Simplifying Electricity Bills Project: Literature Review

consumer.

Introduction

The 2019 *Electricity Price Review* found that low consumer engagement within New Zealand's electricity market has contributed to New Zealanders not receiving the full benefits of a competitive electricity market (Dean et al., 2019).

New Zealand Electricity Authority data – along with data from primary sources (see Appendices) – support similar findings from international studies which suggest that consumer inertia is largely driven by lack of trust in electricity retailers, lack of sufficient information from retailers, and language and cultural barriers to bill comprehension. Low engagement in the New Zealand electricity market has led to many consumers remaining on outdated electricity deals despite the existence of better priced deals. At the consumer level, this means that consumers are leaving considerable cost savings on the table (Dean et al., 2019). On the supply side, this decreased competition may lead retailers to maintain a lack of engagement rather than invest in cost reductions for their customers (Henderson et al., 2021).

Many of the issues constraining consumer engagement are driven by a lack of information, a lack of information processing ability, and an aversion to information processing. Recommendations within the literature discuss improvements to electricity billing as an effective tool for building consumer engagement (Ioannidou, 2018). Electricity bills are an important channel of information between the customer and their retailer. Studies argue that consumers should be able to get all the necessary information to effectively engage with the electricity market through their electricity bill, and that the information should be presented in an easily understandable way (BEUC, 2017). Providing the consumer with essential information (such as historical usage) helps to increase engagement by allowing consumers to better utilise comparison tools (such as Powerswitch), and by acting as a tool for the consumer to understand and engage with their electricity usage (Australian Energy Regulator, 2021; BEUC, 2017; Hampton et al., 2022; Ioannidou, 2018).

Increased engagement can benefit the electricity market at multiple levels. At the consumer level, engagement can help customers save money by increasing their motivation to search for better electricity deals, and allowing them greater control over their usage (Australian Energy Regulator, 2021; Ioannidou, 2018). Increased engagement will increase the consumer's demand for affordable and high-quality service from their retailer (Henderson et al., 2021). At the provider level, consumer engagement incentivises retailers to increase quality or decrease prices charged to consumers (Hortaçsu et al., 2017). For these benefits to be realised, increasing engagement should be seen as a long-term goal (Ioannidou, 2018). It shouldn't be assumed that any interventions in the market will necessarily result in action from the consumer since the consumer must be willing to increase their engagement with the market. Therefore, focusing on increasing consumers' motivation to engage is vital to the success of any recommendations to address consumer inertia.

This literature review is structured as follows. We look at the issue first in a New Zealand context. Next, we discuss the high-level issues that constrain consumer engagement within the electricity industry in comparable jurisdictions. The pervasive nature of these issues, as well as data from primary and secondary New Zealand sources, strongly suggest that high-level international findings can be applied to the New Zealand context. We then review the possible solutions to these issues that have been proposed in international jurisdictions, to inform the recommendations that have been made in this review.

Low consumer engagement in the New Zealand electricity market

Studies of consumer engagement in New Zealand's electricity market are somewhat conflicting.

For instance, an Electricity Authority study found that New Zealand has the highest annual switching rate across all the jurisdictions included in the study (Electricity Authority, 2014). The researchers attributed the high switch rate to the success of engagement campaigns. These campaigns ran for 3.5 years, using marketing channels to reach a general audience and targeting community outreach programmes to reach more vulnerable consumers. The campaigns were successful in increasing awareness of the value of switching retailers and they positively affected consumers' intention to 'shop around' (Ros et al., 2018). However, according to the study, the majority of consumers switching electricity retailers only did so after they were approached by another retailer, while only 21% had used online comparison tools. In comparison, 31% of consumers from Australia and 42% of consumers from Texas switched after using online comparison tools (Electricity Authority, 2014). Hence, a key reason for higher switching rates in New Zealand may be that some New Zealand electricity retailers have more effective customer acquisition strategies than the other jurisdictions included in the 2014 study. Further, in the years since the completion of the campaign, consumer switching between retailers fell from 10.5% in 2011 to 5.6% in 2021 (Electricity Authority, 2021) (see Figure 1). This suggests that while the campaign may have been successful in building long-term awareness of the benefits of engagement, the actual increase in retailer switching may not have been long-term. The 2014 report posits that around 20% of New Zealand consumers review retailer offerings and regularly switch retailers (Electricity Authority, 2014). The 2019 Electricity Price Review observes, on the other hand, that the number of New Zealanders who have never switched could potentially far outnumber this figure; indeed, the report suggests that a "two-tier market is developing between those who switch and enjoy the benefits of competition and those who don't and pay higher prices" (Dean et al., 2019 p.5). Such conflicting findings highlight the complexity of the issue. Increasing engagement is not a simple or quick fix. Prior campaigns have proven highly successful. Building upon prior successes and learning from overseas campaigns are necessary if these complexities are to be overcome.

More recent switching data clearly show that consumers' switching rate between retailers remains low. Consumer mobility is a good representation of engagement as it implies consumer awareness and action[1] (Cooke, 2011). Electricity Authority data show that the rate of New Zealanders switching electricity retailers (defined as 'trader switch' by the Electricity Authority) currently sits at close to 5%, and the five-year rolling average rate of consumers changing electricity retailers is under 10%. The switching rate differs between regions and cities in New Zealand with Tauranga and Northland having switching rates below 5% (as of 31st July 2022). Data suggest that many New Zealanders are missing out on cost savings due to this lack of engagement. For instance, in August 2022, the average annual savings per household in Bay of Plenty was $789 and in Northland was $636 (Figure 6, Appendix). Therefore, despite the high potential savings and the apparent high perception of the ease of switching retailers (Electricity Authority, 2014), many New Zealanders remain disengaged from the electricity market.

We should not judge engagement merely by looking at the rate of retailer switching. A 2014 comparison between New Zealand consumers and consumers from Australia, the United States and Canada found that despite New Zealanders finding it easier than the respondents from other countries to switch retailers (and despite 77% of New Zealand respondents believing it to be useful to search for better electricity deals), New Zealanders were the least likely to consider shopping around for better electricity deals (Electricity Authority, 2014). While the report found that many New Zealanders are satisfied with electricity pricing, the report also indicated serious issues that may constrain switching rates. For instance, 74% of respondents did not trust retailers who promise better deals; 57% agreed that power bills were confusing and that it was difficult to determine whether they were getting a better deal; and 67% of respondents disliked signing contracts due to concerns over fine print (Electricity Authority, 2014). These findings are interesting because they suggest a consumer base that appears satisfied, but also lacks trust in electricity retailers and feels disempowered. Engagement requires both a willingness to spend the time and effort required to process information, and also the confidence that engaging will result in beneficial outcomes (Ioannidou, 2018). The issues identified in the 2014 report further suggest that despite favourable switching rates compared with other countries, engagement within the New Zealand electricity market is low.

1. There are some limitations to this proxy. Inaction can also be an indication of individual deals (between the customer and retailer).

The problem of low consumer engagement

Lack of engagement can lead to a less competitive market, with the consequence that high consumer satisfaction is less important for retailers. Low engagement results in less internal switching (i.e., switching between the same retailer's electricity plans) and less switching between retailers. This can result in retailers that are more motivated to maintain offerings rather than improve the products and services they offer their customers (Henderson et al., 2021). The Electricity Price Review estimated between 23% and 42% of consumers haven't changed electricity retailers since records began (Dean et al., 2019). This means that even if retailers actively improve their products and services, many consumers will remain on less competitive electricity deals, which may further decrease motivation to improve offerings (Hampton et al., 2022).

Low engagement with usage

Low switching rates represent only part of the issue. A lack of engagement means that consumers may not be optimising their electricity usage (Ioannidou, 2018). Therefore, while many New Zealanders may be missing out on more cost-effective retailers and electricity plans, many other New Zealanders may be paying more for their electricity due to suboptimal usage. The potential long-term implication of this is that New Zealanders remain unaware of how their usage affects how much they pay (Hortaçsu et al., 2017). This may be an issue that disproportionately affects consumers in lower socioeconomic groups. According to international studies, people experiencing high levels of financial hardship are more likely to have reduced engagement with the electricity market (Australian Energy Regulator, 2021; Gov.uk, 2013). This is heightened by the fact that many of these people live in rental accommodation that is more likely to have issues with energy efficiency (i.e., lack of proper insulation, lack of up-to-date energy efficient technology/appliances) (BEUC, 2017; Ofgem, 2019).

Figure 1: 12-month rolling retailer switch rate for New Zealand (2012-2021)

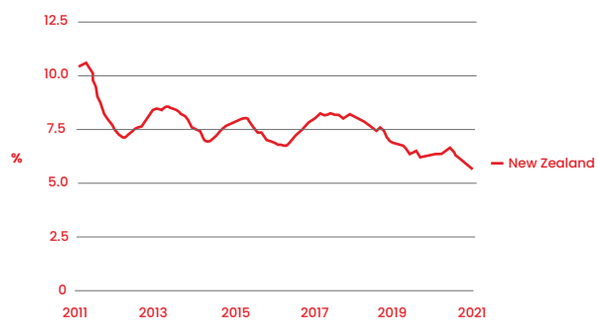
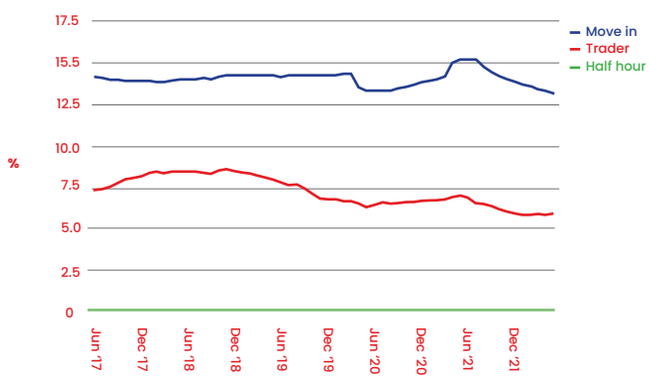


Figure 2: 5-year average switch rate for switches to new retailers from an old retailer ('Trader') and from no retailer ('Move in')



Key problems in New Zealand

High consumer inertia

The electricity sector is prone to consumer inertia. Consumer inertia is a common concept within marketing. It is based on the consumer's desire to reduce effort in the purchasing process. When consumer inertia is high, a person no longer chooses a product based on their overall satisfaction with the product. Rather, the person continues purchasing to avoid the effort of engaging with the market (Henderson et al., 2021; Ying-Feng et al., 2013). Products and services prone to consumer inertia are generally those that require high information processing to gain full comprehension (Cui et al., 2021). Within the electricity market, consumers often perceive switching between retailers to be a hassle due to the time and effort needed to engage in switching[2] (Ofgem, 2019). Inertia generally increases for products purchased consistently and over time and is commonly seen in industries that are not particularly enjoyable to engage with (Henderson et al., 2021). This often means that consumers who have been with their electricity retailer for a considerable amount of time have higher inertia and lower satisfaction than consumers who regularly switch (Hortaçsu et al., 2017). As was found in the New Zealand Electricity Price Review, a substantial number of New Zealanders have not switched retailers. While it is likely true that many of these consumers are satisfied with their retailer, the high number of consumers who stick with their retailer, along with the conclusion of low engagement within the market (Dean et al., 2019), suggests a substantial degree of consumer inertia within the electricity industry.

At the individual level, increased inertia means that long-term customers are likely to be worse off. Customers may be paying a 'loyalty fee' due to increases in their deal's tariffs over time (BEUC, 2017; Hortaçsu et al., 2017). Customers are also less likely to be engaged with their usage, meaning that they may not be using their electricity optimally (Ioannidou, 2018). At the company level, because satisfaction is no longer the central reason for continued purchasing, the company's brand equity may suffer. If customers believe that their retailer is acting in ways to increase inertia, they may deem the retailer to be unethical. Therefore, while increasing inertia may help maintain stability within revenue streams, it may harm the brand if significant shocks occur within the market. Lastly, as satisfaction becomes less important and long-term purchasing becomes habitual, companies may be less motivated to invest in offerings that increase customer satisfaction (Henderson et al., 2021). Therefore, inertia can have industry-wide effects by decreasing competition and innovation.

2. It is important to note that while switching may appear difficult for consumers overall, global studies have found that New Zealanders find it easier to switch retailers in comparison to other countries (Ros et al., 2018). While this does not mean that New Zealanders perceive it as being easy to switch, it suggests that successful strategies used in international studies to build engagement may be successful in New Zealand as New Zealand is starting from a relatively good position.

NZ customers lack key information

A significant contributing factor to New Zealand's lack of switching is that many consumers lack the required information to effectively engage with the electricity market. The Electricity Authority requires all retailers to display certain information such as the quantity and cost of electricity used over the billing period and links to a message promoting the Powerswitch website. However, other information beneficial for consumer engagement, such as a full breakdown of charges, is not required (Ros et al., 2018). Primary data suggest that some consumers may be missing information that is essential for returning accurate results through the Powerswitch tool. For instance, less than half (49%) of all Powerswitch users have successfully identified their existing pricing plan[3]. A little more than a third (36%) of users entered prior consumption data. Of those who entered their consumption information, less than 10% (8.81%) provided the ideal amount of historical data (12 months or more) (Figure 3 in Appendix). Figure 4 in the Appendix further emphasises this point: users are most likely to abandon or exit their Powerswitch search when asked to supply information to do with their power bills (54,653 exits in the past year = 30.73% of all exits). Without this information, tools such as Powerswitch cannot provide customers with reliable results. These tools assist consumers with effective market engagement by simplifying the switching process, so it is crucial that issues around the provision of essential information are resolved if engagement is to increase.

Inconsistent bill content

All consumers must have access to information that is necessary for engagement. However, many electricity bills do not contain the information that is necessary to effectively use the Powerswitch website. Further, the actual content within electricity bills can vary widely between retailers (Dean et al., 2019), meaning that some consumers are worse off because of their retailer. Studies have found that consumers are unlikely to search for information that is not on their bill (Australian Energy Regulator, 2021). According to data from primary sources, missing information was a key factor in consumers opting out of switching through the Powerswitch website (Figure 5 in Appendix).

Multiple countries have mandated the information that must be contained in all electricity bills. New Zealand has taken some steps in this direction; however, evidence suggests that more needs to be done. Mandating the provision of information pertinent to high engagement could help improve consumer engagement with the market.

Low motivation for retailers to change

Inertia can decrease volatility during stable times as it is easier to forecast customer numbers when purchasing patterns remain relatively consistent (Henderson et al., 2021). Increasing engagement may require the retailer to invest significant resources (Ioannidou, 2018). It is easy to see why some retailers would lack the motivation to make this investment if it has the potential to increase costs and volatility, rather than create value for the company. However, high inertia is not entirely beneficial for companies. Significant shocks within the market can break inertia and cause an increase in engagement if the shock is significant enough to overcome the perceived barriers (Henderson et al., 2021). For the electricity industry, this may mean that high inertia consumers will be relatively loyal until a significant enough event (such as a very high bill or a media article criticising retailer practices) to motivate the consumer to search for information and engage with the market. International studies have found that consumers will often increase engagement following a noticeably expensive bill (Australian Energy Regulator, 2021). In addition to this, high inertia customers who are dissatisfied with their retailer are more likely to spread negative word of mouth even if the shock was not due to problems directly caused by the retailer (Henderson et al., 2021; Ying-Feng et al., 2013). Therefore, while there is some motivation to increase inertia, there is also reason for retailers to increase engagement if they value a happy customer base.

3. There may be additional contributing factors to issues with correct plan identification. The likelihood of information inconsistencies between the retailer, regulators, and Powerswitch may increase as information increases. Due to the magnitude of deals available to customers, some of the information inconsistencies may be explained by this.

Three core constraints

Three core costs that constrain consumers from engagement have emerged from the literature: (A) consumers with relatively high time costs, (B) consumers with relatively high[4] information processing costs, and (C) consumers with relatively high information access costs (refer to the Venn diagram in Appendix).

The overall issues that constrain consumer engagement within the electricity market can be placed within three groups. The first group comprises consumers who have access to information and the ability to accurately process the information but choose not to act on this information. Members of this group know that they could get a better deal by engaging with the market but choose not to. For this group, the overarching constraint is that the costs of engagement outweigh the perceived benefits of engagement (Hampton et al., 2022). The second group comprises consumers who have access to the information but cannot sufficiently process it. This group is constrained by external barriers that increase the cost of information processing. Members of this group have a higher perception of the potential benefits of engagement, however the external barriers make attaining these benefits difficult (Ioannidou, 2018). The third group comprises people who do not have sufficient access to information. This group is constrained by reduced access to information that assists with, or is necessary for, engagement (Gov.uk, 2013).

Group A - Overarching constraint: High cost of time

International studies have found that some consumers are put off by the high cost of time needed to gain meaningful benefits from increased engagement. This tends to be an issue across many of the international studies included in this literature review (BETA, 2021; Ioannidou, 2018; Ofgem, 2019). Despite previous studies showing that New Zealanders found it easier to switch retailers than people from other countries (Ros et al., 2018), findings suggest that an overarching constraint impacting many New Zealanders is the high cost of time required for the process of switching. According to the Electricity Authority (2014), "switching seemed too much of a hassle" was the third most common reason for not switching retailers. In addition, despite 77% of consumers believing that it is worthwhile switching retailers, only 33% had searched for information to help with their switching decision. Furthermore, many customers who had switched found it difficult due to the 'long delay in switching over'. As discussed above, most of the New Zealanders from the Electricity Authority study who switched retailers had not directly searched for the information that prompted them to switch retailers. Instead, retailers had won them over through their customer acquisition strategies. In comparison, respondents from Australia and Texas were much more likely to have switched following a proactive search (Electricity Authority, 2014). These findings suggest that many of the consumers who choose to switch may appear to be more engaged than they actually are. While this may be an effective method of encouraging switching, it suggests that retailers may be lowering the cost of time for customers as they did not need to spend time searching for information.

High perception of effort

Some information may unintentionally decrease engagement. There are likely to be many consumers who value having rich information from their electricity retailer. While some retailers do not offer sufficient information, other retailers have likely noticed this desire for information and subsequently increased information within their bills to meet this demand (Henderson et al., 2021; Ioannidou, 2018). However, this may also have increased the perception of effort required to engage among consumers who do not value information richness (Ioannidou, 2018). This could potentially place retailers in a difficult position as decreasing the richness of information being offered may anger their customers who value information richness. It is also important to consider when trying to increase engagement. Merely adding information in the hopes that it will increase engagement may not provide any significant benefit and may increase the perception of effort required to engage. Therefore, to increase engagement within this group, the perception of required effort needs to be reduced.

4. Relative to the other groups.

Status-quo bias

Status-quo bias is strongly associated with the cost of time. For a consumer to switch retailers or electricity plans, they must be more active than if they were to remain with their current retailer or plan (Cui et al., 2021). Engaging with the electricity market is a high-cost activity for consumers as they need to spend time processing information and may also need to spend money to switch retailers or plans. For these consumers, the opportunity cost of engagement outweighs the perceived benefits of engagement (Giulietti et al., 2014; Hampton et al., 2022; Ioannidou, 2018; Ofgem, 2019). Consumers are often confronted with many options when choosing between retailer offerings. This adds to the perception of effort that is required to engage, further increasing the opportunity cost for high cost of time consumers (Ofgem, 2019). Therefore, status-quo bias within the electricity market can result in consumers choosing not to engage with the market despite understanding that engagement could result in cost savings or a better experience with their retailer.

Unwillingness to search for information

Consumers with high time costs do not want to spend time searching for information. The search process inconveniences time-poor consumers. Such consumers will often avoid the task completely (Henderson et al., 2021). Australian research has found that consumers are unlikely to follow weblinks embedded within their bills, even if the weblink offers assistance (Australian Energy Regulator, 2021). This is a critical issue given that tools such as Powerswitch streamline the process of switching, but require the customer to engage in a separate information search. While this significantly reduces the time that would be required for the customer to search for this information elsewhere, consumers who are unwilling to search for information will likely avoid this task.

Low perception of benefits

A key barrier to engagement is the low perception of the benefits of switching. Consumers will weigh benefits against costs in their decision-making process. If benefits do not outweigh the costs, consumers will perceive the costs as too high and choose not to engage (assuming that the consumer is rational). As seen in Figure 5, 'not enough savings' is the second most common response when Powerswitch users are asked why they did not switch retailers. When considering the relative benefits consumers can gain from increased engagement, this becomes clearer. While it is true that some consumers stand to gain very little via cost savings, it may also be true that other consumers simply perceive the costs of engagement as being too high in comparison to the potential benefits (Gov.uk, 2013; Ioannidou, 2018; Ofgem, 2019). This is an important distinction, as it suggests that these consumers could be motivated to engage in the market if the costs required to engage were reduced.

Group B - Overarching constraint: High cost of information processing

For consumers to increase engagement to a level that is meaningful enough to offer benefits, they must have a high enough comprehension of the information to effectively analyse it. Even if electricity bills were to contain all the information necessary for a consumer to engage with the market, we cannot assume that all consumers will be able to understand this information. Group B is mostly constrained by difficulties with effective and accurate processing of information. Consumer engagement within the electricity market requires comprehension of both technical language and numerical data (BETA, 2021; Ioannidou, 2018). The Electricity Price Review (2019) emphasised that many consumers find their bills difficult to understand. Tools such as Powerswitch exist to help overcome these barriers, however these tools are only part of the solution. Consumers constrained by the high cost of information processing should not have to rely on external tools to increase their engagement. Consumers should not be disadvantaged due to lower information processing skills and should be able to attain the same level of engagement as consumers without these constraints.

Lack of necessary knowledge

To properly engage with billing information, the reader must be able to combine different types of information; understand, compare, and combine different units and quantities; undertake multi-step tasks; identify the relevant information within different areas of the bill; and so on. For instance, to determine whether their monthly usage was higher than normal, a consumer will need to locate the relevant information on the bill; assuming the information is sufficient, the consumer will likely then need to compare the information with what they would consider 'normal'. For this to be accurate, the consumer would need an understanding of what should be considered average electricity usage. Without this understanding, there is a risk that the consumer will incorrectly evaluate their usage (Ioannidou, 2018). Engagement also requires an understanding of technical language. Important information on bills is often communicated in complex technical terms (such as kilowatt-hour). Consumers who do not understand terms such as this will find it more difficult to benefit from the billing information (Ofgem, 2019). According to a study from the Ministry of Education and Ministry of Business, Innovation and Employment, around 19% of New Zealand adults lack the numerical skills to understand quantities and undertake multi-step tasks, while approximately 12% of New Zealand adults lack the literacy skills to 'combine and synthesise information from multiple complex texts' and lack the skills to form conclusions based on the ideas in these texts. The report also found significant differences in literacy skills between ethnicities (MOE & MBIE, 2016). Given that all New Zealanders must have access to electricity to live a healthy life, all New Zealanders should also be able to engage with the market so that they can gain the benefits available to them. A person should not be excluded from engagement because they do not have the necessary knowledge to engage with complex data.

Language barriers

Language barriers can also constrain comprehension of electricity bills. As discussed, the terminology used in many electricity bills is often technical. International studies found that consumers who spoke English as a second language found it more difficult to understand the technical language in bills (Australian Energy Regulator, 2021; BEUC, 2017). New Zealand is a multicultural country with many New Zealanders who do not speak English as a first language. Further, while the majority of New Zealanders have at least a basic understanding of written and spoken English, approximately 4.5% cannot engage in conversational English (StatsNZ, 2020). This suggests that even well-designed and easy-to-understand bills may be incomprehensible to some consumers.

Physical and intellectual disabilities

Disabilities can decrease consumers' ability to analyse the information presented on an electricity bill. Consumers with physical and/or intellectual disabilities constitute a very broad group; however, the group shares similarities with consumers with high language and cultural barriers impeding their ability to analyse information. This group may have access to information, but they also have certain impediments that may make it difficult for them to effectively process information presented on bills (Ioannidou, 2018). As an example, dyslexia affects approximately one in ten New Zealanders (Dyslexia Foundation of New Zealand). The small font size and use of technical jargon that is present in many New Zealand electricity bills may create barriers for these consumers, thus reducing their engagement.

High perception of benefits

While there are significant constraints that hinder this group's engagement, consumers within this group are likely to have a high perception of benefits. Due to the external challenges that contribute to this group's constraints, consumers from this group tend to have a lower income than consumers who are solely constrained by a high cost of time (Gov.uk, 2013; Ioannidou, 2018; Ofgem, 2019). Therefore, while the costs of engagement are high, so is the perception of benefits. This is an important factor as it suggests that engagement could increase within this group if bills were designed to be easily comprehensible by all consumers and/or additional services were established for more specific assistance.

Group C - Overarching constraint: High cost of information access

Group C is constrained from engagement due to a lack of access to sufficient information and tools that are necessary to engage with the market. Studies from the European Union and the United Kingdom have found that this group is likely to have very little access to the internet and may live in rural areas, transitional housing or shift addresses regularly (Gov.uk, 2013; Ioannidou, 2018). This presents difficulties for organisations trying to reach these consumers and may mean that these consumers are left out of studies that use the internet to reach respondents, potentially resulting in a lack of sufficient data about this group (Gov.uk, 2013). Therefore, there is a danger that this group's key constraints are missed by researchers. A substantial number of New Zealand homes do not have access to broadband internet (Motu Economic and Public Policy Research, 2019). While some of these homes may have alternative means to access the internet, a substantial number may have no access to the internet. For this group, comparison websites (such as Powerswitch) are not beneficial as they cannot easily access them, meaning that these consumers have very little opportunity to engage with the electricity market if the comparison sites are used as the primary method of engagement. Additional strategies may be necessary to reach these consumers.

High perception of benefits

Like with the previous group, consumers who lack key information have a high perception of potential benefits. As discussed above, many consumers who cannot access sufficient information are more likely to be disenfranchised or in low socioeconomic groups (Gov.uk, 2013). Therefore, consumers from this group have high relative gains. If information was made more widely available (potentially through billing or other more targeted programmes), this group may be motivated to increase engagement.

Shared constraints

Low consumer trust in retailers

All consumers must trust competing retailers if they are to consider switching. Primary findings suggest that lack of trust is a considerable barrier to engagement among New Zealand electricity consumers (Figure 5). Low trust can impact all consumers' willingness to change retailers. Consumers may trust their retailer over other retailers in the market. In the United Kingdom, 65% of consumers trusted that their retailer was charging a fair price (Hampton et al., 2022). This was found to be the case in Texas, where consumers were less willing to switch to new entrants due to the lack of trust in these new entrant retailers (Hortaçsu et al., 2017). New entrants place competitive constraints on incumbents (Özsomer & Tamer Cavusgil, 1999). Low trust in new entrants is an important issue as it reduces the competitive constraint that new entrants place on incumbents, thereby reducing the benefits that these retailers bring to the market.

Customers may also mistrust low-priced deals offered by competitors. Experiences with electricity deals that offer extremely low initial prices followed by steep price hiking have made some customers wary of deals that are offered to them by retailers (Australian Energy Regulator, 2021; BEUC, 2017). Further, price is often used as a basic heuristic when determining a product's quality. Customers may perceive pricing plans that are priced significantly lower than their current plan as inferior or containing hidden costs (Ofgem, 2019). It is important to note that the issue of trust may have some dependence on the specific jurisdiction of the electricity industry. For instance, the issue of 'honeymoon deals' may be more serious in Australia and the European Union than in New Zealand. However, as our primary data sources suggest, trust is likely to be an issue that constrains New Zealand consumers from switching retailers. Therefore, it is important to consider consumer trust when attempting to make any changes in the effort of increasing consumer engagement.

Imbalance of power

Consumers must be confident that their attempts at engagement will result in meaningful changes from the retailer. A key finding within the Electricity Price Review (2019) was that consumers are not having their voices heard. The Electricity Price Review recommended the establishment of the Consumer Advocacy Council to advocate on behalf of consumers to help strengthen the consumer voice within the electricity market. Given the necessity of electricity in all people's lives and the differences in financial resources between retailers and consumers, it should be no surprise that many consumers feel powerless when dealing with electricity retailers (Ofgem, 2019). A consumer's perception of their level of power positively influences their intention to voice feelings and concerns with their retailer (Wan & Li, 2021). The Electricity Price Review's findings and recommendations suggest a serious imbalance of power because when consumers feel there is an imbalance of power between themselves and the company, they are less confident in sharing their voice. This reduces the intention to engage with retailers as it reduces consumers' confidence that they will come away in a better position (BEUC, 2017; Wan & Li, 2021). Further, as power is a core component of negotiating, an imbalance of power can reduce the consumer's ability to negotiate better deals with their retailer (Gov.uk, 2013).

Complexities of low engagement

While the core constraints for each of the groups are different, there are also crossovers between constraints (see Venn diagram in Appendix). From a big-picture view, the different contributing factors outlined above may suggest that there are distinct differences between consumer groups. However, from an individual consumer perspective, a consumer may not fit neatly within their group's boundaries. In some cases, a consumer may fit within two or even all three of the groups discussed above (Ioannidou, 2018). For instance, a consumer with high barriers to information processing may also have high perceptions of the cost of time. This highlights the complexity of the issues being discussed. Researchers and policymakers must consider that consumers may be facing several constraints along their journey towards increased engagement. Merely focusing on improving one of the core constraints risks not achieving the objective of increased engagement.

Increasing consumer engagement through empowerment

Increased consumer engagement needs to be considered as a long-term goal if it is to be successful.

Consumer empowerment is the process of increasing consumers' active engagement within the market. It involves effective information processing by consumers for them to gain the most benefits from empowerment (Ioannidou, 2018). In the context of the electricity market, empowered consumers would accurately assess the benefits and drawbacks of each of the different retailers and their deals. Improved electricity billing can play a role in increasing empowerment. A consumer's electricity bill is an important channel of information between the retailer and the customer. It can act as the main method of information transfer from the retailer to the customer (BEUC, 2017). Many international studies have focused on improving electricity billing alongside other changes (such as collective buying schemes and regulated default prices) as a method of empowering consumers (Australian Energy Regulator, 2021; BEUC, 2017; Hortaçsu et al., 2017).

Care needs to be taken when considering any changes to electricity billing. This is a complex issue and there is a risk that any changes that are made to consumers' bills will result in decreased engagement (Ioannidou, 2018). Further, low engagement does not necessarily mean that consumers are dissatisfied with the electricity market. Consumers may value low engagement and choose lower engagement options despite having to pay more for the service (Cui et al., 2021). Despite this, improved electricity bills can benefit all consumers if done correctly as it gives consumers more power to increase their engagement should they choose to do so (Ioannidou, 2018). We will now outline the recommendations made in international studies. However, as this is an exploratory exercise, and due to the complexity of the issue, further research will need to be done in a New Zealand context to test the efficacy of these recommendations.

Bill content

Basic information

There is certain basic information that all bills should contain if any form of engagement is to be achieved. This is information that is required for basic interactions (such as payment methods and amounts, usage information, and electricity plan names). Without this information, switching between plans and retailers becomes less efficient, comparison tools such as Powerswitch become less reliable, and consumers who wish to engage more with their usage cannot effectively do so. International studies have recommended that this basic information is made mandatory across all bills. This would ensure that all consumers have the necessary information for engagement while still giving freedom to retailers to provide any additional information that their customers may value (Australian Energy Regulator, 2021; BEUC, 2017). As discussed in previous sections, many New Zealand electricity bills do not contain all the information necessary for accurate results on Powerswitch. Given that one of the recommendations set out in the Electricity Price Review was to increase usage of Powerswitch (Dean et al., 2019), the results consumers are getting from the tool must be optimal. Therefore, New Zealand electricity bills should contain the information that will enable this.

'Best deal' messages and reference prices

Many countries (including New Zealand) have implemented mandatory additional information on their electricity bills. Australia has attempted to reduce the effort required to switch to an affordable deal through its 'best deal' message. This message informs the customer whether they are currently on the best electricity plan for their usage, reducing the need to search for better offerings within the customer's retailer. The Australian study compared bills that contained detailed information and a 'best offer' message with bills that contained detailed information but no best offer message. The study found that consumers were almost twice as likely to state that they would compare or switch electricity plans when presented with a 'best offer' message (Australian Energy Regulator, 2021). The best offer message could potentially decrease barriers across all consumer groups as it is a straightforward method of delivering a highly actionable piece of information.

The study also tested the effectiveness of adding a reference price (set by the regulator) to help consumers compare prices. Forty percent of respondents stated that they would look for a cheaper deal if the price of their bill was equal to the reference price (Australian Energy Regulator, 2021). Bills that contain this information have the potential to benefit all three consumer groups. This can reduce the opportunity cost of engagement as the consumer does not need to search through multiple pieces of information to see if they are on the best deal. These are straightforward messages, meaning that less effort is required from the consumer to gain some of the benefits of engagement. Lastly, it can help consumers who do not have internet access more effectively switch retailers despite having limited access to tools such as Powerswitch.

Comparison information

Electricity bills themselves should contain comparison information. As discussed, Group C consumers have limited or zero access to the internet. Tools such as Powerswitch are of little use to these consumers. Further, Group A consumers are constrained by an unwillingness to search for information, so may be unwilling to use these tools. The Australian Energy Regulator tested benchmarks within bills that compare the household's usage with similar households. This saw an increase in bill comprehension from 24% to 44%, and participants also found the information useful for reducing their energy usage (Australian Energy Regulator, 2021). This can allow consumers to gain additional benefits that enable them to save money and become more energy efficient, as well as increase their ability to switch retailers.

Language used

The use of technical language is common place in electricity bills. Technical jargon can reduce consumer confidence in engaging with the information on their bill and increases dissatisfaction among consumers who lack sufficient technical literacy (Tsai & McGill, 2011; Wu et al., 2020; Xu et al., 2010). British researchers found that terms such as 'kilowatt-hour' and 'credit' acted as significant barriers to understanding for some consumers (Ofgem, 2019). Australian and European studies tested the use of conversational English in power bills. Phrases such as 'how much do I need to pay?' and 'how much do I owe?' were found to improve bill comprehension (Australian Energy Regulator, 2021; BEUC, 2017). The use of conversational English was more effective than other recommendations such as the use of glossaries to define terms. In addition to conversational English, the use of translation hotlines can further assist customers who have high language barriers (Australian Energy Regulator, 2021). This is an important issue constraining engagement. Much of the technical information in a bill relates to areas that are critical to achieving higher engagement (such as electricity usage). Language that is more consumer-focused can help to increase engagement within groups constrained by insufficient technical literacy.

Bill design

Tiered layout

Australian and European studies have recommended a tiered layout, where the most important information is presented up front, while additional information is presented in second and third tiers (Australian Energy Regulator, 2021; BEUC, 2017). Australian legislation has mandated that the first tier of an electricity bill should be at the beginning of the bill and contain information that is necessary for basic engagement such as customer and plan names, account and meter numbers, payment dates and methods, and the deemed best offer message. Information for higher levels of engagement such as comparisons with historical usage, plan summaries, cost breakdowns, and translation services is presented in tier two on the second page of the bill. Additional information about the retailer's obligations is presented in the last tier (Australian Energy Regulator, 2022).

Presenting information in a tiered system can help to decrease search costs for consumers. Consumers who find engagement more daunting can benefit from the immediate presentation of information that is necessary for engagement with comparison tools (i.e., Powerswitch), while consumers who wish for greater engagement can easily find the necessary information in later tiers.

Tables, charts, and infographics

Bills that are rich in data can provide benefits to consumers who wish to use the data to better control their electricity usage. However, rich data can overwhelm some consumers, reducing their market engagement. Effective dissemination of data through appropriate visualisation tools can help to improve information processing (Lurie & Mason, 2007). The Australian study found that detailed, invoice-style cost breakdowns improved consumer understanding of how their bill was calculated, and that bar and line graphs improved usage comprehension (Australian Energy Regulator, 2021). In addition to these, specific design elements such as circles, arrows, and the use of bold lettering can draw the reader's attention towards actionable information (Australian Energy Regulator, 2021). Improved dissemination of data through design elements such as these can reduce barriers to information processing for Group B consumers. It can also reduce the perception of time needed to process information, thus reducing the opportunity cost of engagement. In addition, it can help consumers who have limited internet access better engage with the market provided that the charts and tables contain the necessary information for engagement.

Increasing consumers' trust

A key reason many consumers do not trust electricity retailers is due to consumer perceptions of conflicting interests between the retailer and the consumer (Ofgem, 2019; Simshauser, 2018). Power imbalances and previous unpleasant experiences between the consumer and the retailer have added to this issue (BEUC, 2017; Darke & Ritchie, 2007). This issue needs to be considered when determining any messaging on bills meant to assist consumers to switch retailers or electricity plans and better optimise their electricity usage. Consumers may mistrust messaging that comes from their retailer, as they may believe that this information is not in the consumer's best interest (Darke & Ritchie, 2007). The Australian study recommended that energy bills contain reference prices set by the Australian Energy Regulator. In the study, the reference price represented the highest price in the market, helping consumers to compare their plan's cost against a reliable and trustworthy source set by a party independent from their retailer. As discussed above, the reference price increased motivation to search for a better deal (Australian Energy Regulator, 2022). A reliable representation of the highest price[5] in the market can help consumers feel more confident in their ability to accurately compare their costs. It provides the customer with an easy-to-interpret figure that is backed by an independent third party (i.e., the regulator). This can increase the legitimacy of important information, thereby increasing intention to engage with the information (Ofgem, 2019).

Improving bills through value-sensitive design

A key issue that also needs to be resolved is the often-conflicting motivators and constraints between consumer groups. For instance, Group A may wish for simpler bills due to a higher perception of time required to engage with more detailed bills (Brühl et al., 2019), while Group B may wish for more explanatory information to gain a deeper understanding of the different elements of their bill (Ioannidou, 2018; Ofgem, 2019). There is a risk that changes made to billing lead to a reduction (rather than an increase) in engagement due to changes being implemented that do not seriously consider the values of the consumer. Value-sensitive design could help better determine what information provides the most value to consumers, and how the information should best be presented for consumers to gain the maximum value from it. Value-sensitive design, often used in engineering and architecture, places values at the core of design (Mok & Hyysalo, 2018). For electricity billing, this would require bill designers to fully understand what consumers specifically value about their electricity bills, and what they value about the electricity market in general. Therefore, while the recommendations made in international studies appear to be successful in increasing engagement, it is important that the specific values of New Zealand electricity consumers are understood, and that the recommendations made in international studies fit within the New Zealand value system.

Additional interventions

There are some additional interventions that are worth highlighting for future research. These interventions sit outside the scope of billing but have shown success in mitigating some of the issues that may not be solvable through improved electricity billing.

Reaching Group C consumers

The recommendations outlined above could potentially benefit Groups A and B, however they are likely less effective for Group C. Group C has limited access to tools such as Powerswitch. Given that a key purpose of Powerswitch is to make it easier for New Zealanders to switch energy retailers, limited access puts Group C consumers at a significant disadvantage compared to the other consumer groups. Given their disconnectedness, Group C is also more likely to suffer from higher levels of poverty, meaning that this group could potentially benefit substantially from increased engagement. Research from the United Kingdom recommended a more targeted and direct approach for this group. The study found that these consumers benefitted significantly from greater advocacy and collective electricity buying schemes. Consumers in this study were reached through third-party community groups who acted on their behalf when negotiating electricity deals with retailers (Gov.uk, 2013). This would require additional changes to be effective in addition to improved electricity billing. However, because this group is smaller than the other groups, resources could be utilised in a more concentrated and effective manner.

5. Note that this was an element of the study (rather than the actual recommendation). The reference price could also represent the average price (or any other price).

Regulated default offer

Some jurisdictions have also implemented default offers set by the electricity regulator. An example of this is the Victorian Default Offer from the Australian state of Victoria. The offer is the highest price in the market, as the government mandates that retailers cannot offer plans priced higher than the default offer. All retailers must include the default offer for their consumers. Consumers may opt to be placed on the default offer and are automatically placed on the offer upon completion of their current electricity deal. A key reason for the introduction of the Victorian Default Offer was in response to many Australian consumers paying too much due to being on long outdated electricity deals (Essential Services Commission, 2021). This is different from the reference price discussed as it represents a much more radical intervention and would require further investigation in a New Zealand context before any recommendations should be made. Researchers argued that regulators have more power to negotiate wholesale prices. This can increase competition as retailers must also negotiate for lower prices if they wish to keep their other offerings competitive (Tsai & Tsai, 2018). However, there is a risk that such default offers backfire: many consumers may opt for the default offer (i.e., the highest-priced deal) as the default offer requires the least amount of engagement from customers. This may further reduce the competitiveness of the retailer's other offerings, reducing their motivation to work towards providing better deals for their customers (Esplin et al., 2020).

Conclusion and recommendations

Consumer engagement within the electricity industry is a complex issue. Overall, building consumer engagement should be seen as a long-term goal (Ioannidou, 2018).

It has the potential for wide-ranging benefits for the consumer due to increased competition within the market. It can also lead to more efficient energy usage. Improved billing can play an important role in the process of increasing consumer engagement. Important learnings can be applied from the prior research done in Australia, the European Union and the United States. From the literature discussed above, it is apparent that multiple components comprise an effective bill. Bills must be designed in a way to communicate with different consumer groups. Bills need to contain all the necessary information for proper market engagement. This means that a consumer should be able to confidently switch retailers and electricity deals, and engage more effectively with their usage through the information provided on the bill alone. This information should be presented in ways that are easy to understand by all customer groups. Value-sensitive design principles should be used to draw the customer's attention to the most important information so this information is not missed. Further, additional support such as translation services and consumer advocacy groups should also be used to assist consumers who do not have the ability to properly process the necessary information.

It is also important to consider that not all consumers wish to increase their engagement with the market. Consumers who do not wish to engage heavily with the market can still benefit from these changes as they will have more streamlined access to the necessary information. This could potentially reduce the opportunity cost of market engagement and lead to a reduction in consumer inertia.

Limitations

This literature review was mostly based on very recent research from international jurisdictions. This means that many of their recommendations may not have been in place for long enough to fully understand their implications. Further, while these electricity markets have been through similar privatisation processes, differences between those processes – as well as cultural and demographic differences between the countries – may change the implications of the recommendations for New Zealand. Therefore, any specific recommendations to be made need to be tested through empirical research in a context that better represents New Zealand.

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Appendices

Figure 3: Powerswitch bill usage data 1st August 2021 – 31st July 2022

Figure 4: Powerswitch calculations abandoned between 1st August 2021 – 31st July 2022

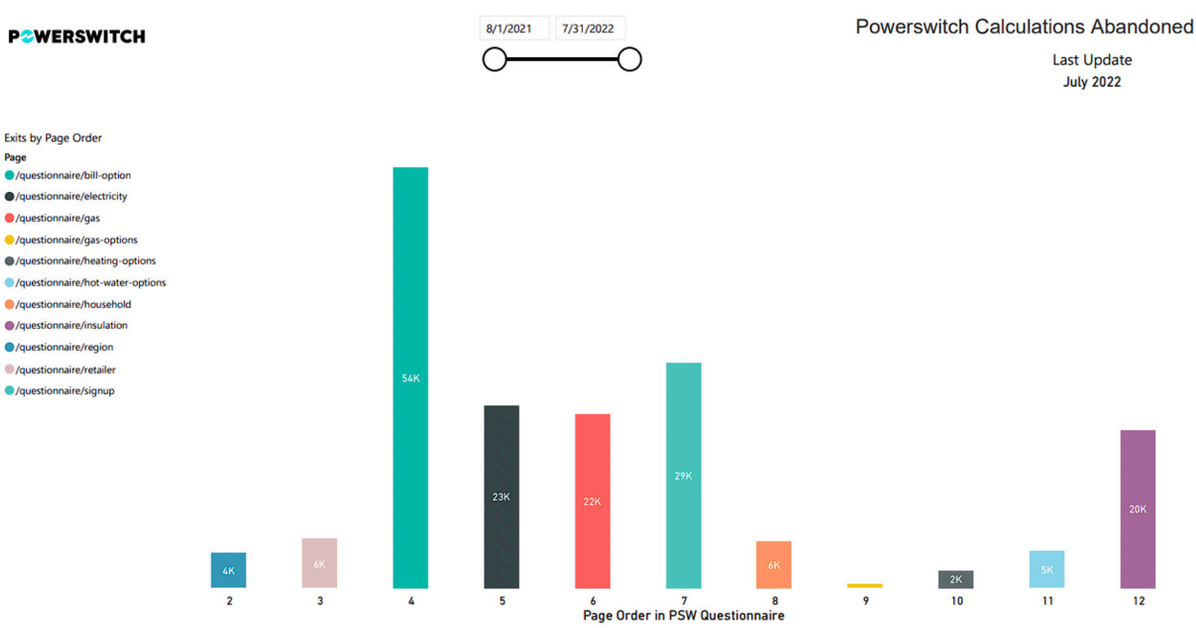


Figure 5: Powerswitch switching survey. Reasons for not switching (2021-2022). Sample size: 4492 respondents

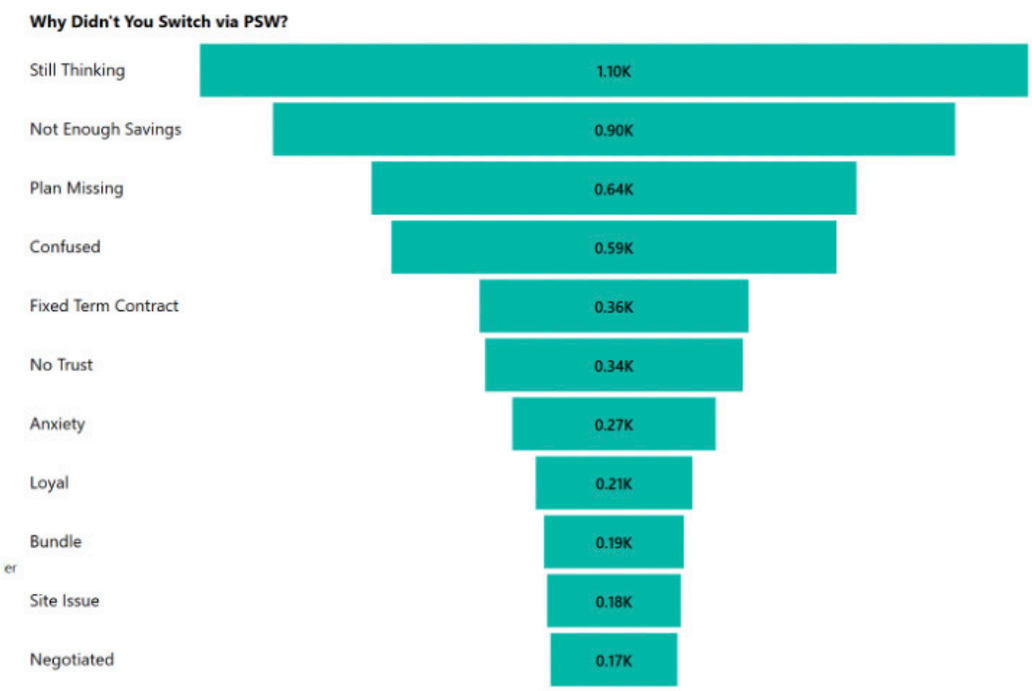
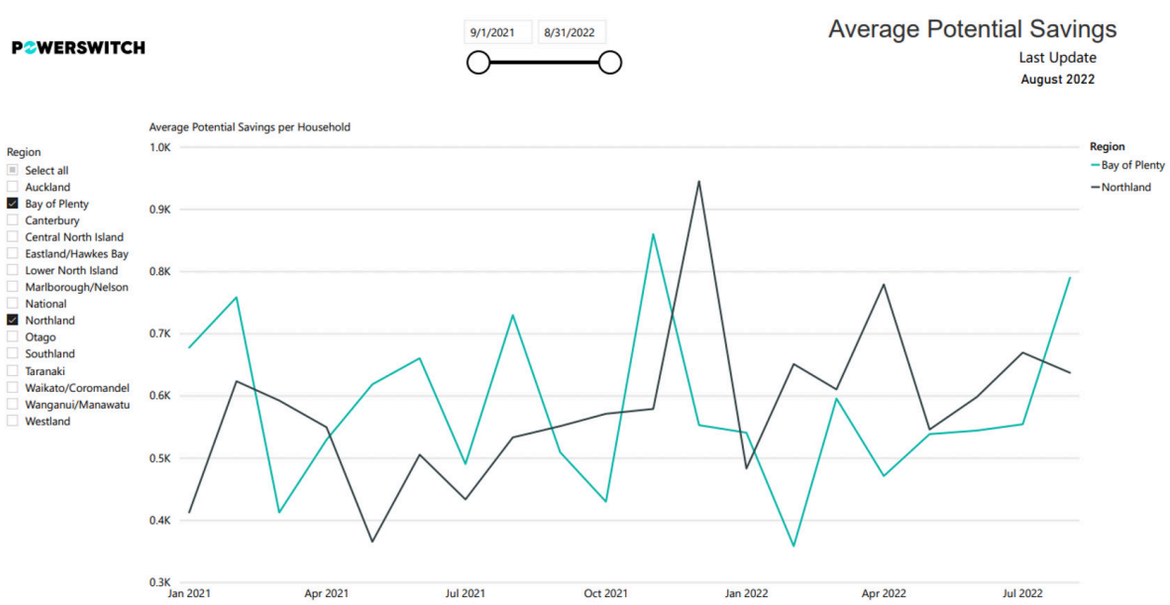


Figure 6: Average household savings by region



Note: This graph shows the average savings being seen on the result pages by users that entered bill information for the region(s) selected. Savings are the estimated current costs of the users vs. the lowest cost option shown to them on their results page.

Venn diagram: