Energy retail markets

An international review
A report for the Victorian Department of Environment, Land, Water and Planning

April 2017
kpmg.com.au
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This report provides a summary of KPMG’s findings during the course of the work undertaken for the Department under the terms of the engagement letter.

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1 Introduction

Victoria’s electricity market is considered to be one of the most competitive markets in the world. However, some concerns have been raised that competition is not delivering benefits to all consumers in Victoria. A number of reports have suggested that retailers in Victoria may have some of the highest electricity margins in the National Electricity Market.\(^1\) Of particular concern to the Victorian Government is a finding that some customers on (higher priced) standing offers were more likely to be older or living in regional areas.\(^2\)

To consider these issues, the Victorian Government has initiated a review into Victoria’s electricity and gas retail markets in respect of supply to residential and small business consumers. The review is considering:

- barriers that stop consumers from obtaining better offers
- whether action is required to improve retail energy markets in Victoria
- ways to assist everyday consumers to obtain the benefits of a competitive market.

The objectives of the review are to examine the operation of the Victorian electricity and gas retail markets and provide options that would improve outcomes for consumers.

1.1 Purpose of this report

To inform the Panel’s review, the Victorian Department of Environment, Land, Water and Planning (the Department) sought analysis of the energy retail market policies, regulations and practices of other jurisdictions around the world. To this end, the Department engaged KPMG and VaasaETT to:

- Advise on what options have been implemented in other jurisdictions that could lead to better outcomes for consumers, and the extent to which those options could apply in Victoria. The Department also sought advice on how those options could be implemented, and the benefits and costs of doing so.
- Provide observations on retail margins overseas, including trends and drivers.

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\(^1\) See the Terms of Reference for the review, as well as Grattan Institute, Price Shock: Is the retail electricity market failing consumers?, March 2017.

1.2 Scope of this report

The scope of this report includes considering policies, regulations and practices outside of Australia that apply to residential and small business electricity and gas retail customers. We have not considered any policies or outcomes that relate to large customers.

This report focuses on a number of case studies agreed with the Department, with some additional examples where relevant. It does not purport to consider all jurisdictions that have implemented a particular reform, nor does it consider every possible approach to reforming energy retail markets. KPMG has not been asked to provide an assessment of the effectiveness of the Victorian energy retail markets and this report should be interpreted as such.

1.3 Structure of the report

The remainder of this report is structured as follows:

- Chapter 2 explains our methodology and provides observations.
- Chapter 3 provides observations on the case study analysis and retail margin analysis.
- Chapters 4 and 5 consider options for making the demand side more active, specifically ways to provide consumers with greater confidence and options for non-tariff regulation.
- Chapters 6 and 7 consider options for improving outcomes for vulnerable customers and passive customers that do not engage in the market, specifically policies targeted at these customers and a collective bargaining approach to the default tariff.
- Chapters 8 and 9 consider options for imposing additional constraints on retailer behaviour, specifically the re-introduction of price regulation and monitoring prices.
- Chapter 10 summarises the analysis of retail margins from a number of jurisdictions around the world to determine trends in retail margins.
- Appendix A provides case studies for eight energy retail markets around the world, as well as the Australian mortgage sector and several other Australian industries; and
- Appendix B provides further details analysis on the methodology and findings for the margins analysis.
2 Methodology

This chapter sets out our approach to the case study analysis. Our approach to the retail margin analysis is described in Chapter 10. Our approach to the case studies involved four main steps:

1. Identify jurisdictions
2. Assess outcomes
3. Identify policy options
4. Apply to Victoria

2.1 Identifying jurisdictions

In step 1, we collaborated with the Department to identify a number of markets that demonstrate a range of different reform options and approaches.

We agreed with the Department that we would examine the following electricity and, where relevant, natural gas retail markets:

1. France, as an example of a market that still has price regulation;
2. Great Britain, with a focus on their “simpler choices” reforms;
3. Maine, with a focus on how they establish the default price (the price applicable to customers who do not switch);
4. New Zealand, with a focus on their campaigns to improve customer awareness and their diversity in offers;
5. The Netherlands, with a focus on their form of price monitoring;
6. Norway, with a focus on their “hands off” approach to regulation;
7. Ontario, with a focus on price re-regulation; and
8. Texas, with a focus on the absence of a default supplier and efforts by the regulator to provide greater information transparency and education for consumers.

For each of these jurisdictions we provide a summary of the regulatory arrangements for retail contestability, explain the developments since the start of competition and provide an assessment of customer outcomes. These summaries are provided in Appendix A. In our discussion on the reforms applied in other jurisdictions, we have also included some discussion of additional jurisdictions where relevant, although we have not completed a full analysis for these markets.

In addition to energy retail markets, we agreed to examine:

- the application of a price comparison rate for mortgages; and
- other industries in Australia that apply price monitoring.
2.2 Assessing outcomes

The second step in our approach was to consider outcomes for consumers in those markets that we examined. Where possible, we considered whether there was a link between the reforms and improved customer outcomes.

In identifying reform options that have improved customer outcomes, we must first define what might represent a desirable outcome for consumers. We have used an analytical framework to define and measure desirable customer and market outcomes consisting of 6 pillars:

- **Awareness and interest**: customer awareness and interest in energy retail market competition and knowledge of how to benefit from different retail offers. This includes whether a customer considers there is value in switching.
- **Diversity**: level of customer choice in both the range of savings under different retail offers and retailers and the different types of products available.
- **Activity**: extent of decisions by customers to take advantage of competition through switching, or otherwise engaging by reviewing offers.
- **Experience**: understanding how consumers feel about competitive outcomes through their satisfaction levels and number of complaints, identified problems with retailers and services being provided.
- **Retail margins**: the extent to which margins earned by retailers could indicate that customers are, or are not, benefiting from retail competition.
- **Innovation and evolution**: the potential for the jurisdiction to continue to evolve and capture future benefit through increased innovation and the emergence of new products and services enabled by technology improvements.

Each of these indicators should be considered as one part of the overall picture. No indicator in isolation can provide an accurate picture of the state of a market. Rather, it is the combination of these factors that will inform how a market is performing. For example, a high level of activity in a market could suggest that the market is performing well, with highly engaged customers switching between retailers to take advantage of lower prices or alternative offerings. On the other hand, a high level of activity could indicate that customers are unhappy with their retailers.

As we discuss in the next chapter, there are also likely to be trade-offs between these indicators.

It is also important to note that outcomes will change over time as markets develop and mature, and as new technologies allow different products and services to be offered. As competitive markets mature, customers become more experienced in shopping around and can place greater pressure on retailers to continue to offer low prices, products that customers want and good customer service.

In analysing outcomes in retail markets, it is therefore important to consider a range of indicators over time. Even once a market matures and customers have a high degree of awareness, the level of diversity, activity, experience and retail margins can be expected to wax and wane as innovations occur and new retailers enter the market. This could be driven, for example, by new technology developments such as smart meters that facilitate new products and services.

Finally, every customer is different. Customers’ experiences under retail competition will be unique to each individual customer, which in turn will drive their perceptions and engagement in the market. At a high level, customers can be segmented into two cohorts (noting that customer groups can be segmented in other ways):
• **Active customers.** These customers are willing to shop around for better deals on a regular basis. This could be because they want to find the cheapest price, or because they want to take advantage of particular products or services offered by retailers.

• **Passive customers.** Also known as “sticky” customers, these customers may have switched once or twice, usually prompted by direct marketing, but typically do not review their energy plan on a regular basis. Customers may be sticky for a range of reasons, such as due to a lack of information or do not have the time to make the choice, because it is hard to compare offers, they are unable to access alternative tariffs (e.g. because they cannot access or do not feel comfortable using the internet), distrust of the market and transaction costs of switching.

By passive customers, we do not necessarily mean those customers considered vulnerable to energy affordability difficulties. However in the report we do recognise those reforms relating to passive customers which are particularly targeted at assisting vulnerable customers.

These different types of customers may have very different experiences of markets and typically reforms have benefited some customer groups more than others. In some cases the benefits accruing to some customers have been to the detriment of the others. Consequently, there may be trade-offs between outcomes for different customer types. In addition, customer behaviour can change over time and those customer considered to be active today but not be active in the future.

### 2.3 Identifying policy options

Each jurisdiction that we have examined has approached the reform of their energy retail markets in a unique way – although there are some commonalities –each jurisdiction has had a unique experience. Further, jurisdictions are in different stages of market development. However, it is possible to consider whether there are common approaches that have led to certain outcomes for consumers across a number of jurisdictions.

Based on the jurisdictions we examined, we have grouped possible approaches into three categories:

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<thead>
<tr>
<th>Demand side measures</th>
<th>Protecting passive customers</th>
<th>Supply side measures</th>
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<tr>
<td>Customer empowerment</td>
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<td>Price regulation</td>
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<tr>
<td>Non-price tariff regulation</td>
<td>Collective bargaining</td>
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There are myriad different ways in which each of these approaches could be applied. We have not attempted to identify every possible permutation. Rather, we have generally considered the way in which the option has been applied in a particular jurisdiction.

It is also important to recognise that often jurisdictions will apply a combination of these options. This makes it difficult to isolate the direct impacts of a particular reform on customer outcomes. Policy frameworks which are the most successful at delivering effective customer outcomes are those where the range of policy measures have been appropriately designed to complement each other and work in tandem.
2.4 Application in Victoria

In considering the possible application of the various approaches in Victoria we have considered:

- practical implementation issues, including potential legislative and structural barriers;
- likely outcomes for customers, based on the 6 pillar assessment framework set out in section 2.2; and
- likely implementation costs.

For some of the approaches considered, these factors will vary significantly depending on the specific details of the policy put in place.

We have also considered the extent to which the purpose behind the reforms may be different between a jurisdiction that has applied the approach and Victoria, as well as differences in market structure that could result in different outcomes in Victoria.
3 Observations

3.1 Observations from case study analysis

Since the mid-1990s, many jurisdictions across Europe, Australasia and North America have opened up their energy markets to retail contestability. The common rationale behind these reforms was that competition would drive efficient price outcomes, provide customers with greater choice and lead to a greater degree of innovation than under a regulated, vertically-integrated monopoly supplier. These outcomes were considered to be in the long term interest of consumers. Jurisdictions that have started down this pathway of reform has seen increase competition, albeit to different degrees and at varying rates.

Most jurisdictions have implemented further reforms since contestability was introduced in an effort to improve customer and market outcomes. Some approaches focus on regulating the behaviour of retailers. Others focus on increasing customer understanding of and participation in the market. Still others have introduced specific reforms or refinements targeted at specific issues. More commonly, jurisdictions have employed a combination of different measures. Consequently, it is not always possible to point to a single reform that has improved outcomes for customers.

However, drawing on the jurisdictions we have analysed, it is possible to make some general observations about the nature of reforms and the impact on customer and market outcomes over time.

Broadly we have found that:

All jurisdictions continue to have some degree of oversight of their energy retail markets. Even jurisdictions that are highly pro-competition and have very light handed regulations periodically consider further refinements or reforms to address specific issues that arise that suggest outcomes for consumers could be improved.

Every jurisdiction that we analysed has continued to review aspects of their energy retail markets and implement changes to resolve issues that arise. These changes range from relatively minor amendments that target a specific problem, through to wholesale changes that fundamentally impact the way in which the market operates.

As an essential service, it is likely that energy retail markets will continue to be monitored on an ongoing basis.
Jurisdictions that have more prescriptive regulations on retailers typically have lower levels of price dispersion and lower retail margins, but also lower diversity in offers and lower levels of activity. These markets are less likely to exhibit characteristics of an innovative market, and are therefore less well-placed to provide future benefits to customers.

France is an example of a market that has never lifted price regulation. For many years, the regulated price was lower than the incumbent supplier’s costs, making it difficult for new retailers to enter the market and compete. This approach has maintained low prices for French energy consumers, assisted by low cost nuclear energy. However, while there is some degree of innovation, the scale and speed of change in the French market tends to lag behind other European markets. Despite this, French consumers assess their experience of both electricity and gas services as relatively high.

Similarly, Maine continues to have a default price that is set by the regulator. Maine is somewhat unique in that the regulator auctions the right to supply energy to customers on the default service. This approach effectively provides those customers on a default tariff with access to competitive prices, without the need to choose an offer. However, despite the widespread roll-out of smart meters, few customers have benefited from opportunities in terms of new products and services that smart meters can facilitate.

Jurisdictions that have re-introduced stronger controls on tariffs in response to concerns about the retail market, whether price controls or non-price tariff regulation, have typically experienced a fall in diversity of offers and activity. The impact on price has varied between customer types. Introducing more restrictive regulations are likely to benefit some customers to the detriment of others. Over the longer term, there could be a risk that greater controls will stifle activity and innovation in the market unless the regulator decides to get involved in product development.

Ontario is the only jurisdiction of which we are aware that has re-introduced price regulation for all customers following price deregulation. Price controls were introduced in response to price volatility in the wholesale market due to tight supply conditions. While price controls have achieved their purpose of reducing price volatility, the competitive retail market has consistently shrunk. Only 6% of customers are on a competitive market offer, down from almost 25% within the first few months of the market opening, likely due to difficulty in competing with the default regulated price. Innovation is occurring to a limited extent, however this is being driven by the regulator rather than the competitive market.

In response to concerns about the complexity, transparency and low levels of trust in energy retailers, the regulator in Great Britain introduced a number of reforms. Among other things, Ofgem limited the number of tariffs that a retailer could offer. A subsequent review found that some of the reform measures had constrained the choices of customers in a way that distorted competition and reduced customer welfare. Many of the reforms have now been repealed, and Ofgem has moved to a more principles-based approach to regulation. It is too early to determine how effective this change will be.

Markets improve over time by becoming more responsive to customers and more innovative in their product and service offerings. Price dispersion facilitates greater competition as it enables retailers to distinguish their products and offer savings to attract customers. However, it could also lead to a segment of the customer base being exposed to relatively higher prices, especially those customers that are not active, and hence these customers could be potentially worse off.

Being aware of this trade-off is increasingly important for policy makers and therefore analysing the causes of inactivity and lack of engagement, and considering how to address such causes, is becoming a more important feature of policy makers’ attempts to foster better outcomes for customers.
Jurisdictions that focus on supporting customers to shop around through information campaigns, access to data, transparency and reduced switching times, typically have higher levels of price dispersion and higher margins, but also greater levels of diversity. These markets are more likely to be flexible and responsive to new developments that could provide value to customers.

The regulatory framework in Texas has focused on supporting customer participation in the market and delivering customer choices since retail competition was introduced. The regulator introduced an education program in 2001, a year before competition was introduced, to inform and support customers. In combination with a number of other measures, including a data hub which facilitates switching and access to consumption data, this approach has contributed to Texas being one of the most active and competitive energy markets in the world. Texans are relatively satisfied with their electricity retailer, and a number of innovative products and services are available. It is likely that the relatively high retail margins in Texas have contributed to this outcome, as retailers have an incentive to develop new offerings in order to compete.

Norway has also had a focus on customer awareness and engagement since competition was introduced, and was one of the first countries to develop an independent comparator website. Customers are encouraged to choose a retailer by setting a relatively high default tariff for those customers supplied by the retailer of last resort. Retailers have offered a strong variety of products and services, and few customers report having issues with their retailer.

Jurisdictions that have introduced a greater focus on improving customer understanding and participation following the introduction of competition have typically experienced subsequent growth in levels of customer activity. Policy makers are increasingly trying to find innovative ways to get customers more engaged. For example, the regulator in Austria introduced a service hotline for all gas and electricity customers, where customers can find a wide range of information on electricity and gas markets and check their opportunities for energy savings.

In New Zealand, a review of the electricity sector in 2009 resulted in a range of changes, some of which were designed to improve retail competition and constrain price increases. A three-year campaign was funded to promote to customers the benefits of comparing and switching electricity retailers. The success of the campaign, which led to a spike in switching rates, prompted additional funding to enable the campaign to continue. A range of innovative retail products have continued to emerge in the market. While this has enabled customers to have a wider choice, complicated pricing plans can add costs for those that do not want to have a high degree of engagement. Fewer options exist for customers that simply want access to low cost electricity without having to be actively engaged in the market.

Despite continued price monitoring, which in some markets could serve to stifle competition, the Netherlands has a relatively mature energy retail market, with strong competition and relatively diverse offers. Over time, the regulator has increasingly focused on ensuring transparency of information for customers so that customers themselves can drive competitive market outcomes. Overall, the combination of measures employed in the Netherlands has resulted in strong customer choice and above average customer satisfaction when compared with other European markets. There are trade-offs between different customer outcomes, and some outcomes may suit some customers more than others.
Different customer segments are affected in different ways by competition. The Government has a role to play in weighing the necessary trade-offs between customer outcomes. However, it is also important to consider the risks associated with any actual, or threatened, government intervention.

As can be seen from the discussion above, in many jurisdictions there is a trade-off between trying to ensure that all customers benefit from price competition, and providing the right conditions for an innovative market that will capture future benefits through the emergence of new products and services, but may exclude some customers from the market due to the level of complexity. Ultimately this is a trade-off that governments must make (or devolve to the regulator), as it will impact different customer segments in different ways.

A competitive market is likely to be better placed to respond and adapt to changes in the industry. This is a particularly important time to have flexible and adaptive markets, as new technologies are becoming available which will continue to change the way in which customers use energy, particularly electricity. Solar PV combined with battery storage, as well as the potential uptake of electric vehicles, will require the development of a range of tariffs and product bundles. Competitive retailers will be better placed to move quickly into this space to develop matching products and services that add value to customers and allow them to maximise the benefits of such technologies.

There is a risk that policies that limit incentives to innovate will delay the introduction of suitable products and services in this space.

On the other hand, it is important that all customers continue to have access to essential services at a reasonable price. To the extent that the competitive market is not benefiting a large cohort of customers, then consideration may need to be given to why the market is not driving the desired outcomes and how that issue can best be addressed without stifling innovation.

Finally, it is important to note that government intervention in a competitive market can drive different, and sometimes unanticipated, outcomes. In some instances, government intervention can drive the desired outcomes, with even the threat of further regulation providing an effective means by which to curb undesirable behaviour. On the other hand, intervention can also lead to short term, profit-maximising behaviour, as it did in Great Britain. Policies designed to benefit customers can actually lead to outcomes that are detrimental to competition and to consumer outcomes.

Governments must not only consider the impact on customers that they are trying to achieve, but recognise that competitive players may respond in unanticipated ways.
3.2 Observations from margins analysis

Globally, margins in competitive markets are typically higher than those in regulated markets, and have been increasing over time. Higher margins therefore appear to be a feature of competitive markets.

While high margins can be an indication of a lack of competition or lack of activity, evidence suggests that competition and higher margins go hand in hand in energy markets. Higher margins make it easier for new retailers to enter the market. If margins are too low, the attractiveness and competitiveness of alternative retailers, particularly those with different business models, is not sufficient. Rather, higher margins enable and encourage the long-term benefits of competition such as greater customer focus, greater customer awareness and new offerings.

Comparing retail margins of competitive retailers with margins earned in markets that still have price regulation is problematic. Retailers operating in a fully competitive market will face different costs and risks from those operating in a market with price controls, because the nature of the service they provide is different. Competitive retailers must compete to win customers by offering innovative products and services and employing various marketing techniques. The risks associated with this activity are higher than for an incumbent utility that has a default customer base.

Many jurisdictions recognised the additional costs of acquiring and retaining customers in the competitive market and, as a transition to removing price caps, allowed an additional mark-up on the regulated price to compensate for these costs and allow new entrants to compete more readily with incumbents. Analysis conducted for this report has found that retail margins tend to gravitate to a trend level, consistent with the level prior to price caps being removed. Consequently, jurisdictions that have increased their mark-up prior to removing price caps find that it takes a long time for that mark-up to reduce, if it does at all. This mark-up can foster increased profit expectations for retailers which can then be hard to diminish.

As competition develops, retailers continually learn what marketing techniques and pricing strategies enable them to attract and retain customers. In particular, retailers seek to reduce their acquisition costs by creating incentives for customers to remain with them. “All you can eat” fixed price contracts, dual fuel contracts, earning frequent flyer points and other forms of bundling all contribute to making customers more “sticky”. Typically, retailers earn higher margins on such customers over time.

To date, retail margins have been influenced by many inter-dependent variables. Going forward, emerging technologies will allow smaller new entrants to compete more effectively and challenge the traditional business models, and hence traditional retail margins.

Analysis conducted for this report suggests that retail margins are impacted by many different variables. While there is great variation in margins and market shares between liberalised markets around the world, and while margins can change significantly over time, margins tend to follow reasonably predictable patterns. In particular, the following variables are likely to have influenced margins to date:

- High levels of liquidity in the wholesale market, necessary for an effective retail market, increases retail margins.
• Pricing based on wholesale spot market prices lowers margins and risk for retailers (e.g. Norway and Sweden).
• Regulated prices lead to lower margins.
• Higher churn reduces margins, but this normally occurs in markets that have higher margins to begin with.
• Customers that do not switch provide incumbent retailers with higher margins.
• Margins have a natural approximate equilibrium level: energy market margins trend towards a similar level before, during and after competition is introduced.
• Markets where competitors are defensive tend to have lower margins.
• Markets with volatile retail prices, typically driven by volatile wholesale prices, tend to have higher margins to compensate for the risk associated with that volatility.

The retail margin analysis is presented in section 10 with the methodology explained in Appendix B. These findings were based on analysis primarily of incumbent retailers’ margins and therefore by definition exclude consideration of the impact of new entrants on retail margins. Although the evidence we have suggests that in general the margins for new entrant retailers are only around 50% of incumbent retailers due to the discounts they offer, the customers they acquire and the costs they incur from competition.

Emerging technologies are facilitating a different approach to energy retail business models. Subscription services, flat fees, self-generation and storage and non-energy players offering energy as a side offering are just some of the emerging threats to the historical, incumbent business model based on a fixed charge plus a variable energy charge. There is insufficient data at this early stage to analyse the dynamics or impact of this change. However, the rate at which energy retail markets are changing suggests that present margins are not necessarily a good indicator of margins in the future.
4 Demand side 1: Improving customer engagement

Summary

Any competitive market requires the participation of both the supply side and the demand side; that is, both retailers and customers. To the extent that customers are not engaged and do not switch retailers in response to cheaper or more suitable offers, the market becomes a less effective mechanism for keeping prices competitive and delivering innovative new offerings that customers value. For this reason, a number of jurisdictions have focussed on making it easier for customers to engage, for example through providing a source of independent information, comparison tools and campaigns to encourage customers to switch or review their energy arrangements, as well as making the customers transfer process faster.

Our analysis shows that markets that focus on supporting customers in this way - such as New Zealand, Texas, the Netherlands and Norway - perform well in terms of overall customer satisfaction, activity and level of diversity in offers. However, the benefits of providing information and tools will be limited if customers are not aware of the availability of those tools. Further, retailers in New Zealand and Texas enjoy relatively high retail margins. While the margins per kWh are low in Norway, they are substantial on a customer by customer level due to very high consumption levels.

Implementing a strategy to increase customer engagement in Victoria through an intense campaign to raise awareness of customer information programs and price comparison websites has the potential to improve customer outcomes in Victoria. However, the success of such a strategy will rely on overcoming customer cynicism or apathy, as well as complementary policies which support customers in participating in the market, such as an efficient switching process.

4.1 Application in New Zealand

New Zealand’s electricity market is viewed as one of the most competitive and progressive in the world. It is a market with limited regulation. Retail prices were not regulated when full retail competition was introduced in 1999, and the regulator (the Electricity Authority or EA) has focused on fostering effective competition, only intervening in the market when a clear market failure is identified. Key measures the EA has introduced to foster competition include reducing barriers to entry for new retailers and improving customer engagement via a number of methods.

One such method to improve customer engagement was establishing a Consumer Switching Fund (CSF) in 2011, to promote to customers the benefits of comparing and switching electricity retailers, and to address the ‘stickiness’ of customers and their lack of engagement in the market. The CSF established a website that allowed residential customers to estimate how much money they could save by switching to a cheaper retailer (the What’s my number? website); improved the functionality

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3 This approach also relies on complementary features that support a competitive retail market, such as a liquid and competitive wholesale market and low barriers to entering the retail market.
of an existing price comparison website; and funded intense advertising campaigns to inform customers about retail electricity competition and promote the above websites, via television, radio, print, online and other advertising.

New Zealand has also achieved significant improvements in the time taken to transfer customers between retailers when they initiate a switch. These improvements stem from a new rule introduced in 2010 requiring a maximum transfer time of ten business days, and requiring at least 50% of standard switches to be completed within five business days. These requirements were implemented following a finding that the length of time taken to transfer customers between retailers was a significant constraint on retail competition.

Together with a number of other initiatives designed to enhance competition, the CSF and improved switching times led to improvements in a range of customer and market outcomes. These include high awareness of retail competition; high switching rates (which spiked following the CSF advertising campaigns); and diversity and innovation in product offerings. Much of this innovation has been enabled by the rollout of smart meters. Overall, quantitative indicators suggest that the majority of residential customers in New Zealand are satisfied with their retailer.

Currently, retailers appear to be catering more towards engaged customers. These customers have a wide choice in the way they manage their bills, including access to wholesale prices. However, additional choices and complicated pricing plans can add costs for those customers that do not want to have a high degree of engagement. Fewer options exist for those customers that simply want access to low cost electricity.

See section A.6 for further details on the New Zealand market.

### 4.2 Application in Texas

Like New Zealand, the Texan regulator (the Public Utilities Commission of Texas, or PUCT) has focused on driving customer activity and ensuring customer benefits where possible without unnecessary intervention in the market. It has also focused on reducing barriers to retailer entry, including by developing an efficient and liquid wholesale price, and educating customers to provide them with the confidence to switch.

The PUCT introduced an education program in 2001, a year before competition was introduced. The program, run in both Spanish and English, uses a range of strategies to inform and support customers, including websites which provide information and price comparison tools. In 2010 a call centre was also set up to assist customers. The education program still runs.

Two other measures that have served to increase customer activity are:

1. an absence of a default supplier, meaning that customers have to make a positive decision to choose a supplier; and
2. the development of a single data hub which, among other things, allows easy access to consumption data.

The customer transfer process is also very fast, facilitated by the near complete roll out of smart meters.

Together with a number of other policies, these measures have contributed to the relative success of the Texas retail electricity market. The evidence suggests that customers in Texas have benefited substantially from retail competition, although there is also evidence of a relatively high level of customer complaints. The level of complaints has been falling, however, somewhat in line with the fall in the price of gas.
The Texan market shows a high level of activity, as demonstrated by a high switching rate – by January 2015, the great majority of customers had switched from their incumbent supplier. Texans are relatively satisfied with their current electricity company – 66% of customers have indicated they are satisfied or very satisfied with their overall service. Awareness and interest in the competitive market is relatively high. The Texas market is characterised by innovative tariff approaches and service models, including bundled services; a fixed rate for unlimited consumption; and various green offers. One retailer offers free electricity in the morning and evening, and another offers a fixed rate per year irrespective of how much electricity is used.

While price dispersion is relatively low in Texas, retail margins are relatively high compared to other jurisdictions, largely due to relatively high consumption.

See section A.9 for further details on the Texas market.

4.3 Application in Norway

Norway is another example of a market that is widely seen as having a highly competitive electricity retail market that has a focus on customer awareness and engagement. The regulator, NVE “considers active, well-informed consumers to be key for the Norwegian retail market”. It has no retail price regulation, and relies heavily on the awareness and engagement of customers, together with low barriers to entry in the market, to promote competition.

Norway was one of the first countries to introduce an independent comparator website in 1998, two years after competition was introduced. Despite relatively high switching rates of over 8% per annum since 2001, a number of shortcomings were identified with the website, including outdated reporting criteria and design, and displaying only a limited number of the offers available in the market. This meant that customers using the website were not necessarily getting access to the offers that might suit them best.

This led to a new price comparison tool being developed, which was launched in 2015. NVE imposed regulations which enable the collection of information necessary to create and maintain the website. The new comparator website has significantly improved the ability of Norwegian consumers to compare electricity offers, by presenting all electricity offers available in the market through a user-friendly web-site. It is too early as yet to assess the impact of the new PCT on customer outcomes in the market.

Norway also has an interesting approach to customers that do not choose a market offer. Customers who have not chosen a retailer are served by their network company (as the supplier of last resort) for the first six weeks at a maximum price based on spot prices plus a margin. After six weeks, the price is set by the distributor at a level “so that the customers are provided with an incentive to find a supplier in the energy market”. The distributor also has an obligation to inform customers about the price comparison tool.

Despite continued refinements to the market, such as the improved comparator website, Norwegian customers appear relatively satisfied with the electricity retail market. The vast majority of customers have not had a negative experience with their energy retailer or the service provided. Norway has

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one of the most mature and innovative markets in the world, and retailers have introduced a diverse range of products and services, with average retail margins.

NVE has announced that all electricity consumers will receive smart meters by 1 January 2019 through their local distributor. This should provide further opportunities for the market to develop. NVE notes that smart meters “will provide consumers with better information about their electricity consumption and prices, and facilitate opportunities for new energy related services”.8

The widespread roll-out of smart meters is also allowing the development of a national datahub, through which all future transactions between distributors and retailers will occur. Third parties will also be able to access consumers’ energy data, where they have contract. Ownership of data remains with the customer.

See section A.7 for further details on the Norway market.

With the increase in installation of smart meters across a number of countries there has been an increasing focus on how to effectively use the increase in customer data to improve customer engagement. The easy access data hub in Texas is a good example of this. Another is the Swedish approach to smart meters which is discussed in the box below.

### Smart meters: the Swedish experience

Sweden was the first EU country to (indirectly) mandate smart meters. The large scale deployment of first generation smart meters began in 2003, with a requirement that by 2009 all electricity customers should have monthly billing based on actual consumption for residential and small business customers. While the primary purpose of the roll-out was to achieve this goal, more recently smart meters have been viewed as a means to increase customer awareness of their consumption.

In 2012, new measures were adopted to strengthen consumers’ role in the electricity market, enabled by smart meters. The measures include:

- voluntary hourly metering of households’ electricity consumption if requested by the customer;
- new methods for settlement, billing and data management; and
- enabling households to generate their own renewable electricity and to charge an electric vehicle.

Many of the meters deployed in the first roll-out were not capable of supporting energy efficiency programs, nor was the national data handling and communication system capable of handling the necessary levels of data required for flexible pricing programs. Consequently many meters have required upgrading to enable new objectives regarding customer empowerment to be achieved.

### 4.4 Application in Denmark

Danish electricity customers have been able to choose their supplier since 2003. In 2012 the regulator, DERA, undertook analysis of, and made a number of recommendations in relation to, the retail electricity market. They noted that a key challenge to creating a competitive market is to induce customers to make an active choice of supplier, as well as product. Further, they found that price

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regulation – covering approximately 85% of customers in 2012 – was a barrier to customers switching supplier. For this reason they recommended abolishing price regulation.\textsuperscript{9}

The removal of price regulation has happened in stages, by supply area, driven by when retailers’ licenses expire. In 30 of the 39 supply areas, all customers have now been switched to a market product for which no regulations apply. This has happened either by customers choosing to switch or, for inactive customers, they have automatically been switched to an unregulated product. The remaining areas that have a product that is still subject to price regulation, representing 10% of customers, will switch to full competition in 2017.

To support customers, the regulator is required to manage an online portal for electricity prices that allows customers to compare prices. In addition, the Danish transmission system operator, Energinet.dk, is required to run a datahub. All consumers have access to the datahub through their retailer. Third parties, such as energy advisors and service providers, are also able to access a customer’s data. Access by third parties is controlled by the customer using an electronic identification process.

4.5 Application in Great Britain

Great Britain has undergone a number of reforms over the years. Some of these are discussed in other chapters, and section A.3 provides greater context for a number of the key reforms. However, it is worth briefly mentioning a number of more recent measures recommended by the Competition and Markets Authority in mid-2016 to improve customer engagement. These include:\textsuperscript{10}

- a program run by the regulator, Ofgem, to provide customers with information to prompt them to engage;
- an Ofgem-controlled database of ‘disengaged customers’ on default tariffs to allow rival suppliers to prompt these customers to engage in the retail energy markets;
- enhancing the ability and incentives of third party intermediaries (such as price comparison websites) to promote customer engagement in the retail energy markets;
- Ofgem making greater use of principles rather than prescriptive rules in addressing potential adverse supplier behaviour concerning the comparability of their tariffs; and
- requiring all suppliers to make all their single-rate tariffs available to domestic customers on any type of restricted meter, without making switching conditional on a restricted meter being replaced, and to provide additional information to customers on restricted meters.

Ofgem has begun implementing these policies, but notes that “these remedies, which include more effective prompts on customer communications and more sharing of data, will need more time to take effect”.\textsuperscript{11} The database of disengaged customers is planned to go live in 2018, and Ofgem notes that one issue to resolve is the privacy of customer’s data, and the ability of customers to opt out of being contacted by rival suppliers.

\textsuperscript{9} CEER, National Report 2016, Demark.
\textsuperscript{10} https://assets.publishing.service.gov.uk/media/576c23e4ed915d62c000087/Energy-final-report-summary.pdf
4.6 Application in the Australian mortgage sector

Like energy retail markets, the market for home loans is complex. It can be difficult to compare offers due to the number of different variables relevant to the loan. This section sets out the way this issue was addressed in the mortgage sector.

The Australian financial sector was substantially deregulated in the 1980s. Competition in the mortgage sector began to increase in the early 1990s with the emergence of new non-bank lenders such as Aussie Home Loans, and the increasing role of mortgage brokers. The range of products available increased, with options such as redraw facilities and reverse mortgages.

Many commentators have recognised that the ability for consumers to compare prices and to switch providers is important in encouraging a competitive banking sector. One of the difficulties for consumers is comparing home loan rates from different providers when they have different loan terms, fees, and other terms and conditions. As a result, a mandatory comparison rate was first introduced on 1 July 2003.

While the mortgage comparison rate is a useful tool for comparing the cost of different loans, it had limitations. For example, it did not include all potential future fees and charges, nor did it take into account all the factors that could make a loan more or less attractive (such as the ability to vary repayments). A review of the comparison rate in 2008 found lenders used a range of strategies to avoid or manipulate the comparison rate.

This demonstrates the difficulty of providing ‘simple’ comparison rates when products are complex and their relative attractiveness varies depending on the individual characteristics of the customer and their loan. Furthermore, it demonstrates the potential for businesses to change their behaviour in order to avoid regulations.

A subsequent review of the mortgage comparison rate led to the introduction of a new information requirement in 2012, the ‘key facts sheet’. The key facts sheet improved on the comparison rate because it includes more characteristics of the loans, and it uses information that is specific to the individual customer and their intended loan. Nonetheless, it still has some limitations.

The experience in the Australian banking sector suggests that banking sector regulators continue to see benefit in disclosure requirements that include standardised price comparison tools, so that customers are better able to compare different products and providers. However, there may be a range of shortcomings:

- there are difficulties where the comparison tool does not or cannot capture all the dimensions of a product;
- businesses may ‘game’ regulations by trying to avoid or manipulate price comparison requirements; and
- while customers find comparison tools useful, there may not be wide knowledge of their existence.

See section A.10 for further details on the Australian mortgage sector.

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4.7 Potential application in Victoria

In some respects Victoria has already achieved high rates of consumer engagement in the retail electricity sector. For example, Victoria has the highest switching activity in Australia, and awareness of the ability to choose different companies and offers is also very high.\(^\text{13}\) In 2016 around a third of small consumers surveyed had actively investigated options to switch in the previous 12 months.

In the latest survey into energy sentiment conducted for Energy Consumers Australia, Victorian households were found to be more confident than other states in their ability to make choices about energy products and services.\(^\text{14}\) However, they are less confident that the information available to assist them enables them to make good decisions. Furthermore, awareness of the Victorian Government’s comparator sites is very low (0 per cent unprompted and 23 per cent when prompted), with internet searches being the main source of information for customers.\(^\text{15}\)

This information suggests that Victorian customers could benefit from greater levels of awareness about the availability of price comparison websites. Evidence from other jurisdictions suggests these websites can increase price competition (see discussion of Great Britain in section A.3).

4.7.1 Practical implementation

The Victorian government already runs a price comparison website (Victorian Energy Compare), which also provides a range of information about energy, and ways to save money. This information is similar to the information provided in other markets like New Zealand and Texas.

Given low awareness of the site, the government could consider an intense advertising campaign similar to those used in New Zealand and elsewhere to raise awareness.

Victoria could also consider introducing a database of disengaged customers, similar to the one being implemented in the UK. Issues which would need to be addressed include:

- Who would run the database (in the UK it is the regulator Ofgem)?
- What powers are there to collect the information needed?
- What privacy issues arise, and how will customers be given the right to ‘opt out’ of being contacted by rival suppliers?

4.7.2 Likely impacts on Victorian consumers

Experience in other jurisdictions suggests that high levels of customer engagement and positive outcomes from the competitive market are usually attributable to a suite of policies, not a customer information or engagement program in isolation. While a customer engagement program could have an incremental impact on customer outcomes, as discussed below, it will be most effective where it supported by other measures which make switching easier, such as an efficient customer transfer process, as well as ensuring that barriers to retailer entry are as low as possible.

\(^{13}\) This section relies on the results of surveys undertaken by Newgate Research, Consumer research for 2016 nationwide review of competition in retail energy markets, June 2016, p156-. http://www.aemc.gov.au/getattachment/ea539f7-75b1-4bb7-b3c6-f8474fd231f3/Newgate-Research-Consumer-research-for-2016-natio.aspx


\(^{15}\) Newgate Research, p156.
Awareness

Victorian customers already have high levels of customer awareness and interest in retail competition. Nonetheless, an intense advertising campaign accompanied by improvements in the use of price comparison websites would increase awareness and interest even further, and provide customers with the tools to participate more fully in the market.

Customer empowerment programs could also focus on those customer groups which have been less likely in the past to participate in the competitive market. If they are less likely to switch, these customers may be more susceptible to remaining on tariffs which are more costly or less appropriate to their needs.

The Consumer Utilities Advocacy Centre (CUAC) led a research study that investigated the switching behaviour of older customers in the Victorian market. CUAC found that switching activity is lower for older customers due to a variety of reasons, including:

- poor access to the internet;
- apathy (stemming from mistrust from large energy companies); and
- loyalty.

This demonstrates that customer information and empowerment policies need to consider how they might best reach some of these ‘sticky’ customer groups – for example, via more traditional media rather than internet alone. Customer segments that are not comfortable using the internet, or are less confident in their numeracy skills or English, may require additional tools. Giving these customer groups a simple way to find and compare products is also likely to assist their confidence in participating in the market. The CUAC survey also suggests that information alone may not be sufficient to ensure that some customer groups benefit from retail market competition.

Diversity

The Victorian electricity market already displays a wide range of price and product differentiation. However, opportunities for new products and services facilitated by smart meters have not resulted in the same level of diversity as they have in other jurisdictions, such as New Zealand and the Netherlands. Policies designed to empower customers will assist them in understanding different products, which provides a basis for greater uptake and further diversity in product offerings.

Experience

Customer empowerment policies like those in place in New Zealand offer the potential to improve customer experience. Improved information and product comparison tools would allow customers to feel more confident in their ability to choose an appropriate product, and more inclined to switch if they were not happy with their current retailer.

However, it is also important to note that price has a strong influence on experience. To the extent that the underlying price of energy is increasing, customers may report a negative experience even where the price rises are beyond the control of retailers.

Retail margins

Evidence from the UK suggests that price comparison websites can put downward pressure on prices. Greater customer awareness of an independent government website could make it easier for consumers to compare different options and take advantage of more attractive offers.

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16 CUAC, Tariff switching among older electricity consumers, June 2014.
However, retail margins in New Zealand and Texas are relatively high. Therefore improving customer engagement in the Victorian market in and of itself is unlikely to contribute to substantially reduced margins.

**Market evolution**

A customer base which is interested and involved in the competitive market provides the basis for future innovation and market development. Measures which improve customer knowledge and participation provide incentives to retailers to develop products which meet the needs of different customer groups, in order to attract and retain customers.

**4.7.3 Implementation costs**

Since Victoria already has a price comparison website, the costs are primarily around a campaign to raise awareness. It may also be worth reviewing the functioning of the website periodically to ensure it is operating to improve comparability and lead to improved market outcomes for customers. To reach customers that are less comfortable using price comparison websites, additional tools may be required.

An insight into the possible cost of implementing policies of this type can be found by reference to the New Zealand program, which involved funding of NZ$15m for an initial 3 year program, followed by additional funding for a further 3 years. This could be incurred by the Victorian Government. Alternatively, in New Zealand funding is provided through a levy on retailers.

Policies which enhance customer knowledge and participation do not impose significant risks to the market and its stakeholders, and it is not obvious that there is a significant downside to a well-designed program of this sort. Active participation by well-informed customers is a central feature of a well-functioning competitive market.
5 Demand Side 2: Non-price tariff regulation

Summary

Regulating non-price characteristics of tariffs provides another means by which outcomes for customers can potentially be improved. Even countries which have taken a relatively light handed approach to regulation sometimes impose non-price regulations in relation to some tariffs, to achieve specific goals. For example, in New Zealand retailers are required to offer a domestic tariff with low fixed charges. Non-price tariff regulation could take many forms, and will depend on the purpose for which it is introduced. This could be, for example:

- to make it easier for customers to compare tariffs e.g. by increasing standardisation between retailers or reducing the complexity of offers; or
- to ensure certain tariff structures are available that may be more suited to certain customer types, such as low volume users.

It follows that non-price tariff regulation could potentially provide a benefit to at least certain types of customers, depending on what the purpose of the regulation is.

However, not all forms of non-price tariff regulation have been successful in improving outcomes overall. Reforms undertaken in Great Britain in 2013 applied broad restrictions on non-price characteristics of tariffs. The objectives of the ‘simpler choices’ package centred on making the retail market simpler so that customers found it easier to compare products and engage in the market. A subsequent review found that some of the reforms had constrained the choices of customers in a way that distorted competition and reduced consumer welfare, and some of the measures were repealed three years after their introduction.

While the outcomes of this approach depend on the specific non-price tariff conditions imposed, the Great Britain experience demonstrates the risks associated with introducing policies of this type. A key learning from the Great Britain experience is that there could be unforeseen impacts following a market intervention. Policies designed to benefit customers may actually lead to outcomes that are detrimental to competition and to consumer outcomes.

The Victorian regulatory framework offers significant flexibility to introduce non-price constraints on tariffs, through changes to the Energy Retail Code. However, if policies of this type are to be introduced, they need to be carefully designed to achieve specified objectives, and to reduce the risk of detrimental outcomes. It is important to be mindful of the incentives these policies give retailers in terms of the products and pricing they offer to customers, so the potential benefits can be weighed against any detriment. In addition, given that non-price regulations would apply in Victoria but not elsewhere in the National Electricity Market (NEM), it may deter retailers from entering or expanding their presence in Victoria, with detrimental impacts on the development of competition in Victoria.
5.1 Application in Great Britain

In late 2010 the regulator in Great Britain, Ofgem, launched its Retail Market Review due to continuing concern that the energy market was not working effectively for consumers. The review concluded that there were a range of barriers to effective consumer engagement in the energy market, including the complexity of tariff options, the poor quality of information provided to consumers, and low levels of trust in energy suppliers.

As a result a number of reforms were introduced, including the ‘simpler choices’ measures, which aimed to simplify tariffs so that customers found it easier to compare different product offerings. A key requirement was that retailers could not offer more than four core tariffs to any one customer. In addition, tariffs could not be multi-tiered – they had to have a simple standing charge (which could be zero) and unit rate structure. Discounts, bundles and reward points were also simplified.

The simpler choices package was not successful in promoting competition. In fact, a review by the Competition and Markets Authority (CMA) in 2016 concluded that aspects of the package had an adverse effect on competition and stifled innovation. The CMA also found that the reforms had reduced competition between price comparison websites, which could no longer negotiate exclusive prices with retailers, nor offer cash back or other rewards using commissions paid by retailers.

In addition, there was little sign that the package had increased customer engagement or improved their experience in the market. The CMA found that the reforms had not resulted in any material improvement in customer switching or shopping around. Those who were disengaged appeared to remain so. As a result, in November 2016 Ofgem removed many of the non-price restrictions on tariffs that had been introduced only three years earlier.

In place of the simpler choices package, the CMA recommended that Ofgem introduce an additional principle to the Standards of Conduct, which energy suppliers must follow as part of their licence conditions. Ofgem is currently consulting on a proposed principle that requires suppliers to enable customer to make informed choices about their energy supply. This reflects a broader strategy by Ofgem to move from detailed licence rules towards enforceable principles-based regulation.

See section A.3 for further details on the market in Great Britain.

5.2 Application in New Zealand

In 2004, new regulations were introduced in New Zealand that required all retailers to offer domestic consumers a low fixed charge tariff option of no more than NZ$0.30 per day. The low fixed charge tariff options were required to incorporate, among other things, the following design features:17

- domestic consumers consuming less than 8,000kWh, or 9,000kWh for consumers in the lower South island, per year must pay less on a low fixed charge tariff option than on any corresponding tariff option;
- the low fixed charge tariff options must be advertised in the same manner as other tariffs; and
- the retailer must inform domestic consumers at least annually whether it may be beneficial for them to switch to a low fixed charge tariff option.

The Electricity Authority was charged with monitoring and enforcing the regulations.

See section A.6 for further details on the New Zealand market.

17 www.mbie.govt.nz
5.3  Application in Denmark

While not a reform per se, the Ombudsman in Denmark has prevented certain promotional activities which were viewed as unfair practices. The activities of one retailer in particular, Neas Energy, has set the scene for much of the regulation of the Danish energy markets when it comes to marketing and communication of prices.

In 2009, Neas Energy (then called Nordjysk Elhandel), offered promotional prices whereby customers paid a premium on their electricity bill, with the ability to save 4000 Danish kroner if the price of electricity in the market remained within a specified band for a set period. The Danish Ombudsman found this promotion was not in accordance with the Marketing Practices Act. The retailer was required to cease offering the product, and arrangements were agreed for customers that had already signed up to the product.

Many jurisdictions, including Victoria, have introduced reforms to target specific marketing practices that are deemed to be unfair or misleading.

5.4  Potential application in Victoria

5.4.1  Practical implementation

The regulatory and legislative framework in Victoria offers substantial flexibility for the Essential Services Commission (the Commission) to specify non-price conditions for the sale of electricity and gas.

For example, under the *Electricity Industry Act 2000* the Commission is responsible for granting licences to sell electricity (section 18). Licences are subject to conditions decided by the Commission (section 20(2)). While the Electricity Supply Act specifically limits the circumstances under which the Commission can regulate tariffs for the sale of electricity (sections 12 and 13), it provides substantial flexibility in relation to other licence conditions. For example, section 21 states that:

> "Without limiting the generality of section 20, the conditions on a licence may include provisions –….. *requiring the licensee to observe …industry codes, standards, rules and guidelines…. *specifying methods or principles to be applied by the licensee in determining prices or charges... “

One of the retail licence conditions imposed by the Commission is the requirement to adhere to the Energy Retail Code. The Code covers matters such as:

- model terms and conditions for standard retail contracts;
- terms and conditions of market retail contracts;
- internet publication of standing offer tariffs;
- product and price disclosure;
- billing arrangements; and
- customer hardship policies.

The Energy Retail Code could be expanded to include non-price elements of retail tariffs. These non-price conditions could incorporate the methods or principles to be applied in determining prices or
charges. As long as the rules do not contravene the Act (for example, do not regulate prices), the Commission could introduce conditions affecting the regulation of non-price aspects of the sale of energy by retailers in Victoria.

5.4.2 Likely impacts on Victorian consumers

A wide variety of possible non-price regulations are possible, and their impact is likely to depend on the nature of the conditions introduced. Blanket restrictions, such as those imposed in Great Britain, are likely to have very different outcomes from more targeted requirements, such as the low fixed charge option introduced in New Zealand.

Customer awareness and interest in electricity retail market competition

The Great Britain experience demonstrates that attempts to simplify tariffs to allow customers to make comparisons more easily may not be successful and, indeed, could have an adverse impact. Consequently, any blanket application of non-tariff regulation would need to be carefully thought through and potentially trialed.

Policies that target accessible, easy to use price comparison websites, and customer awareness of these websites, may be more successful in targeting customer engagement in the market. This is discussed further in chapter 4 which discusses ways to improve customer engagement.

Diversity in customer choice

By their very nature, blanket regulations of the sort imposed by Ofgem are designed to reduce the number of offers in the market, thereby reducing diversity and choice. On the other hand, more targeted regulations may not have any impact, or could increase customer choice. In New Zealand, for example, the requirement to offer a low fixed charge tariff does not appear to have restricted diversity in the market, at least in the long run (noting that the regulation was imposed in 2004).

The impact on product diversity would be less pronounced without the imposition of the four-tariff rule. Nonetheless, by their nature non-price restrictions will reduce aspects of product diversity.

Activity in the market, such as customer switching

The impact on activity in the market will depend on the purpose for which the regulation is designed. Even where the regulation of non-price elements of tariffs may be designed to encourage increased activity in the market, there is a risk that this will not be successful, as the Great Britain experience demonstrates.

For this reason any non-price regulation needs to be carefully considered in light of the potential for unintended impacts on competition and customer activity.

Experience of customers

The types of rules imposed in the UK did not enhance the experience of customers, some of whom were unable to continue on their exiting tariff, even if this led to them paying higher price for their energy. Customer choice was reduced, and there was less opportunity for product and price innovation. The evidence suggests that customers did not respond to the changes by becoming more active in the market and switching retailer.

It is difficult to assess the consequences of the low fixed charge tariff in New Zealand on the experience of customers. However, at least over time, it appears that this regulation is not harming the experience of consumers and could be enhancing it for low volume customers.
Retail margins

The impact of non-price tariff regulations on retail margins is not clear, and will depend on the conditions put in place. In Great Britain the CMA found that the simpler choices package was likely to have decreased the pressure on prices because price comparison websites could no longer negotiate exclusive discounts with retailers (as this would become one of the four ‘core’ tariffs). Further, it appears that retail margins actually increased over time (see section A.3.5).

Market evolution and innovation

In an active competitive market retailers will seek to develop new product/price combinations and product bundles to appeal to different types of customers. Regulation of the non-price characteristics of tariffs is likely to reduce the ability of retailers to develop innovative products. Even if the four-tariff rules were not introduced in the UK, other rules such as the ban on ‘complex’ tariffs would prevent retailers from developing new offerings that may appeal to a subset of customers.

The low fixed charge tariff does not appear to have inhibited the evolution of the New Zealand market, which is one of the most innovative in the world.

5.4.3 Implementation costs

The costs of implementing regulations regarding the non-price features of tariffs will depend on the nature of the regulations put in place, but would include:

- **Retailers.** Retailers would incur costs to redesign their tariff offerings to comply with new regulations, as well as associated reporting and compliance costs. These costs could be significant as they may change the whole approach of retailers to their retail offerings.

- **Customers.** There may be costs to some customers if they are forced onto a tariff which is less attractive than their current tariff. The cost to other customers may fall.

- **Regulator.** There will be an additional regulatory cost to monitor compliance by retailers with the non-price tariff requirements.
6 Protecting passive customers 1: Targeted protections

Summary

Underlying the introduction of retail competition into energy markets is an expectation that it will benefit customers because competitive pressures will drive retailers to offer the services and products demanded by customers, at an efficient price. When retail competition was introduced, and regulated prices were removed, many jurisdictions introduced complementary policies to assist more vulnerable customers, such as subsidised energy tariffs, or restrictions on the circumstances in which customers can be disconnected.

Experience in other jurisdictions suggests that:

- Vulnerable customers may not benefit from the competitive market to the same extent as other customers, either because they are not as engaged, or because they have restricted options (for example, they may not have access to the same range of tariffs or payment methods). Reviews of the energy market in Great Britain have recognised these concerns.

- Programs directed at vulnerable customer need to be well advertised to the people they are intended to support. In Portugal, for example, uptake of discounted tariffs for vulnerable customers was very low because many customers that would have qualified were not aware of the subsidies available to them.

A variety of policies have been introduced in response to these concerns:

- In Poland, an audit was undertaken to ensure that retailers were meeting their obligations in relation to informing customers about the discounted tariff.

- In Great Britain, the regulator introduced a ‘vulnerable customer strategy’ which considers the impact on vulnerable customers of policies across the whole framework for retail competition in the energy market. Remedies have included obligations on retailers to provide non-financial assistance to vulnerable customers, measures to reduce disconnections, and encouraging retailers to develop innovative tariffs for vulnerable customers. More recently, a temporary price cap has been introduced for customers with prepayment meters (see section 8.3).

Victoria is already undertaking a substantial program of work in relation to vulnerable customers. On 1 January 2016 Victoria’s energy legislation was amended to include a new objective for the Essential Services Commission (ESC) “to promote protections for customers, including in relation to assisting customers who are facing payment difficulties”.

The ESC is currently reviewing its draft decision on a safety net for Victorian energy consumers facing payment difficulty.
Important lessons from international experience are that:

- The availability of benefits for vulnerable customers is not sufficient to ensure there will be substantial uptake of those benefits. Other mechanisms will be needed to ensure vulnerable customers take up any benefits – for example, obligations on retailers to provide information to relevant customers.

- If outcomes for vulnerable customers from the retail energy market are a priority, this could require a review of the impact on these customers of policies and practices in virtually every area of the competitive market framework.

6.1 Application in the European Union

Under EU Directives for both the electricity and gas sectors, member states are required to take appropriate measures to protect end-use customers, and to ensure there are adequate safeguards to protect vulnerable customers. The EU Directives note that social policy and energy policy can interact to protect vulnerable customers.

While there is some variation in the way vulnerable customers are defined in each country, most include low-income households and the chronically unwell, as well as the elderly. Some countries also include the unemployed, single parents, or households with young children.

The following figure shows the various types of protections put in place for vulnerable customers in different EU countries. The most common forms of protection are restrictions on disconnecting vulnerable customers, special energy tariffs (social tariffs) and additional social benefits. Protections apply to both the electricity and gas sectors, but tend to be more extensive in electricity.

Figure 1 EU countries protecting vulnerable customers, by type of measure

Each measure can be applied to varying degrees. For example, in some countries, disconnections must not take place on specific days (e.g. weekends, public holidays etc). In other countries, including France and the Netherlands, households cannot be disconnected in winter months (except under more strict circumstances).

In addition to the mechanisms described above, which focus specifically on vulnerable customers, some EU countries have used the retailer of last resort to protect customers with payment difficulties or inactive consumers. For example, in Austria all households are protected by supply of last resort protections under which they can enforce their right to be supplied with energy.

Furthermore, most countries have customer protection mechanisms which apply to all energy customers, whether or not they are classified as ‘vulnerable’. This covers, for example, provisions in relation to the circumstances under which customers can be disconnected.

### 6.1.1 Application in Portugal

Full retail competition has been introduced in Portugal in both the electricity and gas markets (since 2006 and 2010 respectively). Regulated tariffs were phased out from 2011 for electricity (2010 for gas), before being abolished for all customers in 2013. A ‘transitional tariff’ continues to apply until December 2017 for customers who have not switched to a market tariff.

Portuguese law defines vulnerable customers for the gas and electricity market as those with a “socio-economic low income situation”. They have the right to access essential services, including energy supply, at reduced prices. This is known as the social tariff.

The social tariff was introduced for vulnerable electricity customers in 2010 (2011 for gas customers). It was available for consumers under specific social security programs, and with energy consumption up to a specified limit. In 2011 an additional support mechanism (known as the additional support system to energy consumer or ASECE) was put in place for vulnerable customers to neutralise changes in the VAT rate at that time. This mechanism has a value of 13.8 per cent.

In December 2014 a new support scheme was introduced which expanded the existing scheme to low-income households, with an aim of extending the social tariff regime to half a million electricity consumers. The income threshold is to be progressively adjusted in order to meet this level of half a million.

The social tariff discount is 20 per cent of the basic electricity supply price and on average 17.2 per cent of gas prices. Together with the additional discount of 13.8 per cent the total discount to vulnerable customers in energy is over 30 per cent of the regular price. The price cut is applied via the network component of the customer bill, so as not to distort competition between retailers.

The cost of the social tariff is borne by all customers in the access component of the end-use tariff. The cost of the additional discount is borne by wholesale electricity generators (excluding some renewable generators).

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18 Arrangements for a supplier of last resort is more usually introduced to protect customers when there supplier goes out of business.
19 This section relies on information in ACER/CEER Annual report on the results of monitoring the internal electricity and gas markets in 2015, consumer protection and empowerment, November 2016, p26.
20 The transitional tariff includes an optional surcharge to encourage consumers to switch to a market tariff. For more information see http://www.ceer.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/NATIONAL_REPORTS/National_Reportng_2016/MMR-2015\%20-%20RETAIL_final.pdf, p51.
Regulations in electricity and gas impose obligations on retailers in relation to the social tariff regime, including:

- informing customers of a social tariff regime and how to apply for it;
- keeping records of any interaction with customers related to the social tariff;
- checking with social security and tax authorities that a consumer is eligible for support schemes or if their income is below the threshold relevant;
- informing the distribution business if the social tariff applies; and
- assessing each year whether the conditions are still met.

**Customer and market outcomes**

The number of beneficiaries of the social tariff and the ASECE has not exceeded 2.2 per cent in the electricity market and 1.3 per cent in the gas market. This is very low given the number of customers who would meet the criteria for the social tariff. As a result the energy regulator in Portugal (ERSE) conducted an audit in 2015, focusing on information provided to consumers and the correct application of the social tariff mechanism.

The audit suggested that the there was a reduction in the total number of beneficiaries between 2013 and 2014, and that the following factors were likely to have contributed:

- limits to information availability to customers; and
- high switching rates during the process of abolishing regulated tariffs.

Switching rates are very high in the Portuguese energy sector – in 2015 switching rates reached 25 per cent in the gas sector, and slightly higher in electricity at 26 per cent. Given the role of retailers in implementing the social tariff, the increase in new entrants together with the movement of customers between retailers may have reduced focus on the social tariff.

After the ERSE audit the number of consumers benefiting from the social tariff increased for the first time since 2011. The ACER/CEER suggest this may be a direct result of the audit, or may be associated with an increased amount of information made available to consumers.21

**6.1.2 Application in Germany**

Retail contestability was introduced for German households in 1998. Most residential customers can choose from around 90 suppliers in their network area.22 Approximately a quarter of residential customers are served by a supplier other than their default supplier, and approximately a third of customers are on a default supply contract. The remainder are on a market contract with their default supplier. Switching rates are currently around 9% per annum.

One supplier in each network is deemed to be the local default supplier. The default supplier is determined every 3 years, and the role is allocated to the supplier with the most number of household customers in a network area. Customers receive a default supply if they do not choose a market contract or if their current supplier will no longer supply them, for whatever reason.

The default supplier is able to require a default customer to prepay for their energy, or require a deposit, if the default supplier has reason to believe that a customer will fail to pay on time.

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22 CEER, National Report 2015, Germany.
If a customer is not able to pay their energy bill, a default supplier is able to request the distribution system operator to disconnect that customer for non-payment. There are a number of restrictions around the way that this occurs, such as notification requirements, meaning that the actual disconnection takes at least four weeks.

Customers are not permitted to be disconnected “if the consequences are disproportionate to the severity of the violation of the terms and conditions of default supply, or if the consumer explains that there is sufficient chance that payment obligations will be fulfilled”. In practice, a customer is able to avoid a disconnection by submitting a declaration that the costs are borne by their local job centre or social security office. The civil courts are responsible for hearing disagreements relating to disconnections. They usually deny a disconnection if:

- electricity is required for medical reasons;
- small children are affected;
- access to energy for heating during cold periods is required;
- the disconnection would occur over the course of public holidays.

6.1.3 Application in Ireland

In Ireland, prepayment meters are viewed as playing an important role in providing protection and support to customers who might otherwise struggle to pay their electricity and gas bills. Prepayment meters are provided free of charge to those that are in financial difficulty. Since the cost of the meter is socialised across all customers, these meters are only installed in cases when a customer is in genuine financial hardship.

The issuance of a prepayment meter is the last in a number of steps that suppliers are required to follow prior to proceeding with a disconnection for non-payment. These steps include engaging with the customer and offering a payment plan that takes into account the customer’s ability to pay. When offering to install a prepayment meter, the supplier must also assess the suitability of a prepayment meter for a particular customer.

6.2 Application in Great Britain

Programs to assist vulnerable customers have been established by both the Government and the regulator (Ofgem). Ofgem has noted that much of its work on vulnerability is focused on facilitating access to services and choice in the market, whereas the Government’s role extends to providing subsidies or price support for specific customer groups.

In order to address the needs of vulnerable customers, Ofgem launched a vulnerable customer strategy in 2013 which encompasses a broad range of programs, as shown in the following figure.

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23 ACER/CEER Annual report on the results of monitoring the internal electricity and gas markets in 2015, consumer protection and empowerment, November 2016, p10.

24 The obligations on suppliers are set out in the Commission for Energy Regulation’s Electricity and Natural Gas Supplier Handbook.

These programs cover a variety of mechanisms including:

- **Government support.** Government-funded programs for vulnerable customers include the following schemes:
  
  - for low income customers, the Warm Home Discount Scheme, which is a one-off discount on a customer’s electricity bill during winter. The payment is made directly from the Government to the electricity supplier;
  
  - for low income customers, a cold weather payment if temperatures in the customer’s area drop below a certain level; and
  
  - for older customers, a winter fuel payment.

In addition, there are Government schemes that are available to all customers (such as energy efficiency schemes), but which have been accessed more often by lower income households.
- **Obligations on retailers.** These are imposed via retailer licences, and include:
  - keeping a priority service register which is a register of vulnerable customers. Customers on this register are provided with a range of free services such as information about energy efficiency measures, and government financial assistance for these measures.
  - Restrictions on disconnecting certain groups in vulnerable situations during winter, or anyone whose debt their retailer has not taken all reasonable steps to recover first by using a pre-payment meter.

- **Rules relating to prepayment meters.** A significant focus of Ofgem’s work has been how to improve the access to the competitive market of those customers on pre-payment meters, who tend to be more vulnerable customers. This includes introducing a temporary price cap for prepayment customers following recommendations by the CMA (see discussion in section 8.3). Ofgem has also encouraged suppliers to offer a greater range of tariffs to customers on prepayment meters, such as zero standing charge tariffs, prepayment collective switching deals, and short, fixed-term deals.

In addition, Ofgem is considering how it could introduce a broad, enforceable vulnerability principle into domestic supply licences, in line with Ofgem’s move towards principles-based regulation rather than prescriptive rules about how companies should run their businesses.

**Customer and market outcomes**

Ofgem has pointed to a number of achievements in relation to its customer vulnerability strategy, including:

- increased uptake of prepayment vouchers (a rebate available from the Government);
- a reduction in the price differential between prepayment customers and direct debit customers;
- an increase in the number of fuel-poor customers connected to the gas network; and
- a reduction in the number of customers disconnected due to debt (from 3,280 in 2004 to 233 in 2014).

However, there is continuing concern about the need to ensure that vulnerable customers are supported in the competitive retail energy market.

In March 2014 a State of the Market Assessment in the UK concluded that there was a segmented retail energy market with some groups benefiting much less from competition. Vulnerable customers were more likely to be part of the 'stickiest' group of customers who pay higher prices for their energy than those who are able and willing to switch supplier for better deal.

Similarly, the Competition and Markets Authority (CMA) investigation into the energy market (June 2016) found that there were substantial numbers of customers disengaged from retail energy markets, and that these customers were more likely to come from disadvantaged groups (low income, low qualifications, in rented accommodation or over 65 years of age). For example, 35% of those whose household incomes were above £36,000 had switched supplier in the last three years, compared with 20% of those whose household incomes were below £18,000. The CMA also found that more disadvantaged customers have the most to gain from switching.

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6.3 Potential application in Victoria

A range of policies have been adopted in other countries to assist vulnerable customers. The practical application in Victoria and potential outcomes for customers and the market would depend on which policy or policies might be considered for implementation.

The Essential Services Commission (ESC) is already undertaking an extensive program of policy development in relation to assisting energy customers who are experiencing hardship. In November 2016 the ESC released a draft decision to introduce a safety net for Victorian energy consumers facing payment difficulty, which would incorporate:29

- clear entitlements to assistance from their energy company;
- certainty of the minimum standards of assistance they should receive;
- access to practical information about the cost of their energy use; and
- assistance to reduce the cost of energy use.

Overall, submissions from stakeholders on the proposed safety net were not supportive. As a result the ESC is now reviewing its draft decision to introduce a safety net.

Important considerations from international experience are that:

- The availability of benefits for vulnerable customers is not sufficient to ensure there will be substantial uptake of those benefits. Other mechanisms will be needed to ensure vulnerable customers take up any benefits – for example, obligations on suppliers to provide information to relevant customers or a widespread information campaign.

- If outcomes for vulnerable customers from the retail energy market are a priority, this could require a review of the impact on these customers of policies and practices in virtually every area of the competitive market framework.

7 Protecting passive customers 2: Collective bargaining

Summary

Many jurisdictions have retained a regulated default tariff to protect customers – particularly passive customers – at least until competition develops in the market. As discussed further in chapter 9, the default price is typically regulated based on an estimate of, among other things, wholesale market costs determined by the regulator. However, three jurisdictions have adopted a somewhat unique approach that we have termed “collective bargaining”, or a single buyer, approach. Under this approach, the regulator (or another entity) is responsible for sourcing electricity or gas from the competitive market rather than estimating the costs incurred by the retailer.

Collective bargaining allows all customers to benefit from what is essentially a competitive price for electricity, without having to shop around on a regular basis. This contrasts with other markets, including outside of the energy market, where customers that do not actively review their service provider often pay higher prices than those that do. While passive customers in particular benefit, the downside to this approach is that customers are unlikely to have much access to choice in their energy service and, related to this, retailers are unlikely to have an incentive to develop new products and services that could be facilitated by new technologies.

Introducing a mandated collective bargaining approach for customers on a standing offer in Victoria would likely require significant structural change. The reason the approach works in Maine and Italy is because the distributor still undertakes retail functions, which have been completely separated in Victoria. It would be very costly to require distributors to invest in the necessary systems and resources to undertake the billing function, and the approach would face significant opposition from retailers who would not be able to compete on a level playing field if customers defaulted to the distributor. Implementing a collective bargaining option with the existing market structure is also likely to be problematic and cause confusion for customers.

7.1 Application in Maine

Maine has a unique approach to setting the default tariff that applies to electricity customers that do not choose to have their energy supplied by a competitive provider. Rather than set a regulated rate, the regulator auctions the right to supply energy to default customers. This approach effectively provides those customers on a default tariff with access to competition, without the need to choose an offer.

While this approach allows all customers to benefit to some degree from price competition, it also means that it is more difficult for competitive suppliers to compete on price to attract individual customers onto a competitive supply contract. The auction process also reduces incentives on customers to search and switch retailer, if they consider the default tariff represents a competitive price.
This can be observed by the high number of customers that remain on the default supply. While retail contestability was introduced in 2000, it was not until 2012 until retailers became active in the market and began offering prices below the default rate. By June 2013, competitive providers were supplying almost a third of the small customer market. Since then, however, the competitive provider share of the market has dropped to 17%, likely due to a change in the regulator’s approach to soliciting bids for the default tariff combined with increasing wholesale market prices.

Lower prices and therefore retail margins have not provided the right conditions for innovation to occur in the market. Despite the widespread roll-out of smart meters, few customers have benefited from the opportunities in terms of new products and services that smart meters can facilitate. As a consequence, the majority of customers remain on the default supply tariff, as there is no meaningful incentive for them to switch.

Overall, while all customers in Maine benefit from competition in terms of lower prices – particularly those that are not active in the market – they do not benefit in terms of product choice. See section A.4 for further details on the Maine market.

7.2 Application in Italy

In Italy, consumers that do not choose a supplier remain with a default supplier, the local distribution system operator (DSO), which provides electricity according to a ‘standard offer’. In this case, the local DSO buys electricity from a ‘single buyer’. Today the majority (80%) of households are still served on the base of this standard offer. The single buyer, Acquirente Unico, is a state owned body responsible for supplying electricity to the regulated market. It sources electricity from the wholesale forward market (mainly by auctions) and from the spot power exchange.

This mechanism was set up by the Government in recognition that it would be necessary to organise the procurement process to secure the energy needs of non-eligible or captive customers at economically efficient and competitive terms. In Italy it is considered that few suppliers are prepared to serve households due to high acquisition and commercial costs.

7.3 Application in Denmark

Gas customers in Denmark who do not choose their supplier are able to access a default product, with prices overseen by the Danish Energy Regulatory Authority (DERA). \(^{30}\) Since May 2013, DERA has supervised the price of the regulated default products, which are decided through tenders of supply obligation licenses. The license period is for three years.

The price of the default product is determined on a monthly basis. It must not exceed the sum of the wholesale price of natural gas and charges to cover storage costs, costs of transmission outside and inside Denmark, a contribution margin and a subscription (fixed fee).

This approach also applied in electricity while default products were phased out. As in electricity, the gas default product will be phased out by automatically switching customers to a “basic product” once the supply obligation licenses expire in 2019. The price and conditions of the basic product must correspond to those of the previously delivered supply obligation product. DERA continues to oversee prices and conditions of the basic product.

\(^{30}\) CEER, National Report 2016, Denmark.
7.4 Application in the US

Collective bargaining, known as “municipal aggregation” in the US, has been authorized in some US states as a way to introduce the benefits of retail competition without requiring customers to make a choice of retailer or product. Critics of this approach consider aggregation treats all customers the same, which results in all customers receiving a plain-vanilla product. They consider that this is inconsistent with the purpose of restructuring the energy markets, which was to enable individual choice.

The following states have opt-out aggregation schemes:

- **California.** Local governments are able to develop opt-out aggregation programs to “offer procurement service to electric customers within their political boundaries”. One utility has been aggressive in its attempts to encourage customers to opt-out, resulting in judicial proceedings that placed restrictions on utilities’ behaviour in relation to these schemes.

- **Ohio.** Communities are able to aggregate their loads when they negotiate electricity prices. Residents in the scheme receive a postcard notifying them of their new electricity provider, and providing 21 days for a customer to opt out. Aggregation programs have fallen in and out of favour over time. As of September 2013, approximately 71% of the state’s switching residential consumers were in an aggregation program.

- **Massachusetts.** As of October 2014, Massachusetts had 19 approved municipal aggregations that included 39 municipalities, with a further 35 municipalities seeking approval of their aggregation plans.

7.5 Application in New Zealand

In 2013, a Retail Advisory Group (RAG) was requested to provide independent advice to the Electricity Authority on whether there were any barriers to group switching and mass market aggregation. The review arose from concerns that there were limited group switching and mass market aggregation activities in the New Zealand electricity market, relative to other industries.

The RAG concluded that group switching and mass market aggregation activities do exist and provide benefits to some electricity consumer groups. They further found that there were no identified barriers, and that the Electricity Authority was already addressing several hurdles to group switching and mass market aggregation. Finally, they considered the Electricity Authority could assist the understanding and awareness of consumers and buying groups/aggregation schemes. However, they also noted that they were unsure of whether the benefits from promoting such schemes were likely to outweigh the costs.

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32 Group switching is defined as a group of consumers, who have got together to negotiate a group deal with their electricity retailer, switching retailer at the same time.
33 Mass market aggregation is defined as the act of grouping consumers together to negotiate a group deal with their electricity retailer. Often a third party acts as the aggregator.
34 Retail Advisory Group, Barriers to group switching and mass market aggregation, 10 September 2014.
7.6 Potential application in Victoria

7.6.1 Practical implementation

Maine and Italy have been able to adopt a single buyer approach because the local distributor is still the default supplier and is responsible for issuing customer bills, even where a customer has chosen a competitive provider to supply their energy. In Victoria, the distribution functions have been fully disaggregated from the retail function. Retailers are required to provide a standard, default offer to small customers and retailers are responsible for billing.

An auction process for the standard offer is unlikely to be practical under the market structure that currently exists in Victoria for a number of reasons, including:

- If multiple retailers were selected it is unclear who would bill the customer.
- Even if only one retailer was selected, the default retailer could change every time the auction process was run (e.g. annually). This would cause significant confusion for customers if they received bills from different retailers every year, without having chosen a different retailer.
- Retailers that currently have billing systems in place may find it difficult to recover their costs if a significant proportion of their customer base was at risk each year.
- On the other hand, retailers that contract out their billing services may find it difficult to have appropriate contracts in place that would allow them to easily scale up or scale down their billing requirements by a potentially significant order of magnitude.

To overcome these challenges, the existing market structure could be reformed to require distributors to undertake the billing functions as in Maine. This approach would also have significant challenges, including:

- Both the distribution and retailing functions would significantly change. This could require legislative and retail code changes in Victoria, and potentially changes to the National Electricity Rules.
- Victoria may require unique retail market operating procedures, which are currently maintained by the Australian Energy Market Operator (AEMO). This would likely impose additional costs on retailers and distributors operating in the Victorian market, as well as AEMO.
- Distributors do not currently have the skill sets nor the systems to produce bills for hundreds of thousands of customers. There would be significant costs involved in investing in these.
- This approach would be significantly out of step with other Australian jurisdictions and, as such, any economics of scale that retailers currently benefit from (and pass through to customers in the form of lower costs) may be reduced. In contrast, it could increase the cost of operating in Victoria relative to other markets, and may cause some retailers to leave the market altogether.

While it would not target passive customers as effectively, an alternative, less costly approach would be to provide support for aggregators such as One Big Switch who negotiate discounted offers with retailers for groups of customers. Aggregator business models require customers to register their interest. They then negotiate with retailers, offering a sizable number of customers in return for discounts and potentially other benefits. Under the One Big Switch model, customers are not obligated to take up the offer, even after registering their interest.
7.6.2 Likely impact on customers

Based on experiences in Maine, it is likely that passive customers will benefit from price regulation. However, active customers that value choice may be worse off.

**Awareness**

The vast majority of Victorian energy consumers are already aware that they are able to choose their energy retailer. The option of a competitively-established default tariff could cause some confusion for customers, particularly if they started receiving bills from their distributor or a different retailer.

**Diversity**

Customer choice could reduce as a result of introducing a collective bargaining approach for default customers. There is a risk that some smaller retailers may exit the market if their costs increase as a result, or if it becomes more difficult to acquire customers.

On the other hand, price dispersion may also reduce if all retailers price their services relative to the default supply price. This is likely to benefit passive customers that consider the transaction costs associated with shopping around for an offer to be too high.

**Activity**

Activity in the market is likely to reduce. Customers may consider that the default offer provides them with a competitive price without the transaction costs associated with seeking out and assessing retailer offers. To the extent that the level of diversity in the market reduces, this is also likely to reduce activity as customers will have fewer options to choose from.

**Experience**

The impact on customer experience is uncertain and is likely to differ between customer segments. Those customers that place value on choice may become less satisfied if the range of products and services available reduces. In Maine, the majority of customers on a competitive contract are paying more than the default price. While some customers may be willing to pay more to fix the price for a period of time or to pay for green energy, others may not realise that a cheaper default option is available.

On the other hand, those customers that are not active in the market could potentially benefit from lower prices. Customers on the default tariff may also have greater confidence that the price they are paying is fair.

As discussed in the next chapter in relation to regulated prices, there could be some initial customer confusion about the role of the default tariff vis-a-vis market offers. Further, as noted above, there could also be confusion if a customer begins receiving bills from their distributor, or from different retailers. These are issues that would need to be carefully managed but are likely to be transitory.

**Retail margins**

It is likely that retail margins would reduce on average, assuming that the default price would be lower than the unregulated standing offers currently available in Victoria. The default price is likely to create a focal point for other, competitive offers. Consequently if there is sufficient competition to supply the default service, then retailers are unlikely to be able to earn much of a margin.
Innovation

One of the factors that motivates new retailers to enter the market and offer new products and services is the promise of a return on their investment. To the extent that retail margins are reduced, this incentive to develop and offer innovative new products is likely to also reduce, lessening the likelihood that the market will evolve to increase benefits to customers.

7.6.3 Implementation costs

The costs associated with re-introducing price regulation are likely to be high. The following entities would likely incur costs:

- **The Victorian Government.** In addition to the costs associated with drafting and implementing new legislation, it is likely the Government would need to run, or at least fund, an information campaign to explain the changes to customers.

- **The regulator** (or another entity that acts as a single buyer). The regulator would have costs associated with running and managing the auction. Additional resources may be required to run this process.

- **Distributors.** If distributors became the default supplier, they would incur significant costs associated with setting up the necessary billing and other systems, as well as hiring additional staff to manage billing and customer enquiries. As a regulated provider, these costs would ultimately be passed through to customers.

- **Retailers.** Retailers may not incur significant upfront costs, other than competing in the auctions. However, depending on how the approach was implemented, some retailers could face significant stranded asset costs associated with their billing systems or contracts, and the costs associated with operating in Victoria as well as other NEM jurisdictions could increase due to the operational differences.
8 Supply side measure 1: Price regulation

Summary

Most jurisdictions that have introduced retail contestability have adopted some form of price regulation as an interim measure to protect customers against excessive prices before competition becomes effective. In most cases price regulation is viewed as a temporary measure. However, some jurisdictions, such as France, continue to regulate retail prices. Ontario is the only market of which we are aware that has re-introduced price regulation for all customers after allowing retail prices to be set competitively.

Continuing to regulate prices may bring certain benefits, particularly for passive customers who tend to benefit less from competition. However, markets with price regulation also tend to exhibit limited diversity in terms of new business models or new products and services. In Ontario, the re-introduction of price regulation has depressed the competitive market. For new retailers to enter markets, and for existing retailers to develop and market new offers, requires compensating them for the associated risks and costs. However, price regulation, even when only applied to the largest retailers, typically constrains the prices that all retailers can charge for their products and services.

Re-introducing price regulation in Victoria would likely be very challenging from a practical as well as a stakeholder management perspective. Legislation would need to be amended, and the Victorian Government would no longer comply with aspects of the Australian Energy Market Agreement. Retailers would likely be adversely impacted by the re-introduction of price regulations, and there is a risk that smaller retailers, who often offer the most innovative products and services, may drop out of the market if the competitive market contracts as it did in Ontario. Finally, while passive customers may benefit from a lower default tariff, more active customers may find themselves on more expensive offers and with less choice.

8.1 Application in Ontario

While there are a number of jurisdictions with competitive markets that have continued to regulate energy prices, not many jurisdictions have re-regulated energy prices after lifting price controls. One exception is Ontario, where a period of wholesale spot price volatility led to a price freeze and subsequent retail price re-regulation after only 7 months of operation.

Price regulation was re-introduced with the objective of, among other things, providing stable and predictable electricity pricing. Following the roll-out of smart meters, the majority of customers on the regulated rate are on a time of use tariff, set by the Ontario Energy Board. Prices are adjusted every six months, based on updated wholesale market forecasts and any accumulated differences between the amount that consumers paid for electricity and the amount paid to generators in the previous period.
The regulated price applies to customers that obtain their electricity from their local utility (i.e. integrated distributor and retailer), who are the default supplier. Competitive electricity providers are not subject to the regulated rate.

A regulated retail price, combined with very strong consumer protections, have served to limit the ability of competitive providers to acquire and retain customers. While the retail market initially showed some promise, with almost 25% of customers switching to a competitive provider prior to the price freeze, only 6% of customers are now with a competitive provider. Customer awareness, diversity and market activity are low. Competitive providers have limited incentives to offer new products and services due to the downward pressure of the regulated rate on competitive prices and, as a consequence, few customers have an incentive to switch to a competitive provider.

There does not appear to be any immediate appetite to resume the market liberalisation process. Regulated retail prices remain in place and continue to be set in much the same way, although the regulator is currently considering options for structuring the regulated price differently and introducing tools to enhance consumer energy literacy and demand response. However, these options do not provide customers with meaningful choice.

See section A.8 for further details on the Ontario market.

8.2 Application in France

France introduced retail competition in both the electricity and gas sectors in 2007. Although customers are free to choose their suppliers, the options are relatively limited. The incumbent, Électricité de France (EDF), has a market share of approximately 88% of household customers. The remaining share is split among a large number of very small regional incumbents, although two retailers, Engie and Direct Energie, are gaining significant market share through dual fuel offers.

Regulated tariffs have historically been very low. Heavy reliance on nuclear energy has helped keep prices low, however the regulated price has historically also below EDF’s costs. Regulated tariffs were raised significantly in 2013 and 2014, primarily due to the financing needs of EDF and modernisation of the nuclear fleet. These increases slightly improved the competitiveness of free market priced offers relative to the regulated offer. Another measure to increase competition was implemented, in 2011 when a new law came into effect that made available, at a regulated price, withdrawal rights to low-cost electricity production from nuclear plants owned by the incumbent.35

There is some degree of choice for customers. Green energy offers and a variety of energy pricing options are available. However, the market is lacking the entry of innovative retail business models. The main inhibitor to achieving more diversity and innovation is likely to be the very low prices, and so low retail margins. Without the promise of a return on their investment, retailers do not have an incentive to create and develop innovative offerings.

Despite the limited choices available and the dominance of a single provider, customers assess their experience of both electricity and gas services as relatively high, and well above the average of the European Union (EU). The market has the third lowest percentage of complaints and second highest assessment of trust in the EU.

For the French market to be able to provide future benefits to customers, in terms of new offerings and models, retailers must be able to earn a higher margin. While there is some degree of innovation, the scale and speed of change in the French market tends to lag behind other European markets.

See section A.2 for further details on the French market.

35 Nouvelle Organisation du Marché d l’Electricité.
8.3 Limited application in Great Britain

As part of its review of energy retail markets in 2016, the Competition and Consumer Authority (CMA) found that customers with prepayment meters face particular problems engaging in the competitive market. They found that prepayment customers face:

- higher actual and perceived barriers to accessing and assessing information about switching arising; and
- higher actual and perceived barriers to switching.

The CMA also identified supply-side constraints affecting customers on ‘dumb’ (i.e. non-smart) prepayment meters, which serve to limit the extent of competition in this customer segment. Further, competition in the prepayment segments was found to be significantly weaker than in the wider domestic energy retail market.

Based on their assessment, the CMA decided to introduce a price cap for prepayment customers for a transitional period while the remainder of their reforms could take effect. The cap applies from 2017 to 2020 and will be based on a ‘reference price and cost index approach’. An initial level of the cap will be based on the CMA’s competitive benchmark analysis, with the cap indexed over time according to a number of indices including wholesale costs, network costs, policy costs and inflation. In determining the cap, the CMA included a level of headroom to allow competition to coexist with the cap.

The CMA also considered applying a transitional price cap for all standard variable tariff customers. On balance, the majority of the panel concluded that:

‘...attempting to control outcomes for the substantial majority of customers would – even during a transitional period – run excessive risks of undermining the competitive process, likely resulting in worse outcomes for customer in the long run.’

One Panel member dissented from this view, considering that a broader cap was required to address the scale of detriment identified in the short term.

See section A.3 for further details on the market in Great Britain.

37 Ibid, p59.
8.4 Potential application in Victoria

Re-regulating prices is likely to be a challenging option to implement in the Victorian context. The main challenges are legislative and stakeholder opposition.

Before discussing the application of price regulation in Victoria, it is worth noting that there are some key differences between the Victorian market and the Ontario market, which means that if Victoria applied the same approach the results could be quite different:

- The motivation for the price freeze and objective of the subsequent price regulation in Ontario related to wholesale market price volatility. In Victoria, concerns appear to relate primarily to the operation of the retail market.
- The competitive retail electricity market in Ontario only operated for a few months before a price freeze was instated and subsequently price regulation was re-introduced. In contrast, Victorian energy consumers have been able to choose their retailer for close to 15 years, and price regulation was removed around 8 years ago.
- In Ontario, approximately 25% of customers were on competitive retail contracts when the price freeze took effect. In Victoria, 90% of residential and small business customers are on a market contract.

8.4.1 Practical implementation

The Electricity Industry Act 2000 (Vic) permits the Governor in Council to regulate tariffs for the sale of electricity to prescribed customers. However, the Governor in Council is only able to do so if the AEMC, in a review of the effectiveness of competition in the Victorian energy market:

- concludes that competition in a market for electricity is not effective; and
- recommends that price controls for retail electricity services be reintroduced.

This obligation stems from the Australian Energy Market Agreement (AEMA), signed by all Australian states and territories, which sets out an agreement to phase out the exercise of retail price regulation for electricity and natural gas where effective retail competition can be demonstrated.

The AEMC is required to conduct an annual, NEM-wide review of the effectiveness of competition. Since the first NEM-wide review in 2014, the AEMC has consistently found the Victorian energy retail markets to be among the most competitive in Australia. Based on the AEMC’s framework for assessing the effectiveness of competition, we consider it unlikely that the AEMC would find that either the electricity or gas market in Victoria was not effective. Further, even if the AEMC did find that competition was not effective in either of these markets, we consider it unlikely that the AEMC would recommend that price controls be introduced. See, for example, its review of the ACT electricity market where the AEMC found price regulation to be a barrier to competition and recommended that it be lifted, even where competition was not currently effective.

Consequently, if the Victorian Government were to re-introduce price regulation, it would likely need to repeal the relevant sections of the Electricity Industry Act 2000 and no longer comply with the AEMA in respect of retail price controls.

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38 Electricity Industry Act 2000 (Vic) s.13(1).
39 Electricity Industry Act 2000 (Vic) s.13(1A).
40 AEMA cl.14.11.
8.4.2 Likely impact on customers

Based on experiences in Ontario and France, it is likely that passive customers will benefit from price regulation. However, active customers that value choice may be worse off.

Awareness

The vast majority of Victorian energy consumers are already aware that they are able to choose their energy retailer. The Victorian Government would likely need to raise awareness of consumers’ ability to choose a regulated price. This could cause some confusion about whether consumers can still access competitive offers and there may be potentially unwarranted assumptions that the regulated price must be better than a competitive price. However, provided any information campaigns are clear about the difference between the regulated tariff and market offers then awareness about retail market competition need not be impacted.

Diversity

Customer choice could reduce as a result of re-introducing price regulation. Jurisdictions that we have considered that have price controls in place, including France and Ontario, typically exhibit less diversity in offers compared to jurisdictions that do not have price controls.

On the other hand, price dispersion is typically lower in markets with price controls. This is likely to benefit passive customers that do not want to shop around.

Activity

Activity in the market is likely to reduce, as it has in the Ontario market. The main driver for the decline in activity in Ontario is likely due to the regulated price being set fairly low and the level of price dispersion also being low. A smaller spread of prices implies a reduction in potential savings for customers from switching. Further, smaller potential savings implies relatively higher transaction costs associated with searching for better offers. Bill savings is a strong motivator for encouraging customers to switch. Consequently unless the transaction costs can be reduced, customers may be less motivated to search for better deals.

In Victoria, customers could also perceive the re-introduction of price regulation after 15 years of retail competition as a sign that retail energy markets do not work, eroding trust in the market. In turn, this may reduce customers’ propensity to search out better deals. As mentioned above, a regulated tariff may also be viewed as being more predictable and a “safer” choice than a tariff set by a business.

Experience

The impact on customer experience is uncertain and is likely to differ between customer segments. Those customers that place value on choice may become less satisfied if the range of products and services available reduces. Similarly, highly active and engaged customers that previously benefited from low prices may become less satisfied if the same degree of discounting is not offered.

On the other hand, those customers that are not active in the market may benefit from lower prices, depending on how the price is set and whether customers are required to opt into receiving the regulated rates.

As discussed above, there could also be some initial customer confusion about the role of the regulated tariff vis-a-vis market offers. The re-introduction of a regulated tariff could also erode trust in the market and impact on consumers’ perceptions of the market. Even where they are satisfied
with their own retailer, negative perceptions of the market could leave them dissatisfied with the market overall.  

**Retail margins**

Depending on the way in which regulated prices are set, it is likely that retail margins would reduce on average. This assumes that the regulated price would be lower than the current, unregulated standing offers seen in Victoria. Further, jurisdictions with price controls typically exhibit lower retail margins.  

**Innovation**

One of the factors that motivates new retailers to enter the market and offer new products and services is the promise of a return on their investment. To the extent that retail margins are reduced, this incentive to develop and offer innovative new products is likely to also reduce, lessening the likelihood that the market will evolve to increase benefits to customers. 

Historically, Victoria was the preferred entry point for new retailers before they expanded into other jurisdictions. Since NSW removed price regulation, more retailers with innovative business models have chosen to enter that market first, including Pooled Energy and Mojo Power. Re-introducing price regulation is likely to negatively impact the conditions required to encourage these types of innovative offers. 

### 8.4.3 Implementation costs

The costs associated with re-introducing price regulation are likely to be high. The following entities would likely incur costs:

- **The Victorian Government.** In addition to the costs associated with drafting and implementing new legislation, it is likely the Government would need to run, or at least fund, an information campaign to explain the changes to customers.

- **The regulator.** To set a regulated price, the regulator would incur additional resourcing costs for additional staff and potentially expert consultants. The extent of these costs would depend on the nature of the price regulation.

- **Retailers.** Retailers would incur additional costs associated with engaging with the retailer on the level of the regulated price. The more complex the form of price regulation, the greater these costs will be. Retailers may also face additional compliance costs.

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42 For example, a survey conducted by Newgate Research for the AEMC found that most consumers were satisfied with their current electricity and gas company, however qualitative research results suggest they feel less positive about electricity and gas companies in general. See Newgate Research, Australian Energy Market Commission Consumer Research for Nationwide Review of Competition in Retail Energy Markets, Qualitative and Quantitative Research Report, June 2014, p4.

43 See, for example, ACER/CEER, Annual Report on the Results of Monitoring the Internal Electricity and Gas Markets in 2015, Retail markets, November 2016, p43, as well as Appendix B of this report.

44 Operating exclusively in Sydney, Pooled Energy markets an integrated service for customers with swimming pools, combining pool automation services and electricity optimisation.

45 Targeted towards customers that have relatively high consumption levels, Mojo offers a subscription service called an ‘EnergyPass’. Customers pay a flat rate of between $30 and $50 per month, which gives them access to wholesale rates for electricity.
Summary

Where there is uncertainty about the competitive nature of markets, scrutiny of prices and market performance can be achieved by requiring relevant businesses to publish, or submit to the regulator, key information. Some jurisdictions apply price monitoring as a less intrusive alternative to price regulation, protecting customers by enhancing market transparency and fostering the competitive process. In Australia, price monitoring is more commonly applied in industries where there are a small number of large customers. However, price monitoring has been employed as a tool by the regulator in the Netherlands in respect of its residential energy markets, as well as in Belgium.

Price monitoring can enable customers, the community, policy makers and regulators to monitor market outcomes and gain a better understanding of the workings of the market. There is a concern that more intrusive forms of price monitoring can be costly and have similar detrimental impacts on the market to price regulation. Nevertheless, the Netherlands appears to have struck a reasonable balance between encouraging innovation, diversity and activity in its markets while scrutinising prices. However, the way it assesses the reasonableness of prices is not transparent, whereas transparency is a cornerstone of price monitoring regimes in Australia.

There do not appear to be any legislative barriers to introducing price monitoring in Victoria, unless the threat of price regulation is seen as a necessary component of the regime to be effective. In this instances, a number of barriers would need to be addressed, as discussed previously. There is a risk that price monitoring could curb innovation in the market. While this does not appear to have been an issue in the Netherlands, the impact would very much depend on the nature of the regime. Consequently, without defining the nature of the price monitoring regime that might apply, it is difficult to predict what the outcomes might be for customers.

9.1 Application in the Netherlands

The Netherlands has a relatively mature energy retail market, with strong competition and relatively diverse offers. Both the electricity and gas markets are consistently ranked among the most competitive in Europe. While a third of the market is still with their incumbent supplier, those customers that have switched are reportedly satisfied with their switch.

Price regulation was removed when the market was opened to competition in 2004. However, the regulator, ACM, continues to have the power to set a maximum price for individual electricity and natural gas retailers. While the regulator has never exercised this power, it does require several retailers to provide an explanation about the level of their tariffs each year so that the regulator can determine whether they are reasonable. This process has resulted in some retailers adjusting their tariffs.
Despite the threat of price regulation, this does not appear to have impacted the level of diversity in the market. A number of novel price structures are available, facilitated by the roll-out of smart meters. Switching rates are relatively high and, in 2014, Dutch consumers rated their electricity and gas retail markets above the EU average.

In addition to price monitoring, the ACM has strong focus on encouraging customers to participate in the market. It does this by providing tools to make it easier for customers to compare offers, ensuring transparency of information from retailers, and conducting campaigns to remind customers to regularly review their energy services. The ACM considers that consumers have an essential role in helping to create a competitive market.

Due to the combination of measures introduced, it is difficult to attribute the relative success of the Dutch energy markets to any one factor.

See section A.5 for further details on the Dutch market.

### 9.2 Application in Belgium

Since 1 January 2013, the retail energy markets in Belgium have been subject to safety net regulation, which attempts to tackle the issue of price volatility and the complexity of pricing methodologies employed by retailers.

This form of regulation works through the following:

- indexation of those retailers market offers which have a variable pricing formula is subject to the regulator’s (CREG) supervision and is limited to four times a year (at the beginning of each quarter);
- checking the indexation formulas used by suppliers against a list of set criteria to obtain transparent parameters linked to energy exchanges instead of those developed by suppliers (CREG approves both the parameters and their values); and
- enabling on-going comparison of energy prices in Belgium with prices in neighbouring countries (i.e. the Netherlands, Germany and France), used by CREG to analyse price increases announced by suppliers, as all planned price increases which are not directly linked to the evolution of indexation parameters have to be motivated by the supplier in an ex-ante procedure.

The safety net mechanism was supported by reforms to improve the transparency of energy market information available to customers.

A price freeze was applied in the 8 month period preceding the introduction of the safety net approach as a transitional measure. In a 2014 report, assessing the impacts of this approach, CREG found that market-disrupting effects specifically attributable to the safety net mechanism. Market concentration has decreased and the number of customers changing suppliers has done nothing but increased – with switching rates in Flanders and Wallonia in excess of 15% – since the introduction of the safety net mechanism. In addition, analysis shown that electricity and gas prices in Belgium were evolving towards the average level in neighbour countries.46

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46 Commission for Regulation of Electricity and Gas – Report Monitoring Possible market disrupting effects within the scope of the safety net mechanism, 27 March 2014.
9.3 Application in other Australian industries

Other industries in Australia have adopted various forms of price monitoring, including:

- The Queensland urban retail water sector, monitored by the Queensland Competition Authority
- Container stevedoring, monitored by the Australian Competition and Consumer Commission (ACCC)
- Airport services, monitored by the ACCC
- Ports, monitored by the relevant state regulator
- Telecommunications, monitored by the ACCC

The monitoring regime in each of these industries is slightly different in order to meet different objectives. The purpose of price monitoring generally falls into one of two categories:

1. as an instrument of regulation and compliance, with the threat of more intrusive forms of regulation if businesses to not comply with agreed outcomes; or
2. as a means of observing and understanding the performance of a firm, industry or market.

The first approach appears to be more common in industries where businesses have monopoly characteristics and where the regulator may have the discretion to impose regulation. The second approach appears to be more common in industries that are open to competition but where there may be some concerns over the strength of competitive pressures in the market. Such concerns may be temporary in nature as the market transitions away from price regulation.

Most of the monitoring regimes administered by the ACCC are intended to be informative in nature. Therefore under the regimes administrated by the ACCC, price monitoring is not used as a direct means for introducing price controls or taking action against the business monitored. Where competition concerns are identified as a result of monitoring activities, the ACCC either initiates a price inquiry or takes action under the Competition and Consumer Act 2010.

The effectiveness of these regimes in Australia are often debated. Some of the key concerns raised are discussed further below.

See section A.11 for further details on the price monitoring in other Australian industries.

9.4 Potential application in Victoria

9.4.1 Practical implementation

Price monitoring has been viewed in Australia as an appropriate measure for transitioning towards the removal of price regulation in energy retail markets. The Australian Energy market Agreement (AEMC) permits that “…the phase out of the exercise of retail price regulation … may involve a period of price monitoring and/or price agreements with retailers under appropriate oversight arrangements”.47 NSW adopted this approach when it removed electricity retail price regulation in 2014, requiring the state regulator to monitor competition annually for small customers in the retail electricity market.

The AEMA does not appear to contemplate the introduction of price monitoring following the phase-out of price regulation. On the other hand, there do not appear to be any barriers within the AEMA to

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47 Australian Energy Market Agreement clause 14.16(b).
implementing price monitoring. However, for reasons discussed in the previous chapter, it would be more difficult to impose a price monitoring regime that encompassed the threat of subsequent price regulation. Consequently, this section assumes the implementation of price monitoring as a means of observing and understanding the performance of a firm, industry or market.

There do not appear to be any further legislative or structural barriers to implementing a price monitoring regime in the Victorian energy retail market. Legislative amendments could be made to confer a price monitoring function on the Essential Services Commission, and/or provide the ESC with the necessary information gathering powers.

9.4.2 Likely impacts on Victorian consumers

It is difficult to predict the likely outcomes for Victorian consumers of a price monitoring regime without defining the regime in some detail. The nature of price monitoring could range from a fairly “light handed” regime, which simply collated prices and other essential information, to a more intrusive regime that could almost resemble price regulation. The impact on consumers, and the market more broadly, could therefore be very different.

Further, the general philosophy of the regulator may also influence the way in which price monitoring impacts the market. In the Netherlands, the regulator is clearly supportive of competitive markets, and sees customers as playing an active role in order to provide the necessary pressure on retailers to keep prices down as well as provide innovative new products and services. While the regulator has the power to impose a maximum price, it has never done so. This has resulted in a relatively strong and competitive market whereby customers have access to a diverse range of energy products.

On the other hand, regulators that consider their role to be protecting customers by keeping prices low may be more likely to become involved in the operation of the market. If retailers consider there is a high chance of the regulator imposing a price cap – or even recommending to the Government that a price cap be imposed – this may have the same impact on the market as price regulation. That is, customers may benefit from lower prices, but the level of choice and innovation in the market may reduce.

The impact of price monitoring will also depend on the costs associated with the regime. To the extent that price monitoring imposes significant compliance costs on retailers, this could make it more difficult, particularly for smaller retailers, to operate in Victoria. In this instance, the additional costs could cause smaller retailers to exit the market, potentially reducing diversity in the market.

Other factors impacting outcomes include:

- the exact nature of the information collected from businesses;
- whether the information collected is only reviewed by the regulator or whether it is published; and
- if it is published, the extent to which the information is aggregated to protect commercial interests.

Some of these issues are discussed further in section A.11 below.
Overall, without defining the exact form of the price monitoring regime, it is difficult to determine whether outcomes would:

- improve overall, by striking the right balance between being effective without being too intrusive, and because greater transparency provides customers with greater confidence in the market and forces retailers to compete in more innovative ways for customers
- have no effect, for example because retailers do not consider the price monitoring regime to provide any constraint on the way in which they operate
- be detrimental overall, because the regime is highly costly and/or the risk of further market intervention reduces retailers’ propensity to invest in the development of innovative offers.

### 9.4.3 Implementation costs

The implementation costs of price monitoring could vary widely, depending on what information is collected and how it is used. In order to reduce the costs of complying with information requirements, many regulators attempt to make use of information provided by the business under other reporting requirements. However, this can make the information difficult to compare to the extent that it is determined on a different basis between different retailers and so can reduce the effectiveness of the monitoring regime.

Broadly speaking, costs would likely be incurred by:

- **The regulator.** The details of the monitoring regime would need to be developed and systems and processes put in place to collect and analyse the information on an ongoing basis. This could also require additional staff.

- **Retailers.** Depending on the nature of the information collected, retailers may also need to implement different systems and processes to what exists today in order to identify and deliver the necessary information in the form required.
10 Analysis of international retail margins

This chapter sets out analysis conducted by VaasaETT for the purpose of informing observations on retail margins around the world. This analysis sought to consider the levels and dynamics of Gross Retail Margins (GRM) and Net Retail margins (NRM). In particular, it sought to answer the following questions:

1. How do Victorian margins compare internationally?
2. What drives margins and their relationship to other characteristics and outcomes in liberalised markets, including diversity in choice and customers’ activity, awareness, interest and experience?

This chapter is structured as follows:

• Section 10.1 provides a brief description of the methodology used. Appendix B provides a more detailed description.
• Section 10.2 sets out our findings relating to the level of Victorian margins versus international comparisons
• Section 10.3 discusses the drivers behind retail margins.

Appendix B provides more detail on this analysis, including:
• a more detailed description of the methodology;
• more detail on the findings; and
• a glossary.

Other reports have recently published margins data on selected markets. Care should be taken when comparing the results with this report. Appendix B provides further details on why the results may differ.

GRMs are defined as the energy component price less the spot market price, adjusted by a fixed proportion to recognise that retailers typically hedge their supply costs at a premium to the spot market price. As the resulting GRMs are only an estimate, they are referred to as theoretical GRMs.

NRMs are defined as the difference between the GRM and the cost to serve, divided by the number of customers.

48 VaasaETT prides itself on the uniqueness, breadth and independence of its data and analysis. Such data and analysis should always be used with care however. This analysis is a representation of the opinion of the writers based on the assumptions, estimations and data obtained, analysed and interpreted by the analysts and writers that produced this report. VaasaETT collected and modelled data but was not the source of the data. Different sources may vary in their methodology. Data and conclusions of this report should be taken as approximate and audit-based. VaasaETT has however cross referenced the findings with its broader market data, expert connections and own knowledge. In Australia, for instance the findings were presented to four utilities as a sense-check and feedback was positive.
10.1 Summary of methodology

The first step in this analysis was to identify the markets and variables to be considered. Based on a number of considerations, including data availability, 21 markets were chosen. These markets have been grouped into a number of regions as follows:

- **Nordic**: Finland, Sweden, Denmark, Norway
- **Northern Europe**: Great Britain, Belgium, Netherlands, Germany, Ireland, Luxembourg
- **Central and Eastern Europe**: Austria, Czech Republic, Slovenia, Poland, Slovakia,
- **Southern Europe**: Spain, Italy, Portugal
- **Rest of World/Non Europe**: ANZ (Victoria and New Zealand); USA (Texas).

Next, 25 market variables were identified for the purpose of conducting factor analysis to determine factors that influence retail margins.

Altogether 39 energy retailers were surveyed for the research into Net Retail Margins (NRM), through a mixture of direct contact, direct knowledge and indirect contact. Most of the sample was incumbent retailers, but a few were key new entrants in order to identify or estimate ratios between incumbent and non-incumbents. The sample is considered generally reflective of the markets being investigated. The sample should though be seen as primarily representing large (relative to the size of the market) incumbent retailers.

A statistical technique known as Principal Component Analysis was performed in order to identify the variables that most influence GRM and NRM. Some variables that are likely to be influential have not been included in the statistical analysis because of difficulty in operationalising them or because of insufficient data availability. However, a separate analysis was conducted on these variables to consider the level and nature of their dynamics.

The analysis focuses on residential electricity customers.

10.2 How do Victorian margins compare internationally?

Victorian margins are relatively high when compared to European markets, but are by no means the highest among liberalised energy markets as a whole. Victorian margins are in between European and non-European liberalised market levels.

10.2.1 International GRMs

There is significant variation between the gross margins of different retail electricity markets. However, when expressed as a proportion of the energy component of the bill, GRMs are remarkably similar, averaging at 34%. All but four markets range from 30% to 50%.
### Table 1: International theoretical gross margins by region

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ANZ</td>
<td>56.93</td>
<td>371.17</td>
<td>22.40%</td>
</tr>
<tr>
<td>Nordic</td>
<td>26.46⁴⁹</td>
<td>208.21</td>
<td>34.73%</td>
</tr>
<tr>
<td>Northern Europe</td>
<td>65.21</td>
<td>261.71</td>
<td>48.65%</td>
</tr>
<tr>
<td>Central and Eastern Europe</td>
<td>35.84</td>
<td>127.58</td>
<td>33.73%</td>
</tr>
<tr>
<td>Southern Europe</td>
<td>53.29</td>
<td>178.69</td>
<td>43.16%</td>
</tr>
<tr>
<td>USA</td>
<td>NA</td>
<td>557.44</td>
<td>30.00%</td>
</tr>
</tbody>
</table>

*Source: VaasaETT*

#### 10.2.2 International NRMs

NRMs for average residential customers of incumbent utilities in liberalised markets vary from a few dollars to over $200 per year depending on the market. Markets can effectively be placed into one of three statistical levels of net retail margins, as shown in the figure below.

*Figure 3 International NRM*

![International NRM](image)

*Source: VaasaETT*

If the markets are grouped into regions it is possible to see large differences, with Europe apparently having far a lower NRM than ANZ and the USA (Texas). It should be noted though that some of this difference is due to differences in consumption levels, with the average consumption level in Europe being far lower than in the other regions.

⁴⁹ It should be noted that the average gross margin / MWh in Norway is especially low because it is a market based largely on wholesale spot prices.
10.3 Margin drivers and impacts

While there is great variation in margins and market share between liberalised markets around the world, and while margins can change significantly over time, markets are driven by common dynamics and margins tend to follow reasonably predictable patterns.

Our analysis and observations of markets has identified a number of common features that influence margins in markets around the world. Additional detail is provided in Appendix B.

**Liquidity of the wholesale market**

Margins are cushioned from volatility in wholesale markets where those markets are liquid. As market liquidity increases, provided retailers are appropriately hedged, they are not significantly affected by wholesale market volatility. Consequently, in such markets, retail prices tend to follow the wholesale market, keeping relatively stable margins.

Despite this, sometimes retail prices cannot respond quickly enough to unexpected and significant wholesale price changes. Retail margins tend to be smallest when wholesale prices suddenly rise significantly for a sustained period.

**Pricing based on spot markets**

In markets where retail prices are essentially a mark-up on wholesale market prices, such as in Norway, retail prices become a direct function of wholesale prices. In such markets, retailers essentially pass through the price volatility risk to customers, reducing their hedging costs. These markets also tend to produce a lower GRM expressed in c/kWh.
Regulated prices tend to lead to lower margins

In markets with regulated retail prices, the dynamics of GRM, and so NRM, are set by the relevant regulator or government. Margins are typically higher in markets with liberalised prices. This can be seen in the figure below.

Figure 5: Evolution of retail mark-up on spot price for regulated versus non-regulated markets

Level of churn

Some of the largest net retail margins have historically been seen in some of the most active markets in the world. This can be due to variations in service efficiency and consumption per customer, but it is also due to the fact that competition is dependent on reasonable margins. Net margins therefore do not necessarily fall as the level of competition increases. Competition may result in lower margins than would otherwise be the case for active customers, but may hide higher margins for less active customers.

A profit maximising strategy for retailers is to keep prices high for sticky customers, lower prices to some extent for customers that are at risk of churning, and accept that some customer will leave, but it is better to lose them than lower prices further for the remaining customers.

Churn therefore primarily affects the gross margins of customers who churn, and to some extent those who are considered likely to churn.
**Inactive customers are more profitable**

As would be expected, margins made on inactive customers are typically far higher (commonly double, but up to many times more) than those made on customers who switch retailer. Keeping customers longer through improved loyalty will further increase the customer lifetime value of customer segments. However, in general, the most profitable customer is the one who has never exercised their choice.

**Equilibrium of net margins**

Margins appear to find an equilibrium level. That is, assuming structural variables such as consumption, price regulation, disposable income and bill as share of disposable income remain largely the same, NRM tend to remain at that level or trajectory in the long-term, although there may be periods when they change. Further, they appear to gradually increase over time.

Interviews with energy companies and 17 years of observation has indicated that while net margins fluctuate significantly from year to year, depending on many factors including the variation in wholesale and competition, they appear to find a long-term equilibrium, increasing gradually, that they tend to gravitate towards. This level, while not necessarily the same or even similar to the level before or immediately after the onset of full free liberalisation, is at least indexed to the starting point and so the starting point sets a tone for the future.

A caveat to this is that many markets display sharp falls in retail price levels and therefore net margins in the initial phase of competition as they try to pre-empt churn, and consequently re-adjust.

This concept of an equilibrium margin cannot be statistically proven, since detailed historical data dating back to the onset of competition is either not documented, documented differently over time or not obtainable. Anecdotal evidence however seems to support it.
Additional determinants

In addition to the above, the following variables stand out as determinants of the level of margins:

1. **Time**: Margins evolve over time, up and down but tend to increase, not fall in the longer term. It is not surprising then that a market that has been liberalised for many years, may achieve higher, and stabilised markets if allowed to do so.

2. **Competitor Activity**: Markets where competitors are defensive tend to have lower margins

3. **Price Volatility**: Markets with volatile prices, normally because of volatile wholesale markets, tend to have higher margins to cover for the risk of that volatility

4. **Ease of Access to Energy**: Markets where access to energy is greater - better wholesale liquidity for example - tend to have higher margins, because players in those markets often treat trading expertise as a competitive advantage.
Appendix A: Case studies

This appendix sets out a number of case studies that we have examined in order to inform our analysis.

We agreed with the Department that we would examine the following electricity and, where relevant, natural gas retail markets:

- France;
- Great Britain;
- Maine;
- New Zealand;
- The Netherlands;
- Norway;
- Ontario; and
- Texas.

In addition to energy retail markets, we agreed to examine:

- the application of a price comparison rate for mortgages; and
- examination of other industries in Australia that apply price monitoring.

We have not been asked to examine the Victorian market. However, for the purpose of comparison it is worth setting out a few key characteristics of the Victorian market.
A.1 Key characteristics of the Victorian market

<table>
<thead>
<tr>
<th>Key metrics and characteristics</th>
<th>Electricity</th>
<th>Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year FRC was introduced</td>
<td>2002</td>
<td>2002</td>
</tr>
<tr>
<td>Year price regulation was removed</td>
<td>2009</td>
<td>2009</td>
</tr>
<tr>
<td>No. of small customers (millions)</td>
<td>2.7</td>
<td>1.9</td>
</tr>
<tr>
<td>No. of retailers</td>
<td>29</td>
<td>11</td>
</tr>
<tr>
<td>Market share of 3 largest retailers</td>
<td>61%</td>
<td>70%</td>
</tr>
<tr>
<td>Switching rate (2015)</td>
<td>25%</td>
<td>25%</td>
</tr>
<tr>
<td>Average consumption (kWh or kj/year)</td>
<td>4,000</td>
<td>54,400</td>
</tr>
<tr>
<td>Proportion of customers on default tariff (res)</td>
<td>9%</td>
<td>11%</td>
</tr>
</tbody>
</table>


A.1.1 Governance arrangements

In Victoria, there are a number of entities that govern the operation of energy retail markets.

Figure 7 Summary of governance arrangements

The COAG Energy Council has overall responsibility and policy leadership for Australian gas and electricity markets. Their work program is based around six strategic themes: generation, networks, retail, energy productivity, natural gas, and resources productivity and development. Their approach is based on a number of principles, including “promoting the interests of electricity and gas consumers by overseeing the development and maintenance of competitive electricity and gas markets and effective regulation of network monopoly infrastructure”.

There are three other national entities:

- The Australian Energy Market Commission is the rule maker for Australian electricity and gas markets. They make and amend the National Electricity Rules and, National Gas Rules that apply in Victoria. They are also responsible for the National Energy Retail Rules, which Victoria has not adopted. In addition, the AEMC provides market development advice to governments.

- The Australian Energy Regulator regulates wholesale energy markets (monitors, investigates and enforces compliance with national energy legislation and rules) and energy networks.

(regulates electricity and natural gas pipelines by setting the maximum amount of revenue they can earn). Outside of Victoria they also regulate retail markets (monitoring and enforcement, reporting on performance etc).

- **The Australian Energy Market Operator** is the independent energy markets and power systems operator. They operated the National Electricity Market and a number of gas markets. They also provide critical planning, forecasting and power systems information and security advice.

In carrying out their functions, each of these entities must have regard to the National Electricity Objective:

- to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to—
  - (a) price, quality, safety, reliability and security of supply of electricity; and
  - (b) the reliability, safety and security of the national electricity system.

The **Victorian Essential Services Commission (ESC)** is Victoria’s independent economic regulator of prescribed essential utility services, including electricity and gas. The ESC’s role in energy is to oversee compliance and performance reporting by energy businesses, and issue energy distribution and retail licenses. The ESC’s objective under the *Essential Services Commission Act 2001* is to “promote the long term interests of Victorian customers with regard to the price, quality and reliability of essential services”. In addition, the ESC has objectives under the *Electricity Industry Act 2000*:

- to promote a consistent regulatory approach between the electricity industry and the gas industry, to the extent that it is efficient and practicable to do so
- to promote the development of full retail competition.
A.2 France

<table>
<thead>
<tr>
<th>Key metrics and characteristics</th>
<th>Electricity</th>
<th>Gas</th>
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</thead>
<tbody>
<tr>
<td>Year FRC was introduced</td>
<td>2007</td>
<td>2007</td>
</tr>
<tr>
<td>Year price regulation was removed</td>
<td>Not removed</td>
<td>Not removed</td>
</tr>
<tr>
<td>No. of small customers (millions)</td>
<td>31.7</td>
<td>10.6</td>
</tr>
<tr>
<td>No. of retailers (No. operating nationwide)</td>
<td>174 (12)</td>
<td>77 (2)</td>
</tr>
<tr>
<td>Market share of 3 largest retailers</td>
<td>99%</td>
<td>92%</td>
</tr>
<tr>
<td>Switching rate (2015)</td>
<td>4.7%</td>
<td>10%</td>
</tr>
<tr>
<td>Average consumption (kWh or kj/year)</td>
<td>5,036</td>
<td>17,000</td>
</tr>
<tr>
<td>Proportion of customers on default tariff (2015)</td>
<td>88%</td>
<td>59%</td>
</tr>
</tbody>
</table>

A.2.1 Brief history of retail contestability

Retail competition in electricity began with industrial customers in 1999, then was followed by smaller businesses in 2004 and finally residential customers in 2007. Customers are able to choose from a market-based offer or a regulated price decided by public authorities.

Regulated tariffs have historically been low and this imposes a barrier to entry for new retailers. Regulated tariffs were raised significantly in 2013 and in 2014. This is mainly due to the financing needs of the dominant incumbent retailer, Electricité de France (EDF), and to modernise its nuclear fleet. These increases slightly improved the competitiveness of free market priced offers.

A new law also came into effect in 2011 that makes available, at a regulated price, withdrawal rights to low-cost electricity production from nuclear plants owned by the incumbent. Electricity retailers will be able to benefit from this measure until 2025. The main objective of this reform was to enhance competition, which was introduced to a concern that EDF’s competitors were not able to offer competitive retail prices due to higher generation sourcing costs.

The way in which regulated tariffs are calculated has recently changed as part of a gradual transition towards transparent pricing and to stimulate the entry of alternative suppliers. They are calculated as the sum of the cost of nuclear, the additional cost of alternative market offers, distribution and transmission charges, and EDF’s marketing costs.

As of 31 December 2015, France has removed regulated electricity prices for large and medium industrial consumers. Regulated prices for non-household consumers in the French gas market will be removed gradually. The French Government has not yet set out plans to remove retail price regulation for household customers.

The high pressure gas network in France is owned by two operators – GRTgaz and TIGF. France imports almost all its natural gas, the largest share (40.4%) from Norway. The market has

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54 Nouvelle Organisation du Marché de l’Electricité.
55 IEA, p132.
traditionally been dominated by long-term import contracts linked to oil product prices. There are 3 virtual trading points in the wholesale market.

The gas market is much more active than the electricity market. Low and decreasing gas prices on international markets allowed other suppliers and the dominant supplier, ENGIE, to provide offers that are consistently cheaper than the regulated price.

### A.2.2 Market structure and governance arrangements

EDF, the historical national utility for electricity, dominates the electricity market. EDF also owns Réseau de Transport d’Electricité (RTE), which owns and maintains control over the electricity transmission networks. Furthermore, the distribution network serving over 95 per cent of the French customers is a subsidiary of EDF (ENEDIS). EDF also owns generation.

Only the historic supplier, – EDF and certain local distribution companies, which include municipalities – can offer regulated tariffs to consumers located in their territory. They are also able to provide market offers. At the end of 2015, 88% of customers were on regulated electricity tariffs.

Like in electricity, only historic suppliers are able to offer regulated tariffs to consumers in their territory. ENGIE (previously GDF-Suez) dominates the market for households and small businesses. There are 22 other distribution companies that qualify to offer regulated tariffs. At the end of 2015, 59% of customers were on regulated gas tariffs. A further 21% of customers were on a market rate with ENGIE. ENGIE is also EDF’s main rival in the electricity market especially thanks to dual fuel offers and a well-known brand.

Both the electricity and gas markets are highly regionalised. While there are a large number of (generally historic) operators, only around 12 offer electricity nationally and only EDF and ENGIE offer gas nationally.

![Figure 8 Market share of largest three retailers – France](source)

The Ministry of Environment, Energy and the Sea (MEEM) covers, among other things, energy policy. Within MEEM, the Directorate-General for Energy and Climate (DGEC) plans and implements policies in energy markets and energy supply. Under the authority of MEEM and regional authorities, regional directorates work closely with the public to implement energy policy objectives. The Environment and Energy Management Agency is a public agency dedicated to energy efficiency and sustainable development, including climate change and energy research and development.

The Commission for Energy Regulation (CRE) regulates the French gas and electricity markets, and ensures access to transmission distribution networks. It also monitors electricity and gas markets, among other things.
Consumer interests are represented by the Energy Ombudsman, as well as a number of consumer associations such as UFC Que Choisisir and CLCV.

A.2.3 Customer and market outcomes

Awareness

Customer awareness and interest has grown since 2010 and is at a relatively high level. Customers rate highly the ease of switching retailer and the ease of comparing offers. The CRE in France has put effort into educating customers and informing the public about developments in the energy industry.

Diversity

There are 174 suppliers in the small electricity market, 12 of them operating nationwide, and 77 natural gas retailers with two operating nationwide. Two suppliers dominate both markets and market concentration remains high. There are only 21 electricity-only offers available to consumers and while the price dispersion is approximately AU $ 150 the potential savings available to consumers from switching retailer away from their incumbent is only 5.6 per cent.

Additional services such as home insurances or free maintenance services are not widely offered. However, ICT-based solutions, consumption feedback systems and in-house displays are available and typically complemented with web portal solutions.

There are dual-fuel and certified green energy offers and a variety of energy pricing alternatives available to customers. However, the market is lacking the appearance of innovative, new retailer business models, and overall has quite a low level of diversity.

Special tariffs are reserved for households with an income below or equal to a threshold of entitlement to supplementary universal health cover. These tariffs are available for both electricity and natural gas consumers. From the end of 2013, these social tariffs were extended further to cover more households. These social tariffs apply to an estimated 4.5m electricity and gas households.57

The main inhibitor to achieve more diversity appears to be the price regulation. As the regulated prices are low, the retailer net margins are also low leading to decreased motivation to create and develop innovative offerings to the market.

Activity

Electricity switching rates have increased but remain low, as shown in the chart below. Around 90% of customers remain on a regulated tariff by 2015, indicating that most French customers are still with their incumbent supplier’s by-default contract. Of those that have switched to a market contract, almost all have changed retailer.58

Unlike the electricity sector, gas switching rates have increased significantly, up to 10 per cent in 2015. Around 60% of gas customers (both household and non-household) remain on the regulated tariff in 2015.

The main inhibitor to achieving a more active market appears to be the continuing price regulation. This is despite the quick switching process, where the practical switching time seems to take only one day in electricity and four days in gas.

Experience

The EU tracks the functioning of consumer markets across the EU and ranks them on the basis of the ‘market performance indicator’ (MPI), which incorporates five aspects of consumer experience.59 The MPI for electricity services in France is 84.6, well above the EU average of 75.3, and slightly above the average of all markets in France (83.8).60 This reflects scores that are better than the EU average in terms of the comparability of services, and trust that consumer obligations are being followed.

Similar to the electricity sector, customers’ experience of the gas market is well above the EU average (a market performance indicator of 83.9 in France relative to the EU average of 78.1).61

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58 Ibid, p3.
59 The five aspects are comparability; trust; consumer satisfaction; choice; and customers experiencing problems. For more information see http://ec.europa.eu/consumers/consumer_evidence/consumer_scoreboards/market_monitoring/index_en.htm
60 Ibid.
Retail margins

The mark-up between wholesale prices and the energy component of retail prices were negative in 2012. Since then it has increased, consistent with the increase in the regulated price. For gas, the mark-up has hovered around €10/MWh since 2012.

Figure 10 Mark-up and relationship between wholesale prices and the energy component of the retail electricity price in the household segment 2008-2015


Innovation/evolution of the market

The scale and speed of change in France lags behind other dynamic markets such as the Nordic markets, Great Britain and Australia. France is making large investments in sustainability, and offering a variety of new services to deliver that sustainability, but most of the change is being delivered by three players. There are few new entrants, few new business models and very little diversity of new offerings in the market.

Utilities, such as ENGIE and EDF France, are taking part in a wide variety of sustainability projects related to developing green/electric mobility, smarter cities or communities, low-carbon electricity and renewable energy. France was also one of the first markets in the world to have demand response tariffs (as opposed to simple time of use). EDF and ENGIE are currently offering home automation services and self-generation packages.

France is in the process of introducing smart meters and has conducted various customer engagement and active customer energy efficiency trials, as well as products and services including smart thermostats and other home energy management and smart home services.

For future benefits to flourish in France, there would need to be more new entrants and new product offerings. This is unlikely to happen while regulated prices and margins are kept low. While customer awareness is relatively high, the large incumbents continue to dominate, so the market’s level and rate of innovation will depend almost entirely on the activities of three players.
### A.3 Great Britain

#### Key metrics and characteristics

<table>
<thead>
<tr>
<th></th>
<th>Electricity</th>
<th>Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year FRC was introduced</td>
<td>1999</td>
<td>1999</td>
</tr>
<tr>
<td>Year price regulation was removed</td>
<td>2002</td>
<td>2002</td>
</tr>
<tr>
<td>No. of small customers (millions)</td>
<td>27.8</td>
<td>21</td>
</tr>
<tr>
<td>No. of retailers (no. nationwide)</td>
<td>43 (35)</td>
<td>43 (37)</td>
</tr>
<tr>
<td>Market share of 3 largest retailers</td>
<td>54%</td>
<td>63%</td>
</tr>
<tr>
<td>Switching rate (2015)</td>
<td>12.2%</td>
<td>12.3%</td>
</tr>
<tr>
<td>Average consumption (kWh/year)</td>
<td>3,100</td>
<td>12,500</td>
</tr>
<tr>
<td>Proportion of customer with default supplier (2015)</td>
<td>37%</td>
<td>41%</td>
</tr>
</tbody>
</table>


#### A.3.1 Brief history of retail contestability

Great Britain paved the way in terms of energy sector reform. Liberalisation began in 1986 with the privatisation of British Gas and the introduction of a licensing regime for gas transportation, shipping and supply activities. The Electricity Act 1989 introduced a licensing regime for electricity that recognised supply (retail) activities as separate to generation, transmission, interconnection and distribution services. This was followed by the introduction of a competitive wholesale electricity market, and extensive privatisation of electricity businesses.

Retail competition in gas and electricity was introduced during the 1990s, initially for larger customers and later for smaller customers, with full retail competition occurring in 1999. Retail price caps were removed in electricity and gas in 2002.

While the market is dominated by six large, vertically integrated suppliers, many new suppliers have entered the market since the introduction of retail competition. The more recent new entrants have often targeted niche markets and have increased product diversity. In addition, there are eight ‘white label’ suppliers. These are organisations such as supermarkets, which do not have a license to supply but partner with a licensed electricity or gas supplier to offer supply under the organisation’s brand.

Gas penetration is high in Great Britain, with around 21m gas customers compared to 27.8m electricity customers. Most of the active suppliers in the domestic energy market supply both gas and electricity.

In the retail market, the regulatory regime is generally the same across the gas and electricity sectors.

#### A.3.2 Market structure and governance arrangements

The UK’s domestic electricity and gas markets are dominated by six large suppliers, comprising the former regional electricity incumbents and Centrica, the former gas incumbent. These businesses all own generation assets as well as retail. Like in Victoria, transmission and distribution are separately owned and regulated.

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63 Active licensed suppliers in domestic markets, mostly offering both gas and electricity

64 As above
The Department of Environment and Climate Change (DECC) has overall responsibility for the government’s energy policy as well as climate change policy.

While initially the gas and electricity markets were overseen by industry-specific regulators (Ofgas and Offer), these bodies were combined in 2000 to form one energy regulator, Ofgem. The regulator is independent of government, accountable instead to Parliament. Ofgem’s principal objective when carrying out its functions is to protect the interests of existing and future gas and electricity customers.

Customers’ interests are also represented by the Energy Ombudsman, and Citizens Advice will provide assistance and support in laying a complaint with an energy supplier. Citizens Advice also undertakes energy policy work and advocates for customers.

A.3.3 Summary of reforms

Ofgem has undertaken a series of measures and reforms to enhance retail energy markets since price regulation was removed. This case study focuses on one particular reform – the Simpler Choices package – and the impact on customers, which is discussed further below. This section outlines briefly two other measures implemented by Ofgem:

- In 2003, Ofgem undertook a number of measures to remove barriers to competition, including reviewing the customer transfer process, tackling misselling, reforming rules for objective to switches, improving competition for dynamically teleswitched customers, as well as enforcing competition law. These measures were implemented despite finding that competition was developing well.65

- In 2008, Ofgem proposed a package of measures in response to concerns that many customers were not yet fully benefiting from competition, and that vulnerable consumer groups were disproportionately affected. A number of measures were introduced to help customers make well-informed decisions. Ofgem was also concerned about incumbent retailers having higher average prices in their supply regions than in other regions. Consequently, Ofgem required that any differences in charges must reflect different costs to supply. Critical reviews found that, as a result, incumbent retailers increased their prices outside of their traditional supply areas and retailers’ profit margins increased.66

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65 Ofgem, Domestic gas and electricity supply competition, Recent developments, June 2003.
66 See, for example, Littlechild, Stephen, Promoting or restricting competition?: Regulation of the UK retail residential energy markets since 2008, EPRG Working Paper 1415, 20 August 2014.
It is also worth noting that, generally, Great Britain is generally viewed as having one of the more competitive markets in the world for both electricity and gas. According to one assessment, both its electricity and gas markets were ranked amongst the most competitive in Europe, alongside Finland, Sweden, Norway and the Netherlands for electricity, and Belgium, the Netherlands and Italy for gas. However, that same assessment notes that while Great Britain scores relatively well on market structure indicators for electricity, it seems to have “a lack of consumer engagement problem, which suppliers are able to exploit by charging high prices”.

A.3.4 Non-price tariff regulation – the Simpler Choices package

In late 2010 Ofgem launched a Retail Market Review (RMR) due to continuing concern that the energy market was not working effectively for consumers. The review concluded that there were a range of barriers to effective consumer engagement in the energy market, including:

- the complexity of tariff options,
- the poor quality of information provided to consumers, and
- low levels of trust in energy suppliers.

The purpose of the RMR was to promote customer engagement in energy markets, so that the threat of customers switching imposed an effective constraint on retailers and improved competitive outcomes for customers. The RMR reform package included three broad components:

- Simpler choices – designed to make it simpler for customers to understand and compare energy tariffs, and thereby encourage customer engagement;
- Clearer information – to help customers understand the information they receive from retailer; and
- Fairer treatment – new Standards of Conduct designed to rebuild customer confidence in the energy market.

The simpler choices reforms incorporated the following measures:

- Simplifying tariff structures to ensure that all tariffs have a simple standing charge (which could be zero) and unit rate structure (no multi-tier tariffs);
- A maximum limit on the number of core tariffs retailers can offer at any one time (the ‘four tariff rule’);
- Simplifying how discounts, bundles and reward points were offered and presented;
- Improving customer protection safeguards for both evergreen and fixed term offers;
- Migrating customers from tariffs that were closed to new customers onto open tariffs where this was beneficial to customers; and
- Facilitating collective switching schemes.

The objective was to make the market simpler, in order to ‘increase consumer confidence and engagement in the market’. The intent was that customers should face fewer tariff choices so as to make comparisons between them easier. To achieve this, retailers could not offer more than four core tariffs to any one customer.

Retailers were required to implement the tariff simplification package by 31 December 2013.

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68 Ibid, p33.
69 Ofgem, The Retail Market Review – implementation of simpler tariff choices and clearer information, 27 August 2013, pp11-12.
70 Ibid, p12.
A.3.5 Customer and market outcomes from the simpler choices package

The impact of the RMR was assessed by the Competition and Markets Authority (CMA) in 2016, as part of a wider investigation into the energy market in Great Britain. Their overall finding was that “the evidence we have on the impact of the RMR rules is not particularly encouraging”.\(^{71}\) In fact, the CMA found that aspects of the simpler choices package had an adverse effect on competition by limiting the number of tariffs retailers could offer, stifling innovation and softening competition between price comparison websites.\(^{72}\)

**Awareness and activity**

There were few, if any, signs that customer engagement improved materially as a result of the simpler choices package, either in terms of direct customer activity (e.g. switching, shopping around) or their experience and perception (e.g. views on tariff complexity). Those who were disengaged before the RMR appeared to remain so. In fact, switching rates fell after the implementation of the simpler choices reforms, as can be seen in the figure below.

![Figure 12: Historical switching rates – Great Britain](image-url)


The CMA also had doubts that the four-tariff rule would improve engagement in the longer term. The CMA argued that given the number of suppliers, any customer who wished to find the cheapest tariff in the market would in practice need to use a third party intermediary (such as a price comparison website), with or without the four-tariff rule.

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\(^{71}\) Ibid, p41.

\(^{72}\) An adverse effect on competition occurs where competition is prevented, restricted or distorted as a result of features in the market.

The customer impacts discussed in this section rely on the conclusions drawn by the CMA.
Diversity
The four-tariff rule led to a number of the six large energy firms withdrawing tariffs and discounts and changing tariff structures, which may have left some customers worse off. The tariffs removed included those directed towards specific niche customer groups, such as:

- green tariffs
- fixed-bill tariffs
- tariffs designed for low-usage and vulnerable customers (such as nil standing charge tariffs).

In its review, the CMA concluded that:

- aspects of the ‘simpler choices’ rules dampened price competition between suppliers, either by restricting their ability to acquire or retail customers through offering discounts or tariffs, or through making it more costly to offer cheaper prices or discounts.
- the requirement to offer all tariffs to both new and existing customers reduced the incentive to respond to competition for either the acquisition or retention of customers.
- price comparison websites were restricted in their ability to negotiate exclusive tariffs with retailers, since this would represent another ‘tariff’.

Experience
There is little evidence suggesting customers benefited from the simpler choice package. In fact, the CMA concluded that some of the RMR measures restricted the behaviour of suppliers and constrained the choices of customers in a way that distorted competition and reduced customer welfare.

Retail margins
Direct information on the impact of the simpler choices package on retail margins is not available. However, there is evidence that price competition between retailers was dampened:

- the RMR rules dampened price competition by limiting the ability and incentives for retailers to respond to competition by offering cheaper tariffs or discounts. This in turn means there was less rivalry between competing retailers.
- The RMR rules also stopped price comparison websites from negotiating cheaper exclusive tariffs with retailers, or offering discounts or cashback offers funded by the commission they received from retailers. The RMR rules therefore limited the competition between price comparison websites and the pressure they could place on prices.

More generally, with the exception of 2009, the mark-up between the electricity wholesale price and the energy component of the retail price has increased since 2008, reaching over €50/MWh in 2015. For gas, the mark-up has ranged between around €12 to €27 between 2012 and 2015.
Innovation and market evolution

The RMR four-tariff rule limited the ability of retailers to innovate and provide new products which may benefit different customer groups. Several suppliers suggested the four-tariff rule would be a particular constraint on their ability to offer innovative products to customers with smart meters. The CMA appeared to agree with this view, noting “this is of particular concern over the longer term as RMR rules could potentially stifle innovation around smart meters.”

One UK retailer suggested that “much of the regulatory intervention had stifled competition and hindered innovation. In particular, the four tariff rule...hindered innovation in providing commercial, competitive answer to the problem of inactive customers”.

A.3.6 Subsequent policy developments

Given its finding that the ‘simpler choices’ package had an adverse effect on competition, the CMA recommended that certain aspects of the simpler choices component of the RMR rules be withdrawn. As a result Ofgem modified electricity and gas supply licences, with effect from 28 November 2016, to remove those aspects of the simpler tariff choices rules identified as having an adverse effect on competition, including:

- the ban on complex tariff structures;
- the four-tariff rule;
- the restrictions on the offer of discounts; and
- the restrictions on the offer of bundled products.

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73 Competition and Markets Authority, Energy market investigation, final report, 24 June 2016, p41.
74 Ibid, p572.
The CMA believed this would:

- promote competition and innovation between retail energy suppliers in the retention and acquisition of domestic customers by allowing them to offer a wider range of tariffs, including tariffs designed to benefit certain customer groups; and
- facilitate competition between price comparison websites by allowing them to negotiate exclusive tariffs with domestic energy suppliers and to offer discounts funded by the commissions they receive from suppliers.

In place of the simpler choices package, the CMA recommended that Ofgem introduce an additional principle to the Standards of Conduct, which energy suppliers must follow as part of their licence conditions. Ofgem is currently consulting on a proposed principle that requires suppliers to enable customer to make informed choices about their energy supply. This reflects a broader strategy by Ofgem to move from detailed licence rules towards enforceable principles-based regulation.

A.3.7 Dual fuel

Customers with dual fuel contracts do not appear to face any particular issues.

The majority of domestic customers are on dual fuel tariffs, meaning they have the same supplier for both gas and electricity. The State of the Market report published in 2014 found the energy market in Great Britain was segmented, with different customers experiencing different outcomes:

- Customers on single tariffs with their legacy supplier were likely to be paying more than those who had switched supplier (to either a single or dual fuel tariff);
- Much of the rest of the market was characterised by weak competition.
- Customers that managed their account online, paid direct debit, and fixed their energy costs over 12-18 months got the best deal.

In other words, the differences in competitive outcomes did not relate so much to the type of fuel (or dual fuel), but rather to the ‘stickiness’ of the customer in terms of their switching behavior, and their willingness to use less traditional forms of payment and account management.

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76 See https://www.ofgem.gov.uk/gas/retail-market/market-review-and-reform/future-retail-market-regulation
A.4 Maine

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<thead>
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<th>Key metrics and characteristics</th>
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<tr>
<td>Year price regulation was removed</td>
<td>A form of price regulation continues to apply</td>
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<td>No. of competitive electricity providers</td>
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<tr>
<td>Proportion of customers on default rate (2017)</td>
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<tr>
<td>Average consumption (kWh/year) (residential)</td>
<td>6,372</td>
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</tbody>
</table>

Table sources: Maine Public Utilities Commission, www.electricitylocal.com

A.4.1 Brief history of retail contestability

Retail contestability was introduced to Maine in March 2000. Prior to market commencement, the majority of Maine electricity customers were served by geographically-based, vertically integrated monopoly utilities. These utilities were required to divest their generation assets prior to market start. However, they maintained responsibility for metering, issuing bills, and other customer-facing services, as well as delivery and the default supplier.

Prior to the competitive market commencing, utilities were also required to begin issuing itemised electricity bills to clearly show the two charges that customers are required to pay:

- the energy rate, which became the unregulated retail prices charged for generation services by competitive electricity providers; and
- the delivery rate, which is regulated.78

Once the market commenced, customers continued to receive a bill from their local utility. Customers who chose their own competitive electricity provider would see the energy rate agreed with their provider. Customers who did not choose their own provider would see the default or “standard” rate for their energy charges, set by the Maine Public Utilities Commission (Maine PUC). The way in which this is set is discussed below. All customer classes, including large customers, are able to access a standard rate for energy supply, which differs by customer size.

A.4.2 Market structure and governance arrangements

There are two main utilities defined by their network area – Central Maine Power and Emera Maine (Bangor Hydro). These are operated by New England’s Independent System Operator (ISO-NE) and represent the majority of load. While these networks were required to divest their generation assets, they continue to provide regulated retail services. Energy is effectively sourced on their behalf by the Maine PUC (see section A.3.3 below) and so they do not strictly compete with competitive electricity providers.

Competitive electricity providers can either own their own generation, or else purchase generation through the New England wholesale market. They must be licensed by the Maine PUC to retail

78 The regulated charge comprises a bundle of costs, including transmission rates (regulated by the Federal Energy Regulatory Commission), distribution rates (regulated by the Maine Public Utilities Commission), and “stranded cost rates” (regulated by the Maine PUC). The stranded cost rates reflect the net above-market costs for generation obligations that utilities incurred prior to industry restructuring.
energy. There are currently nine competitive electricity providers operating across the two main network areas.

The Federal Energy Regulatory Commission (FERC) is an independent agency that regulates the interstate transmission of electricity, natural gas, and oil. FERC has a number of responsibilities relating to transmission and wholesale sales of energy in interstate commerce, and has a role monitoring and investigating energy markets. It does not regulate retail energy markets.

The Maine PUC regulates electricity, natural gas, telecommunications and water utilities “to ensure that Maine consumers enjoy safe, adequate and reliable services at rates that are just and reasonable for both consumers and utilities”. They also oversee competitive markets for these services. The Maine PUC adjudicates cases similar to a court – it may take testimony, subpoena witnesses and records and issue decisions or orders, among other things. The Maine PUC may also initiate investigations and rule makings, resolve procedural matters and respond to legislative directives. Consumers are also able to file complaints against their utility with the Maine PUC.

The interests of utility customers are represented by the Maine Office of the Public Advocate. They advocate for rates, services and practices to benefit utility customers in regulatory and court proceedings. They also intervene in cases before FERC.

A.4.3 Auction for default supply

Under the Restructuring Act, the Maine PUC is required to administer a periodic bid process to select providers of the standard offer service. More than one standard offer provider can be selected to provide a specified portion of the total requirements. In case no acceptable retail bids are received, the Maine PUC is able to direct the utilities to solicit wholesale bids.

The Maine PUC initially solicited and awarded bids for the residential and small commercial standard offer services every year for a three year term for one-third of the standard offer load. This approach helped to smooth any wholesale market volatility and prevented large price changes that could occur if supply for the entire residential and small commercial markets were procured at a single point of time.

In March 2013 a competitive provider, Electricity Maine, submitted a request for a number of amendments to the rules governing the standard offer. The proposed changes were intended to “remove protections that give standard offer providers a competitive advantage or that act as impediments to further development of the retail competitive electricity provider market, and that are no longer necessary or appropriate under current market conditions”. The proposed changes included issues around the treatment of customer bad debt, deposits and the way in which partial payments were allocated between the utility and the competitive provider.

Electricity Maine also requested that the Maine PUC alter its practice of soliciting bids for the residential and small commercial class using staggered terms, and instead award the standard offer contracts every six months for 100% of the customer class. Electricity Maine considered this approach would better facilitate competition for the supply of these customers.

The Maine PUC agreed that, given competition was beginning to emerge, it would be appropriate for the standard offer to better reflect wholesale market prices, and that products that allow customers to manage price volatility are likely to be available in the market. Consequently they moved to an annual solicitation process for the entire load for a one year term. They considered that a one year

79 This approach applies to two of the three utilities which supply the majority of load. The third utility is smaller and not operated by New England’s Independent System Operator (ISO-NE) and so is treated slightly differently. However, the principal is the same.

period, rather than 6 months, would better balance the need to reflect market wholesale prices with the need to maintain a degree of retail price stability and predictability. They also noted that they would consider moving to a 6 monthly auction process if competition continued to develop.

The Maine PUC also decided to allow bids for the load in 20% increments to increase flexibility for the bidders.

A.4.4 Customer and market outcomes

**Awareness and activity**

While retail contestability was introduced in 2000, competition did not emerge with any significance in the residential and small business sectors until 2012. As discussed further below, competition is likely to have been triggered by a reduction in wholesale prices. Prior to that, a few customers left the standard offer to take up a green power option. These customers tended to migrate back to the standard offer after their contracts lapsed, although it is not certain whether this was through a conscious choice or because of a failure to renew their competitive contract.

In 2012, a number of retailers became more active in the market. Electricity Maine, in particular, began acquiring customers by offering prices that were below the standard rate. In one year they grew from 1,000 to 150,000 small customers, representing 90% of the competitive market. The strong growth, driven primarily by Electricity Maine, can be seen in the figure below, which shows the proportion of small customers that hold a contract with a competitive provider.

![Figure 14: Proportion of small customers with a competitive supply contract](https://example.com/figure14.png)

The initial success of competitive providers in 2012-2014 is likely because of the combination of a lag between the standard offer price and the wholesale price and falling wholesale prices. Because of the three year staggered approach initially adopted by Maine PUC, the standard rate would reflect to some extent the wholesale prices from the previous two years, as well as the current year. Retailers were able to take advantage of the falling wholesale prices to undercut the standard rate.

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81 In contrast to the residential and small business market, the market for medium and large customers is somewhat more developed. As of December 2016, almost 50% of medium-sized customers and 88% of large customers had a contract with a competitive provider.

At their peak in June 2013, competitive providers were supplying almost a third of the small customer market. Since then, the competitive provider share of the market has close to halved. This is likely due to a combination of the Maine PUC amending its approach to soliciting bids for the standard rate, as well as a return to higher wholesale market prices.

Diversity

There is very limited diversity in products offered by competitive providers. The competitive nature of the standard offer makes it difficult to compete on price unless certain conditions are met – i.e. where wholesale prices are falling more quickly than the standard offer is adjusted. Currently, the majority of competitive offers are higher than the standard offer.

Each of the 9 retailers active in the market are currently offering (as of 1 February 2017) between 2 and 6 different products for each of the two main utility areas. These include variations around:

- the energy rate, of which the majority are higher than the standard offer;
- variable and fixed contracts;
- the term of the fixed contracts, which range from 3 to 36 months; and
- the proportion of electricity sourced from renewables (either 0, 50 or 100%).

Some retailers are now offering discounts for new customers, links to reward programs and one retailer is advertising its sponsorship of local non-profit organisations.

Prices for energy currently range from 6.3 to 15 c/kWh in the Central Maine Power network area, where the standard offer is 6.69 c/kWh, and between 6.25 and 13.25 c/kWh in the Emera Maine (Bangor Hydro) network area, where the standard offer is 6.32 c/kWh.

Consumer experience

There is limited information available on the degree of customer satisfaction for customers on the standard rate.

For those with a competitive provider, the Maine PUC noted that “the growth in competition in the residential and small commercial customer sector has been accompanied by customer confusion and complaints”. These complaints fell into three categories:

- lack of clarity in the contract
- lack of notice about changes in rates
- promises made by competitive providers that either were not kept or that appear too good to be true.

The Maine PUC undertook a review of licensing conditions and consumer protection rules in response to a number of complaints.

In January 2015, the PUC adopted several changes to the rules to strengthen various consumer protection provisions, including those relating to marketing by competitive providers, customer information disclosures, contractual renewal and variable rates plans. Many of these issues have already been considered and addressed in Victoria.

One of the issues considered was whether “affirmative consent” should be required for contract renewals. The Maine PUC concluded that contracts may continue to be automatically renewed. Instead, additional conditions were inserted, including that the new contract could not exceed the

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term of the existing contract or 18 months, whichever is longer. However if the new rate was a non-indexed variable rate, the contract could only renew on a month by month basis.\textsuperscript{85}

**Retail margins**

The figure below shows that the mark-up between the electricity wholesale price and standard offer from Maine PUC has increased as wholesale prices have reduced. For residential and small business customers competitive provider prices are generally higher than standard off prices. While this implies that the mark-up over wholesale prices are higher, competitive suppliers are also likely to incur higher costs associated with attracting and retaining customers.

Figure 15: Mark-up and relationship between wholesale prices and standard offers for residential customers 2013-2017 - Maine

![Diagram showing mark-up and relationship between wholesale prices and standard offers for residential customers 2013-2017 - Maine](source)

**Innovation/evolution of the market**

There is a very low level of innovation in the Maine market. The market remains fairly immature, despite customers being able to choose a competitive electricity provider for over 15 years. This is likely due to the way in which the standard rate is set, which makes it difficult for competitive providers to compete on price. The ability of competitive providers to attract price-sensitive customers is dependent on the difference between wholesale market prices and the level of the standard rate. Consequently, it is difficult for them to trial different products and services that would require a higher return to be worthwhile for them.

During 2010, the Maine PUC approved the installation of smart meters by the two larger utilities, finding that the benefits in terms of customer supply savings and utility operational cost savings are likely to exceed the costs of the investment.\textsuperscript{86} The two utilities are now offering time of use prices, however no retailers appear to be competing on time of use products at this stage. This compares to more other markets where smart meters have allowed retailers to provide innovative offerings such as free power on a Saturday (AGL, Victoria) and allow customers to be exposed to wholesale market prices (Flick and Paua, New Zealand).

\textsuperscript{85} Clause 6.

A.5 The Netherlands

<table>
<thead>
<tr>
<th>Key metrics and characteristics</th>
<th>Electricity</th>
<th>Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year FRC was introduced</td>
<td>2004</td>
<td>2004</td>
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<tr>
<td>Year price regulation was removed</td>
<td>2004</td>
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<td>No. of small customers (millions)</td>
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<td>No. of retailers</td>
<td>53</td>
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<tr>
<td>Market share of 3 largest retailers</td>
<td>78%</td>
<td>77%</td>
</tr>
<tr>
<td>Switching rate (2014-15)</td>
<td>17.6%</td>
<td>16.7%</td>
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<tr>
<td>Proportion of customers on default rate (2015)</td>
<td>47%</td>
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<tr>
<td>Average consumption (kWh or kJ/year)</td>
<td>3,500</td>
<td>18,000</td>
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A.5.1 Brief history of retail contestability

Before the Dutch market was liberalised, customers were supplied by a regulated, vertically integrated incumbent with a regional monopoly for electricity distribution and retail. The market was gradually opened up to competition, with all consumers free to choose a supplier from 2004. Price regulation was lifted at the time the market opened. Prior to that, in 2001, customers were able to choose a supplier for green electricity products.

Since then, a number of reforms have been implemented, including structural regulation (full unbundling of generation and retail from network activities was not completed until 2008), contracting restrictions, information requirements and monitoring. The figure below provides a snapshot of these reforms.

In 2013 the energy-specific regulator was merged with the regulator for telecommunications and postal services to create the Authority for Consumers and Markets (ACM). Since then, regulation of the retail market has increasingly focused on general consumer protection and less on sector-specific rules.

In respect of energy markets, the ACM’s focus is on market monitoring and ensuring transparency of information for customers so that customers themselves can drive competitive market outcomes. This can be seen in the following objective statement:88

“ACM wishes to have a healthy consumer energy market with clear options for consumers, and to have a level playing field with room for good entrepreneurship and innovation: to have a market in which consumers are given easy-to-understand, easy-to-compare, and consistent information so that they are able to make a choice that suits their situation and preferences. In a market with well-informed consumers, their behavior may lead to self-correction by the market, and will enforcement activities by ACM be needed less often [sic].”

88 ACM, Provision of information in the consumer energy market, 1 July 2016, p3.
A.5.2 Market structure and governance arrangements

The electricity market is characterised by three very large retailers (all incumbents), four relatively small retailers (one of which is an incumbent) and a number of very small retailers. Some retailers use multiple brands.\(^89\) Generation and retail of gas and electricity are typically vertically integrated, while network companies are prohibited from being part of a vertically integrated group. Some international entrants have focused more on either the generation or the retail, although they may have a presence in the other market.

Figure 17: Market share of largest 3 retailers

\(^{89}\) For example, Essent/RWE owns a second brand, EnergieDirect, which sells only through the internet.
The Ministry of Economic Affairs has the overall responsibility for Dutch energy policy.

ACM has regulatory powers to supervise electricity and natural gas markets. The ACM is charged with competition oversight, sector-specific regulation of several sectors, including energy, and enforcement of consumer protection laws. They state that their “ultimate goal is to create a level playing field, where all businesses play by the rules, and where consumers exercise their rights”. 90

ACM has a specific consumer information portal called ConsuWijzer. Through this portal, ACM educates consumers about their rights and consumers are able to lay complaints about their utilities.

A.5.3 Key reforms

**Contracting restrictions: tariff surveillance and prohibition on automatic contract renewal**

Known as a “safety net” mechanism, tariff surveillance was implemented when the market opened with the purpose of preventing unreasonable prices and protecting inactive customers. The regulation requires that, while prices are set competitively, electricity and natural gas retailers must submit their tariffs for small-scale users to the regulator. The regulator assesses those tariffs for reasonableness. Each year the regulator requires several retailers to provide an explanation about the level of their tariffs so that the regulator can determine whether the contracting conditions and, in particular, the price, are fair. While the regulator has not published its assessment methodology, it does take into account whether a product or service of superior quality justifies a higher price.

If the regulator considers a retailer’s tariff(s) to be unfair, they can set a maximum tariff for that retailer. To date, the regulator has not had to set a maximum tariff, although some suppliers have had to adjust their tariffs in order to be considered fair. 91

This constant threat of price regulation could have the effect of stifling innovation. However, as discussed further below, there is a reasonable level of diversity in the electricity. Despite this, the International Energy Agency has encouraged The Netherlands to remove this oversight measure on the basis that competition is now effective and that these powers “have the potential to weaken incentives for efficient and timely investment and innovation in new products and services”. 92

In 2011, general consumer protections were introduced that limited the ability for contracts to be automatically renewed for a fixed period of time. While the contract may be extended or renewed, the customer has the right to terminate the extended contract with a notice period not exceeding one month.

**Information requirements**

Many of the requirements relating to information provision are based on voluntary codes of conduct rather than enforceable regulations. These primarily relate to improving market transparency by making information more comparable, as well as preventing unfair or misleading marketing practices. The most recent amendment to the code of conduct for retailers was a rule that requires retailers to inform consumers what the annual costs of a specific offer will be for them.

To assist energy retailers understand what information they must provide to customers, the ACM published a guide setting out its expectations. 93 The guide addresses principles for fair commercial practices, various statutory requirements applicable to different sale methods (e.g. door to door,

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90 [www.acm.nl](http://www.acm.nl)
91 European Regulators Group for Electricity & Gas, 2010 national report of Energiekamer to the European Commission, p47.
93 ACM, Provision of information in the consumer energy market, 1 July 2016.
telemarketing etc) and other topics relating to offers, price, contracts, invoices and termination or renewals. Among other things, the following requirements have been specified:

- consumers must be informed in advance about all costs associated with an offer, and those costs must be personalised to the consumer (e.g. the specific network tariff that applies, since these differ by network operator)
- consumers must be informed about the cooling-off period
- consumers must be informed about when the contract starts
- when stating the total (personalised) price, the total annual costs must be displayed to make it easier to compare offers
- tariff changes must be communicated with customers personal and in a timely manner, with an opportunity to cancel their contract following such tariff changes
- consumers must be clearly informed about whether they are purchasing green or brown power.

In 2015, ACM reprimanded 7 energy companies regarding unclear information. Four of these were forced to amend their websites.

Information campaign

In addition to publishing guidelines for information provision as discussed above, the ACM’s consumer-facing entity, ConsuWijzer, conducted an awareness campaign on switching in 2013. The campaign, entitled “If you snooze, you lose”, encouraged consumers to review their various contracts, including energy, noting how much a customer could save. The campaign directed customers to their website, which has tools to make comparing contracts and offers simpler.

A.5.4 Market monitoring

ACM is required to monitor the small consumer market, including the supply process, the contents and accuracy of bills and whether there are any obstructions to switching retailer. ACM assesses the quality, independence and transparency of price-comparison websites on an ad-hoc basis in order to provide customers with confidence in using this tool. ACM publishes the results on the website of the national point of contact, Consuwijzer.

In 2015, ACM noted it will continue to closely monitor information on retailers’ websites. They also undertook to monitor information presented in the contracts that consumers receive after accepting an offer, as well as the information that is provided to a customer over the phone or at the door.

A.5.5 Customer and market outcomes

Awareness and activity

Awareness and interest in energy markets appears relatively high. Over half of both electricity and gas customers have switched away from their incumbent retailer. The majority of switchers say they are very satisfied with their switch.94

Switching rates are fairly high by European standards.95 As can be seen from the figures below, customer activity for both electricity and gas are closely related. This is due to the popularity of dual fuel contracts.

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95 In the Netherlands the switching period is 20 working days, because the former supplier has to be given four weeks’ notice.
Despite this, the regulator continues to seek ways to encourage consumers to switch, particularly those that are still with their incumbent retailer. A 2014 study suggested that many consumers consider switching is a hassle, and that the benefits of switching are low. This is despite price differences of up to €221 for an average household. The ACM considers it is “vital that consumers take on the role they were given”\(^6\); that is, to help create a competitive market.

The majority of consumers switch to save on their monthly costs. A high number of customers that renegotiate their contract with their current retailer do so in response to an offer from that provider. A smaller number negotiate a new contract with their current retailer after an offer from a different energy retailer.

In addition, the Dutch market has benefit from quite successful collective switching campaigns, organised by consumer groups.\(^7\)

**Diversity**

The 7 largest retailers each currently offer around 10 different products. The majority of these offers are “green”; that is, they are from 100% renewable energy sources. Around two thirds of electricity supplied to residential households in 2014 was green. More than 80% of consumers are on a dual fuel contract.

Retailers also differentiate their products by offering different pricing structures. The two most common pricing structures offered by all retailers are a variable price contract and fixed price contracts. Prices for variable priced contracts typically change every 3 to 6 months and are set by the retailer, subject to the safety net regulation. Prices for fixed contracts are typically fixed for one or three years.

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\(^7\) Collective switching campaigns operate by aggregating consumption and building on the bargaining power of a large group. Over the past few years, collective switching campaigns have become increasingly effective due to their potential to remove perceived barriers to switching such as the time take to switch, the risk of not obtaining the best deal and distrust of new suppliers.
More recently, novel pricing structures have become available. These include:

- an option contract in which prices are variable but cannot increase above their initial price
- a combination of fixed and variable price to reduce price volatility
- prices that are linked to wholesale market conditions, including prices that drop with outside temperature or with higher wind speeds
- bundling energy contracts with other services or devices such as smart thermostats, energy audits and iPads.

Diversity also exists amongst comparison websites, which are all commercially operated. Some develop relationships with retailers in order to offer special deals. Others instead rely on revenue from advertising on their websites. ACM monitors these websites on an ad hoc basis to check for independence, accuracy and reliability.

**Experience**

In 2014, Dutch consumers rated their electricity and gas retail markets above the EU average, which corresponds to 9th and 10th place EU-wide, respectively. Both markets rank well above average on choice (2nd and 1st highest score in the EU, respectively and overall consumer satisfaction.

Similar to Australia, energy customers in the Netherlands appear to be more satisfied with their own retailer than the market as a whole. Only 1% of customers were dissatisfied with their current provider’s overall service. Dissatisfaction related primarily to price. On the other hand, 57% of consumers who have looked around but have not switched have little or very little confidence in energy providers.

**Retail margins**

The chart below shows that the mark-up between the wholesale price and the energy component of the retail electricity price in the household segment has been relatively constant since 2008, fluctuating around €20/MWh. For gas, the mark-up has been closer to €10/MWh.

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100 CMA, Trend report on competition and consumer confidence in the energy market, first half of 2014, November 2014, p5.
Innovation/evolution of the market

The Dutch market appears to be fairly well-placed to continue to evolve and capture future benefit through ongoing innovation. The regulator’s focus on encouraging consumer activity in the market, combined with sufficient retail margins to incentivise retailers to develop new offerings, provides a platform for increased innovation and benefits emerging in the market.

A.6 New Zealand

<table>
<thead>
<tr>
<th>Key metrics and characteristics</th>
<th>Electricity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year FRC was introduced</strong></td>
<td>1999</td>
</tr>
<tr>
<td><strong>Year price regulation was removed</strong></td>
<td>1999</td>
</tr>
<tr>
<td><strong>No. of small customers (millions)</strong></td>
<td>1.78(^{101})</td>
</tr>
<tr>
<td><strong>No. of retailers</strong></td>
<td>31 (^{102})</td>
</tr>
<tr>
<td><strong>Market share of 3 largest retailers</strong></td>
<td>66%</td>
</tr>
<tr>
<td><strong>Switching rate</strong></td>
<td>21.9% (^{103})</td>
</tr>
<tr>
<td><strong>Average consumption (kWh/year) (2015)</strong></td>
<td>7,238(^{104})</td>
</tr>
<tr>
<td><strong>Proportion of customers on default tariff</strong></td>
<td>n/a</td>
</tr>
</tbody>
</table>

A.6.1 Brief history of retail contestability

The New Zealand electricity market has a similar structure to Victoria. However deregulation happened more quickly in New Zealand, with no regulation applied to the retail tariff once competition was introduced, and no requirement for a standing offer similar to that in Victoria. The regulator has a relatively pro-competition approach to the retail market.

The Electricity Industry Reform Act 1998 required full ownership separation of distribution businesses from supply (generation and retail) businesses.\(^{105}\) No price regulation was imposed following the introduction of full retail competition in 1999. Limited regulations and consumer protections have evolved over time. These include, for example, the introduction of:

- the Electricity and Gas Complaints Commission (now Utilities Disputes Limited);
- a dispute resolution scheme; and
- a requirement for all electricity retailers to offer a domestic tariff with low fixed charges (with some exemptions and regional variations).

New Zealand’s electricity market is smaller than the Victorian market, with approximately 2.1 million small customers of electricity. Despite this, many retailers have entered the market. Some only operate in small geographic areas.

A.6.2 Market structure and governance arrangements

New Zealand’s retail market is dominated by 5 vertically integrated (i.e. generation and retail) companies that operate nation-wide. In 1998, vertically integrated distribution and retail businesses were required to divest either their distribution business or their retail business. Most opted to divest their retail assets, which were acquired by the five major generators operating at that time.

There are 26 other smaller retailers, some of which only operate in certain geographic areas.

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\(^{103}\) As above

\(^{104}\) As above

\(^{105}\) These cross-ownership restrictions have been subsequently relaxed to allow lines businesses to own some generation and to sell the output from those stations.
The Ministry of Business, Innovation and Employment (MBIE) is the policy adviser to the Government. Its role includes advising on Acts and regulations. MBIE also has a monitoring role in respect of the Electricity Authority. The Commerce Commission regulates monopoly suppliers of electricity lines businesses.

The Electricity Authority (EA) is an independent Crown entity responsible for the efficient operation of the New Zealand electricity market. The EA regulates the electricity market by developing and setting the market rules, enforcing and administering them and monitoring the market’s performance. Their statutory objective is “to promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers”. As an independent entity, the EA is free to adopt their own approach to matters covered by government policy statements presented in Parliament by the Minister of Energy and Resources while pursuing their statutory objectives.

Utilities Disputes Ltd deals with complaints between individual consumers and retailers. It is funded by member companies, but is otherwise independent of the industry.

The Domestic Energy Users’ Network is a network of national organisations that advocates for affordable and sustainable energy services for all householders.

A.6.3 Consumer switching fund

A Ministerial Review of the New Zealand Electricity Sector was conducted in 2009 and resulted in a range of changes designed to:

• improve competition and constrain price increases;

• increase security of supply; and

• ensure effective and stream-lined governance.

These changes included the establishment of a Consumer Switching Fund (CSF) of $15m over 3 years, funded by a levy on retailers, to promote to customers the benefits of comparing and switching electricity retailers.

The CSF aimed to address the ‘stickiness’ of customers and their lack of engagement with the competitive electricity market, even though there had been improvements in switching and comparison tools such as websites were available. The CSF had the following main components:

• the What’s My Number website, which commenced in 2011. The website allows residential customers to estimate how much money they could save by switching to a cheaper retailer;

• improving the functionality of the pre-existing Consumer Power Switch website, which allows customers to compare prices across electricity retailers, monitor price trends, and allows customers to initiate the switching process online; and

Figure 20: Market share of largest 3 retailers
• intense advertising campaigns to inform customers about retail electricity competition and promote the above websites, via television, radio, print, online and other advertising.

The EA noted the What’s My Number campaign was “critical to empowering customers to get the best value they can”.  

In 2014, a further three years of funding totaling $7.5m was provided to the EA, and the project was renamed the Facilitating Customer Participation program.  It has evolved from a ‘switching’ campaign to a ‘checking’ campaign, and focuses on encouraging consumers to compare their options, regardless of whether they choose to switch.

A.6.4 Customer and market outcomes

The CSF was one of a number of initiatives designed to enhance competition - other policies focused on improving access to retail information, improving transparency of customer charges, and a review of barriers to group switching. Together with these other initiatives, the introduction of the CSF led to improvements in a range of customer and market outcomes.

Awareness

Awareness that customers can choose their electricity retailer is particularly strong in New Zealand, and is in part attributable to the ongoing campaign to promote the benefits of comparing and switching retailers. The What’s My Number campaign has had strong brand awareness, and as of August 2016, the website has been used to calculate potential savings almost 1.5 million times.

In a recent survey, less than one per cent of customers stated that they had not reviewed their plan or switched retailer because they were not aware that they could change company or plan. This is relatively impressive compared to other markets and demonstrates that the New Zealand campaign has been one of the more successful.

Diversity

Following the introduction of the CSF retailers changed their pricing and marketing strategies. In its 2013 review of the program, the EA noted that “since the launch of What’s My Number, there has been an increase in the number of retailers offering different pricing plans and services to consumers in certain parts of the country”.  

By the end of November 2016, New Zealand had 34 retail brands backed by 24 independent retailers, with the top four retailers having 80 per cent of the market share. New entrants continue to win customers. Retailers are differentiating themselves through different business models, such as allowing customers to be exposed to the wholesale price, and bundling electricity with other services. In turn, this has provided customers with increased retailer and product choice over time, as well as stable electricity prices.

A range of innovative retail products have continued to emerge in the New Zealand market, including:

• innovative pricing plans backed by online and mobile tools;
• tariffs aimed at specific consumer needs, such as flexibility, certainty or maximum discounts;

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109 New Zealand Electricity Authority – Electricity Market Performance 2015
• tariffs that pass through half-hourly spot prices
• a tariff that caps the energy component of prices for 5 years
• bundled products with telecommunications and internet services
• discounts for community services cardholders
• discounts for electric bike purchases
• products that inform the customer of their energy usage and credit position, using smart meters.

Recently, several small retailers have gained traction in the market due to new innovative ideas and offers and by targeting their business models towards different customer types:

• Flick has been operating for two years and is currently one of the fastest growing retailers in the market following a strong marketing campaign in 2015. Flick offers residential consumers a retail contract that provides electricity at wholesale prices. These prices are volatile so consumers assume the risk of prices rising when energy is scarce and the benefit when prices are low due to high electricity storage. To support this model, Flick offers customers personalised online tools to show how prices change, how a customer uses power, what they are paying and what they are saving.

• Ecotricity markets itself as being New Zealand’s only carbon zero certified, 100 per cent renewable electricity company. Ecotricity provides a carbon emissions calculator as well as information on owning an electric vehicle, such as running costs.

Much of this innovation has been enabled by the rollout of smart meters – the introduction of smart meters has been managed by electricity retailers without cost to government or customers. By 30 November 2016 over 73 per cent of customers had smart meters.110

Activity

Switching rates spiked following the introduction of the CSF, as shown in the following figure - in 2011 switching rates increased 28 per cent compared to the previous year.111 High customer switching rates have continued in subsequent years, and the EA recently noted that “New Zealand has one of the highest switching rates in the world”.112

The CSF also led to retailers becoming much more proactive in competing for customers, with an increase in the number of customers being directly approached by retailers increasing from 58 per cent in 2011 to 68 per cent in the two years following its introduction.113

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110 Electricity Authority, Briefing to the incoming Minister Hon Judith Collins, 22 December 2016, p24.


112 Electricity Authority, Briefing to the incoming Minister Hon Judith Collins, 22 December 2016, p22.

Experience

Overall, quantitative indicators suggest that the majority of residential customers in New Zealand are satisfied with their retailer. Based on surveys conducted in January 2014 and 2015, many of the measures of satisfaction are improving. Generally these metrics compare well against the Australian jurisdictions. The 2015 survey showed that:

- over 70 per cent of consumers were satisfied with their current electricity retailer and 15 per cent were indifferent, while 7 per cent were dissatisfied.
- 56 per cent of consumers believed the overall value for money was either excellent or good and another 32 per cent were neutral.
- almost 60 per cent of consumers rated switching retailers as very or fairly easy, and another 18 per cent were indifferent.
- 55 per cent of consumers surveyed were confident they have all the information needed to compare different offers, and 67 per cent were confident they would choose the best deal for their household.

Like Australia, electricity customers in New Zealand sit along a spectrum in terms of desire to engage in the electricity market. Currently, retailers appear to be catering more towards the engaged customers. While this enables such customers to have a wider choice in the way they manage their bills, additional choices and complicated pricing plans can add costs for those that do not want to have a high degree of engagement. Fewer options exist for these customers that simply want access to low cost electricity.

Retail margins

In the residential market, gross margins in New Zealand vary from NZ$0.297/kWh to NZ$0.605/kWh. The highest gross margins reside with historic incumbencies and range from NZ$0.485/kWh to NZ$0.605/kWh, with an average of NZ$0.553/kWh. For large, non-incumbencies the gross margin across traditional retailers ranges from NZ$0.415/kWh to $0.525/kWh with an average of...
NZ$0.491/kWh. The analysis for smaller, “fighting brands” reveals a very different story with the gross margin varying from NZ$0.297/kWh to NZ$0.428/kWh, and an average of NZ$0.410/kWh.

The above analysis highlights that:

- incumbency retailer margins are high, hence retention strategies are highly desirable / profitable;
- large retailers competing in non-incumbent network areas need to reduce their margins by an average of NZ$0.60/kWh to entice customers. They also use one-off switch incentives (e.g. $100 cash back, one month’s free power etc.);
- the major retailers use ‘fighting brands’ to offer cheaper tariffs; and
- retailers without an incumbent base do not have high margin customers to assist the recovery of their cost to serve/contribute to profitability.

Innovation and market evolution

The outlook for the New Zealand retail market is positive and the platform exists for increased innovation and consumer benefits emerging in the market. The government awareness campaign has assisted in creating a highly active and knowledgeable customer base.

New Zealand has been an international leader not only in switching rates and customer engagement but also innovation. Retailers continue to innovate in the way they engage with and provide information to customers. Options for pricing structures and plans continues to increase, as discussed above. Incentives to sign up with a new retailer are also more readily available. Retailers continue to improve websites and mobile apps to help customers to better monitor and manage their usage.

While recognising the benefits of the retail market in New Zealand, it is also important to understand that the achievement of such benefits depends on the customer actively engaging in the market and searching for the best deal. Hence the onus is on the customer to ensure they are getting the right outcomes from the market.
A.7 Norway

<table>
<thead>
<tr>
<th>Key metrics and characteristics</th>
<th>Electricity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year FRC was introduced</td>
<td>1996</td>
</tr>
<tr>
<td>Year price regulation was removed</td>
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<td>No. of small customers (millions) (2014)</td>
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<td>No. of retailers</td>
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<tr>
<td>Market share of 3 largest retailers</td>
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<tr>
<td>Switching rate</td>
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</tr>
<tr>
<td>Average consumption (kWh/year)</td>
<td>15,324</td>
</tr>
</tbody>
</table>

A.7.1 Brief history of retail contestability

The Energy Act of 1990 provided the basis for wholesale and retail competition in the Norwegian electricity market. While households were able to switch supplier from this time, it was initially very expensive because hourly meters were required. The development of customer load profiles some years later made switching easier.

NVE is the independent regulatory authority for the electricity market in Norway. There are no regulated prices. Customers who have not chosen a supplier are served by their network company for the first six weeks (supplier of last resort) at a maximum price based on spot prices plus a margin. After six weeks the supplier of last resort sets the price “so that customers are provided with an incentive to find a supplier in the energy market”.

NVE notes that it “considers active, well-informed consumers to be key for the Norwegian retail market”.

The competitive retail market is underpinned by a competitive, liquid wholesale market. A number of measures are being implemented to encourage competition and increase efficiency in the retail market:

- In 2015 a voluntary combined billing regime was introduced – known as the customer centric supplier model - and NVE have indicated that it will become mandatory. This aims to reduce barriers to switching by removing the current anomaly where prior to switching away from their incumbent retailer customers typically receive just one bill each billing period, while after they switch they receive two bills – one from the network business and one from the retailer. The combined billing means customers will receive one bill, from their retailer.

- Smart hourly metering, to be rolled out by 1 January 2019.

114 National Report 2016, Norway p.31
115 National Report 2016, Norway p.28
116 NVEs leverandørskifteundersøkelse, 4. kvartal 2015, Norway, p. 4, https://www.nve.no/Media/3984/4-kvartal-2015-hovedtall-fra-nve-leverand%C3%B8rskifteunders%C3%B8kelse_osb_v2.pdf
A national point of data management (Elhub) is being implemented in 2017 – this data hub will standardize the exchange of hourly metering data.

Vulnerable customers are protected via the general welfare system rather than energy-specific legislation. If social services have guaranteed a customer’s payment, disconnection is prohibited.

Given the similarities between the Nordic markets, and efforts of the Nordic regulators (NordREG) to harmonise market processes across the Nordic region, there is a reasonable degree of inter-market competition. Although retailers cannot treat the Nordic region as a single market, the Nordic market does represent a bigger opportunity than the sum of its parts, and this has led to stronger competitive growth than would otherwise have been the case.

A.7.2 Market structure and governance arrangements

There are 140 businesses with electricity supply (retail) licenses, plus an additional 146 distribution businesses, which can also provide retail services. Distribution businesses with more than 100,000 customers are required to be legally and functionally unbundled – in 2015 seven distribution businesses fell into this category (57% of total connected customers), while another 139 were smaller. The dominant retailer within a network area is most often a vertically integrated supplier or a supplier within the same corporation as the distribution business. On average, the dominant supplier has a market share of about 70% of residential customers within its own network area.

In 2016 the Energy Act was amended to require legal and functional separation of all distribution businesses by 2021. Currently all distribution businesses are subject to regulations concerning neutral and non-discriminatory behaviour in matters such as information, customer switching, metering and billing.

![Market share of largest 3 retailers](source:VaasaETT)

The Ministry of Petroleum and Energy (MPE) manages, among other things, water and hydropower resources and other domestic energy sources. It also acts as the owner of Statnett, the transmission system operator.

The Norwegian Water Resources and Energy Directorate (NVE) is a subordinate agency of the MPE. The NVE’s main statutory objective is to promote social and economic development through an efficient and environmentally sound energy production, as well as promoting efficient and reliable transmission, distribution, trade and efficient use of energy. NVE is an independent regulatory authority. It has the authority to issue regulations on economic and technical reporting, network

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**Note:**


A.7.3 Price comparison tools

In order to provide customers with adequate information about the electricity market a new price comparison tool (PCT) was developed by the Norwegian Consumer Council under a Government mandate, and launched in 2015. NVE imposed regulations which enabled the collection of information necessary to create and maintain the website.\textsuperscript{120}

The Norwegian Competition Authority first provided a price comparison tool in 1998. However, it was found that outdated reporting criteria and design meant that only a limited number of the offers available in the market were displayed. In many cases, retailers chose to meet the reporting obligation only for their cheapest offers, while leaving more expensive offers out of the tool. This resulted in information asymmetries regarding the prices offered by retailers, and put consumers at a disadvantage.

A study of market efficiency commissioned by NVE found that 62\% of consumers were on contracts that were not available through the previous PCT, and that these contracts were on average more expensive. As consumers were suffering from insufficient comparability and transparency, this adversely affected market efficiency. Moreover, price statistics collected by a number of institutions, e.g. NVE, the national statistical bureau etc., were based on prices that were not representative of what most consumers were paying.

The new PCT has significantly improved the ability of Norwegian consumers to compare electricity offers, by presenting all electricity offers available in the market through a user-friendly web-site.

Stakeholders consulted during the design phase raised some key concerns with regard to the possibility for retailers to define new offers and price structures when deciding on definitions for reporting purposes. Retailers were concerned that all individually-concluded agreements with consumers on the basis of an offered price would have to be separately reported in the tool. Consequently the burden of reporting would limit their ability to offer individual pricing to their customers. NVE balanced these concerns with the need for comparability in the PCT, allowing individual pricing (depending on consumer specifics) within each offer.

In addition to providing a price comparison tool, NVE publishes a weekly overview of retail market prices, comparing the average price of the three standard types of contracts in the past week. NVE also presents an estimation of the average accumulated electricity cost for customers for the year. NVE also publishes a quarterly report on the energy market.\textsuperscript{121}

A.7.4 Customer and market outcomes

The ACER retail competition index (ARCI) assesses the relative level of competition in retail energy markets across EU member states and Norway. This index suggests that Norway has one of the...
more competitive retail electricity markets for household consumers in this region, together with other Nordic countries, Great Britain and the Netherlands.\textsuperscript{122}

\textbf{Awareness}

In Nordic electricity markets, the awareness and interest of small customers is relatively high. For instance, the process of switching retailer is perceived to be relatively easy. Since 2010 the perceived ease of switching has increased by 10 per cent in Norway.

Norway’s high incidence of relatively transparent market based competitive prices (where prices are often simply the wholesale price average for a given month plus a commission) has increased its perceived price transparency and satisfaction, which in turn has supported a higher level of awareness and interest.

The EU market performance indicator (MPI) which ranks different markets includes a component reflecting the ease of comparing goods and services. In Norway the average MPI score of customer awareness and interest is approximately 7.1, well above the EU average of 6.5.\textsuperscript{123}

\textbf{Diversity}

The Nordic markets are by any standards relatively diverse, largely because of the extremely large number of players in each market, but also because of the diversity of strategies, the innovativeness and need to differentiate in the market. This is also assisted by a relative ease of access to energy and the market in general, higher average consumption levels, relatively high awareness levels, and higher switching levels. This enables a diversity of segmented offers to find a place in the market.

There are a large number of electricity retailers in Norway, together with a diverse range of products offered. In 2014 and 2015, on average there were 5 offers available per retail in Oslo.\textsuperscript{124}

Most contracts can be divided into three groups: spot price, standard variable price and fixed price contracts. Spot price contracts are based on daily wholesale spot prices with a mark-up that consists of a variable and in some cases a fixed yearly fee. For standard variable price contracts, the price and duration are set by the retailer. Fixed priced contracts are based on an agreement to deliver electricity at a fixed price for the duration of the contract.

Currently, customers with a spot price contract are billed using an average daily, weekly or monthly price. However, all customers are expected to have a smart meter in place by 2019, in which case this approach may change.

There are substantial savings opportunities from switching (almost 20 per cent); and high price dispersion (AUD 1,931).

\textsuperscript{122} The ACRI is a composite index comprised of market structure indicators (such as market concentration); market conduct indicators (such as switching activity); and competition performance indicators (such as consumer satisfaction. See ACER/CEER, Annual report on the results of monitoring the internal electricity and gas markets in 2015, retail markets, November 2016, p32. http://www.ceer.eu/portal/page/portal/EER_HOME/EER_WORKSHOP/CEER-ERGEG%20EVENTS/CROSS_SECTORAL/ACER_CEER_MMR_2016/MMR%202015%20-%20%20RETAIL_final.pdf

\textsuperscript{123} [Check source]

\textsuperscript{124} ACER/CEER, Annual report on the results of monitoring the internal electricity and gas markets in 2015, retail markets, November 2016, p68.
Activity

Switching rates are relatively high in Norway - 13.7 per cent for household customers in 2015.\textsuperscript{125} This was a slight increase on 2014. It is too early to assess whether the new price comparison tool has had an impact on switching behaviour.

Switching rates have generally increased over time, but have shown some volatility as shown in the following figure. The volatility reflects a number of factors including the volatility of wholesale prices (which are reflected more in end-user prices), price rise change announcements, sudden new entrant activities, negative media publicity and other market events, as well as by cyclical influences such as seasonality (more activity in winter).

Figure 23  Historical switching rates in Norway

![Switching rates graph](Norway)


While switching rates have increased, most incumbent suppliers still have a dominant position in their local network area - on average, about 70 per cent of residential customers in their own area. The move to single billing (the customer centric supplier model) is one strategy which aims to reduce this dominance.

Customer Experience

The European Commission undertakes a European consumer market monitoring survey, which calculates a market performance index (MPI) for European countries taking into account five key aspects of consumer experience.\textsuperscript{126}

The most recent survey shows that Norway had an MPI of 77.5 points for electricity services, higher than the European average of 75.3 points and an increase of 2.8 points on the previous survey.\textsuperscript{127}

The vast majority, in fact over 90 per cent of Nordic customers, have not had negative experiences with their energy retailer or with the service they provided.

Norway rated a little over 6 out of 10 in relation to the ability of consumers to compare prices easily. Scores for other EU countries ranged between 5 and 8 for electricity. While there are some


\textsuperscript{126} These are comparability, trust, expectations, choice and overall detriment.

exceptions, generally the ease of comparison was inversely related to the number of offers in the market.

**Retail margins**

Compared to other European markets that have lifted price controls (e.g. the Netherlands and Great Britain), Norway has a relatively low mark-up between wholesale prices and the energy component of the retail electricity price in the household segment.

**Figure 24** Mark-up and relationship between wholesale prices and the energy component of the retail electricity price in the household segment 2008-2015


**Innovation and market evolution**

The Nordic energy markets are some of the most mature and innovative in the world, and retailers have been creating many new offerings (products and services) and models. These include:

- Demand response and energy efficiency schemes;
- Tariffs based on the Nordic hourly spot price, and adjusting household demand through controlling customers’ heating according to the spot price;
- Services that allow customers to be either more pro-active or less, depending on what they prefer;
- Green energy products
- Individualised tariff structures.

Together with the other Nordic countries, Norway is well placed to experience further innovation in the future, given the level of competition, awareness and activity in the market, and the continuing emergence of new products and services.
A.8 Ontario

<table>
<thead>
<tr>
<th>Key metrics and characteristics</th>
<th>Electricity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year FRC was introduced</td>
<td>2002</td>
</tr>
<tr>
<td>Year price regulation was removed</td>
<td>2002/2005</td>
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<tr>
<td>No. of small customers (millions)</td>
<td>4.9</td>
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<tr>
<td>No. of retailers</td>
<td>20</td>
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<td>Market share of 3 largest retailers</td>
<td>&gt;80%</td>
</tr>
<tr>
<td>Switching rate</td>
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<tr>
<td>Proportion of customers on default rate (2017)</td>
<td>94%</td>
</tr>
<tr>
<td>Average consumption (kWh/year) (residential)</td>
<td>9,000</td>
</tr>
</tbody>
</table>

A.8.1 Brief history of retail contestability

A competitive retail electricity market was introduced in Ontario in May 2002, at the same time as the competitive wholesale market opened. There was no phase-in of competition: retail choice was available to all consumers at the same time, and there was no initial regulated price. Customers had the option of entering into a contract with a competitive electricity provider for the energy component of their electricity, or remain with their default provider – their local government-owned, vertically integrated utility. In either case, the utility continued to undertake the delivery and billing functions.

The new arrangements allowed the energy component of the bill to better reflect the wholesale spot price. Almost 1 million customers opted to take out a fixed price contract with a competitive provider in the first few months after the market opened. The remaining 3.4 million customers continued to purchase electricity via their local utility, which passed through a smoothed spot price.

Seven months later, in December 2002, the Government effectively halted the deregulation process when it enacted the Electricity Pricing and Conservation and Supply Act (EPCS). The EPCS Act capped prices for all low-volume customers and other designated customer at 4.3 cents per kilowatt hour. This was in response to significant spot price volatility in the few months that the competitive markets had been in operation, where the wholesale price had ranged from 3.01 to 6.2 cents per kWh. The price volatility was caused by tightening supply in the wholesale market and high demand as a result of a hot, dry summer.

Concern about a lack of generation also led to re-intervention in the wholesale market. Ontario now has a ‘hybrid’ market whereby a real-time spot price is set every 5 minutes, but most new generation is supported by long-term government-backed contracts that specifies or regulates rates. The retail price freeze remained in place for a number of years while the Ontario Energy Board (OEB) was tasked with designing a new, regulated rate structure. Transmission and distribution rates were also subject to a price freeze over the same period.

128 http://www.ontarioenergyboard.ca/OEB/Consumers/Energy+Contracts/List+of+Retailers+and+Marketers#electricity
130 Clause 79.4.
131 The wholesale market is essentially a combination of an energy market and a capacity market. While the wholesale market was initially intended to work as an energy market, the lack of generation capacity and associated spot price volatility led the Ontario Government to enter into contracts with generators in order to encourage new capacity into the market.
A.8.2 Market structure and governance arrangements

Generation is unbundled from transmission and distribution, however local distribution companies still perform a retail function. In 2015, there were 90 licenced electricity distributors in Ontario. The largest of these serves about 25% of Ontario’s customer base. Overall, local distributors serve approximately 94% of small customers.

There are 20 licensed competitive electricity retailers, however not all of these may be active.

Provincial Governments an authorities in Canada provide electric utilities under their jurisdiction both policy guidance and policy objectives to fulfil federal responsibilities, to set policy direction with respect to electricity market structure, pricing and utility regulation.

The OEB’s guiding objectives are set out in the Ontario Energy Board Act, 1998. Their objectives include, amongst other things:

- To protect the interests of consumers with respect to prices and the adequacy, reliability and quality of electricity service; and
- To promote economic efficiency and cost effectiveness in the generation, transmission, distribution, sale and demand management of electricity and to facilitate the maintenance of a financially viable electricity industry.

In the electricity sector, the OEB sets transmission and distribution rates, as well as the rate for the Standard Supply Service (default rate) for distribution utilities that supply electricity directly to consumers.

A.8.3 Re-introducing price regulation

On 1 April 2005, the OEB re-introduced price regulation, with the objective of, among other things, providing stable and predictable electricity pricing. There are two types of tariffs set under the regulated pricing plan (RPP), which apply to the energy component of the bill:

- a time-of-use (TOU) tariff; and
- a tiered price, which is essentially an inclining block tariff, with the threshold set at 600kWh per month over summer months and 1,000kWh per month over winter months.

The RPP applies to customers that obtain their electricity from their local utility, who are the default supplier. Competitive electricity providers are not subject to the regulated rate. All customers pay the same amount for:

- delivery, which includes the network charges and a customer service charge relating to services such as meter reading, billing, customer service and account maintenance and
- regulatory costs, which cover costs such as administrative fees.

In August 2010 the OEB issued a determination to mandate TOU pricing for RPP customers. This followed the regulated roll out of smart meters to all customers. As a consequence, more than 90% of customers on a RPP are on a TOU tariff.132

Prices are adjusted every six months, based on updated wholesale market forecasts and any accumulated differences between the amount that consumers paid for electricity and the amount paid to generators in the previous period. This latter component is called the “Global Adjustment” and functions to adjust for the difference between the contracted or regulated prices paid to generators and the market prices they would have received had they not been subject to regulation or contractual arrangements. Customers with a competitive contract are also subject to the Global Adjustment.

132 See [http://www.ontarioenergyboard.ca/OEB/Consumers/Electricity/Electricity+Prices](http://www.ontarioenergyboard.ca/OEB/Consumers/Electricity/Electricity+Prices)
A.8.4 Customer protections

A number of reforms have been implemented in Ontario since price regulation was re-introduced. In 2010, the *Energy Consumer Protection Act* (ECPA) was introduced. Part II of the ECPS is designed to “protect low-volume energy consumers from unfair practices and ensure they have the information they need to make informed decisions about retail electricity and natural gas contracts”. These reforms were intended to protect customers considering entering into a competitive contract.

Many of these reforms are already present in Victoria. However, key components of the ECPA that are different from Victoria are:

- Requiring an energy retail to provide an OEB-approved Disclosure Statement when offering a retail contract. The customer must acknowledge receipt of the contract or else the contract is invalid.
- Customers are required to “verify” a contract in a follow-up call using a script approved by the OEB. The contract becomes invalid if not verified, however this process is not required where the consumer initiated the contract, responded to direct mail or signed up online.
- Consumers have a number of cancellation rights, for example if they move or if the energy retailer has committed an unfair practice. An electricity contract can also be cancelled within 30 days of receiving the first bill.

A review of Part II of the ECSP took place in 2014-15 by the OEB. The review recommended 14 measures be adopted to further enhance consumer protections.133

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**Customer protections in New York**

At the beginning of 2016, the New York Public Service Commission (the Commission) announced a number of measures to increase protections for energy consumers, arising from concerns regarding unfair business practices by energy service companies.134 To strengthen regulatory oversight and enhance consumer protections, the Commission implemented, among other things, a requirement that energy service companies could only enroll new small energy customers if they met at least one of the following conditions:

- The enrollment contract guarantees that the customer will not pay more compared to customers of receiving the same services from a utility.
- Contract for an electricity product must be generated and provided from a minimum of 30% renewable resources.

These measures were to begin ten calendar days after the date of the Order.

Energy supply companies disputed a number of requirements set out in the Order, particularly the short timeframe with which they were required to comply. During subsequent court proceedings, the judge found that the Commission was pushing to put the Order into effect while leaving many questions unanswered. The judge considered that energy suppliers had not been afforded due process, given the short time in which to implement what amounted to a major restructuring of the retail energy market.

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A.8.5 Customer and market outcomes

A review of the market conducted in 2014-15 suggests that retail market competition has not been of great benefit to the majority of customers.\textsuperscript{135}

**Awareness**

The OEB has found that customer awareness and understanding of energy markets is low. Customers struggle to understand their choices and compare prices. This is exacerbated by the way in which bills are presented.

Around one third of customers with a competitive supply are not aware that they are on a competitive contract. Typically, the types of customers that fall into this category are consumers with a low income and are less likely to have a university degree. These customers are also less familiar with retail energy markets and are less confident when it comes to entering into a contract.

**Diversity**

As of 2013, there were thirteen active competitive electricity providers in Ontario, eleven of which offer both electricity and gas. Competitive providers offer their customers an alternative to the standard TOU prices paid by the majority of residential customers on the RPP. This includes:

- various price structures, including long-term fixed rates, variable prices and tiered prices
- energy from renewable or alternative sources
- products such as “smart” thermostats
- dual fuel discounts.

**Activity**

The retail electricity market has been in decline in terms of customer activity. While close to a quarter of electricity customers switched to a competitive provider when the market initially opened, this share had declined to 16% in 2006 and only 6.3% in 2013. This suggests that customers are not finding value for money in the competitive market.

The majority of residential consumers that entered into a contract did so to save money. Where these consumers believe they have saved money, they are satisfied with their contract. However, research conducted by the OEB suggests that residential customers are highly unlikely to save money by switching to a competitive retailer, and that residential customers with contracts have actually paid more that those who purchase electricity from their distributor. Further, high cost is the most common reason given for cancellation or non-renewal of a contract.

**Customer Experience**

Almost 60 per cent of customers who signed a contract that required verification did not complete the process. The OEB noted this could indicate that customers feel pressured when presented with a contract at the door, or they cannot readily assess the value of the contract to them on the spot. Of contracts that were signed, an increasing number have used the 10 day cooling off period to cancel them, from 4% of contracts in 2010 to 7% in 2011 to 18% in 2013.\textsuperscript{136}

\textsuperscript{135} This section draws on findings by the OEB set out in Report to the Minister of Energy – Consumers Come First: A Report of the Ontario Energy Board on the Effectiveness of Part II of the Energy Consumer Protection Act, 2010, May 28, 2015.

However, successful renewals of electricity contracts have risen. Around 47% of renewal packages were successful in 2013, up on previous years. Unsuccessful renewals fell from 97% in 2009 to 47% in 2013.

These statistics are consistent with the OEB’s finding that customers have different views on the value of choice in the electricity market:

- More than 80% of current contract holders surveyed place value on the opportunity to enter into a competitive energy retail contract
- A similar number of former contract holders who returned to the default supplier also value the ability to choose
- Less than 50% of residential non-contract holders and unaware contract holders are interested in being able to enter into a competitive retail contract.

This suggests that there is a proportion of customers that, once persuaded to enter into a retail contract, do see some value and are willing to continue sourcing energy competitively.

**Retail margins**

As discussed above, the regulated time-of-use (TOU) charges are based on forecast of the wholesale market price for electricity, known as Hourly Ontario Energy Price (HOEP). The mark-up between the HOEP and regulated price (RPP) is the Global Adjustment charge. The mark-up varies significantly as the HOEP changes. Average TUO charges paid by a typical home-owner with average consumption of 750kWh per month is 11.15¢/kWh. Average HOEP in 2017 is 2.13¢/kWh while the current mark-up is 8.98¢/kWh.

**Innovation**

The Ontario market does not appear to be conducive to innovation by competitive providers. Competitive providers “feel the regulatory and administrative burdens placed on them are intended to force them out of the market”. They consider the process to sign a contract is too cumbersome and likely to dissuade customers, and that the high cost of compliance is being passed on to consumers. The reduction in the number of customers on a competitive energy contract would appear to support this concern.

Competitive providers also consider that their ability to offer innovative new products is restricted, and that ultimately this leads to less choice for customers.

The regulator has developed an “RPP Roadmap”, which sets out a plan to ensure the RPP “is able to meet the challenges of the future”. The Roadmap has two main components:

- Implementing price pilots, including critical peak pricing,
- Empowering consumers by enhancing energy literacy and non-price tools such as piloting automated load control technology and behavioral interventions.

While these options may be somewhat innovative, it is not clear to what extent these options will provide greater choice for customers, or whether they will simply change the nature of the only product that RPP customers are able to access. The OEB notes that the aim of the pricing pilots is to examine “alternatives and choice for consumers in addition to or as a replacement for the current TOU regime”.

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Whether or not these trials lead to any form of choice for consumers is yet to be seen. Further, innovation is currently only being driven by the regulator through the design of TOU tariffs and other regulated products. Innovation is not being driven by the market.
A.9 Texas

<table>
<thead>
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<th>Key metrics and characteristics</th>
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<tbody>
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<tr>
<td>Year price regulation was removed</td>
<td>2007</td>
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<td>No. of small customers (millions)</td>
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<td>No. of retailers</td>
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<td>Switching rate</td>
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<td>Average consumption (kWh/year)</td>
<td>14,016</td>
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<tr>
<td>Proportion of customers with incumbent supplier</td>
<td>8%</td>
</tr>
</tbody>
</table>

Table source140

A.9.1 Brief history of retail competition

Texas has an interconnected transmission network which supplies about 90 per cent of the state’s load. The system is relatively isolated from other markets, with limited links to both the main US Eastern interconnection system and to the Mexican system.

The competitive wholesale market in Texas commenced in 2001, and full retail competition was introduced in 2002. A number of policies have contributed to the development of retail competition in Texas, including:

- the absence of a default supplier, so customers had to make a positive decision to choose a supplier;
- a ‘price-to-beat’ tariff for incumbents for the initial stages of retail competition;
- efforts by PUCT to educate customers via a ‘price to compare’ website;
- a single data hub which facilitates efficient switching; and
- a process for switching which is fast and straightforward for customers, who can request to switch retailer in the morning and usually be switched by the afternoon.141

In May 2007, PUCT issued a rulemaking authorising the utilities to install smart meters for residential customers.

A.9.2 Market structure and governance arrangements

Like in Victoria, retail operations in Texas are fully separated from network functions. Distribution businesses are only able to perform distribution network services – they cannot be involved in the sale of energy or retail services.

There are over 100 retailers in the market, although not all retailers operate in every geographic area. The largest three retailers have less than a 50% market share.

140 http://puc.texas.gov/industry/electric/reports/scope/2017/2017scope_elec.pdf

141 However, we note that while the system and market operator (the Electricity Reliability Council of Texas or ERCOT) notifies the incumbent retailer of a switch and confirms to the customer, it has no responsibility for checking whether the switch is contractually feasible. If a customer signs a new contract while already having a contract, the retailers and the customer have to sort out the situation.
Since Texas only has very limited interconnections with other networks, the Federal Energy Regulatory Commission (FERC) has no jurisdiction over the electricity system; oversight is instead provided by the State legislature and the Public Utility Commission of Texas (PUCT).

PUCT regulates electricity, as well as a number of other sectors. They also offer customer assistance in resolving consumer complaints. Their focus is on the oversight of competitive markets and compliance enforcement of statutes and rules for the electricity and telecommunications industries. The PUCT also regulates transmission and distribution utilities.

A.9.3 Price-to-beat tariff

When retail competition was introduced, incumbent retailers were initially only able to offer a “price-to-beat” tariff in their traditional service territory. The price was determined by the regulator PUCT, and was designed to be high enough to encourage competition and new entrants in the retail market. Incumbents could not undercut the price-to-beat in their own area but were free to seek customers in other companies’ areas.142

The price-to-beat regulation was designed to be in place until the incumbent lost 40 per cent or more of the residential and small commercial load, or until January 2005 (whichever came first). It ended up applying for 5 years, until January 2007.

A.9.4 PUCT education program

The PUCT engages with residential and small commercial electric customers about retail competition through its “Texas Electric Choice” campaign, and also informs customers about energy conservation opportunities through its “Power to Save Texas” campaign.

The “Texas Electric Choice” campaign began in February 2001 with the goal of educating Texans about the changes and choices in the retail electric market. The PowerToChoose.org website, and its Spanish-language counterpart PoderDeEscoger.org, provides a simple, one-stop shop portal for Texans who live in a service territory open to customer choice to enter in their zip code and browse through the numerous plans offered by different retailers.

In addition to the “Texas Electric Choice” campaign and the PowerToChoose website, the PUCT has a state-wide initiative, “Power to Save Texas”, together with its parallel Spanish-language initiative, “Poder de Ahorrar”, which educates Texans about conserving energy during the summer peak times of 3 p.m. to 7 p.m., when the demand for electricity tends to be the highest. The PowerToSaveTexas.org website, and its Spanish-language counterpart, PoderDeAhorrarTexas.org, provide Texans with energy saving tips for homes and businesses.

Campaign Outreach

PowerToChoose.org and its Spanish-language counterpart, PoderDeEscoger.org, have proven valuable in educating customers about customer choice in the electricity market. The PUCT conducted a number of activities to further promote the state’s official electric choice website through social media, community events, trade shows, and expos. From September 1, 2015 to August 31, 2016, nearly a million people visited the PowerToChoose.org and PoderDeEscoger.org websites.

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142 One company, Reliant, reportedly lost 600,000 of its legacy customers in the Houston area while at the same time they won 550,000 in other areas.
A.9.5 Customer and market outcomes

The evidence suggests that customers in Texas have benefited substantially from retail competition, with high levels of activity and a broad range of products being offered in the market, though there is also evidence of a relatively high level of customer complaints.

Awareness

Awareness and interest in the competitive market is relatively high in Texas, and has been supported by the information campaigns implemented by the PUCT.

Diversity

There are a large number of retailers operating in the Texas retail market, offering a broad range of products. As of September 2016, 109 retailers were operating in the competitive market, offering 440 different products. Of these, 97 related to products which support electricity generated from 100 per cent renewable sources.143

A common product that most, if not all, retailers offer is a “month-to-month” product which allows customers to switch at short notice and generally allows retailers to change price at 45 days’ notice (unless the price is ex-ante defined as being related to an index).

The Texas market is characterised by innovative tariff approaches and service models such as TXU Energy’s offerings of free electricity in the morning (7-10am) and evening (7-10pm) and a moving service where it provides TV, internet and phone services alongside an electricity service. Stream Energy offers a Free Energy Program whereby recommending friends to Stream Energy earns customers credits which then reduce the cost of the their electricity bill. 4Change Energy donates 4 per cent of its profit to charity. Just Energy offers an “all you can eat” service whereby customers pay a fixed rate for a year of electricity during which period they can use as much energy as they want without paying more. These offers are in addition to a wide range of energy efficiency and smart home offerings, including smart thermostats, remote home access and much more.

Activity

The Texan market shows a high level of activity, as demonstrated by a high switching rate (see figure below) – in 2016, the average aggregated switching rate was 16%.

Figure 25: Historical switching rates – Texas

![Historical switching rates - Texas](image)


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143 PUCT, Report to the 85th Texas Legislature, Scope of competition in electric markets in Texas, January 2017, p2.

144 Similar to Sumo Energy and Origin Energy in Australia.
By March 2016, 92 per cent of all customers had exercised their ability to switch providers.\textsuperscript{145} Compared to other North American states, Texas has been ranked first on the Annual Baseline Assessment of Choice in Canada and the United States (ABACCUS), as shown in the following figure. ABACCUS is “a scorecard on the performance of the U.S. states and Canadian provinces in creating healthy retail electricity competition”. The following figure also highlights the proportion of customers in each state who have switched to a competitive electricity service.

Figure 26: Residential customer switching to competitive electric service\textsuperscript{146}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure26}
\caption{Customer switching and ABACCUS score}
\end{figure}

\textbf{Experience}

Texans are relatively satisfied with their current electricity company – 66 per cent of customers have indicated they are satisfied or very satisfied with their overall service.\textsuperscript{147}

One area where experience is not as favourable is the number of customer complaints, which jumped sharply following deregulation of the retail market in 2002 and peaked in 2003. Since 2009 complaints have been declining.

The Texas Coalition for Affordable Power suggests the increase in complaints was due to several factors such as population increases and the rise of the internet and the online presence of electricity providers (which has facilitated the complaint process).\textsuperscript{148} The drop in the number of complaints since 2009 roughly correlates to changes in the natural gas commodity market.

\textsuperscript{145} PUCT, Report to the 85\textsuperscript{th} Texas Legislature, Scope of competition in electric markets in Texas, January 2017, p1.
\textsuperscript{147} UMR Research (2014) Electricity Authority: International comparison of activity, behaviour and attitudes towards electricity industry – A quantitative study, August 2014.
\textsuperscript{148} Texas Coalition for Affordable Power, 2014, Deregulated Electricity in Texas: A History of Retail Competition, p. 79.
Over the last two years, the most common form of complaint submitted to the PUCT relates to electricity bills and the provision of service. In previous years complaints have also centered on problems caused by infrastructure issues.

**Retail margins**

In Texas in 2015, the retailer net margin was 16%, while the gross margin was €377 (per annum for an average residential customer). However, it should be noted that the high level of mark-ups is likely due to the high level of consumption statewide.

**Innovation and evolution of the market**

The Texas market appears well positioned for the future. It is an innovative market in terms of new offerings and models, has high levels of consumption, activity, awareness and interest, and as a result remains attractive for new entrants.
A.10  Australian mortgage sector

A.10.1  Brief history of competition in the finance sector

The Australian financial sector was substantially deregulated in the 1980s. The removal of restrictions on banks allowed them to compete more effectively with non-bank financial institutions in providing housing mortgages. It also opened the mortgage market to international competition and international sources of credit.

Competition in the mortgage sector increased in the early 1990s with the emergence of new non-bank lenders such as Aussie Home Loans, funded by securitisation of their mortgages, which captured a significant part of the market. There was also an increased role for specialist mortgage brokers. It led to a range of innovative mortgage products such as reverse mortgages, offset accounts, and redraw facilities.

A.10.2  Mandatory mortgage comparison rate

Many commentators have recognised that the ability for consumers to compare prices and to switch providers is important in encouraging a competitive banking sector.149

The mandatory comparison rate was first introduced on 1 July 2003 as part of the Uniform Consumer Credit Code (now superseded by the National Credit Code). The comparison rate is a tool to help customers identify the true cost of a loan, so that they can compare different product offerings more easily. It factors in the interest rate, fees and charges and displays a single percentage rate that can be used to compare various loans from different lenders.

Part 10 of the National Credit Code requires credit providers to include a comparison rate when they advertise fixed term credit which is for (or mainly for) personal domestic or household purposes.

A.10.3  Customer and market outcomes

Research conducted into the effectiveness of mandatory mortgage comparison rates found only 12.5 per cent of Australians surveyed fully understood what a comparison rate was. However, once told, the majority found it a useful tool.

The research also found that public information and consumer campaigns were needed to improve awareness and understanding of the measure and increase its effectiveness.150

In 2007 a consumer advocate suggested that while the bulk of consumers didn’t really understand what the comparison rate actually indicates, it had forced lenders to be more honest.151

While the mortgage comparison rate is a useful tool for comparing the cost of different loans, it doesn’t provide all the information needed to compare loan products. In particular:

- The comparison rate does not include fees and charges that may occur or are based on some future “event” - such as redraw, early termination fees, progress payments or fees charged by some institutions when you decide to switch lenders. In addition, government and statutory charges are not included - as these are standard irrespective of the type of loan or who the lender is.

151 Ibid.
• The comparison rate does not take into account all the factors that should be considered when comparing different loan offers from different financial institutions / lenders. Benefits such as redraw, 100% offset and ability to make additional repayments / flexible repayment periods are not included within a Comparison Rate - but they can make a difference to the attractiveness of a loan.

A review of the comparison rate in 2008 found lenders used a range of strategies to avoid or manipulate the comparison rate, such as:

• restructuring their products so that some of the fees, such as deferred establishment and discharge fees, came under the heading of 'non-ascertainable fees' and did not have to be included in the comparison rate;

• avoiding any reference to interest rates in their advertising. As long as they did not mention the rate on the product they did not have to include the comparison rate.

• quoting a reference rate, such as 'rates start from 7 per cent', which did not carry the obligation to include a comparison rate;

• getting brokers or mortgage managers, who were not covered by the Credit Code, to advertise their products.  

The House of Representatives reviewed the mortgage comparison rate as part of its 2008 Inquiry into competition in the banking sector. Consumer groups submitted that the mandatory comparison rate had become less useful due to the increase in exit fees, which were not included in the rate.

The Inquiry concluded that “non-standardised and unclear information is preventing people from being able to shop around effectively because they cannot compare terms, conditions and costings easily.”

The Inquiry recommended that a standardized “key facts” document be developed for mortgage products, based on a UK model.

A.10.4 Key facts sheet

Following the Inquiry’s recommendation, a new requirement was put in place from 1 January 2012. Licensed credit providers are required to make a personalised Key Facts Sheet in respect of ‘standard home loans’ available to consumers on request.

Home Loan Key Fact Sheets provide information to compare different loans, including:

• Whether any one-off establishment fees apply to that loan

• Whether there are any ongoing fees for that loan

• What the repayments would be each month and each year

• The total amount to be paid back over the life of the loan

The key facts sheet improves on the comparison rate because it includes more characteristics of the loans, and it uses information that is specific to the individual customer and their intended loan. Nonetheless, it still has some limitations. For example, it applies only to standard home loans, the definition of which excludes loan contracts which involve ‘interest only’ payments for whatever period


or part variable and part fixed interest rates on the loan balance (commonly described as ‘split loans’). Furthermore, it is only a requirement where customers make a request.

A.10.5 Summary

Regulations in the home mortgage market have recognised the important role of price comparison tools in encouraging competition in the home mortgage market. Experience in that sector has shown that:

- There are difficulties where the comparison tool does not or cannot capture all the dimensions of a product. This includes both price dimensions (such as exit fees) and non-price dimensions (such as bundled products or services).
- Businesses may ‘game’ regulations by trying to avoid or manipulate price comparison requirements.
- While customers find comparison tools useful, there may not be wide knowledge of their existence.

Despite these shortcomings, banking sector regulators continue to see benefit in disclosure requirements that include standardized price comparison tools, so that customers are better able to compare different products and providers.
A.11 Other industries in Australia

This sections sets out how price monitoring is applied in industries other than energy in Australia.

A.11.1 Objectives of price monitoring

The design of a price monitoring regime will depend on the government’s objective for implementing price monitoring. This could be:

1. **As an instrument of regulation and compliance by a regulator**
   - The intent behind this objective is to put pressure on businesses to achieve acceptable outcomes in terms of key factors, such as prices, profits and service quality. The reporting process is used by the regulator to state publicly whether they are satisfied with the outcomes and whether further action, such as price control, is warranted.
   - The regulator can use the threat of more intrusive forms of regulation (which may be strengthened by public and government support generated by the regulator’s report) to persuade businesses to comply with the regulator’s formal or informal targets. In this context, monitoring could be viewed as a form of incentive regulation relying on public perceptions.

2. **As a means of observing and understanding the performance of a firm, industry or market**
   - Following deregulation, there may be some uncertainty whether competitive pressure will deliver efficient prices for customers. In other situations there may be suspicion about market abuse because of price volatility, a significant increase in price, or poor outcomes for customers.
   - In these situations, price monitoring could be employed as a way to provide a means of observing and understanding the performance of the business and the industry. It facilitates the systematic disclosure of information not readily available from other sources, such as reports produced by business. The intent of this type of monitoring is to provide an alternative form of oversight in circumstances where price regulation is likely, on balance, to be detrimental to the operation of the market, even though there is some degree of market power that might be exercised.

The distinction between these two forms of monitoring appears to be related to the strength of the regulatory threat and the willingness and capacity of the relevant regulator to act on that threat.

The former appears to be more appropriate for industries where businesses have monopoly characteristics and where the regulator may have the discretion to impose regulation (plus the credibility and resources to do so). The latter appears to be more appropriate in those industries open to competition but where there may be some concerns over the strength of competitive pressures in the market. Such concerns may be temporary in nature as the market transitions away from price regulation.

The design elements for any price monitoring regime are:
- Methodology for evaluating performance and prices
- The information that is needed to be collected
- The period over which price monitoring will occur (i.e. whether it is a transitional measure)
- The approach to reporting the information to stakeholders/consumers
- The ability of the regulator to take further action or raise concerns

Design of a price monitoring regime can vary significantly between different sectors and states.
A.11.2 Current Price Monitoring regimes in Australia

The table below identifies and provides a high level description of price monitoring regimes currently applied in utilities and infrastructure owners in Australia.

<table>
<thead>
<tr>
<th>Queensland Urban Retail Water Sector</th>
<th>The Queensland Competition Authority monitors the prices charged by retailers in south east Queensland for water and sewerage services. The objectives are to:</th>
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<tr>
<td></td>
<td>• provide information to customers about the costs and other factors underlying the provision of water and sewerage services</td>
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<td>• monitor the change in prices for water and sewerage services</td>
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<td>• monitor the revenues earned by the retailers against their total prudent and efficient costs</td>
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<td>• measure the returns earned by retailers against a benchmark Weighted Average Cost of Capital.</td>
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<td>To inform customers about costs, the QCA publishes the costs which underpin prices and conducts a review of these capital and operating costs (based on a sample of items). The review seeks to establish whether the costs are genuinely required (prudent) and as low as possible (efficient), including an assessment against a benchmark rate of return. Given the extensive nature of the analysis conducted, QCA reviews prices every 3 years.</td>
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| Container Stevedoring | The ACCC performs ongoing monitoring of prices, costs and profits of container stevedoring service providers pursuant to a Ministerial direction given in 1999, now operative under Part VIIA of the TPA. The ACCC does identify specific competition concerns and does make conclusions on the extent to which competition appears to be effective. However, it does not specifically state whether, in its view, prices are at efficient levels. |

| Airport Services | Prices and the quality of services at the four major leased federal airports—Sydney, Melbourne, Brisbane and Perth—continue to be monitored annually by the ACCC in accordance with the Airports Act 1996 and Competition and Consumer Act 2010. This includes an assessment of costs and profits. |

| Ports | In Victoria, NSW, SA and Queensland a price monitoring regime is applied to the charges set by port operators. The objective of these monitoring regimes is to test whether the operator is exercising market power in setting prices. The regulator does not have any specific enforcement powers but instead reports to the relevant Minister. Some regulators have adopted the approach of requiring port operators to justify their price increases where a price is shown to increase by more than CPI. For example, in its most recent price monitoring report where price increases were observed to be above CPI, ESCOSA examined information provided by Flinders Port as well as price movements that have occurred in other jurisdictions. |

| Telecommunications | The ACCC collects a range of information from telecommunications companies to monitor competition, market developments and inform its decisions. The Minister can also require the ACCC to monitor and report on various aspects of competition within the industry. In addition, the ACCC reports to the Minister on Telstra’s compliance with retail price controls imposed by the Minister. |

Following deregulation of retail electricity prices in the National Electricity Market, some state governments tasked the local regulator to conduct annual price monitoring. For example, the NSW Government has asked IPART to monitor competition for small customers in the retail electricity market following price deregulation on 1 July 2014. IPART only has the ability to recommend a more 154 Adelaide Airport reports on its pricing and quality of service outcomes under the second tier reporting system alongside Canberra, Darwin, Gold Coast and Hobart.
detailed review of retail prices and profit margins in the market and to state whether it is of the opinion that steps are necessary to improve the competitiveness of the market. 155

Observations

The effectiveness of a monitoring program should be judged by the extent to which it achieves its objectives, and the efficiency with which it does so. While these regimes are generally established as part of the framework, their effectiveness is often debated. The Productivity Commission reported that in general the airport price monitoring regime has been effective and low cost, but that neither the regulator nor Governments have acted when the regulator has raised the possibility that some airports might potentially be exercising market power. 156

Most of the monitoring regimes administered by the ACCC are intended to be informative in nature. The ACCC reports facts and uses the information to assist in its administration of the Trade Practices Act (TPA). Only in stevedoring does the ACCC make some reference to the ‘competitiveness’ of prices. Therefore, under the regimes administered by the ACCC, price monitoring is not used as a direct means for introducing price controls or taking action against the business monitored. Where competition concerns are identified as a result of monitoring activities, the ACCC either initiates a price inquiry or takes action under the TPA.

One of the concerns about price monitoring approaches is the level of intrusion into the businesses operations. For this reason, regulators attempt to make use of information provided by the business under other reporting requirements. However, a potential difficulty in that approach is the risk of inconsistency across businesses in both cost allocation methodologies and definition of services. There could also be a lack of comparable historical data on which to base trend analysis due to structural, reporting and regulatory arrangements over time. To address these risks, regulators often establish their own reporting requirements.

In addition, prices are generally reported on an aggregate basis and not at the firm level, with a focus generally on trends over time. It may be that reporting on a firm-specific basis is unnecessary or could lead to unintended consequences. For example, it could provide monitored businesses with information about their competitors and assist participants in co-ordinating their pricing. Published prices could also potentially create a focal point for pricing in a similar way to the standing offer in Victoria.

It is also debated whether price monitoring works better in industries where there is a small number of customers (i.e., airports/ports) as compared to public utilities where there are a large number of inactive customers. This is because large businesses have the ability to evaluate and respond to the information and have an interest in ensuring that regulation remains effective.

The continuation of price monitoring regimes in Australia is often justified on the grounds that it provides confidence for customers and access users. Governments may view monitoring as a useful device for assuring consumers that unforeseen difficulties will be quickly identified and that poor market outcomes are been prevented. Therefore monitoring has generally continued over quite a long timeframe.

155 In 2007, as part of its recommendations to remove price regulation in the Victorian energy and gas sectors, the AEMC recommended that a clearly specified form of price monitoring of retailers’ published standing offer prices be adopted for a transition period of at least three years following the removal of retail price regulation. Customers on standing offer contracts and deemed supply arrangements are generally those who have not actively engaged with the market by switching to a market contract for retail energy supply and may be more exposed to the risk of inappropriate pricing.

Appendix B: Retail margin analysis

This appendix sets out analysis conducted by VaasaETT for the purpose of informing this report. This analysis sought to consider the levels and dynamics of Gross Retail Margins (GRM) and Net Retail margins (NRM). In particular, it sought to answer the following questions:

1. How do Victorian margins compare internationally?
2. What drives margins and their relationship to other characteristics and outcomes in liberalised markets, including diversity in choice and customers' activity, awareness, interest and experience?

This section is structured as follows:

- Section B.1 sets out the methodology used
- Section B.2 sets out our findings relating to the level of Victorian margins versus international comparisons
- Section B.3 discusses the drivers behind retail margins
- Section B.4 provides a glossary.

B.1 Methodology

B.1.1 Data sources

Most of the data required for this report already existed through VaasaETT’s European and global market monitoring activities such as the Utility Customer Switching Research Project and The World Energy Retail Market Rankings, The Household Energy Price Index and now VaasaETT’s market monitoring project for the European Commission (where available to use for this report). Some data was collected specifically for this project.

The focus of this report is around a specific set of markets and companies, for which specific data was compiled and collected as described below:

1. Global churn trend data on 40 liberalised markets;
2. Data on 78 market variables, 25 of which were used for Principal Component Analysis (factor analysis), for 21 selected markets. Not all variables were able to be collected for all markets; and

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157 VaasaETT prides itself on the uniqueness, breadth and independence of its data and analysis. Such data and analysis should always be used with care however.

This analysis is a representation of the opinion of the writers based on the assumptions, estimations and data obtained, analysed and interpreted by the analysts and writers that produced this report. VaasaETT collected and modelled data but was not the source of the data. Different sources may vary in their methodology. Data and conclusions of this report should be taken as approximate and audit-based. VaasaETT has however cross referenced the findings with its broader market data, expert connections and own knowledge. In Australia, for instance the findings were presented to four utilities as a sense-check and feedback was positive.

158 www.utilitycustomerswitching.com
159 http://www.energypriceindex.com
3. Net retail margins (NRM) values from 39 retail energy suppliers.

B.1.2 Sample overview

Over 40 markets around the world have so far fully liberalised their energy markets, according to the definition used by VaasaETT. The first did so nearly 20 years ago and the most recent this year, with several, including Turkey, to liberalise in the coming years.

VaasaETT staff has tracked all the above-mentioned markets in terms of their competitive behaviour since those markets were liberalised. All these markets share similar characteristics, providing a large amount of data to analyses. However, the wide variety of experiences means that careful analysis needs to be conducted to ensure comparability of findings.

Figure 27: Global liberalisation timetable

Data was collected by VaasaETT during 2017 based on data from 2015-2016. Existing data held by VaasaETT and new data collected from energy retailers, other experts and many other sources were used in the analysis.

The analysis is only focused on residential electricity customers – there is no analysis of margins in gas retail markets.
### Provisionally researched markets

Altogether 44 markets were provisionally researched for this appendix, incorporating all fully liberalised electricity markets (according to the VaasaETT definition of Fully Liberalised), two nearly fully liberalised (Serbia and Japan) and Turkey.

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### Analysed markets

While VaasaETT collects various market monitoring data on all of these markets, the minimum selection, comparability or quality of data was not available in Bulgaria, Canada, Hungary, Iceland, Latvia, Lithuania and Romania.

There are also some markets that are not yet quite fully liberalised or have so recently liberalised that there is insufficient trend data to observe. These include Estonia (liberalised in 2013); Tasmania, Australia (liberalised in 2014); Serbia (liberalisation incomplete); and Japan (liberalised 2016).
There are also markets that are liberalised in such a fundamentally different way that they cannot be considered comparable to the other markets. These markets include New York (and other liberalised markets in the USA except Texas); Croatia where all eligible customers were placed with the DSO from the outset of competition; and Greece where new entrant suppliers have had to offer energy to customers across the country, including all islands, which renders competition effectively impossible. France was also omitted due to the lack of comparability resulting from heavily regulated retail prices, a unique method of access to generation and a low degree of price transparency.

Finally, to avoid repetition, multiple jurisdictions in a single country were omitted, namely the ACT, New South Wales, South Australia, and Queensland in Australia; Flanders and Wallonia in Belgium and Northern Ireland in the United Kingdom.

Consequently the following 21 markets are analysed in detail.

### Analysed Markets

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<thead>
<tr>
<th>Australia (Victoria)</th>
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These 21 markets represent a broad and representative mix of the fully liberalised markets of the world.

Not all data is available for all markets. For this reason, different analyses include different selections of markets depending on the data required.

### Regions

The regions we have defined as:

- **Nordic**: Finland, Sweden, Denmark, Norway
- **Northern Europe**: Great Britain (GB), Belgium, Netherlands, Germany, Ireland, Luxembourg
- **Central and Eastern Europe**: Austria, Czech Republic, Slovenia, Poland, Slovakia,
- **Southern Europe**: Spain, Italy, Portugal
- **Rest of World/Non Europe**: ANZ (Victoria and New Zealand); USA (Texas).

### B.1.4 Electricity retailers

Altogether 39 electricity retailers were surveyed for the research into Net Retail Margins (NRM), through a mixture of direct contact, direct knowledge and indirect contact. Most of the sample was incumbent retailers, but a few were key new entrants in order to identify or estimate ratios between incumbent and non-incumbents. The sample is considered generally reflective of the markets being investigated. The sample should though be seen as primarily representing large (relative to the size of the market) incumbent retailers.
It is important to note that retailers that were thought to price socially or in an arguably anti-competitive way (transfer pricing or predictive pricing) were not included in the sample. In many markets there are retailers that are municipally owned for instance that sell energy at the lowest possible price since they are seen as for the benefit of society and not for the purpose of profit. There are often also companies that are clearly pricing low on electricity so they can earn more on gas, or companies that are pricing artificially low to pre-empt the potential for new entrants. The margins of such players are not considered either representative or realistic and are therefore omitted from the sample. For this reason, the margins identified in this report may be significantly larger than the average, as stated in the data comparability section.

B.1.5 Data comparability

Other reports have recently published margins data on selected markets, but care should be taken when comparing the results of such reports with this report.

1. Other reports for instance have looked at net margins from 2012 or before, whereas this report is focused on current or recent net margins. Due to the volatility of net margins, findings from 2012 or earlier may be quite different from more recent ones.

2. The NRM in this report aim to broadly represent the margins of incumbent retailers, although some new entrants have been included and modelled in a couple of markets where incumbent retailer net margins were not available or (in other markets) for comparability purposes. Some other reports have looked at net margins for a mix of new entrant and incumbent retailers. In general the NRM of new entrant retailers are only around 50% of incumbent retailers due to the discounts they offer, the customers they acquire and the costs they incur from competition.

3. The NRM collected for this report were collected mainly by survey and all respondents were promised anonymity. Public data was used in some cases for cross-references. Other reports have generally used either mandated economic data (some regulatory authorities) - in which case the data is based on the mandated data requirement - or observed and assumed data. Since NRM are so heavily influenced by internal economics, the latter is not considered a reliable source. The former is considered reliable for the definition but may result in some degree of bias due to the potential regulatory consequence of higher NRM levels. The anonymous survey approach of this report is limited by a reliance on pre-calculated or hidden source data but is believed to result in insider knowledge and no deliberate bias.

4. This report looks only at net margins for competitive retailers and excludes retailers that price in a social way as is the case with many municipally owned retailers that aim to provide a low price for...
their residents. Some other reports have included also these players, thereby representing lower average net margins.

5. The sample used in this report generally represents larger retailers. Some other reports include even the smallest of retailers, which may have different net margins. We usually observe higher net margins for larger retailers due to the benefits of greater economies of scale.

6. The NRM in this report relate to average NRM and as such mostly represent a mix of ‘By Default’\textsuperscript{160} and ‘Competitive Incumbent’\textsuperscript{161} tariffs in most markets. In some markets default tariffs are the most common, but in other markets competitive incumbent tariffs are the most common. In a few markets non-incumbent tariffs (tariffs offered to non-incumbent customers) are the most common.

7. The definitions of GRM and NRM all vary from report to report. This appendix represents only the findings relating to the definitions provided below.

8. NRM (net retail margin) in this appendix is the average for all customers in the incumbent retailer’s customer base. They incorporate customers on different tariffs and non-acquisition related discounts including for instance direct debit discounts. It also includes customers who have been won or won back by incumbent retailers. This mix therefore incorporates a diversity of NRM. Dual fuel margins are though left out. Only margins for electricity are incorporated.

9. GRM (gross retail margin) in this appendix relates to theoretical GRM based on spot market prices with a shaping cost adjustment. Some other reports have attempted to apply specific wholesale sourcing strategies or scenarios to the gross margin calculation. This was not done in this report since the wholesale sourcing strategy is not known for each retailer or market. While the simplification applied in this report means the gross margins are accordingly reduced in accuracy, it is considered more appropriate for the purpose of this report, which aims to understand GRM dynamics more than exact GRM levels, and is focused on comparability between markets.

For the above reasons we advise caution when comparing the findings of this report to those of others.

B.1.6 Data restrictions

Regarding margins data and some other data, many of the sources providing data for this project have requested anonymity and since some markets only have one or a few incumbent utilities, we have in the report plotted much market data in absence of the name of the market, or aggregated markets into regions. The only exception is the USA, which only relates to Texas. No retailers/utility companies are mentioned by name and their data has in most cases (except when there is only one incumbent retailer in a market) been aggregated with data from other retailers.

\textsuperscript{160} The By-Default tariff is the tariff that a customer receives in a market if they have not taken any action (either switching tariff or supplier). In a market with liberalised prices this is the standard price that is offered to all customers. In a market with regulated prices, this is the regulated tariff.

\textsuperscript{161} Competitive Incumbent tariffs are the market based, non-regulated, tariffs that incumbent retailers offer to their incumbent customers as an alternative to their standard or regulated prices.
B.1.7 Principal component analysis

**GRM and NRM Determinants and Dynamics - Principal Component Analysis (PCA)**

VaasaETT’s extensive international research into margins and customer retention has identified a large number of influencing or possibly influencing variables. However, in order to build a model around these variables the importance of each variable on each of the object variables for each market was needed. A statistical analysis technique known as Principal Component Analysis (PCA) has been performed in order to identify the most influential variables for GRM and NRM.

**Markets surveyed using PCA**

Twenty markets were analysed (17 for Net Margins):

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<tr>
<th>Analysed Markets</th>
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<td>Netherlands</td>
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<td>Norway</td>
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<td>Slovakia</td>
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<td>Slovenia</td>
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<td>Spain</td>
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<tr>
<td>Sweden</td>
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</tbody>
</table>

**Analysed variables**

Twenty-five variables were analysed, using their latest available values. To our knowledge this is the most extensive analysis of its kind to have taken place globally.

- Years since liberalisation
- Style of liberalisation
- Price liberalisation or not
- Number of residential electricity customers (millions)
- Current Total number of suppliers to residential customers
- Typical residential Consumption (kWh/year)
- Average residential Consumption (kWh/year)
- Are incumbents defensive of offensive in the competitive market
- Average Total annual residential electricity bill (including network, excl. tax)- 5 year average
- Energy component as a share of end-user price (%)  
- Average total electricity bill as a share of disposable income (%)
- Wholesale Market Price volatility level
- Residential electricity price component volatility level
- Spread between cheapest and most expensive tariff in the market (for a typical residential customer - 5 year average)
- How common are market based tariffs
- Ease of access to energy
- Liquidity in wholesale market and the ability to obtain long term hedges
• The extent of excess generation in the wholesale market
• Attitude of media
• Availability and use of key sales channels
• Thermal electric consumption, including Heating or AC
• Churn rate (%)
• Churn rate (% - average since market opening)
• Churn rate (% - 5 year average)
• Electricity consumption change per household over time

**Variables not included**

Some variables that we see as influential or likely-to-be are not included in the Principal Component Analysis due to statistical difficulty in operationalizing them, or because of insufficient data availability (not that we do not have extensive data on a given variable but because all markets in the selection must have data for all variables included in the analysis). Data was nevertheless collected on these variables for this research project and separate analysis conducted on them to identify the level and nature of their dynamics.

• Current Number of incumbents
• Current Number of new entrants for residential customers
• Potential savings (difference between by-default and cheapest tariff in the market for a typical residential customer - 5 year average)
• Are incumbents Gen-Retailers
• Level of unbundling of retail from distribution
• % of household customers who say they have switched supplier (not just tariff) at least once
• Average retail price for 5 years
• Average wholesale price for 5 years
• Real adjusted gross disposable income of households per capita in PPS
B.2 Overall findings

How do Victorian margins compare internationally?

The international margin comparison is set out in section 10.2.

B.3 Margin Drivers and Impacts

What drives margins and their relationship to other characteristics and outcomes in liberalised markets, including diversity in choice and customers' activity, awareness, interest and experience?

Margin drivers and impacts are summarised in section 10.3. This section provides further details and results of our analysis.

To understand the implications, we first have to understand the dynamics of margins. While there is great variation in margins and market share between the markets in liberalised markets around the world, and while margins can change significantly over time, markets are driven by common dynamics and margins tend to follow reasonably predictable patterns. In particular, a number of findings concerning the dynamics of margins in liberalised electricity markets are identified in this report, including the following:

B.3.1 Liquid wholesale markets cushion margins

The level of wholesale prices per-se is not a major determinant of GRM or NRM. Higher wholesale prices essentially just mean higher retail prices as illustrated in the following figures. In Sweden for example, given a short time delay, retail (end-user) prices closely follow wholesale prices, where a percentage of as high as 74% of variations in retail price are explained by variations in wholesale price.

Margins are cushioned from wholesale volatility in markets where wholesale markets are more liquid. As market liquidity increases, as long as incumbent retailers isolate trading risk (by going back to back to the market or setting up independent trading arms) they are not significantly affected by wholesale volatility, except in conditions of extreme wholesale volatility or unless retail prices are regulated down. Retail prices tend to follow the wholesale market, keeping relatively stable margins.
It is not only in the Nordic markets where this close relationship exists. The same can also be seen in other markets. We have analysed 18 European markets where we can obtain the most transparent breakdown of end-user prices and find a correlation of 0.813 between wholesale and retail, meaning that 66% of variations in retail price are explained by variations in wholesale price. However, it should be noted that in markets where the end-user electricity price is a function of spot market price (such as Nordic markets) this relationship is more imminent in terms of timing.

On the other hand, in markets where hedging is a core part of pricing, like in most of the European markets, the relationship is less imminent and there is a delay between wholesale price movements and retail price movements due to long term hedges and rigidity of end-user prices.
B.3.2 Wholesale Volatility Can Cause Short-Term Margin Reductions

Sometimes, retail prices cannot respond quickly enough to unexpected dramatic and sudden wholesale price changes. Upward volatility in wholesale prices tends to temporarily squeeze GRM and NRM while downward trends tend to soften GRM and NRM. Our research indicates that GRM and NRM are smallest when wholesale prices suddenly rise a lot for a sustained period (retail margins are squeezed since they cannot respond quickly enough for fear of losing customers or due to the pricing terms of the retail contract). GRM and NRM are largest when wholesale prices suddenly fall dramatically for a sustained period (retailers delay their price reduction as long as possible). But this is changing in some markets as media become aware of it.

Overall, however, in the longer term, as illustrated in the following figure, wholesale and retail price volatility does not impact GRM or NRM. Retailers gain and lose from volatility. It is a net sum zero game. Volatility can to some extent cause potential momentarily reduction of margins when wholesale prices jump without retail prices being able to respond, but margins are designed across the spread of retailers to incorporate such volatility; it can be compensated by equivalent wholesale price falls; and it only applies to the energy that is purchased in the spot market, which in practice is only a proportion of the wholesale energy that is purchased in most markets.

Figure 32: GRM versus wholesale price volatility

GRM seems to be largely insulated from wholesale and retail price volatility even though it is clear that retail prices in general follow wholesale prices. This is because retail prices aggregate and incorporate wholesale volatility in a planned and deliberate way. Only when volatility is greater than anticipated or planned for may it affect GRM.
The same is true for NRM. As explained above, this does not mean that there is no relationship between NRM and wholesale or retail prices. Rather, retailers plan for such volatility and retailers operating in markets with higher volatility tend to take that into account in their planning.

The net effect of volatility on GRM and NRM is therefore relatively neutral. In other words, volatility is a net sum zero game leading retail profitability immune to price fluctuations in wholesale markets.
B.3.3 Margins are impacted by the media

In markets where consumer awareness of the electricity market is high, to some extent at some times at least, and in some markets, GRM and NRM have been impacted by the actions of the media and public. While utilities mostly decide on their price rises and then manage the media’s response to them, some utilities are now altering their pricing strategies to avoid a potentially damaging media response. An excessive price rise can lead to a media storm that can in turn spark a public backlash that leads to both churn and political action.

In the case of Great Britain for instance, as churn rates fell over a period of around two years following the end of door to door selling in the market (due itself to public pressure), retailers increased prices steadily, until the public became frustrated. Following a series of sudden price shocks, the media responded negatively. New entrant retailers began to take hold for the first time since liberalisation fourteen years earlier, as large numbers of customers switched to them rather than the other incumbents as they had formerly done. Further, politicians raised concerns, leading to a public enquiry into the state of competition. The reaction was enough to force energy retailers themselves to admit they had lost touch with the public and that they needed to change the way they behaved. Prices were moderated, at least temporarily, and at least one major retailer stated publicly that they should stay within the NRM range of 5-8%.

In the case of Great Britain, this has not weakened their GRM or NRM in the long-term. Their margins are in fact apparently larger than ever, but it has demonstrated to retailers that their margins need to be more in line with wholesale prices (because public, media and politicians cannot easily understand the idea of basing prices on futures), with more consistent margins and fewer price shocks. Only time will tell if they get it right and if this is a longer term strategy, but margins and public relations are now inter-dependent as never before in Great Britain.
B.3.4 Spot Based Pricing Can Lowers Margins but Reduce Risk

In certain markets where both average consumption and customer awareness is high, pricing is based on spot-based (market tracking) tariffs e.g. wholesale price + commission. For instance, in Norway, such tariffs are very common, and retail prices directly follow the wholesale prices, or they are a more direct function of wholesale prices. In such markets, we observe fewer hedging costs and lower cAUD/kWh unit GRMs. However, on an average customer basis, both GRM and NRM are among the highest quartile due to high average consumption per customer.

Figure 36: Evolution of spot based tariff in Norway

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B.3.5 Higher Margins with Non-Regulated (liberalised) Prices

In some markets the dynamics of GRM are set by the state, municipality or energy market regulator. This, in turn, influences NRM. In such markets retail prices are typically regulated such that GRM and NRM are too low to allow new players in the market, removing any chance of real choice. The low prices are justified as a means of customer protection, but they are not sustainable in the long term and often hold off larger price rises when adjustments finally come.

There have also been other forms of regulation including price caps (as in Australia) where regulated prices are set high enough to prevent excessive prices but aim to permit sufficient margins for competition to take place, and Price-To-Beat (as in Ireland and Texas) where incumbent retailers cannot reduce their prices below a level that would allow new entrants into the market. The former is now removed in many states in Australia as it was seen as unnecessary for a market with high churn rates; and the latter was only a temporary measure in Ireland and Texas.

Margins are significantly higher in markets with non-regulated (liberalised) prices. This is illustrated in the following figure which shows the mark-up (effectively similar to GRM) for several price regulated markets versus non-price regulated markets.
Figure 37: Evolution of retail mark-up on spot price for regulated versus non-regulated markets

B.3.6 Higher Margins in More Active Markets

While regulation can control margins, it does so by setting prices that are not in line with those that would be set by a free market. A free market expects higher margins than price regulation often affords. If that happens, it acts as a barrier to market entry for many competitors, especially those who base their offerings on more than just low price. The price may therefore be lower, but so will the level of competition.

Some of the largest net retail margins have historically been seen in some of the most active markets. This can be due to variations in service efficiency and consumption per customer, but it is also due to the fact that competition is dependent on reasonable margins.

Great Britain, for example, has relatively large margins despite being, for many years, the most active market in the world. Net retail margins therefore do not necessarily fall as the level of competition increases. Higher margins tend to coincide with higher churn and therefore lower home region market share (HRMS). Competition may result in lower margins (than would otherwise be in any given liberalised market) for the active customers but hides higher margins for the rest.
Figure 38: The relationship between NRM and churn

![NRM vs. Churn Chart]

Source: VaasaETT

Figure 39: Retail mark-up on spot (GRM) versus churn in price regulated and non-price regulated markets

![Retail mark-up on spot vs. churn rate Chart]

Source: VaasaETT, HEPI by Energie-Control Austria, MEKH and VaasaETT Ltd., Regional energy exchanges, Analysis by VaasaETT

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Price Regulated markets: Poland, Portugal, Slovakia, Spain
Non Price regulated markets: Austria, Belgium (Brussels), Czech Republic, Denmark, Finland, Germany, Great Britain, Italy, Luxembourg, Netherlands, Norway, Slovenia, Sweden

Source: VaasaETT
B.3.7 Higher Churn Does Impact Margins

Higher churn impacts GRM and NRM for given segments of customers, reducing them from what they were when competition for those customers increased and those customers started to churn. Customers that a retailer wants to win will need to be offered an incentive to churn, be it through a discount or a reward of some kind. Customers that a retailer wants to retain cannot be excessively profitable. But this does not mean that a large margin cannot be had on those customers.

Even in active markets a large proportion of customers are unlikely to churn and will remain with the incumbent retailer despite large margins. These customers are not necessarily impacted by competition.

A profit maximising strategy for retailers is to keep prices high for sticky customers, lower prices to some extent for customers that are at risk of churning, and accept that some customers will leave, but it is better to lose them than lower prices further for the remaining customers.

Churn therefore generally affects primarily the gross margins of customers who churn and to some extent also those who are considered likely to churn. Markets with the highest gross margins have some of the highest levels of churn because without larger margins, the competitors would not be either trying to, or in a position to provide those customers with offers that will appeal to them. This is why markets with higher NRM tend to have higher churn.

In other words, markets with large margins that then develop high churn levels will still be high margin markets, but perhaps with a little less GRM and a bit more reduction in NRM than there were before. If the other factors impacting GRM and NRM are favourable, GRM and NRM may even increase despite increasing churn. For all these reasons, it is not surprising that the level of churn does not correlate closely with the level of GRM or NRM.

B.3.8 Higher Margins Support Satisfaction, Diversity, Awareness

The relationship between margins and the non-churn outcomes of liberalisation for a market, namely satisfaction, diversity and awareness, is very complex. One might think that high margins would make customers less satisfied, or even dissatisfied, but evidence suggests otherwise. If anything there is a positive relationship, albeit a slight one (a little more for net margins than gross margins), since retailers in markets with higher margins can put more money into service.

However, satisfaction is sometimes lower despite and / or because of the higher margins in the markets where churn is most extreme.

Figure 40: GRM versus satisfaction

![GRM vs. Satisfaction](source: VaasaETT)
Margins also have a positive albeit modest impact on diversity. This is because choice requires both new entrants and an ability to go beyond just low prices. Investment in new offerings and models must be rewarded. Even something as simple as a consumption feedback service may cost more than the margins per average customer of the retailers in the markets with lowest net and gross margins.

Source: VaasaETT
There is an even clearer relationship between margins and awareness, especially regarding net margins. It is likely that not only does the increased competition and churn that comes with higher margins lead to greater customer engagement, but also can attract greater media, leading to greater customer awareness of energy issues.

Figure 44: GRM versus awareness

![GRM vs. Awareness](image)

Source: VaasaETT

Figure 45: NRM versus awareness

![NRM vs. Awareness and Interest](image)

Source: VaasaETT

Margins, churn, satisfaction, diversity and awareness are all inter-related issues. Higher churn means greater awareness and vice versa; higher awareness often goes hand in hand with negative image, thereby reducing satisfaction and stimulating some customers to churn while deterring others; but greater churn also means greater churn costs, reducing margins; and so on. One should be careful therefore not to read too much into single one on one variable relationships since it is the combination of all the variables, the dynamics between them and especially the process by which they evolve together, which drives the outcome.
B.3.9 Inactive Customers are More Profitable

Margins made on inactive customers (customers who do not switch supplier) are typically far higher than (commonly double but up to many times more) those made on customers who switch supplier. The customers that an incumbent retailer wins from other incumbent regions, or wins back in its own area will therefore have lower margins than the rest of its customers on liberalised tariffs. Careful cost-to-serve management and selective targeting of new customers can greatly improve customer profitability, as can selling additional services to existing and new customers. Keeping customers longer through improved loyalty will further increase the customer lifetime value of customer segments. However, in general, the most profitable customer is the one who has never exercised their choice.

B.3.10 Higher Consumption means Higher Margins

Margins are in part a function of the levels of consumption in a market. Higher consumption levels in a market tend to coincide with higher margins.

Figure 46: The relationship between consumption and NRM

![Graph showing the relationship between consumption and NRM.](image)

Source: VaasaETT

B.3.11 Higher Disposable Income means Higher Margins

Markets with higher disposable income also tend, as a whole to have higher GRM and NRM. Higher income customers can afford larger bills and therefore larger margins. However, as illustrated by the following figures, the correlation is not particularly close. There are also markets such as Denmark and Norway which both have very high incomes and relatively modest gross margins, but in the case of Norway it is because of spot market pegged retail tariffs and high consumption, which results in small margins and relatively high share of disposable income. In Denmark taxes constitute over 80% of the bill, the highest in Europe, and so space for retail margins is quite limited.
B.3.12 Equilibrium of Net Margins

Once they find their equilibrium position, then assuming structural variables such as consumption, price regulation, disposable income and bill as share of disposable income remain largely the same, NRM tend to remain at that level or trajectory in the long-term, although there may be periods when they change.

Interviews with energy companies and 17 years of observation has indicated that while net margins fluctuate significantly from year to year, depending on many factors including the variation in wholesale and competition, they appear to find a long-term equilibrium, increasing gradually, that they tend to gravitate towards. This level, while not necessarily the same or even similar to the level before or immediately after the onset of full free liberalisation, is at least indexed to the starting point and so the starting point sets a tone for the future. For instance, in Ireland, margins are now apparently very similar to what they used to be, but for a few years during the regulated period of price-to-beat when competition was heavy, margins fell. In Germany too there have been some major momentary fluctuations, but margins appear to have returned to previous levels. In Great Britain and Australia, margins have always fluctuated from year to year, but seem to find a typical long-term percentage range.
A caveat to this is that many markets display sharp falls in retail price levels and therefore net margins in the initial phase of competition as they try to pre-empt churn, and consequently re-adjust. In Finland, for instance, price falls were clear even before full competition started. Prices continued to fall thereafter, until they eventually recovered and once again followed the wholesale rate more closely as the impact of competition became clearer.

Equilibrium is not something that can be statistically proven, since detailed historical data dating back to the onset of competition is either not documented, documented differently over time or not obtainable. Anecdotal evidence however seems to clearly support it.

**B.3.13 PCA Research Findings**

The analysis, described earlier in the section on methodology identified the variables that are statistically most relevant to the level of margins. These influential variables are summarised in the following table showing those which are most closely related to gross and net retail margins.

<table>
<thead>
<tr>
<th>Variables</th>
<th>GRM</th>
<th>NRM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years since liberalisation</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Style of liberalisation and whether price control (price regulation or not)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Residential Consumption</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Are incumbents defensive or offensive in the competitive market</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Average Total annual residential electricity bill (including network, excl. tax)- 5 year average</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Energy component as a share of end-user price (%)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Residential electricity price component volatility level</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>How common are market based tariffs</td>
<td></td>
<td>✓</td>
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<tr>
<td>Ease of access to energy</td>
<td></td>
<td>✓</td>
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<tr>
<td>Attitude of media</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Thermal electric consumption, incl. Heating or AC</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Churn rate</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

*Source: VaasaETT*

These findings are largely supportive of the earlier analysis, but indicate additional determinants at play in the level of margins. In particular the following additional variables stand out:

5. **Time**: Margins evolve over time, up and down but tend to increase, not fall in the longer term. It is not surprising then that a market that has been liberalised for many years, may achieve higher, and stabilised markets if allowed to do so.

6. **Competitor Activity**: Markets where competitors are defensive tend to have lower margins.

7. **Price Volatility**: Markets with volatile prices, normally because of volatile wholesale markets, tend to have higher margins to cover for the risk of that volatility.

8. **Ease of Access to Energy**: Markets where access to energy is greater - better wholesale liquidity for example - tend to have higher margins, because players in those markets often treat trading expertise as a competitive advantage.
B.4 Definitions, Abbreviations and Terminology

B.4.1 Gross Retail Margins (GRM)

Gross retail margins in this report refer to the:

**Energy Component Price (MINUS) (Spot Market Price x Shape Adjustment)**

The Energy Component Price (relating here only to prices for residential customers) is the total price paid by the customer for their electricity minus distribution and grid fees and taxes, where taxes include also levies.

The Spot Price is the price paid by retailers purchasing electricity on the day ahead hourly (spot) market that is used as a reference point for the given market being analysed. While relatively few retailers outside the Nordic region purchase major proportions of their energy directly from the spot market, it is nevertheless seen as the most comparable wholesale market reference point across markets. Other reference points include seasonal and year ahead prices. Our research has found, furthermore, that in general the spot market is still, as a single barometer the best wholesale indicator of retail prices in Europe as a whole. However, the spot market needs to have at least a shape adjustment cost applied to it to deliver a level of cost that is more closely associated with real costs. Based on research and interviews with company officials, we have come up with one single shaping fee of 3.5% and applied that factor for all European markets.

It is impossible to know exactly what price retailers are actually paying for their electricity without the retailers providing that information directly and such information is difficult to obtain. Indeed retailers may apply any one of very many wholesale procurement and hedging approaches or strategies, and they will vary in terms of their expertise and success. The gross retail margins in this report should therefore only be seen as an indication of the broad level and shape of margins in the market. They are in effect what is referred to as Theoretical Gross Margins.

B.4.2 Net Retail Margins (NRM)

There are many possible definitions of Net Retail Margins (NRM), which is why there are so many different outcomes in different analyses. For this report we therefore sought a simple and consistent definition, which would be both sound and practical. The definition that is used in this report is therefore:

*Net Retail Margins refers to the difference, per average residential electricity customer per annum, between retailer revenue and the cost-to-serve of the retailer where cost to serve includes wholesale supply; operating costs; general marketing; call centre; billing; credit risk; collection; cost of working capital and balancing. It excludes capital investment costs; cost of customer acquisition; retention schemes and on boarding of customers (signing up new customers) and other corporate costs not associated with or required for the service of the customer (such as other business areas).*

\[
NRM = \text{Gross Retail Margins} - \text{Cost-to-Serve}
\]

\[
\frac{\text{Number of Customers}}{\text{NRM}}
\]
NRMs are presented as a percentage of the annual energy bill (%) or per average customer per annum (AUD) excluding tax. The term ‘Average Customer’ should not be confused with ‘Typical Customer which’ can be a very different value. NRM generally relate to 2015 or more recent.

The data collected has though in all cases been calculated by others (utilities mostly and in some cases as an official national research project). VaasaETT has not calculated any NRM and as such although we understand the definitions or methods used to be broadly comparable, there may be some variation and unknown anomalies.

NRM in this report relate mainly to the NRM of incumbent energy retailers. It relates to the average of their residential customer base, which will include all types of residential customers including those on by-default and competitive tariffs, as well as customers who have switched. In some markets more segmented data was obtained or available but in the interest of comparability the broader focus was adopted.

It is important to note that NRM would be smaller if cost to acquire (CTA) and retain (CTR) customers were included, but to include such costs would be to misleadingly favour markets where retailers do not need to or want to compete, and it would also distort the underlying profitability of customers and reflect more the competitive attitude of the retailer and whether the retailer is an incumbent than the profitability of the market, since not all customers are won and the costs of acquiring customers are not evenly distributed throughout the lifetime of a customer. A customer won with a €100 discount for example, may appear unprofitable for the first two or three years, and then profitable thereafter. An incumbent customer may seem more profitable since they were not won, but after the cost of acquisition is paid off, they may deliver the same profitability.

This report therefore considers typical CTA and CTR and the impact of their inclusion can be taken into account, but as a basis of NRM, such costs are not included.

B.4.3 Other Terms

- **Churn (Switching):** Switching supplier is defined as “the action through which a customer changes supplier”. More specifically: A switch is essentially seen as the free (by choice) movement of a customer (defined in terms of an overall relationship or the supply points and quantity of electricity or gas associated with the relationship) from one supplier to another. Switching activity is defined as the number of switches in a given period of time.

- **CLV (Customer lifetime value):** Customer Lifetime Value is the total net value, for a retailer of a given customer, over the total period of time that the customer remains with the retailer. It is essentially the average annual net retail margin (customer profitability) multiplied by the number of years that the customer is a customer.

- **Cross-validation:** Cross-validation is a model validation technique used to assess the capability of a model to generalize to an independent data set. It is mainly used in cases where the goal is prediction, in order to estimate how accurately a predictive model will perform in practice.

- **ECB (Evolved Customer Base):** The total number of residential customers that a former incumbent retailer has after a given period of full liberalisation has elapsed. The number includes both incumbent customers and customers that have been won from other areas. Essentially it is HRMS + customers won from other areas. In this report it is shown as a percentage of the original customer base prior to full liberalisation.

- **Energy:** Electricity

- **Energy Retailer:** Supplier of energy to customers. This excludes distribution and other upstream parts of the supply chain. Often referred to as an Energy Supplier.
• **Full training set validation**: It is a validation technique where the validation set is a part of the training set. It is used in order to assess how well the model has been fit to the given dataset.

• **Leave-one-out cross-validation**: It is a validation cross-validation technique that uses one observation as the validation set and the remaining ones as the training set, repeated in all possible combinations of the available dataset.

• **Liberalised Market**: Full liberalisation (otherwise known as full retail competition or FRC or full deregulation) is when residential and I&C (Industrial and Commercial) customers are all eligible to choose their energy (electricity and or gas) retailer (otherwise known as supplier). In the Utility Customer Switching Research Project Full Liberalisation additionally refers to electricity or gas markets where end customers can choose their retailer freely, where they have at least one alternative retailer realistically available to them, and where switching supplier does not incur additional financial costs, reprisals from the former utility/retailer, technical changes (such as the need for an additional meter), or other unreasonable or excessive effort on the part of the customer.

• **Linear Regression**: It is a regression analysis approach for modelling the relationship between a dependent variable and one or more explanatory (independent) variables, using linear predictor functions, and unknown model parameters are estimated from the data.

• **HRMS (Home Region Market Share)**: Home Region Market Share, referred to briefly as Market Share, is defined in this report as the percentage of incumbent residential customers retained by the incumbent in their own area, typically as of 2013. This represents the number of customers that an incumbent has in its own area.

• **Over-fitting**: Over-fitting generally occurs when a model is excessively complex, such as having too many parameters relative to the number of observations. A model that has been over-fit will generally have poor predictive performance, as it can exaggerate minor fluctuations in the data.

• **PPS (Purchasing Power Standard)**: is an artificial currency unit, which allows for price comparisons of goods or services across Europe.

• **Principal Component Analysis (PCA)**: Principal component analysis (PCA) is a technique used to emphasize variation and bring out strong patterns in a dataset, in order to achieve dimensionality reduction and make data easy to explore or visualize. It uses an orthogonal transformation to convert a set of observations of possibly correlated variables into a set of values of linearly uncorrelated variables called principal components.

• **Price cap**: is a ceiling set by regulation on the price which utilities can charge customers.

• **Regression Analysis**: Regression analysis is a statistical process for estimating the relationships among variables. It focuses on the relationship between a dependent variable and one or more independent variables, helping one understand how the typical value of the dependent variable changes when any of the independent variables is varied. It is widely used for prediction and forecasting.

• **Utility / Utilities**: Electricity, Gas, Water

• **Utility Company**: Any company providing utility services to end customers:

• **Volatility**: The relative rate at which the price moves up and down. Volatility is found by calculating the annualized standard deviation of daily change in price.
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