

# Market Design Considerations in Implementing Recommendation 4A from the Independent Review into the Electricity and Gas Retail Markets in Victoria

**A/Prof David P. Byrne**

University of Melbourne  
byrned@unimelb.edu.au

**Dr Gordon Leslie**

Monash University  
gordon.leslie@monash.edu

4 October 2019

## Table of Contents

Executive Summary.....	2
1. Introduction .....	3
2. Conceptual Framework.....	3
2.1 Interpreting recommendation 4A .....	4
2.2 Other policy considerations .....	5
3. Assessing the Options .....	6
3.1 Do nothing.....	7
3.2 All retailers have to offer one 12-month contract.....	7
3.3 All contracts must be 12-months long .....	8
3.4 Price changes can only occur at set times during the year.....	8
3.5 Call-to-market for 12-month contracts.....	12
4. Reducing search costs via a centralized retail exchange.....	14
5. Conclusion.....	16
References .....	18

## Executive Summary

In this report, we discuss various market design considerations with respect to implementing 4A from the 2017 *Independent Review into the Electricity and Gas Retail Markets in Victoria* regarding fixing prices of retail energy contracts.

Five options were raised to us by the Essential Services Commission, and we consider each option through the lens of a conceptual framework based on consumer search cost and retail pricing, a commonly used framework for examining retail competition in energy markets. For each option, we discuss the channels through which it could potentially reduce consumer search costs, enable consumers to more easily compare retail energy contracts, and create price certainty for consumers through the omission of “bait and switch” type pricing.

Where appropriate, we raise other market design considerations, with a recurring and important one being the ability of retailers’ to be able to adjust their prices to reflect changing wholesale and network costs over time. Other considerations raised include the potential for regulated contract durations to stifle product innovation; introduce higher levels of supply-side wholesale cost risk in setting retail prices; the potential for regulation to induce retailer exit; how regulation can potentially facilitate tacit price coordination through price leadership and/or focal points; aligning regulation related to option 4A with the Victorian Default Offer; the potential role of government information campaigns depending on how option 4A is implemented; and the creation of a centralised exchange for retail energy contracts.

## 1. Introduction

This article considers implementation options for the Essential Services Commission (ESC) in addressing recommendation 4A from the 2017 “Independent Review into the Electricity and Gas Retail Markets in Victoria” which is stated as follows:

*“Require retailers to commit to fix any prices they are offering for a minimum of 12 months. During this period, the market contract prices cannot change. Retailers may request an exemption from the ESC to address unforeseen changes in network costs.”*

We have been asked to provide views on the following 5 options being considered by the ESC related to implementing recommendation 4A:

1. Do nothing
2. All retailers have to offer one contract where prices are fixed for the first 12 months
3. The price of all contracts must be fixed for the first 12 months
4. Price changes can only occur at set times during the year
5. Call-to-market for 12-month fixed-price contracts

This report proceeds by developing these views across four sections. In Section 2 we discuss a conceptual framework for thinking about the key market failure that we consider recommendation 4A attempts to address, namely information acquisition costs incurred by consumers in shopping for retail energy contracts. In light of our conceptual framework, in Section 3 we address each of the 5 options directly. Section 4 then elaborates on potential approaches to implementing specific policy options that we view as likely to yield favourable outcomes for improving the efficiency of the market. Finally, in Section 5 we conclude.

## 2. Conceptual Framework

Whenever a policy is being considered, it is important to ask what market failure it is attempting to correct. We view the market failure that recommendation 4A attempts to address is linked to consumer *search costs*. Search costs represent any cost a consumer faces in shopping for retail energy contracts. For example, search costs may involve the cost of time and effort spent on:

- gathering contract quotes from retailers
- monitoring updates to their existing plan for comparing to new offers in the market
- estimating the expected annual/monthly expenditure for each contract quote to determine the best deal in the market. Contracts can be nonlinear or time-varying, and estimating energy usage can make these calculations challenging

Customers that incur search costs might do so because they expect they can find a better deal if they examine multiple products from different retailers. These search costs might be lower if products are relatively homogenous and more straightforward to compare (e.g., a fixed per day service charge and a per kWh usage charge) or higher if they are more

targeted or tailored (e.g., introductory teaser rates that later change, pay-on-time discount criteria, prices varying with time-of-day or real-time wholesale market conditions).

A bedrock result from research in industrial organization that dates back to Stigler (1961) is that consumer search costs can give rise to retail price dispersion (e.g., retailers offering the exact same product charge different prices). Competitive retail electricity markets have been well-established as a textbook example of settings where consumers face search costs, and where firms charge dispersed retail prices (Giulietti 2014; Hortascu et al 2018).

Conceptually, a core framework for understanding the economics of consumer search costs when products are relatively homogeneous is Varian (1980), which considers a retail market with two types of consumers:

- *engaged consumers*: those who face low search costs and actively shop for their best energy contracts.
- *disengaged consumers*: those who face high search costs and do not shop for their best energy contracts.

Retail pricing in economic models with search frictions offer the following insight: firms offer different products and prices in the market to discriminate between the two types of consumers. Relatively lower prices are offered to attract engaged consumers, who are aware of deals, to a retailer. These might be offered off-the-menu or periodically and might include more tailored products.

At the same time, however, higher prices are also offered. These will be ignored by engaged consumers but may be paid by disengaged consumers who decide not to search the products offered by other providers and are potentially unaware that they are not necessarily paying the lowest price available in the market.

In our view, this is the most pertinent economic framework for thinking about consumer choice and retail pricing in the Victorian retail energy markets. This is not simply based on our own expert understanding of the market and experience with these models. As mentioned, experts from other competitive retail electricity markets around the world in the UK and Texas have similarly used this framework for studying these markets; see Giulietti 2014 and Hortascu et al 2018.

## 2.1 Interpreting recommendation 4A

It is instructive to interpret recommendation 4A through the lens of our conceptual framework. Currently, energy retailers are relatively free in the characteristics of contracts they offer, including their duration. Engaged consumers in the market can benefit from firms being able to offer various energy contracts aimed at poaching them from their rivals. Indeed, in a recent field experiment run in the Victorian retail electricity market, Byrne et al. (2019) show that firms are willing to forgo a substantial degree of their profitability to compete for engaged consumers in the market. The current flexibility retailers have in their ability to offer different contracts of different durations to different types of consumers allows them to compete aggressively for engaged consumers.

The story is different, however, for disengaged consumers who might face high search costs. The dominant style of contract currently offered in the market contains a fixed per day service charge and a per kWh usage charge as the core elements. Even with only two core elements, different terms relating to contract duration, criterion-based discounts and the ability to adjust prices mid-contract can involve enough complexity and variability in contracts that can prevent consumers from engaging in the market and searching for deals.

Through recommendation 4A, a restriction on the contract space in the form of requiring prices to be fixed for 12 months can potentially reduce search costs for disengaged consumers. They would know for a 12-month period that their rate is locked in, and there would be no need to frequently re-engage in tracking their current contract's rates and searching the market for alternative contracts over the period. For example, in the current environment, a customer may be confused about teaser rates within a one-year contract window, which introduces a sort of search cost in their contract. A 12-month price fix aims to remove this consumer choice friction.

## 2.2 Other policy considerations

Although we view recommendation 4A as being directed at correcting any inefficiencies arising from search costs, there are other economic factors to consider when introducing regulated contract standards. We highlight three factors that we view as most relevant to consider when assessing the policy options to be reviewed in the next section.

**Product innovation.** Retailers have a profit motive to lower their operating and energy procurement costs, and also to offer products that are more appealing to their customers. Although many contracts offered in the Victorian retail electricity market charge a flat per kWh rate for electricity consumption, in practice the cost of procuring that energy from the wholesale market varies at 30-minute intervals. Therefore, 1kWh of consumption by a customer at 1am on a Summer Friday might cost a retailer much less than 1kWh of consumption later that day at 6pm. The fact that customers face a marginal price that is not equal to the marginal cost of electrical energy provides inefficient consumption incentives, and retail contestability may provide a mechanism to reduce these inefficiencies.

If a retailer can design contracts that encourage customers to shift their consumption to lower cost times of day (perhaps with the help of emerging automation technology), retailer and customer costs could fall, improving economic efficiency. Regulating contract standards could stifle such product innovation, potentially harming the current and future productivity of the market. Having an active demand-side of the market is crucial to unlocking many foreseeable future productivity gains in the sector, therefore the customers that are willing to engage with the market and be flexible with their consumption must have the opportunity to benefit from doing so. See McRae and Wolak (2019) for a demonstration of both the distortions inherent in fixed-price or increasing-block-tariff retail tariffs, and for

retail tariff designs that support the efficient deployment of distributed generation and electric vehicles.<sup>1</sup>

**Retailer risks.** For products that have fixed-price components, retailers are essentially taking on wholesale price risk for their customers. Therefore, restricting the ability for retailers to pass through changes in their underlying costs to their customers increases their risk profile. In addition, requiring retailers to commit to the contract but having customers being able to leave without penalty furthers the risks on retailers. Potential consequences of regulated contract standards to this effect are higher retail margins or reduced retailer entry. There may be further competitive implications regarding the large market shares observed among vertically integrated “gentailers,” as firms with a generating portfolio are better placed to manage these risks.

**Customer turnover.** Changes in market shares will require retailers to upscale/downscale their operations. These actions are costly, but it can improve market efficiency to incur them if customers move toward retailers that have lower costs or that develop more desirable products. However, if regulated contract standards result in infrequent opportunities to recruit large segments of customers in a *winner-takes-all* manner, this could result in large swings in market shares between retailers with largely similar characteristics due to more idiosyncratic reasons. Long-run issues of reduced competition could arise, where less firms are willing to enter the market given greater uncertainty in their ability to retain customers.

Irrespective of how a 12-month price fix is implemented, the roles of search frictions, product innovation, retailer risk, and customer turnover are of first-order importance. There are other second-order issues that are more nuanced but potentially relevant, including focal points, price leadership, and price coordination. These second-order issues depend on the policy design, and we discuss situations where they may arise where relevant in our evaluation of the policy options.

### 3. Assessing the Options

The effectiveness of fixing prices for 12 months in mitigating search frictions depends on the specifics entailed in the options below and their implementation. We now assess these specifics and the options for implementing recommendation 4A. Where relevant, we also address other economic factors to be mindful of when considering the various policy options.

---

<sup>1</sup> McRae and Wolak (2019) study the Colombian electricity market, where small customers do not face retail competition. Regardless, their insights apply to settings with retail competition, as the existence of efficiency-improving tariff structures means that retailers could profit from adopting such strategies and sharing the surplus with the customers they obtain.

### 3.1 Do nothing

Maintaining the status quo will not reduce search costs in these markets, but it retains the current competitive environment. Incentives for product innovation are maintained, keeping open the possibility of efficiency gains in the sector if firms can develop plans / technologies that lower energy procurement costs for their customers.

We believe that there are potential efficiency gains from implementing a well-designed 12-month contract standard, so doing nothing is likely not the leading option available to policy makers.

### 3.2 All retailers have to offer one contract where prices are fixed for the first 12 months

This option will likely have little impact on the market, because requiring retailers to offer just one additional contract where prices are fixed for the first 12 months will simply add to a substantial list of contracts currently offered by retailers. Engaged consumers will continue to shop for better deals being offered by retailers, so will likely be unaffected. Disengaged consumers will likely not be aware that these contracts are offered or will not be likely to put in the effort necessary to find the best 12-month fixed-price contract for them.

To overcome disengaged consumers' search costs in being aware of and shopping for the individual 12-month fixed-price contracts offered by each retailer, the policy makers could aim to promote to the public the list of 12-month fixed-price contracts available, making clear the rank order of the contracts for a "typical" consumer in the market. By making the contracts salient to the public, it can help otherwise disengaged consumers search among these contracts. However, there are challenges to the effectiveness of public information campaigns that will be explored in more detail in sections 3.4 and 3.5. Yet without an effective public information campaign, simply requiring companies to offer just one 12-month fixed-price contract will likely not address the search cost market failure.

**Tacit price coordination.** There is an important caveat, however, to keep in mind if public announcements are used to reduce search costs for 12-month fixed-price contracts. They will similarly make transparent the 12-month fixed-price contracts among the retailers in the market, and such announcement effects with normalized contract types can act as a focal point among retailers for coordinating on higher retail rates. In effect, the 12-month fixed-price contracts could serve as anchor prices with which firms could coordinate in the market, and discount all other contract offers from in competing for engaged consumers. In this way, there could be unintended negative impact on all consumers, both engaged and disengaged, from requiring companies to offer a 12-month fixed-price contract and making the contracts salient to the disengaged consumers that they are intended to help. Knittel and Stango (2003) provide an example of how nonbinding price regulations can give rise to tacit collusion in practice.



### 3.3 The price of all contracts must be fixed for the first 12 months

This option would remove all flexibility from retailers in terms of offering introductory discounts or short-run contracts in the market. Although consumers will not need to track their existing deal over this period, we see two major concerns with this option.

**Ability to compete.** The first is that it will hamper retailers' ability to compete for engaged consumers in the market. As alluded to above, recent work from Byrne et al (2019) has shown that retailers are indeed willing to compete vigorously for engaged consumers who search online and negotiate rates over the phone. Imposing fixed-price 12-month contracts will limit retailers' ability to compete in this fashion through introductory discounts/teaser rates that engaged consumers can exploit, and by varying contract durations.

**Adjusting to wholesale cost.** The second concern is that firms will be afforded no flexibility in adjusting rates to reflect wholesale supply conditions over time. While recommendation 4A allows for exceptions to be made in light of unforeseen network costs, such a regulated approach to allowing for cost passthrough will likely suffer from major efficiency losses compared to an approach that allows firms to adjust prices in response to wholesale supply conditions as they change (refer to discussion in Section 2.2 above).

At a minimum, if policy makers wish to pursue 12-month fixed-price contracts, no further restrictions should be made on the number of contracts that can be offered throughout the year to ensure retailers can adjust to changing wholesale supply conditions in offering new contracts to attract new consumers month-to-month. Even in this case, we would expect consumers to pay a premium for 12-month fixed-price contracts since retailers will be exposed substantially more to wholesale price volatility, and the costs incurred by the retailers to mitigate this risk will be passed through to consumers.

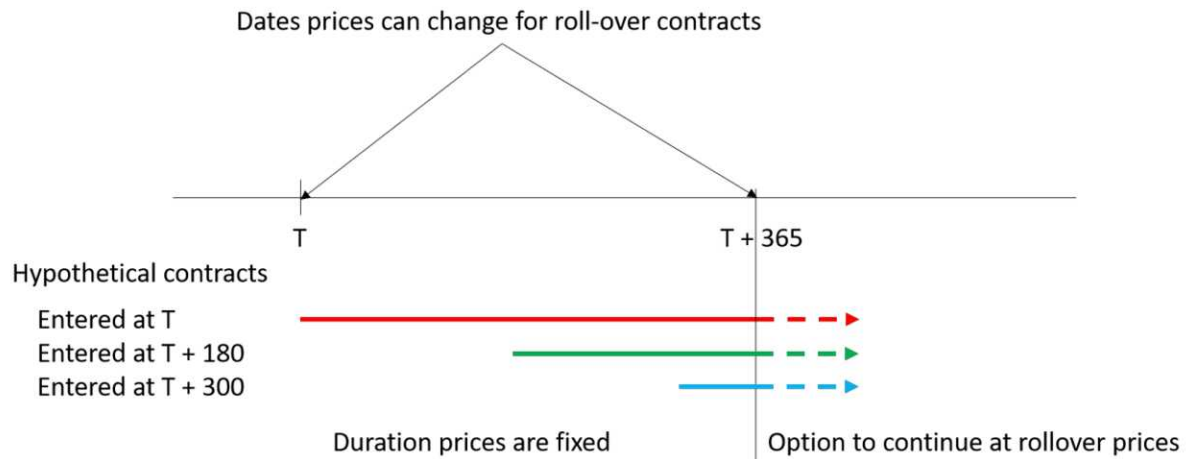
However, if firms are able to offer new 12-month fixed-price contracts all the time to better (but imperfectly) adjust to changing wholesale cost conditions, this would yield a market that is likely just as challenging for consumers to navigate in terms of searching for contracts. While the 12-month fixed-price contracts would fix the issue of changing rates within a year for disengaged consumers who can misunderstand teaser rates, their challenge in shopping for the best contract *across* retailers will likely be similar to the status quo.

In this way, two economic forces run into each other in fixing the prices of contracts and the number of times they are allowed to be adjusted throughout the year: fixing the price of contracts and when they can be changed *reduces consumer search costs*, however this comes at the cost of creating market inefficiency due to *firms' inability to adjust to wholesale cost conditions*. We believe it likely that the latter problem of wholesale cost will dominate the former improvement of reduced search costs in terms of efficiency outcomes.

### 3.4 Price changes can only occur at set times during the year

We assume that this option relates only to contracts that are not linked to real-time wholesale prices, and that it would restrict the dates that firms can reset their prices for

existing retail contracts that consist of fixed tariff structures with regard to day-charges and per-kWh energy usage components. After clarifying with the ESC, we understand that this option allows for the prices of newly-offered contracts to change over time, but customers entering these contracts have the prices fixed up until a specified “price reset” date, whereby the retailer can adjust prices.



The figure above depicts the structure such regulation would entail if there was, for example, an annual contract price reset date. Here, a contract entered at date T would have the tariff structure fixed for a year, that is until date T+365 (the red line in the figure). If instead a customer signed up, for example, at date T+180, they would have their tariff structure fixed for the remaining 185 days of the year until date T+365 (e.g. the green line). Finally, a customer that signed up on T+300 has the tariff structure fixed for the remaining 65 days of the year until date T+365 (e.g. the blue line). A retailer is not obliged to continue to offer the same tariff structure all year for potential customers but must maintain the terms that new customers signed up for previously within the year.

We note two major features of such regulation that relate to our conceptual framework

- Customers that sign up later in the year (e.g., toward date T+365 in the figure) could soon have their tariff updated, perhaps unexpectedly so
- As all contracts can be reset / rolled over at the same date, this provides a focal point in the retail market and competition calendar

We discuss the implications from these features, followed by some design considerations that relate to the Victorian Default Offer (VDO).

**Within-year timing of new contracts.** Customers that enter a new contract closer to the allowable price reset date do not have a long certainty duration of their tariff conditions and may need to re-incur search costs soon after their decision to determine their new “best” contract offer in the market.

Further, for customers that enter a contract closer to the reset date (toward the end of the year in our example), these contracts represent lower risk for the retailer relative to those

that enter at the start of the year. The reason is that they are not locked into the prices in the tariff for as long a time period, and therefore they face less exposure to changes in market conditions. All else being equal, we would thus expect that contracts entered closer to the reset date would contain relatively lower prices reflecting lower risk. This price difference will be larger if contracts entail one-sided commitment whereby customers can switch retailers before the reset date. One-sided commitment would likely mean that engaged customers will be inclined to incur more search costs throughout the year, whereas less engaged customers will stay on the same offer all year, likely at a higher price. Two-sided commitment will change the search dynamic, as customers cannot leave their current contract for a better deal before the reset date and therefore will not incur related search costs. At the same time, this also lowers the risk profile for retailers holding their customers, potentially lowering prices.

**Information campaign.** This might improve the effectiveness of any government-initiated price information campaign as the potential for a price change will be relevant to all retail customers. For search costs to be reduced in the market, the price adjustment events would need to be complemented with public announcements and online campaigns that either:

- Highlight the rank-order of energy contracts offered in terms of annual cost for a typical household in Victoria if products are directly comparable.<sup>2</sup>
- Direct customers to the Victorian Energy Compare website, as the mass-price update for consumers rolling over on their contracts would mean that what was previously the lowest cost option for a customer might be beaten by a different offer.
- We note that the current requirement for retailers to send bill change notices when prices change also notify the customer of the best offer available to them also serves to reduce search costs for offers within that retailer, but not the full market. A potential retailer strategy could be to avoid changing prices when wholesale costs fall, thereby removing their obligation to inform customers of the best offer they are providing to new customers. However, this may be mitigated by the requirement to list best offers with each billing cycle.

**Price leadership.** This option may induce an overall price-increasing effect if there is price leadership in the market. Price leadership would exist if, for example, firms can choose the timing of their reset date and the dominant retailers update their online posted prices before the mid-sized and smaller retailers in the market. In such instances, the dominant firms' prices can act to coordinate the smaller firms' prices whereby the dominant firms' prices are an effective price ceiling in the market with the smaller companies undercutting from that ceiling. This is what is seen, for example, in retail petrol markets with price cycles (Byrne and de Roos 2019; Byrne, Leslie, and Ware 2015). If the dominant firms anticipate these pricing dynamics, they can raise their price levels to lift overall price levels in the

---

<sup>2</sup> For example, if there is a class of contracts which have the same daily charge but a fixed usage charge that can vary across retailers, a rank order is possible within this class of contract. If contracts vary in more than one characteristic, there is a concern that any information that attempts to rank the offers for an average or typical household just adds to the weight of information disengaged and confused customers struggle to digest, because they might not be the typical household and the best deal for them might differ from that of the typical household.

market, without sacrificing demand since consumers tend to switch retailers based on relative and not absolute price levels. Similar considerations exist if the price change date is fixed, but announcement dates of price changes can vary.

### **Victorian Default Offer (VDO) timing.**

The VDO provides natural focal points relating to prices and dates that could be used in defining price reset date(s) if this regulation is pursued. Here, we assume the VDO tariff structure will move forward with a daily fixed charge and a volumetric per kWh charge that is simply a flat variable rate multiplied by total electricity usage.<sup>3</sup>

Under this scenario, there are potentially useful features of the VDO for implementing option 3.4. From the outset, there is the simple fact that aligning VDO reset dates with retail price reset dates means there are less dates for consumers and firms to track in the market throughout the year as both dates potentially have major impacts on retail prices.

Beyond simplifying regulation, there are other reasons to consider connecting price resets to the VDO. The first relates to innovation. If all contracts can only be reset on designated day(s) of the year, this might hamper product innovation if, for example, real-time pricing products cannot be created given the regulation in option 3.4. Therefore, it might be useful to implement option 3.4 for a class of explicitly linked “VDO products” to ensure product innovation can occur on a separate class of products.

Moreover, creating a set of “VDO products” has other potential benefits for consumers. For example, retailers could offer percent discounts off of the VDO, where VDO-0 is the VDO, VDO-10 is a 10% discount off of the VDO price, VDO-15 is a 15% discount, etc. The specific benefits of creating such a class are twofold.

- Direct comparability and ranking across “VDO products” within the class.

With only one product feature, the biggest discount is the cheapest product on the market, making it easier for consumers to receive the best deal if they view retailers as providing a homogeneous product in electricity.

This would further simplify and make credible the information provided in a complementary government information-campaign related to the contract reset date, which in this case aligns with a VDO reset date. The government could credibly highlight the lowest-priced “VDO product” rate for consumers for between reset through such an information campaign, which simultaneously provides consumers relevant information on the lowest-priced provider through such a government-endorsed “VDO Badge” provided to the lowest-priced retailer. A retailer would hold the badge, for example, between price reset dates if VDO and retail price reset dates were perfectly aligned.

---

<sup>3</sup> We note that this is a matter for the commission to consult on and decide for future years. However, we have made the assumption for the purposes of the following section.

A key challenge with such badging, however, is a retailer could bid an extremely low “VDO product” rate just for the government-provided advertising, and then pull the contract shortly afterward, claiming that it was for only a small number of consumers. This means that the government would have to require the “VDO product” rate to be offered for the entire duration of period between when price resets occur (e.g., 12 months in our example above) to avoid such gaming if the government is looking to run information campaigns based on firms’ bidding during price reset dates relative to a VDO rate. However, such a fix could introduce other concerns because it removes all flexibility for firms to change price offers throughout the year.<sup>4</sup>

- Rollover linkages.

The concern that customers that sign up just before an allowable price reset date are not locking in price certainty for a long period of time could be abated if a requirement for this class of contract is retailers must always specify the next discount at the reset date. This might reduce the so-called “bait-and-switch” approach of luring a customer with a cheap deal before (unknowingly to consumers) ramping up prices.

For example, a contract signed immediately before a price reset date might be VDO-20 (a 20% discount off the VDO), and then specified to be VDO-0 (0% discount). This informs the customer up-front that relative to the VDO, their tariff will increase to a 0% discount once prices are reset in the market. Further, as long as the VDO tariff is set via a well-specified and objective procedure that is forecastable by retailers, retailers will know that large changes in wholesale markets and network charges will be reflected in the VDO, so there is less risk in committing to a discount relative to the VDO than providing explicit prices for the next contract interval.

### 3.5 Call-to-market for 12-month fixed-price contracts

We interpret the call-to-market option as the creation of a forum whereby firms submit contract prices that will be publicly announced. We believe that this option can potentially strike a balance between allowing retailers to adjust to changing wholesale conditions and being able to reduce search costs for disengaged consumers by simplifying contract offerings and making them salient. However, we are not confident in how much extra value the call-to-market will create above directing consumers to the Victorian Energy Compare website.

**Simple version.** In this option, we view policy makers as information aggregators and publicists, whereby they collect 12-month fixed-price contracts from companies at specific

---

<sup>4</sup> If this method for reducing search costs is effective and results in large changes in market share towards the lowest price offers, this raises new risks due to the inability for firms to adjust their prices. For example, a firm that mistakenly prices too low may face insolvency risk while forcing its competitors to downsize as they acquire market share for reasons unrelated to their procurement costs. Large shifts in market shares for idiosyncratic reasons can harm market efficiency (refer to discussion in section 2.2 above).

points in time during the year, and then make this information publicly available and easy to access and understand for consumers. In its very simplest form, one could imagine the call-to-market requiring each retailer to submit one 12-month fixed-price contract being run once per year. The relevant public body collects these contracts, and computes for a typical Victorian household, the annual cost associated with each contract and makes this information publicly available. Teaming with print, online and television media outlets would further help bolster communication of lowest prices; such media-driven impacts of creating consumer price transparency has been recently shown to be important in search markets; see Ater and Rigbi (2019) and Montag and Winter (2019).

This would, in effect, create a set of salient 12-month fixed-price energy contracts that are advertised to the public with the rank-order of firms being publicly known. At the same time, however, the firms would be free to offer various other contracts, as they currently do, which allows them to continue to compete for engaged consumers and flexibly adjust retail pricing in response to wholesale cost shocks. The key difference between this option 3.2 and 3.4 is that in this formal call-to-market, the relevant public body is able to easily collect data on and promote 12-month fixed-price contracts at specific points in time, when the call-to-market is run.

Moreover, in the long-run, if there is a consistent cycle in terms of the timing of the call-to-market, consumers may rationally form habits anticipating the call-to-market process (year-to-year in our simplest scenario). For these consumers, this could potentially greatly simplify the searching process for energy contracts. Such an advertised cycle likely does not exist currently with Victorian Energy Compare; a call-to-market might make for a salient annual event that catches consumers' attention in a routine fashion that ultimately encourages search behaviour with the 12-month fixed-price contracts the market creates.

**Design considerations.** The call-to-market just described involved each firm submitting just one fixed-price contract, for one call each year. The number of contracts, the structure of allowable contracts, and number of times the call-to-market is run could be varied, however.

**Call-to-market frequency.** There is a potential trade-off with the call-to-market frequency to consider.

- *Few call-to-markets.* If the call-to-market is run fewer times, say once or twice per year, it is easier for consumers to track. To the extent that, behaviourally, consumers tend to shop around for new contracts just once per year, then having few call-to-markets year to year (e.g., 1 or 2) could make it easier for consumers to create search habits based on the regular call-to-market timing.
- *Many call-to-markets.* On the other hand, the call-to-market could be run every month. This would have the benefit of allowing retailers to continuously update their 12-month fixed-price offer to adjust to changing wholesale cost conditions at the times when the call-to-market are run. However, continually running a call-to-market may result in a form of "information overload" for consumers looking to engage in the market through the call-to-market. If the contracts are perceived as always changing in the call-to-market by consumers, then they may disengage with it

since it shares similar features with the continuous flow of “regular” contracts already offered by retailers.

**Number of contracts offered.** The call-to-market could also allow each retailer to offer as many contracts as they like through the call-to-market. We also believe this potentially comes with a trade-off.

- *Few contracts.* Like having fewer calls to markets, this will have the benefit of simplifying the process from the point of view of consumers looking to engage with the call-to-market. However, the problem with having a regulation of just (say) one contract per retailer is that it ignores the fact that different consumers can have very different electricity load profiles. Salient examples include non-solar vs solar households or households with “peaky” demand in the morning and night vs households with less peaky demand and more consistent energy usage throughout the day. By only allowing retailers to submit one contract, they will be unable to compete for different segments of consumers.
- *Multiple contracts.* Allowing retailers to submit multiple contracts as part of the call-to-market would allow them to compete for consumer segments. In the extreme, one could imagine allowing firms to submit as many contracts with as many different pricing profiles as they wish. However, we would strongly caution against this. Rather, the call-to-market rules could regulate the number and structure of contracts that the firms bid; for example, requesting bids for solar contracts, fixed-price contracts, contracts with peak and off-peak prices (where the peak/off peak times are defined by the call-to-market rules), and so on.
- *Allowable contract structures.* If the call-to-market specifies that all contracts must be of a form where the day-charge is set in the call-to-market rules and retailers can only submit the per-kWh usage charge, ranking offers is trivial for this class of contracts: the lowest usage charge will result in the lowest bills for customers. However, allowing two or more contract features to vary means that different customers will have different products that will be most suitable for them. This can make publicising the best deals tricky, and perhaps result a market that is likely just as challenging for consumers to navigate in terms of searching for contracts, with similar engagement levels to those currently seen. A further challenge is that with five distribution service regions and the future potential for more granular location-based wholesale prices, there are different underlying costs for retailers across the state. Therefore, it is difficult to foresee additional value beyond referring customers to the Victorian Energy Compare website that already exists and can provide the customer with the best deals for a moment-in-time.

#### 4. Reducing search costs via a centralised retail exchange

The description and options of the call-to-market process above focuses strictly on the supply-side of the market: it focuses on creating a forum whereby firms submit prices that will be publicly announced. The policy is passive in that it still relies on consumers being sufficiently engaged in the market that they pay attention to the call-to-market, value the certainty associated with having a 12-month fixed-price energy contract, and take it upon

themselves to switch retailers month-to-month or year-to-year based on the current 12-month fixed-price contracts.

A public body issuing a call-to-market could achieve better outcomes if it was prepared to become a market-maker, where it also coordinates the demand-side of the market, in effect creating an exchange for retail energy contracts. The idea in its simplest form is that in addition to collecting 12-month fixed-price energy contracts from retailers, the market-maker would also recruit consumers (accounting for the different segments) who are looking to switch retailers based on the outcome of competitive bidding through the exchange. For example, the rules could be that retailers compete for a given consumer segment<sup>5</sup> by submitting the per-kWh usage charge they are prepared to offer all customers in that group.<sup>6</sup> Consumers in the exchange would then be switched, by default, to the offer that represents their lowest-cost provider.<sup>7</sup>

**A parallel system.** A key value to consumers from a centralised exchange for energy contracts is that it gives disengaged consumers a way to effectively “opt-out” of the current decentralised retail energy market by “opting-in” to the retail exchange. By opting-in, an individual knows that they will have their energy rates guaranteed for the next 12-months, and that they will be put on the lowest-cost contract available in the market based on competitive retailer bidding behaviour. Simply put, a consumer can avoid the hassle of shopping for energy contracts in the (current) *decentralised market* and know that they are on a competitive rate through the *centralised energy exchange*. In this way, the exchange directly addresses the market failure of search costs among customers who value 12-month fixed-price contracts and who want to disengage from the current decentralised energy market. In effect, in the long-run, engaged consumers would shop for retail contracts in the decentralised market, while disengaged consumers would enrol in the centralised energy exchange for 12-month fixed-price retail contracts. The exchange could also represent a method for allocating the default provider for cases where one must be provided.

Further, customers that choose to engage and who can benefit from more tailored contracts that perhaps can unlock efficiency gains can still do so in the decentralised market. Product innovation need not be stifled because, as discussed, the exchange targets the customers that wish to disengage from searching. This could be crucial for future productivity in the sector if the adoption of schedulable consumption technologies grows at a consumer level (for example, electric vehicles and smart thermostats).

---

<sup>5</sup> For example, groupings of customers could be arranged by location, contract start date, solar ownership and/or load-profile characteristics and a call-to-market is issued for each consumer segment. Such fragmentation would ensure that large swings in market share do not occur from one single idiosyncratic event.

<sup>6</sup> For example, the exchange could mandate the daily charge, so retailers only have one variable to compete over and establishing a clear winner is easier.

<sup>7</sup> It could also be specified that customers have the choice to not make the default switch if they opt-out, and they would be informed of the rank-order of energy contracts and their associated annual cost in making this decision. However, if they do not opt-out, they should be required to stay in the contract to mitigate the risk to retailers that participate in the exchange of not keeping the customers they win from the competitive process.



**The role of AMI.** Finally, we note that Advanced Metering Infrastructure (AMI) data, which is available for all households in Victoria, can enhance the market exchange for electricity. These data would allow the market maker to expand on the specifications of contracts that can be submitted to the call-to-market. As part of entering the exchange, consumers would make available their smart meter data to the market-maker who would use it to determine the lowest annual cost 12-month fixed-price electricity contract for a consumer from the exchange,<sup>8</sup> and use recent advances in machine learning to determine, with confidence, which offer delivers the lowest expected bill for a given consumer among those bid into the exchange. In this way, AMI data can deliver public value for stimulating competition and addressing search costs in the retail electricity market.

There are various other market design considerations with the exchange, including those related to recruitment, customer segmentation, default behaviour(s), opting in/out of the exchange, and so on. At this stage, however, we are simply flagging the idea of running an energy market exchange as an option that might address the search cost and competition issues highlighted in the conceptual framework. We view this option as a much more effective extension of option 3.5 regarding a call-to-market for 12-month fixed-price energy contracts. It goes beyond creating a second Victorian Energy Compare, which is in effect what we think the most effective version of option 3.5 will yield.

## 5. Conclusion

Contestable retail energy markets provide opportunities for retailers to profit from innovations that can procure energy at lower costs by offering more competitive contracts to customers to gain market share. However, as in most retail markets, consumers incur search costs when they examine the various contracts offered in the market. These costs are likely to be larger when the customers have low understanding about how their actions translate to energy usage and bills, and also if the contracts available on the market vary in many dimensions and are therefore difficult to compare.

The options for regulated contract standards put forward by the ESC all aim at reducing the search costs Victorian retail energy customers need to incur when searching for a deal. Restricting the structure of contracts retailers can offer by requiring prices to be fixed will make it easier for customers to compare offers, but in some cases could stifle innovation and competition. Therefore, proposals for regulating the characteristics of contracts require careful consideration.

Our view of the options put forward by the ESC vary from concerns they might be low impact to potentially innovation stifling. The exception is an extension to the call-to-market option, which might reduce search costs without stifling innovation.

The reasons for the ineffectiveness concerns for many of the options put forward are that even when reducing the characteristics or the timing for when contract characteristics can change, comparing and communicating the best deals is tricky unless there is only one

---

<sup>8</sup> The recently announced Consumer Data Right from Commonwealth Treasury makes this possible.

feature by which retailers are allowed to compete (for example, the per kWh usage charge). However, the potential benefit to customers for having 12-month fixed-price contract options is that they can safely choose to not frequently monitor their existing deal and other deals in the market for that time period. This must be weighed with the potential costs are that retailers bear more risk under such contracts which will be passed through to higher prices. Further, many potential efficiency gains that might be expected with the greater penetration of schedulable consumption technologies (for example, electric vehicles and smart thermostats) will not be unlocked if the allowable contract characteristics are heavily restricted, removing the possibility for flexible price incentives.

We see a way forward where the potential for productivity improving retail innovation is maintained, but where consumers that want to disengage from the market can do so with smaller billing consequences than they might be facing under the current paradigm. Our preferred market design in implementing 12-month fixed-price energy contracts is the creation of a centralised retail energy exchange that could allow for customers to “opt-in” to “opting-out” of the decentralised market yet reap benefits from retail competition. The exchange operator would issue a call-to-market to retailers for a segment of customers that opt-in to this scheme and place rules on the types of contracts that can be entered to meet the preferences of these customers. Then, the exchange operator would allocate customers to the retailer that offers the product that results in the lowest expected bill for that customer over the coming 12 months. Such an exchange would use competition to protect disengaged customers from having their inattention result in them paying higher prices, but also allow for retailers to target the more attentive customers in the decentralised market by offering more innovative products.

## References

- Ater, I. and O. Rigbi (2019): "Price Transparency, Media and Informative Advertising", working paper, Tel Aviv University.
- Byrne, D.P., Leslie, G.W., and R. Ware (2015): "How do Consumers Respond to Gasoline Price Cycles?" *The Energy Journal*, 36(1), 115-147.
- Byrne, D.P. and N. de Roos (2019): "Learning to Coordinate: A Study in Retail Gasoline," *American Economic Review*, 109(2), 591-619.
- Byrne, D. P., Martin, L. A. and J.S. Nah (2019): "Price Discrimination, Search and Negotiation in an Oligopoly: A Field Experiment in Retail Electricity," working paper, The University of Melbourne.
- Giulietti, M., Wildenbeest, M. and M. Waterson (2014): "Estimation of Search Frictions in the British Electricity Market," *Journal of Industrial Economics*, 62, 555-90.
- Hortascu, A., Madanizadeh, S. A. and S. T. Puller (2018): "Power to Choose? An Analysis of Consumer Inertia in the Residential Electricity Market," *American Economic Journal: Economic Policy*, 9, 192-226.
- Knittel, C. R. and V. Stango (2003): "Price Ceilings as Focal Points for Tacit Collusion: Evidence from Credit Cards," *American Economic Review*, 93, 1703-29.
- McRae, S. and F. Wolak (2019): "Retail Pricing in Colombia to Support the Efficient Deployment of Distributed Generation and Electric Vehicles," working paper, Stanford University.
- Stigler, G. (1961): "The Economics of Information," *Journal of Political Economy*, 69, 213-225.
- Thwaites, J., Mulder, T., and P. Faulkner (2017): "Independent Review into the Electricity and Gas Retail Markets in Victoria," technical report, 80 pages.
- Varian, H. (1980): "A Model of Sales," *American Economic Review*, 70, 651-659.