ESSENTIAL SERVICES COMMISSION

Victorian Default Offer to apply from 1 July 2019

Draft advice

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Preface: The Victorian Default Offer in context

In October 2018, the Victorian Government announced it would be legislating to introduce a Victorian Default Offer (VDO) into the state's retail electricity market. In December, we were issued terms of reference requesting we develop a methodology and recommend a price (or prices) for the VDO. In February 2019, legislation to implement the VDO was introduced into the Parliament where it is currently being debated.

This paper outlines our proposed methodology for setting the VDO price having regard to our statutory objectives and the terms of reference. We now seek feedback from the community and energy industry.

This overview briefly describes the Victorian retail energy market, the role of the VDO and how we propose to calculate it, how the VDO differs from the default market offer (DMO) being developed by the Australian Energy Regulator (AER), and the likely impact of the VDO on Victorian consumers.

How does the Victorian retail energy market work?

It is now well-accepted that shopping around for an electricity deal can be a very confusing and unwelcome experience for customers. Likewise, it is now well-established that customers who, through no misdeed of their own, fail to shop around on a regular basis are most likely to find themselves paying more than necessary for their electricity. The cost imposed on customers who do not shop around has been labelled a 'loyalty tax' — reflecting the idea that customers who are 'loyal' (insofar as they don't go looking to switch to a better deal from another retailer) find themselves paying higher prices. In normally competitive markets we would expect loyalty to be rewarded, not penalised.

In the retail electricity market, energy companies are caught up in a marketing 'arms race' as they pursue customers who are inclined to shop around. It's important to note that all this expenditure on marketing does not lead to more customers entering the market; nor does it result in customers using more electricity. In other words, the sole purpose of retailers' marketing efforts is to drive customers to churn back and forth between energy companies. Economists refer to this churning effect as a zero-sum game. Energy companies are spending enormous amounts just to 'shuffle the deck chairs'. Because the energy industry has a captive customer base, the costs of this 'shuffling' is simply passed on to consumers in the form of generally higher prices.

The retail energy market is markedly different from other markets. In this market, marketing does not grow the market but just increases the overall price level. At the same time, customers who are most 'loyal' find themselves paying for most of these marketing costs even though they derive no benefit from it. This is the opposite of what we might normally expect in terms of competitive markets. Competitive markets usually promote efficient pricing that is cost-reflective.

What is the Victorian Default Offer (VDO)?

The Victorian government's legislation proposes that from 1 July 2019, every Victorian residential and small business electricity customer will be able to access the VDO from their energy company. Customers who have never shopped around will be transferred automatically from their present 'standing offer' on to the VDO from their retailer. The VDO will be regulated by the Essential Services Commission.

Importantly, the VDO is not a single, mandatory price to the exclusion of all others. Our terms of reference make clear that the government anticipates electricity retailers will continue to make other market offers available. Presumably, customers will take up these alternative contracts if they represent good value for money (even if they cost more than the VDO).

Our terms of reference, and subsequent statements from the Premier and Minister for Energy, make clear that the purpose of the VDO is to provide customers with universal access to a "fair" price.

There is no single definition of fairness. It is generally dependent on the context within which it is used. In the context of the Victorian retail electricity market (as described above), we assume that a fair price is intended to reflect the price that a loyal customer could expect to pay if this market operated like other normally competitive markets. That is, prices reflect the efficient costs of delivering services to different customers. Our terms of reference reflect this expectation when they state that the VDO should be "based on the efficient cost to run a retail business" and no allowance should be made for "headroom" (where "headroom" means a provision that is not related to (efficient) costs).

There are well established methodologies for estimating electricity retailers' efficient wholesale, network and environmental costs. Estimating retailers' own operating costs requires a greater level of judgement. We have informed our judgements by using several published data sources and our expectation that the government's policy intention is not to promote service outcomes under the VDO that are 'cheap and nasty'.

Estimating the 'efficient' level of marketing costs is more problematic. One way of thinking about how we might solve this problem is to imagine a market which is already operating efficiently because customers are highly engaged and rapidly switching to better priced offers as soon as they became available. In this efficient market, retailers would not need to spend a great deal on marketing because customers are already heavily engaged in searching for a better price. We have concluded this is what our terms of reference mean when they refer to us only including a "modest allowance for customer acquisition and retention costs".

It's worth thinking about what a highly efficient retail electricity market might look like. If customers are highly engaged, they would not tolerate prices that were not cost reflective. They would switch

away from any retailer who tried to raise prices above the efficient cost of providing the service to them. As a result, prices across the entire market would converge on the efficient cost of providing electricity services. There would be no headroom in prices and no cross-subsidies between different groups of customers.

We believe this is the "fair" price that the VDO is intended to make available to customers.

How does the VDO differ from other default offers?

Soon after the Victorian government introduced its VDO legislation, the federal government released draft regulations confirming its intention to introduce a Default Market Offer (DMO) in non-price regulated jurisdictions — namely, South Australia, New South Wales and south east Queensland. At the same time, the AER released its draft proposal for how it would determine the DMO in these states.

While the VDO is described in terms of "fairness", the DMO is described as a "fall-back position" or a "cap…to limit the 'loyalty tax'."

These terms suggest the DMO is not intended to be as profound an intervention as the VDO. The DMO appears to tolerate some headroom and cross-subsidies between customers. This explains the approach taken by the AER. The methodology outlined in its draft determination does not propose a cost-based approach like we have proposed in this paper. Instead, the AER proposes to set the DMO based on the average of the median price for standing offers and the median price for market offers. While it is not possible to draw any conclusions about whether the median price for market offers contains any headroom, there can be no doubt that the median price for standing offers will contain headroom (because standing offers are the most expensive offers in the market). The AER's methodology allows 50 per cent of this level of headroom in its estimate of the DMO.

As reported in this paper, we have applied the AER's methodology to identify what the DMO might have looked like had it been applied in Victoria. We find that for households, the DMO could be around $200 higher than the VDO. Perhaps more interestingly, we have found that if we took the AER's methodology but made no allowance for headroom, the DMO and VDO would produce very similar prices. This provides us comfort because it indicates that the difference between our respective estimates is explained solely by the different policy frameworks within which we are operating, and it is not the product of our different methodologies.

What impact will the VDO have on Victorian customers?

We are required to estimate the VDO for each of the five Victorian distribution zones. If the VDO prices proposed in this draft advice were implemented today, typical residential customers (using 4000 kWh per year) on standing offers would immediately see their energy bills cut by between $390 and $520 per year, depending on where they live. Because the prices paid by customers on market offers vary so greatly, we cannot say how much switching to the VDO will save these

customers. We can suggest however, that switching to the VDO is likely to be very beneficial for customers who have either not shopped around for a long time, or who have struggled to meet the conditions that their retailers impose on their discounts.

Estimating savings for small business customers is a little trickier because usage patterns differ greatly between businesses. However, small businesses that are on a standing offer and using 20,000 kWh per year will save between $1,830 and $2,300 per year, depending on where they're located.

What comes next?

We are now consulting on our proposed approach and we invite feedback from anyone who might be interested in having a say. We'll need your feedback by no later than **5pm 4 April**. Details about how to make a submission can be found in this paper.

Once we've reviewed all the feedback on our proposed approach, we will finalise and provide our advice to the Victorian government in early May. Subject to the passage of legislation through the Victorian Parliament, the VDO will come into effect on 1 July 2019.

Dr Ron Ben-David

Chairperson

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Glossary

Term	Definition
ACCC	Australian Competition and Consumer Commission
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AMI	Advanced Metering Infrastructure (i.e. smart meters)
ASX	Australian Stock Exchange
CARC	Customer acquisition and retention costs
DLF	Distribution Loss Factors
DNSP	Distribution Network Service Provider
EBITDA	Earnings Before Interest Tax Depreciation and Amortisation
ESC	Essential Services Commission
ESCOSA	Essential Services Commission of South Australia
FiT	Feed-in Tariff
FRC	Full Retail Competition
ICRC	Independent Competition and Regulatory Commission (Australian Capital Territory)
IPART	Independent Pricing and Regulatory Tribunal (New South Wales)
kWh	Kilowatt Hours
LGC	Large-scale Generation Certificates
LRET	Large-scale Renewable Energy Target
MLF	Marginal Loss Factor
Monte Carlo Simulation	The process of using repeated random sampling to obtain a numerical result
MRIM	Manually Read Interval Meter
MWh	Megawatt Hour

NECF	National Energy Customer Framework
NEM	National Electricity Market
NER	National Electricity Rules
NERL	National Energy Retail Law
NUOS	Network Use Of System
OOE	Office of Energy (Western Australia)
OTTER	Office of the Tasmanian Economic Regulator
PDF	Payment Difficulty Framework
PPA	Power Purchasing Agreements
QCA	Queensland Competition Authority
REPI	Retail Electricity Pricing Inquiry
RERT	Reliability and Emergency Reserve Trader
ROC	Retail Operating Costs
RPP	Renewable Power Percentage
SRES	Small-scale Renewable Energy Scheme
STC	Small-scale Technology Certificates
STP	Small-scale Technology Percentage
ToR	Terms of Reference
ToU	Time of Use
VDO	Victorian Default Offer
VEEC	Victorian Energy Efficiency Certificates
VEU	Victorian Energy Upgrades
WACC	Weighted Average Cost of Capital

Summary

We have prepared draft advice on the price for a Victorian Default Offer

- This paper sets out the Essential Services Commission's draft advice on the methodology and price for the Victorian Default Offer (VDO), covering retail electricity services.
- On 18 December 2018, we received terms of reference from the Victorian Government to advise on the VDO, which will be available to residential and small business customers from 1 July 2019.[1]
- Our draft advice has considered feedback from stakeholders, including views raised in submissions responding to a commission staff paper, and at a technical workshop.[2]
- Under proposed legislation, the VDO will limit the prices charged to residential and small business customers on standing offer contracts.[3] While the VDO will also be available to all other customers, electricity retail businesses will continue to have flexibility to offer customers different prices to the VDO, through market offers.

Our draft advice means annual electricity bills for customers on standing offers will fall

- Typical residential customers on standing offers and using 4,000 kWh of electricity per year will see their annual electricity bills reduce by between $390 and $520, when compared with the median standing offer in their distribution zone (see map below).[4]
- Small business customers on standing offers and using 20,000 kWh of electricity per year will see their annual electricity bills reduce by around $1,830 to $2,300, when compared with the median standing offer in their distribution zone (see map below).[5]
- Below, we also set out how customer bills under the proposed VDO compare to current market offers.

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[1] Residential and small business customers means customers who purchase power for personal, household or domestic use, or consume no more than 40 megawatt hours (MWh) in a year for business use.

[2] The staff paper was released on 21 December 2018, and is available at www.esc.vic.gov.au. The workshop was held on 21 January 2019.

[3] As reported in our Victorian Energy Market Report in 2017-18, there were around 5% of residential and 16% of small business electricity customers on standing offer contracts.

[4] Based on a typical residential annual consumption of 4,000 kWh per year. Actual savings will depend on each customer's consumption and their current standing offer rates. Estimated savings are based on flat usage tariff offers on Victorian Energy Compare as at 31 January 2019.

[5] Based on a small business annual consumption of 20,000 kWh per year. Actual savings will depend on each customer's consumption and their current standing offer rates. Estimated savings are based on flat usage tariff offers on Victorian Energy Compare as at 31 January 2019.

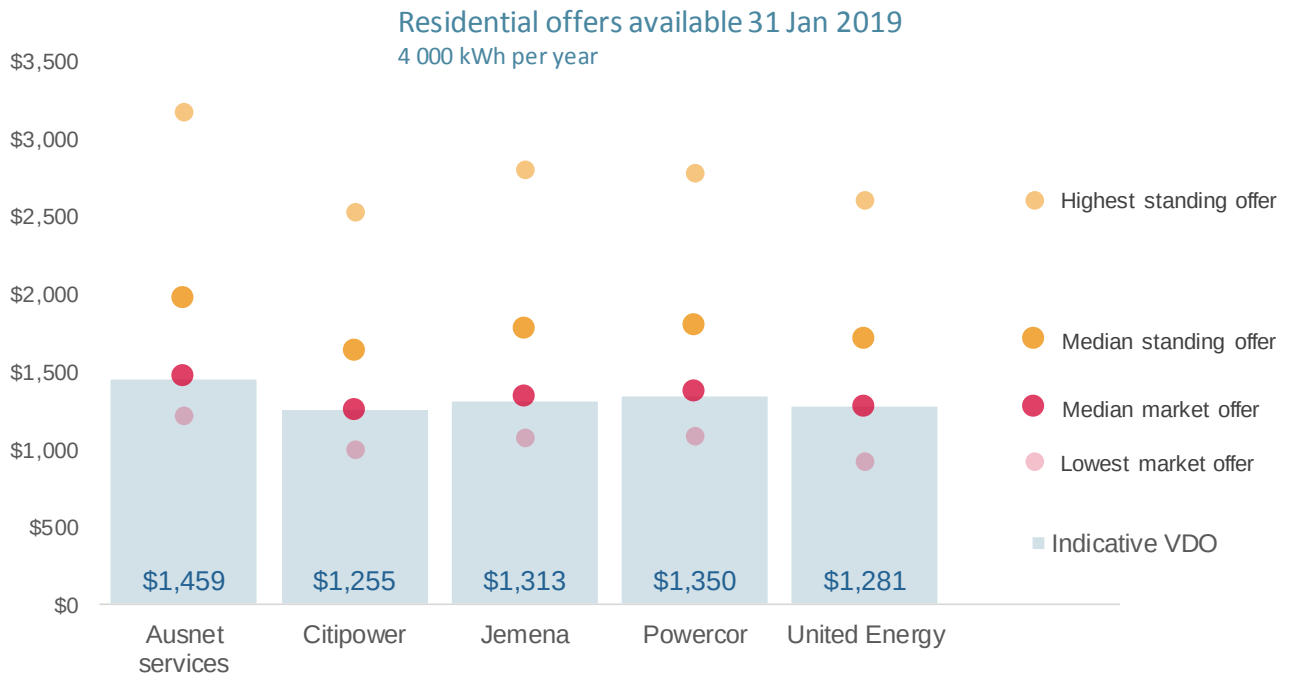


Figure 1 Comparison of the VDO with other available offers, typical residential customer (GST inclusive)

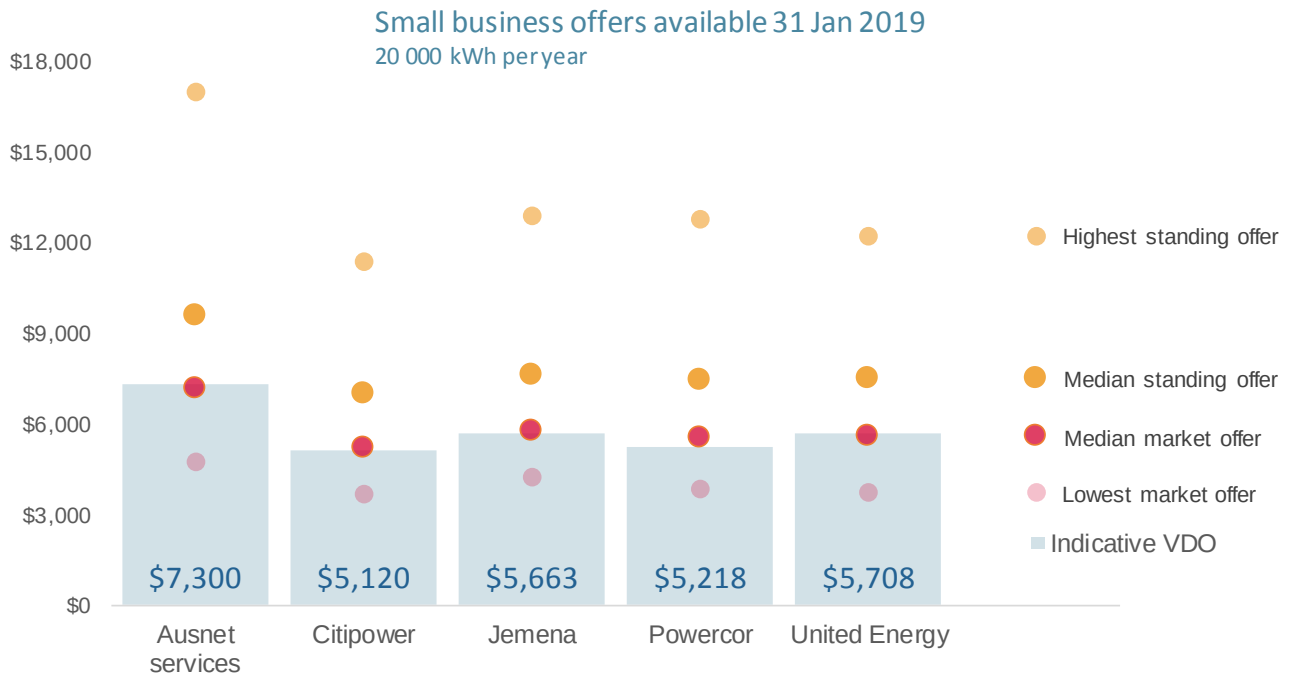


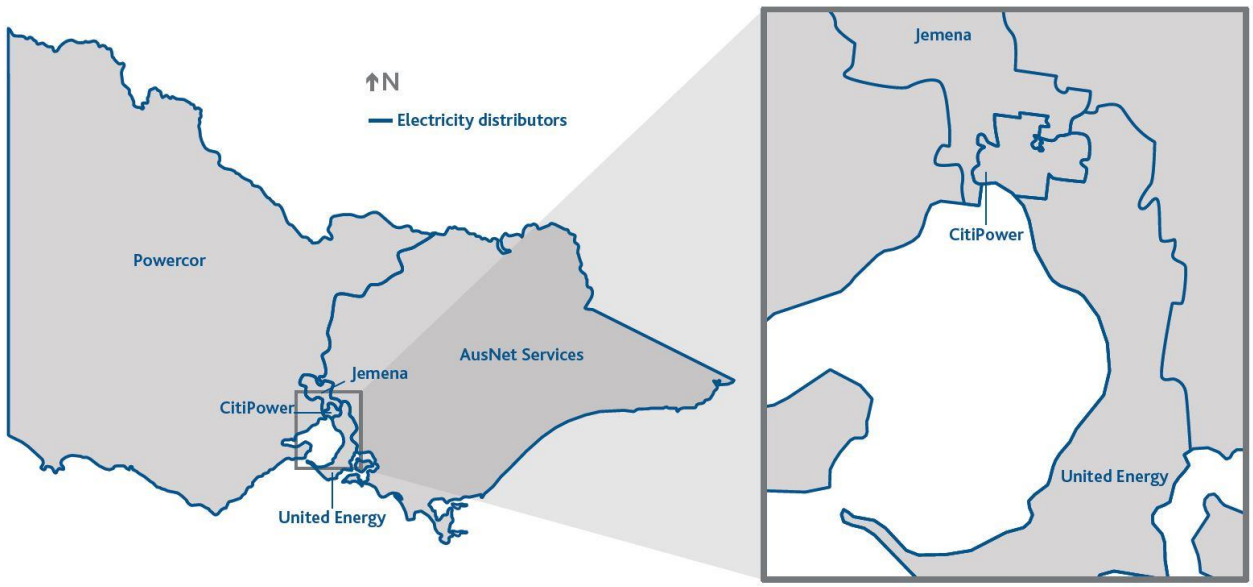
Figure 2 Comparison of the VDO with other available offers, typical small business customer (GST inclusive)

We have estimated the price for a VDO using a cost-based approach

- We have used a cost-based approach to estimate the VDO, as it transparently sets out each of the costs included in calculating the VDO. Moreover, it is an approach that has been used by a range of other economic regulators when setting electricity prices.
- Our draft advice separately calculates costs for:
  - wholesale electricity costs
  - network costs (including metering)
  - environmental scheme costs
  - retail operating costs
  - customer acquisition and retention costs
  - retail margin
  - other costs (e.g. regulatory and licence fees, ancillary charges)

We are seeking feedback before we provide our final advice to government

- This paper provides a further opportunity for stakeholders to provide feedback before we make a final recommendation to the Victorian Government by 3 May 2019.
- Submissions should be made by **5pm 4 April 2019** by email or mail. See section 1.5 for details.



Victorian Electricity Distribution zones

1. Introduction

The Assistant Treasurer has provided the commission with terms of reference under Section 10(g) of the *Essential Services Act 2001* requesting advice in relation to the Government's decision to introduce the Victorian Default Offer (VDO) for residential and small business customers.

1.1. Terms of reference

The terms of reference (Appendix A) set out the request to develop a methodology for determining an efficient price for electricity and use that methodology to recommend a VDO for Victoria that will:

- be offered unconditionally by each licensed electricity retailer to all residential and small business customers[6] including those residential and small business customers who export power under feed-in tariffs;
- be the price that a retailer can charge under the VDO arrangements and is to be established as the basis for retail discounts;
- adopt the terms and conditions for standard retail contracts (i.e. standing offers); and
- be based on current marketing standards and practices.

In addition to this, the terms of reference also set out some further detail about how the VDO should be structured and what it may include. The VDO should:

- be set for each distribution zone;
- be based on the efficient cost to run a retail business;
- include an allowance for a maximum retail profit margin;
- include a modest allowance for customer acquisition and retention costs; and
- not include an allowance for headroom.[7]

The terms of reference also state that the VDO will provide a simple, trusted and reasonably priced option that safeguards customers unable or unwilling to engage in the retail electricity market without impeding the consumer benefits experienced by those who are active in the market.

[6] Residential and small business customers means customers who purchase power for personal, household or domestic use, or consume no more than 40 megawatt hours (MWh) in a year for business use.

[7] For the purposes of our draft advice on the VDO, we have defined headroom as an allowance in a regulated price that does not reflect a cost borne by firms operating in the market. We note that typically, headroom is a transitional allowance intended to attract competitors when markets are in the process of being deregulated.

In developing our advice, we are required to have regard to our objectives under the *Essential Services Act 2001* (ESC Act) and the *Electricity Industry Act 2000* (EI Act), findings from the Independent Review of Electricity and Gas Retail Markets in Victoria (the independent review), the Government's published response to the independent review, advice from relevant experts, and any other matters we deem relevant.

The terms of reference also require us to engage with an expert panel, advise the Assistant Treasurer and Minister for Energy, Environment and Climate Change about our progress and final approach, and consult publicly.

We must develop and recommend a methodology and price by 3 May 2019.

1.2. Background and context to this draft advice

Our terms of reference require us to have regard to the findings from the independent review and the Government's published response to the independent review. This section provides a short summary of how the findings of the independent review and Government response relate to this draft advice, with further detail on how we have had regard to these findings in chapter 2.

In November 2016, the Government announced the independent review, following a number of public reports suggesting Victorians were paying too much for energy.[8]

In August 2017, the independent review released its final report and concluded the market was not working for consumers.[9] The cost of competition, the structure of the market and the practices of the industry were highlighted as key issues.[10]

Having reached these conclusions, the independent review made 29 recommendations aimed at improving energy market outcomes for consumers, including changing retailer marketing practices, improving market monitoring, establishing a regulated basic service offer and abolishing standing offer contracts.[11] In March 2018, the Government released its interim response, which asked the commission to develop a methodology for a basic service offer reference price.[12] The commission provided this analysis to government in mid-2018. While our work on the reference price methodology enabled the commission to gain feedback from stakeholders on the costs incurred by

[8] Victorian Government, Terms of reference for Independent Review of the Electricity and Gas Retail Markets in Victoria, November 2016.

[9] Independent Review Panel, Independent Review of the Electricity and Gas Retail Markets in Victoria, August 2017, p. ix.

[10] ibid, p.ix

[11] ibid, p.xi-xiii

[12] Victorian Government, Victorian Government Interim Response: Bipartisan Independent Review of the Electricity and Gas Retail Markets in Victoria, March 2018, p. 2.

retailers at that time, we have engaged in a separate consultation process in developing this draft advice.

The Government released its final response to the independent review on 26 October 2018, which supported all recommendations including the requirement for electricity retailers to offer a fairer price through the regulated VDO and replacing standing offers.[13]

Given that both the basic service offer reference price methodology and VDO originated out of recommendations from the independent review, our work in developing a reference price methodology considered some matters that are also relevant for the VDO. There are however, differences between a reference price and the VDO, which we have taken account of in forming our draft advice. For example, the VDO includes an allowance for modest customer acquisition and retention costs. Nonetheless, both are based on a cost stack approach with the similar components (apart from customer acquisition and retention costs), and both require consideration of similar issues when the methodology is put into practice.

The commission notes that a Bill has been introduced to the Victorian Parliament that would empower the Governor in Council, on advice from the Minister for Energy, Environment and Climate Change, to regulate a price for standard retail contracts.[14] The Bill also makes amendments that allow the Governor in Council to provide the commission with an Order to make a price determination that would regulate a price for standard retail contracts. The commission notes that the draft advice in this report has been completed under our terms of reference and is not a price determination under section 33 of the ESC Act.

How does the VDO differ from market offers?

As noted above, based on the proposed legislative changes introduced to Parliament the VDO will be a regulated price that replaces current standing offer prices. This does not prevent retailers from making market offers available to customers that differ from the VDO. This aligns with the recommendation from the independent review, which suggested that retailers would be able to offer alternatives in the market above or below the proposed regulated basic service offer price.[15] The VDO will be available to all customers. As noted by the Minister for Energy, Environment and Climate Change:

[13] Victorian Government, Victorian Government Final Response to the Independent Review of the Electricity and Gas Retail Markets in Victoria, October 2018 p. 5.

[14] Energy Legislation Amendment (Victorian Default Offer) Bill 2019.

[15] Independent Review Panel, Independent Review of the Electricity and Gas Retail Markets in Victoria, August 2017, p. xi.

"For every other Victorian household, they'll be entitled to ring up their retailer and ask them to switch onto the Victorian default offer if they think that it's the best offer for them."[16]

1.3. Our approach to addressing the terms of reference

The commission has aimed to take a pragmatic and transparent approach to developing a methodology for the VDO and applying it to form our draft advice. Our draft advice aims to clearly set out the steps we have taken in a way that can be followed and reproduced by stakeholders.

As noted in Chapter 2, we are recommending the first VDO applies from 1 July 2019 to 30 December 2019. This is to align the VDO with the timing of changes to network tariffs regulated by the Australian Energy Regulator (AER). This means an updated VDO price will apply from 1 January 2020. We would engage with stakeholders in advance of this date and will provide more details, subject to the legislation passing the Victorian Parliament.

Although the first VDO would be set for a six month period, where relevant we have taken an annualised view of costs. For example, wholesale electricity costs and retail costs are based on the cost over a year.

As outlined in a staff working paper released in December 2018 our criteria for developing the VDO methodology are[17]:

- Timeliness – the approach should be implementable from 1 July 2019. This would not prevent the commission from consulting on possible refinements to the methodology or updates on the inputs after that date.
- Representative – the approach should produce results that broadly reflect costs faced by retailers efficiently operating in Victoria. This does not mean that the results would necessarily reflect the cost of an individual retailer or group of retailers.
- Transparent – the approach should be able to be understood and reproducible.
- Well accepted – the approach should rely on estimation techniques that are familiar and readily applicable (though these techniques could be enhanced in future, subject to appropriate consultation).

The terms of reference state that the VDO should be based on the efficient cost of running a retail business, not establishing the lowest possible price.

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[16] 'Daniel Andrews to set a default offer on energy bills from July 1', The Australian, 19 February 2019.

[17] Essential Services Commission, Staff working paper: Victorian Default Offer for domestic and small business electricity customers, December 2018, p. 2.

As such, we have sought to frame how we consider the costs of running an electricity retail business by outlining a number of principles:

- Costs are based on a retail business already operating in the Victorian market not a new entrant. We have taken this view based on our terms of reference that state that the VDO will be offered by licensed retailers, and adopt the terms and conditions for standard retail contracts.
- As the VDO is offered to both residential and small business customers, it should reflect the costs of serving those customers.
- We consider that publicly available data for average industry costs (with a modest allowance for customer acquisition and retention costs) are likely to provide a reasonable approximation of the efficient costs to run a retail business.[18]
- The VDO will differ between distribution zones and by residential and small business customers to reflect the difference in underlying network costs applied in each of the zones and between the customer groups.

The commission would consider whether there is additional information that we would include in any future price assessments.

The broader context for our work

The terms of reference issued to the commission in December 2018 require us to have regard to our objectives under the ESC Act and the EI Act, as well as the findings of the independent review (including the Government's final response), advice from relevant experts and any other matters it deems relevant. We consider the objectives in the ESC Act to be more germane than the objectives in the EI Act to the work presented in this draft advice.

Section 8(1) of the ESC Act states, "the objective of the Commission is to promote the long term interests of Victorian consumers." Section 8A lists a number of matters to which the commission must have regard "to the extent that they are relevant in any particular case". We consider the three most relevant matters regarding this draft advice are sections 8A(1)(a)-(c), namely:

(a) efficiency in the industry and incentives for long term investment;

(b) the financial viability of the industry; and

(c) the degree of, and scope for, competition within the industry, including countervailing market power and information asymmetries.

[18] In forming this view we assume that it is not reasonable to assume that a retailer would be able to achieve the lowest cost for each and every element of the cost stack. This principle has regard to s.8A of the Essential Services Commission Act 2001, which requires the commission to consider the financial viability and incentives for long term investment in the industry.

The terms of reference provide us with guidance on how our statutory objective should be interpreted by stating that the interests of consumers are served by having access to a "simple, trusted and reasonably priced" electricity offer. Our terms of reference and subsequent statements from the Premier and Minister for Energy (including the VDO Bill's second reading in Parliament)[19], also make clear that the purpose of the VDO is to provide customers with universal access to a "fair" priced electricity offer. The terms of reference also provide further guidance on how we might consider fairness in the context of the matters to which we must have regard. Specifically, it entails making allowances for:

- the efficient cost to run a retail business
- a maximum retail profit margin
- modest customer acquisition and retention costs

and not including an allowance for headroom.

In this context, the term headroom refers to a regulatory allowance that is unrelated to efficient costs. In other words, the terms of reference make clear that retailers should not earn excess returns (or profits) from customers on the VDO.

The terms of reference further describe a fair outcome as one in which customers on the VDO are only paying for the "efficient cost to run a retail business". We have assumed standard economic definition in interpreting this to mean:

- The VDO price is cost reflective — that is, it reflects the cost a retailer incurs in procuring, delivering and selling electricity to a customer who is on the VDO. Customers on a VDO should be neither the beneficiaries nor the source of cross-subsidies between different customer groups.
- Retailers are expected to optimise their operations to ensure the costs of procuring, delivering and selling electricity to customers on the VDO reflects the sustainable cost (including profit) of providing these retail services.
- There is sufficient retail capacity in the market to service all Victorian customers should they wish to enter a VDO contract for the supply of their electricity.

There are well established methodologies for estimating electricity retailers' efficient wholesale, network and environmental costs. Since December 2018, commission staff have been consulting on the available options. This paper outlines the methodologies we propose to adopt for calculating each of these cost components when determining the VDO.

[19] Energy Legislation Amendment (Victorian Default Offer) Bill 2019, Second Reading.

Estimating efficient retail operating costs is less straightforward. In the absence of statutory powers to compel retailers to provide us with data about these costs, we invited them to share with us the data they recently provided to the ACCC. Little data was forthcoming. Instead, we have relied on published data sources and our own judgement when estimating a retail operating allowance.[20] We consider that publicly available data provides us with sufficient opportunity to form a reasonable approximation of the efficient costs to run a retail electricity business. Our approach, as outlined in this paper, seeks to ensure the allowance for retail operating costs is: cost reflective, sustainable and supports the adequate provision of retail services to VDO customers. We have adopted this approach, having regard to the financial viability of the industry, efficiency in the industry and incentives for long term investment.

The terms of reference note that the VDO will reflect the terms and conditions for standing offers. We have assumed therefore, that the government expects no deterioration in the quality of service experienced by customers.

This paper also outlines how we have approached the task of identifying a "modest allowance for customer acquisition and retention costs" (CARC) and a "maximum retail profit margin". In identifying the appropriate allowance for CARC, we have sought to imagine what a market might look like when customers are highly engaged and willing to rapidly switching to better priced offers as soon as they became available. In this efficient market, retailers would not need to spend a great deal on marketing because customers are already heavily engaged in searching for a better price. Our consideration of an appropriate profit margin has been informed by the approach of other regulators.

Finally, we note that the background section of our terms of reference states that the VDO will be made available to customers "without impeding the consumer benefits experienced by those who are active in the market." We understand this statement to be an articulation of policy intent — that is, that the VDO is not intended to be a single, mandatory price to the exclusion of all others. Retailers will not be prohibited from making other offers available to customers, leaving customers free to enter these alternative contracts if they represent good value for money (even if they cost more than the VDO).

On this basis, we have interpreted the reference to not impeding customers who are active in the market as a statement of policy design rather than a factor which we must take into account when developing a pricing methodology.[21]

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[20] The Bill currently before Victorian Parliament envisages providing the commission with the necessary powers to compel retailers to provide data relevant to the determination of future VDOs.

[21] As discussed in section 2.1, this is the main difference between the Victorian Default Offer (VDO) and the default market offer (DMO) developed by the AER (for application in other states).

We have also had regard to our objectives under the EI Act.[22] Consistent with our objectives under the ESC Act and the policy background outlined in our terms of reference, we have developed the VDO as a safeguard that protects customers. As retailers will still be free to compete for customers in the market by making offers above and below the VDO, we note that our approach to the VDO is consistent with the objective relating to full retail competition. Finally, the objective to maintain consistency between electricity and gas regulation is not applicable in this case as we have not been asked to develop a VDO for gas at this point. However, we do note that the Government has committed to establishing a VDO for gas in the future.

The Government has also separately requested that the commission implement a number of other recommendations from the independent review that address the marketing practices of the industry. Those recommendations are designed to assist those engaged customers seeking to find the most suitable deal for their circumstances. As such, this paper does not address the activities occurring under those recommendations.

1.4. Process in recommending a Victorian Default Offer

On 18 December 2018, the commission received terms of reference from the Assistant Treasurer requiring the development and estimation of the VDO to apply from 1 July 2019.

To help comply with terms of reference requirement to consult publicly commission staff released a staff paper working paper on 21 December 2018.[23]

On 21 January 2019, the ESC hosted a technical workshop to inform stakeholder responses through written submissions to the staff working paper. The workshop included attendees from a range of retailers, consumer advocate groups, other government agencies, and distribution businesses. There was opportunity to provide comments and address issues on the day.

The content of both the staff paper and the technical workshop was designed to receive initial feedback from interested parties on the methodology to calculate a VDO for residential and small business electricity customers. It also provided stakeholders with background and facilitated input to our development of a proposed VDO methodology.

As the workshop was focused on more technical aspects of the VDO methodology, most stakeholder feedback sought greater clarity around elements of the cost stack. Many of these issues were reflected in written submissions to the commission.

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[22] The objectives outlined in section 10 of the EI Act refer to: consistency between the regulation of the electricity and gas industries to the extent it is efficient and practicable to do so; promotion of full retail competition; and promoting protections for customers, including in relation to assisting customers who are facing payment difficulties.

[23] Essential Services Commission, Staff working paper: Victorian Default Offer for residential and small business electricity customers, December 2018.

The commission received 17 written submissions in response to the staff working paper and technical workshop from 10 retailers, five consumer advocates, one from the Australian Energy Council and a joint submission from the Victorian distribution network businesses. A list of submissions can be found in Appendix D and the submissions are available on our website.

Written submissions were generally structured according to the questions raised in the staff paper, while also raising a range of policy and implementation issues. Details from the submissions are found in the following chapters as they relate to different elements of our VDO methodology, including how we have considered the feedback in making our recommendation.

1.5. We are seeking feedback on our draft advice

We invite stakeholders to make submissions in response to this draft advice.

Submissions should be made by **5pm 4 April 2019**.

Submissions, preferably in electronic format, and marked Submission to Victorian Default Offer to apply from 1 July 2019 – draft advice, should be sent by email to: RetailEnergyReview@esc.vic.gov.au,

or by mail to:

Essential Services Commission
Level 37, 2 Lonsdale Street
Melbourne, Victoria 3000

We plan to hold a public forum during the consultation period and will provide details to stakeholders once this is finalised. Once we have received submissions, we will review these to inform the preparation of our final advice.

Submissions will be made available on the commission's website, except for any information that is commercially sensitive or confidential. Submissions should clearly identify which information is sensitive or confidential.

2. Proposed approach for the Victorian Default Offer

In developing our approach we have ensured that we have met the requirements of the terms of reference. This section reflects the requirement to base the Victorian Default Offer (VDO) on the efficient costs of running a retail business, a modest allowance for customer acquisition and retention costs (CARC), and a maximum retail margin, while not making an allowance for headroom. Wherever possible we have also taken the most transparent and simple approach that best meets these requirements of the terms of reference.

2.1. Overall methodological approach

In our staff working paper, we suggested two options that could be considered for calculating the VDO:

- Cost-based approach: where we take a bottom-up approach to determining the costs that a retailer would incur in providing its services.
- Index-based approach: where a price is determined based on a forecast of market changes.

Commission staff proposed the VDO be calculated using a cost-based approach, because it is a more transparent and replicable methodology than the index-based approach. However, commission staff sought feedback to inform the commission's draft advice.

Most submissions to our staff working paper did not refer to the proposed cost-based approach, but rather commented on the estimation of particular parts of the cost stack. The Brotherhood of St Laurence supported the cost-based approach that was suggested in the staff paper.[24] Alternatively, Simply Energy considered that a top-down approach to setting the VDO based on the median of currently available market offers was more appropriate.[25]

We note that cost-based pricing is a well-established and accepted methodology used by other economic regulators when setting electricity prices. This includes the Australian Energy Regulator (AER) when setting network tariffs, Independent Competition and Regulatory Commission (ICRC) in the ACT, and the Independent Pricing and Regulatory Tribunal (IPART) in NSW. In the United Kingdom, the Office of Gas and Electricity Markets uses a cost-based approach to set a default

[24] Brotherhood of St Laurence, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 2.

[25] Simply Energy, submission to the Essential Services Commission Victorian Default Offer staff paper, February 2019, p.1.

tariff cap. Cost-based approaches generally use benchmarked estimated of the efficient costs to supply electricity, rather than the costs incurred by any individual retailer.

The commission believes that the cost-based approach best meets the requirements set out in the terms of reference and the criteria outlined in Chapter 1, as it transparently sets out each of the costs included in calculating the VDO. We also consider it provides a timely option that can be developed in a manner that is representative of the costs incurred by retailers.

Given the factors set out above, we propose to use a cost-based approach to estimate the VDO that will apply from 1 July 2019. It is important to note that in applying a cost-based approach we are not proposing to replicate the costs of a specific firm, but have used the principles set out above to estimate the efficient costs of running a retail business.

Taking a cost-based approach also provides more opportunity for the commission to refine the methodology over time by addressing feedback on specific elements of the cost stack rather than needing to make substantial changes to the overall approach – as may be required with an index-based or top-down approach. A cost-based approach means the VDO will be based on reasonable estimates of the costs faced by industry, which enables the commission to have regard to the financial viability of the industry under section 8A(b) of the ESC Act.

The commission proposes to include the following elements in Figure 3 as part of the cost components for retailers:

- wholesale costs – including hedging costs and network losses for electricity
- network costs – which are directly taken from revenue determinations by the AER
- environmental policy costs – including national renewable energy schemes and the Victorian Energy Upgrades program
- other costs – such as retail licence fees and Australian Energy Market Operator (AEMO) fees
- retail operating costs – this includes both the cost to serve and customer acquisition and retention costs
- retail margin – which is applied to all underlying costs.

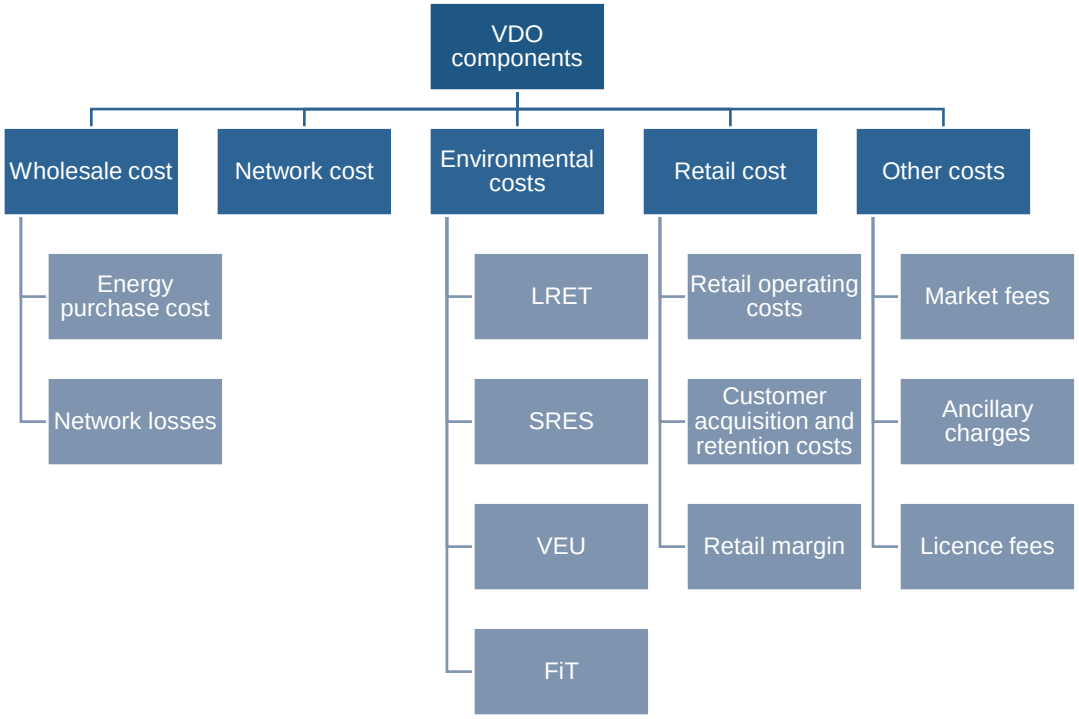

Figure 3 VDO components for retailing energy

Where necessary, components of the cost stack will be adjusted to account for inflation and GST. The cost stack is then converted into a supply and usage charge for the VDO, which is detailed further in chapter 3.

We recommend that the VDO initially be set for a period of six months until 31 December 2019. This will align the VDO with the timing of network tariff changes. If an ongoing role is established for the commission in setting a VDO, we will look to engage with stakeholders to refine and build on the analysis we are undertaking in developing this advice. The technical details of our methodology can be found in Appendix B.

The commission recognises that our proposed approach differs from the methodology proposed by the AER in its draft determination for the introduction of the default market offer (DMO) in New South Wales, South Australia and South-East Queensland.[26] The AER is responding to a request from the Commonwealth Treasurer and Minister for Energy to develop a mechanism for DMO prices. The introduction of a DMO was a recommendation made by the Australian Consumer and Competition Commission (ACCC) in its Retail Electricity Price Inquiry (REPI) final report to reduce unjustifiably high standing offer prices for consumers who are not engaged in the market. The

[26] AER, Draft Determination: Default Market Offer Price, February 2019.

ACCC proposed that the DMO would be located between the median of market offer prices and median of standing offer prices. The AER has proposed a price-based top-down approach for determining DMO prices.[27] While we note that there are some similarities between our work on the VDO and the AER's work on the DMO, there are significant differences in the objectives of each pricing mechanism.

2.2. Wholesale electricity costs

Retailers purchase electricity from the wholesale market to meet the demand of their customers. In the wholesale market (which is operated by the Australian Energy Market Operator or AEMO) the supply and demand for electricity is balanced in real time. Generators offer prices for the supply of electricity, and based on how much electricity is consumed, a spot price is determined every half hour.[28]

Spot prices can be highly volatile, depending on the supply and demand conditions of these half hourly intervals. Retailers, however, sell electricity to customers at a price that is usually left unchanged for a period of time. The volatility in the spot price can be managed by retailers in a variety of ways that include entering into arrangements where the wholesale price they will pay for electricity is set in advance. Often referred to as hedging, this arrangement can be achieved either by contracting directly with a generator, by owning generation assets, or through the derivative futures market (e.g. Australian Stock Exchange (ASX) Energy).

The commission staff working paper, released in December 2018, supported the use of a futures market approach to estimating wholesale electricity costs. This was consistent with the commission's March 2018 consultation paper for the basic service offer reference price methodology. The benefit of the futures market approach is that it provides a transparent option, which also represents an approach a retailer could take to minimising wholesale costs and managing financial risks through hedging.[29]

The staff paper highlighted a number of input assumptions required when using the futures market method and presented possible information sources for those assumptions. Stakeholders were given the opportunity to comment on the overall approach taken to estimating wholesale electricity costs and the information sources used in the futures market approach.

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[27] AER, Draft Determination: Default Market Offer Price, February 2019, p. 8.

[28] In November 2017, the Australian Energy Market Commission determined the national electricity market would move to a five minute settlement period from 1 July 2021.

[29] Essential Services Commission, Staff working paper: Victorian Default Offer for domestic and small business electricity customers, December 2018, p. 8.

Stakeholder feedback on wholesale electricity costs

The commission received a number of submissions that specifically addressed issues relating to the estimation of wholesale electricity costs. There was broad support for using the futures market modelling approach, particularly in a way that reflected the manner in which retailers manage their wholesale electricity purchases for their customer bases.[30] Various comments and positions were raised in relation to the specific input assumptions used in the futures market approach to generate wholesale electricity costs. Particular areas of commentary included consumption load data, the period over which futures contracts are purchased, allowances for volatility and other costs.

Consumption load data

The staff paper suggested the use of Manually Read Interval Meter (MRIM) data that is available from AEMO as it benefitted from being publicly available across each distribution zone and is likely to represent the average load for which a retailer has to provide wholesale electricity. Some retailers questioned using MRIM data in its current state because it includes customers with consumption up to 160 megawatt hours (MWh) per year, which may not be representative of customers to whom the VDO is available (less than 40 MWh per year).[31] These submissions also suggested that the consumption profile differed significantly between residential and small business customers, which may not be reflected in the MRIM data. Sumo made the following statement:

> "A retailer that has a customer base dominated by residential customers – like Sumo does – will have a different load shape to the market on average, and would be expected to have a higher wholesale electricity cost as a result." [32]

In contrast to this Alinta, AGL and EnergyAustralia all supported the use of the most recently available MRIM data as a reasonable source to estimate the consumption profile shape. There were different views about which year of historical MRIM data would be represent future load profiles. AGL and EnergyAustralia suggested that the most recent year of available data would incorporate changing load profiles due to the increased penetration of solar. Origin, however, proposed using as much relevant data as possible, to highlight the variability in the load that

[30] For example, see submissions from AGL, Alinta, EnergyAustralia, Onsite Energy Solutions and Origin Energy.

[31] MEA Group, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 3; Onsite Energy Solutions, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 3; and Sumo, submission to the Essential Services Commission Victorian Default Offer staff paper, February 2019, p. 2.

[32] Sumo, submission to the Essential Services Commission Victorian Default Offer staff paper, February 2019, p. 2.

retailers may need to cover.[33] This was supported by Alinta who highlighted that using a single year of data may lead to changes on a year to year basis.[34]

Futures contract purchasing profile

Retailers provided feedback indicating that the purchase of hedging products does not occur over a short period, but generally occurs over a 1-2 year period. Large retailers (e.g. Origin, AGL and EnergyAustralia) proposed using up to two years of futures market data to generate our estimates of retailers' wholesale costs, while a number of medium-sized retailers (e.g. Alinta, Sumo and MEA Group) proposed using approximately 1 year of data. EnergyAustralia supported using a volume or trade weighted average of futures prices, rather than a time-weighted approach.[35]

Volatility

MEA Group stated that the level of volatility in customer load for an individual retailer is likely to be peakier and more costly to cover than provided for by the MRIM data. The changing mix of generation and behind the meter resources were also highlighted as contributors to increasing volatility in prices and load in the future.[36]

Sumo also stated that it did not believe the proposed volatility allowance (discussed further below) was sufficient to meet their credit support costs.[37]

Other comments

Sumo and AGL questioned the assumption that futures contracts traded at a five per cent premium to the expected actual pool prices. A number of stakeholders raised a range of additional costs incurred while operating in the market that the staff paper may not have taken into account.[38] This included the cost of the Reliability and Emergency Reserve Trader (RERT) scheme, the cost of meeting AEMO and ASX prudential requirements, brokerage fees, and the possible increased costs associated with five-minute settlements.

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[33] Origin Energy, submission to the Essential Services Commission Victorian Default Offer staff paper, February 2019, p. 4.

[34] Alinta Energy, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 6.

[35] EnergyAustralia, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 8.

[36] MEA Group, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 2.

[37] Sumo, submission to the Essential Services Commission Victorian Default Offer staff paper, February 2019, p. 4.

[38] For example, see submissions from St Vincent de Paul Society, MEA Group, Alinta and EnergyAustralia.

Our proposed approach to estimating wholesale electricity costs

Based on the feedback received to our staff paper released in December 2018, we believe that the futures market method best achieves the requirement of the terms of reference, to reflect the efficient cost to run a retail business in the most transparent way. There is limited information available for estimating other options, such as the cost of power purchasing agreements (PPA). The approach specifically reflects the costs an energy retailer would face in minimising wholesale costs and managing financial risks through hedging (via products traded on the ASXEnergy futures market). Further, we assume retailers would only enter into a PPA if the cost of doing so was no higher than their forecasts of purchasing electricity from the wholesale market.

We also note that the futures market approach has been used in a number of other Australian jurisdictions in historical retail price regulation.[39, 40]

For these reasons, we consider the futures market approach to be the most appropriate methodology to estimate wholesale electricity costs for the VDO. Stakeholder feedback to the staff working paper assisted in clarifying the specific assumptions applied in the futures approach.

The commission notes that adopting the futures market approach for the VDO is relatively consistent with the approach we take to setting the minimum feed-in tariff. There are, however, a number of differences between how the approach is applied in the two contexts, which reflect the different objectives of the VDO and the minimum feed-in tariff.

While the VDO is calculated based on the efficient costs to run a retail business, the minimum feed-in tariff is calculated based on the expected level of wholesale prices at the times when renewable electricity is exported to the grid. As the customer load and small-scale renewable energy export profiles are very different, this will necessarily result in different outcomes. Moreover, the minimum feed-in tariff is based on a 40 day average because this is the market's current expectation of what prices will be in the future. This differs from the VDO, which is intended to reflect the costs retailers face in supplying electricity to their customers and involves purchasing hedge products over a longer period.

The staff working paper set out a number of issues that need to be resolved when using the futures method, including the period and profile over which forward contracts are purchased, and the forecast demand or load profile retailers would need to serve. The futures market approach requires inputs for:

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[39] IPART, Review of regulated retail prices and charges for electricity from 1 July 2013 to 30 June 2016: Final Report, June 2013.

[40] ICRC, Issues Paper: Electricity model and methodology review 2018-19, 2018.

- The likely half-hourly load of the retailer's customers.
- The corresponding likely half-hourly spot prices the retailer will face.
- The cost of financial hedging contracts that retailers will face.
- The hedging position a prudent retailer is likely to adopt.

The commission engaged Frontier Economics to provide an estimate of wholesale electricity costs for the VDO to apply from 1 July 2019.[41] Wherever possible we have sought to use publicly available data to increase the transparency in our estimation of the VDO. The following section sets out the sources of data and how they have been applied in estimating wholesale electricity costs.

Customer load and wholesale spot price data

The data used is half-hourly load data sourced from AEMO's MRIM data for each of the five distribution network areas in Victoria. The MRIM data records consumption for customers with an annual consumption of less than 160 MWh. In order to determine the relationship between load profile and spot prices we will use historical spot price data available from AEMO for the Victorian regional reference price node.

Frontier Economics has used the most recently available load data as it is likely to be the most consistent with the forecast period as it incorporates changes in the generation profile and the increasing impact of rooftop solar. Based on its analysis of load factors, the load premium, average daily load profiles and the average profile of spot prices, Frontier Economics has advised that the five years from 1 July 2012 to 30 June 2017 provide reasonable data for forecasting load and price expectations for 2019-20.[42]

Frontier Economics has assessed the feedback from stakeholders that a single year of MRIM data may not fully reflect the level of volatility faced by a retailer in making wholesale electricity purchases and proposed an approach to address this. This is achieved by conducting a Monte Carlo simulation using the five years of data, which reduces the impact of data that is unique to any one particular year and also provides more insight into the expected distribution of wholesale electricity costs. The Monte Carlo simulation produces 500 simulated years using the five years of data up to 30 June 2017. Based on advice from Frontier Economics, the commission proposes to take the median value from the simulation to calculate wholesale electricity costs.

While the commission notes that MRIM data is available up to the end of March 2018, Frontier Economics recommend that the analysis is most suitably undertaken on a financial year basis

[41] A copy of this report is available on our website www.esc.vic.gov.au.

[42] Frontier Economics, Wholesale Electricity Costs – a report for the Essential Services Commission, February 2019, p. 12.

because the VDO will apply from 1 July 2019. Nonetheless, Frontier Economics has advised the commission that the additional available data (between 1 July 2017 and 30 March 2018) is consistent with the five years of data used in their analysis, meaning it is unlikely to materially affect the results used in this draft advice. As updated information becomes available the commission would consider whether it is appropriate for use in future pricing assessments.

We have also reflected on the arguments raised by some retailers that an aggregated load profile would understate the volatility associated with serving individual sets of customers.

Our draft advice uses MRIM data to estimate wholesale costs for each distribution zone. However, the publicly available MRIM does not allow us to estimate wholesale costs separately for residential and small business customers. Frontier Economics has undertaken analysis on data provided from the Citipower and Powercor distribution zones that separates load for residential and small business customers (the data available at that time point contained customers with less than 60 MWh consumption per annum). Based on this available data, Frontier Economics has advised that the difference in wholesale electricity costs for the individual groups would be small compared to the MRIM data (i.e. around two per cent higher or lower than the estimated wholesale costs in chapter 3).[43] Based on this we believe that it is reasonable to use MRIM data for the VDO as it provides the only comprehensive data source for undertaking this analysis at this point in time.

The commission will continue to investigate alternative approaches and data sources from AEMO and distribution businesses that provide more disaggregated data for this and future VDOs.

Futures purchasing time period and profile

To determine the level of future prices, the commission has used contract prices published by ASXEnergy for each quarter from 1 July 2019 to 30 June 2020. Although our recommendation is for the first VDO to apply until 31 December 2019, we do not think it is reasonable to estimate wholesale purchase costs for a six-month period, as this is unlikely to reflect the approach taken by retailers to supplying their customers. That is, retailers would generally set prices expecting to serve the customer for longer than a six-month period. It would also significantly understate the cost incurred (by excluding the first quarter of 2020), which could affect the financial viability of the industry and mean that there may be a large increase to the VDO applying from 1 January 2020.

Frontier Economics advises that ASXEnergy contract prices for base and peak swaps, and base $300 caps are likely to reflect the market's view about the average spot price in the future. Submissions to our staff paper supported the use of these contract prices, but highlighted the significance of which contract prices are chosen. While the 40-day average may be a good

[43] Frontier Economics, Wholesale Electricity Costs – a report for the Essential Services Commission, February 2019, p. 8.

estimation of the market's current expectation of future spot prices, it is unlikely to reflect the actions taken by retailers in purchasing hedging products. This was highlighted in submissions that suggested that a 12 or 24 month average was most appropriate.

In choosing a particular average purchasing profile to calculate the VDO, the commission is seeking to adopt a reasonable benchmark approach given the practices of the industry. There is no single approach that delivers the lowest costs in every circumstance.

In other words, using a 12 month average period does not systematically result in a higher or lower estimate of wholesale costs than using a 24 month average period – in which case, whether we adopt a 12 or 24 month averaging period should not bias our results in favour of one type of retailer over another, or consumers over retailers. Nevertheless, we note that the larger retailers tended to favour the longer averaging period.

On balance, at this stage we have decided to adopt a 12 month averaging period as this assumes a greater level of flexibility for how retailers might efficiently manage their wholesale costs in a period of increased price volatility. We will continue to monitor the suitability of this assumption.

Contract position

Frontier Economics has used its *STRIKE* model to calculate a set of efficient contracting options that produces the lowest energy purchase cost for a given level of risk. This involves estimating the mix of hedging products that retailers would purchase and how much this would cost. For the purposes of estimating retailers' contracting costs in the developing a VDO price, we have assumed that retailers will adopt a minimal risk position when contracting.

This broadly aligns with the reasons we believe that customers would seek to enter a VDO contract with their energy retailer. That is, customers may enter a VDO contract if they are interested in price stability (unlike market contracts which retailers vary at any time). Retailers seeking to efficiently offset the stability that customers desire in their retail prices are likely to adopt hedging strategies that minimise the likelihood of volatility in their wholesale prices.

In general, the contract position at this point involves:

- purchasing swaps to cover (approximately) average demand
- purchasing caps to cover (approximately) peak demand
- incurring a small amount of pool exposure at absolute peak demand times.

While the contract position chosen minimised risk, it does not result in complete coverage of the highest demand because this may incur additional costs associated with being over-contracted. Signing additional contracts is neither costless nor riskless. Being exposed to the spot price during a small number of high demand half-hours can result in large payments. However, being over-contracted for a large number of lower demand half-hours can also result in large payments. To

account for this, Frontier Economics has recommended including a volatility allowance (discussed below) to account for the residual risk not accounted for in the contract position.

Volatility allowance

Our proposed hedging strategy leaves some level of exposure to volatile spot prices. This can be accounted for by holding some working capital (i.e. cash) to fund spot market purchases. The cost of holding this working capital is known as a volatility allowance.

Frontier Economics has estimated that the amount of working capital required to fund cash flow shortfalls is likely to be 3.5 times the standard deviation of wholesale costs. This allowance is estimated to provide sufficient working capital to cover the energy costs associated with a very rare run of high spot prices in a year.

Our approach to estimating an appropriate retailer margin in section 2.7 takes into account that provisions have already been made for contracting costs and volatility allowance. These provisions have been made in our estimate of the VDO in order to offset risks associated with retailers' purchases of electricity in the wholesale market.

Proposed approach to estimating wholesale costs

The commission proposes using a futures market approach based on the following inputs:

- MRIM data for the period 1 July 2012 to 30 June 2017.
- NEM (Victoria) spot price data for the period 1 July 2012 to 30 June 2017.
- Taking the median from a Monte Carlo simulation producing 500 simulated forecasts of the year 2019-20 using the data above.
- ASXEnergy contract prices for base and peak swaps, and $300 caps for the 12 months up to 15 February 2019. Contract prices are the 12 month average.
- Minimised risk contract position, purchasing swaps to cover average demand and caps to cover peak demand and incurring a small amount of pool exposure.
- Including a volatility allowance to reflect the cost of holding working capital to cover the small amount of pool exposure.

Network losses

When electricity is transported through the transmission and distribution networks, some of it is lost in the process. Electrical losses occur in both the transmission and distribution networks because of electrical resistance in the wires which converts some electricity to heat. These losses must be

factored into any electricity purchased through the wholesale market to ensure that supply meets demand. As a result, more electricity is generated than is consumed by end users.

AEMO publishes data on average distribution loss factors (DLF).[44] We have used the residential distribution loss factor that applies to most residential customers in a given network.[45]

AEMO also publishes marginal loss factors.[46] Marginal loss factors represent the increase (or decrease) in loss that would occur in response to an incremental change in generation output or load demand from its current value.[47] The commission has used this data to calculate average loss factors for the transmission network (MLF) for each distribution zone based on the location of each relevant node.

Multiplying these loss factors together gives the combined loss factor for each network. This number represents the required generation for customers to consume 1 unit of electricity.[48]

This total loss factor is then multiplied by the customer volume to calculate the cost of the additional amount of wholesale electricity a retailer needs to purchase to service that customer. This is the same approach taken by the commission in calculating the minimum feed-in tariff on an annual basis.

Proposed approach to network losses

- Using data available from the AEMO for distribution loss factors and marginal loss factors.

[44] Australian Energy Market Operator, *Distribution Loss Factors for the 2018-19 Financial Year*, p. 13.

[45] The relevant loss factor is the type E factor (low voltage market customers) for each distributor's short sub-transmission lines.

[46] Australian Energy Market Operator*, Regions and Marginal Loss Factors: FY 2018-19, National Electricity Market*.

[47] Australian Energy Market Operator, *Treatment of Loss Factors in the National Electricity* Market, July 2012, p. 7.

[48] Note that transmission loss factors can be seen as 'true ups' from the distribution loss factor and can therefore be negative.

2.3. Network costs

Network costs represent the costs of building, operating and expanding the electricity distribution and transmission networks. There are five electricity distribution zones across Victoria (see Figure 4). Each of these zones has separate characteristics which determine their respective tariffs.

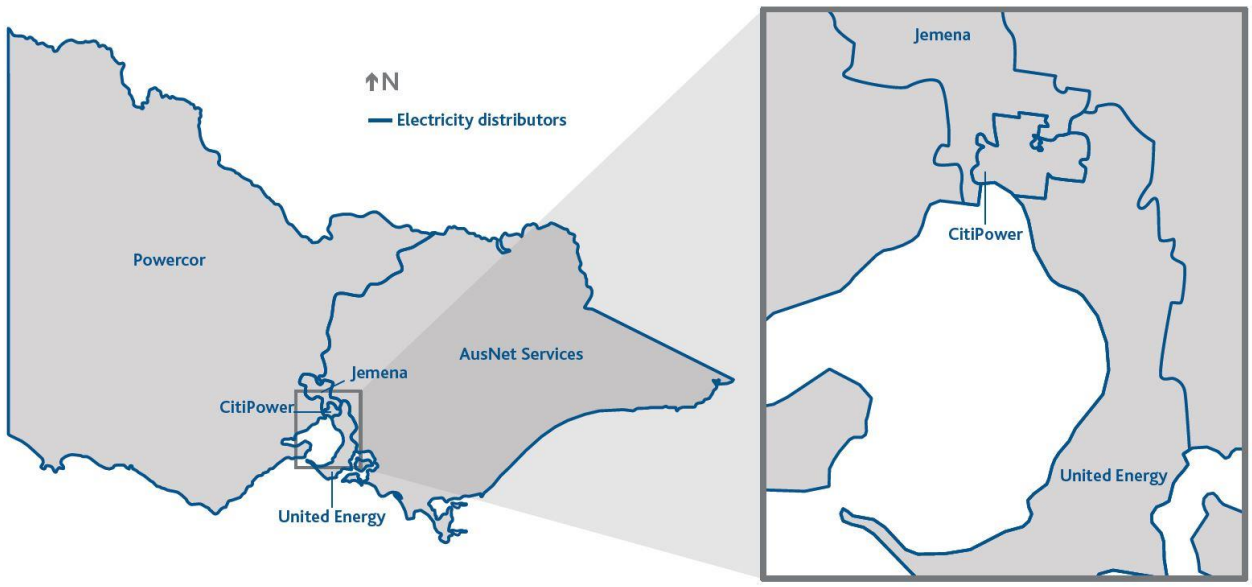

Figure 4 Map of Victorian electricity distribution zones

For all residential and small business electricity customers, there are three main elements associated with each tariff:

- **Distribution charges** – tariffs for the use of the distribution network.
- **Transmission charges –** tariffs for the use of the transmission network
- **Jurisdictional charges** – tariffs for the payments distributors are required to make to customers as part of the Victorian Premium Feed-in Tariff.[49]

These charges vary between the distribution businesses as each network has its own specific requirements in terms of maintenance, expansion and cost allocation.

The five electricity distribution businesses in Victoria were required to install Advanced Metering Infrastructure (AMI, i.e. smart meters) to small customers in their networks. To recover the cost of the AMI rollout, the AER approves a regulated charge for AMI on a per customer basis.

[49] AusNet Services, *Electricity distribution – Annual tariff proposal* 2018, November 2017, p. 54.

We assume that network tariff costs are largely passed through to customers, as retail prices often reflect their structure. That is, an efficient retailer is assumed to pass on the network costs directly to the end user, which in this case would be the residential or small business customer.

The staff working paper highlighted that network tariffs for residential and small business customers are different and likely to require the VDO to be set separately for each of these customer types. This implies that there would be two VDOs set for each distribution zone, or ten in total.

Stakeholder feedback on estimating network costs

Generally, stakeholders supported the approach taken in the staff paper to use a cost pass-through to determine network costs:

> "Given their [network costs] level of impact on the final customer price, it is important that the Commission accurately assesses the level/value of network costs. To that end, network costs must be treated as a pass-through cost."[50]

A number of retailers noted the AER network tariff changes which come into effect on 1 January 2020 and the possible timing mismatch with the initial VDO.[51] We recommend that the initial VDO only apply for a period of six months from 1 July 2019, which will align the VDO estimation with network tariff updates from 1 January 2020.

For both residential and small business customers, there are a number of possible tariff structures such as single rate, time of use and flexible pricing. MEA Group suggested that the commission could calculate network tariff costs on a weighted average basis for residential and small business customers across all network tariff types, rather than using a one network tariff for residential customers and one tariff for small business customers.[52] The Australian Energy Council (AEC) also stated that a simple tariff will require retailers to bear network cost risk for customers on non-flat network tariffs.[53]

We recognise the potential challenges in establishing the VDO where customers may be on different underlying network tariffs. However, we also note that our terms of reference specify that the VDO is intended to be a simple price for consumers unwilling or unable to engage in the retail

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[50] Alinta Energy, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p7.

[51] Simply Energy, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 5.

[52] MEA Group, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 4.

[53] AEC, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 3.

electricity market. Setting a VDO for all possible network tariff options is unlikely to simplify decision making for a consumer.

We discuss this issue further in chapter 3, which discusses the structure of the VDO.

Our approach to estimating network costs

Network charges are regulated by the AER through revenue determinations every five years. The determinations specify the maximum revenue each network business is allowed to earn each year over the determination period. In line with their pricing determinations, network businesses publish their annual network tariff pricing structures and corresponding rates each year.[54]

Retailers pay distributors the cost associated with their customers' use of the electricity network when supplying their customer base. Retailers in turn pass this cost on to customers, who are ultimately charged for the use of the networks.

Consistent with the tariff options set out in our staff working paper and in line with our understanding of our terms of reference we propose to use the distribution tariffs for residential and small business customers shown in Table 1. These tariffs are the single rate tariffs in each distribution zone, with the exception of United Energy and AusNet Services zones.[55] As noted above we recommend that the initial VDO only apply for 6 months from 1 July 2019, which would then align the VDO with changes in network charges that occur on a calendar year basis. Further detail on how we have incorporated these costs into the VDO can be found in Tables 8 and 9, as well as Appendix B.

[54] Published on the Australian Energy Regulator website, www.aer.gov.au.

[55] AusNet's distribution tariff has two inclining blocks where block one is the first 1020 kWh per quarter and block two is the balance. United Energy has separate Peak (Summer) and Off peak (winter) charges.

Table 1 Network tariff categories

Distributor	Residential tariff	Small Business tariff
AusNet	Small residential single rate, NEE11	Small business single rate, NEE12
CitiPower	Residential single rate, C1R	Non-residential single rate, C1G
Jemena	Single rate, A100/F100a/T100b general purpose	Small business A200/F100a/T100b
Powercor	Residential interval, D1	Non-residential single rate, ND1
United Energy	Low voltage small 1 rate, LVS1R	Low voltage medium 1 rate, LVM1R

Controlled load customers

In some circumstances a customer may have a separately metered part of their load (e.g. off-peak electric hot water or underfloor heating) that is charged at a different rate to the rest of their load. The electricity usage that is charged under additional controlled load network tariffs is generally less expensive than the network tariffs that apply to a customer's peak usage. The commission understands that controlled load charges are most relevant for residential customers, with a controlled load network charge identified in each distribution zone (Table 2). As such, the commission's draft advice does not propose to include a controlled load option for small business customers. However, we are seeking feedback from stakeholders on whether the controlled load option should also be available to small business customers on the VDO

While the commission has taken the simplest network tariff structure from each distribution zone in setting the VDO, we also consider that this should apply to those residential customers who have a controlled load or dedicated circuit. We propose a relatively simple approach to allowing the VDO to apply for these customers. In each distribution zone, the residential flat network tariffs shown in Table 1 have a corresponding charge for a dedicated circuit or controlled load. As such we propose to include the option for these charges in the VDO where it is applicable for a residential customer. The controlled load tariffs we propose to apply are set out in Table 2.

Table 2 Controlled load network tariff categories

Distributor	Residential controlled load or dedicated circuit tariff code
AusNet	NEE13
CitiPower	CDS
Jemena	A180
Powercor	DD1
United Energy	LVDed

Each of the five network businesses also publish approved AMI charges that are included in their revenue determinations and charged to each customer. We propose to directly apply the relevant 2019 AMI charges from each distribution zone to the relevant reference price for each electricity distribution zone. As proposed for other network charges, we propose to update AMI charges, as approved by the AER, on a calendar year basis. Further detail on how these charges are incorporated in the VDO can be found in Table 10 and Appendix B.

Proposed approach to network costs (including AMI charges)

- Directly including the simplest network use of service (NUOS) tariff in each distribution zone in the VDO. This is generally a daily supply charge and a flat usage charge.
- Where applicable for a particular customer, we propose that the VDO should include a controlled load or dedicated circuit option. As such we have included these network charges as an additional option.
- Including published AMI charges for each distribution zone as a cost per customer.

2.4. Environmental scheme and other regulatory costs

There are four main environmental costs faced by Victorian energy retailers:

- Large-scale Renewable Energy Target (LRET): a Commonwealth Government scheme that encourages renewable energy generation by creating a market for renewable energy certificates
- Small-scale Renewable Energy Scheme (SRES): a Commonwealth Government scheme that supports the installation of small-scale renewables, such as household solar rooftop panels and solar hot water systems.
- Victorian Energy Upgrades (VEU): a state-based program that places a liability on Victorian energy retailers (both electricity and gas) to surrender a specified number of Victorian Energy Efficiency Certificates each year.
- Feed in tariff (FiT): retailers credit small scale renewable energy exports with the minimum feed-in tariff that includes an allowance for the avoided social cost of carbon.

In addition to this, retailers also incur a range of other costs, such as market participant fees, ancillary service charges, RERT scheme costs, and licence fees. Our March 2018 consultation paper presented some options for an approach to estimating the costs for each of these schemes.[56] Building on this, the staff working paper released in December proposed that environmental costs be estimated using a mixture of market based approaches and publicly available data.[57] Other regulatory costs are based on publicly available information.

Stakeholder feedback on estimating environmental scheme and other regulatory costs

Submissions to the staff paper signalled broad support for a market-based approach to estimating environmental costs.[58] For example:

> "The ESC proposes to use a market-based approach for forecasting these environmental costs which AGL largely supports for this initial VDO."[59]

While there was support for the proposed approach, a number of submissions raised questions about the ongoing use of this method. This included:

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[56] Essential Services Commission, Consultation paper: Developing a reference price methodology for Victoria's energy market, March 2018.

[57] Essential Services Commission, Staff working paper: Victorian Default Offer for domestic and small business electricity customers, December 2018, p. 14.

[58] MEA Group, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 5.

[59] AGL, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 5.

- Some submissions noted that market prices may be becoming less reflective of the investments being made in renewable generation, consequently, estimating the cost of the LRET through market prices may not be applicable in the future.[60] One submission suggested environmental costs should be set at the regulatory price cap to avoid underestimating environmental certificate costs.[61]
- While other submissions suggested that the futures market spot price may not be appropriate since the purchasing timeframe decisions are managed differently.[62]

While we note the concerns of stakeholders, we remain of the view that our proposed approach remains appropriate. Data from renewable power purchase arrangements are often confidential and may represent the particular circumstances of a single retailer rather than a more representative estimate across the industry. Taking a penalty price in all circumstances would also not align with our terms of reference to base the VDO on the efficient costs of running a retail business.

Other submissions raised the timing of data selection for the VDO. The mismatch in regulatory timing between when the VDO is set and when binding LRET and SRES liabilities are set by the Clean Energy Regulator was raised as a particular issue.[63] Feedback from Origin Energy indicated that, based on recent data, it is likely that the binding 2019 liability will be higher than the published non-binding figure.[64] As discussed below, our draft advice has sought to address this issue. Nonetheless, the commission will update the final advice once the binding liabilities are published by 31 March 2019.

A number of submissions raised the impact of new costs. For example:

> "We suggest that some provision should be made that allows waiver of various unexpected fees and charges. This would include charges such as AEMO RERT fees and other unexpected costs."[65]

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[60] Origin Energy, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 5.

[61] Onsite Energy Solutions, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 4.

[62] EnergyAustralia submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 9.

[63] GloBird Energy, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 1.

[64] Origin Energy, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 6.

[65] St Vincent de Paul Society, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 8.

Apart from submissions raising the need to include new costs like the RERT, there was little discussion about the approach to estimating other costs.

Our approach to estimating environmental scheme and other regulatory costs

The proposed approach to estimating the costs for each of these schemes are outlined below.

Large-scale renewable energy target (LRET)

The LRET scheme operates through the creation of tradable certificates. One megawatt hour (MWh) of renewable energy generation from accredited power stations creates one certificate. The amount of renewable energy that must be generated each year is specified in the *Renewable Energy (Electricity) Act 2000 (Cth)*. An obligation is placed on electricity retailers to purchase and surrender a certain number of certificates each year to meet their renewable energy obligations.

To calculate the cost for retailers to comply with the LRET, the quantity of certificates a retailer must purchase and surrender is multiplied by the likely price of large-scale generation certificates (LGCs).

The Clean Energy Regulator determines the number of LGCs that must be purchased by retailers from renewable generators by 31 March each year. This percentage is known as the renewable power percentage (RPP).

As advised by Frontier Economics, the cost to a retailer of obtaining LGCs can be determined either on the basis of the resource costs associated with creating LGCs, or on the basis of the market price which LGCs are traded.

For this report, we have used a market price for LGCs to determine the cost of complying with the LRET. The market price for LGCs is determined by taking a 40-day average of LGC prices as reported by Mercari.[66]

This liability is also multiplied by network losses to reflect that the liability calculation is based on electricity purchases from AEMO settlement point at the Victorian regional reference node.

[66] Available at: http://lgc.mercari.com.au/. Accessed 12 January 2019

Small-scale renewable energy scheme (SRES)

The SRES places an obligation on retailers to purchase small-scale technology certificates (STCs). The Clean Energy Regulator sets the percentage of STCs to be purchased and surrendered each year, known as the small-scale Technology Percentage (STP).[67] This is the percentage required in order to remove STCs from the STC Market for the current year liability.

Similar to the LRET, the cost of complying with the SRES is estimated by multiplying the quantity of STCs a retailer must surrender by the price a retailer is likely to pay for each certificate.

The STP is published for any given year by March 31 of that year. The Clean Energy Regulator also publishes non-binding estimates for the following two years. The commission notes stakeholder feedback that the binding liability increased significantly above the non-binding estimate in 2018. We have considered stakeholder feedback and propose to use Ernst and Young's estimate of the 2019 binding STP produced for the AEMC in this draft advice.[68] This estimate will be updated for the binding STP liability published by the Clean Energy Regulator in our final advice in May.

Liable entities can purchase STCs on the open market or through the STC Clearing House, which are sold at a fixed price of $40 per certificate. Frontier Economics has advised the commission that the reported spot price of STCs has historically been at, or close to, this price of $40. For the purposes of this report we assume that the cost of STCs is equal to this STC Clearing House price.

Similar to the LRET, the STP applies to electricity acquired from the AEMO settlement point at the Victorian regional reference node. As such, the STP is also subject to electricity loss factors in our calculation of the VDO.[69]

Victorian Energy Upgrades

The commission administers the Victorian Energy Upgrades program under the *Victorian Energy Efficiency Target Act 2007*. Under the scheme, relevant entities (largely energy retailers) must surrender a number of Victorian Energy Efficiency Certificates (VEECs) equal to their scheme liability. If a relevant entity fails to surrender a sufficient number of certificates for a particular calendar year, it must pay a penalty per certificate by which it falls short. It is at the discretion of the

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[67] Clean Energy Regulator, Small-scale technology percentage, accessed 21 February 2019, http://www.cleanenergyregulator.gov.au/RET/Scheme-participants-and-industry/the-small-scale-technology-percentage.

[68] EY, Residential Electricity Price Trends – Wholesale Market Costs Modelling 2018, December 2018, p. 34

[69] Clean Energy Regulator, Calculating certificate liability, accessed 21 February 2019, http://www.cleanenergyregulator.gov.au/RET/Scheme-participants-and-industry/Renewable-Energy-Target-liable-entities/Calculating-certificate-liability.

relevant entity whether it creates VEECs directly through energy saving activities or whether it decides to purchase VEECs from accredited businesses.

A retailer's annual electricity VEEC liability is calculated by multiplying its total liable electricity acquisition (in MWh) by the greenhouse gas reduction rate for electricity. For the 2019 compliance year (1 January to 31 December 2019) the reduction rate for electricity is 0.15419.

As the commission does not operate a spot or forward contract market for VEECs, we propose to rely on historic data that is purchased from a market monitoring service.[70] The commission is not aware of a sufficiently liquid forward contract market for VEECs (as is available on ASXEnergy). As such, we propose to use a simple average of spot prices for the last 12 months received by TFS Green. While this involves rolling forward the cost of VEECs from previous years we plan to replicate this approach going forward to ensure that any changes in prices are eventually reflected in the VDO. Despite this, the commission does note that the 12 month average is closely related to the long term VEEC price average as well as the small number of forward contract prices we have observed for 2019 and 2020.

Similar to the LRET and SRES, this liability applies to electricity acquired from the AEMO settlement point at the Victorian regional reference node. As such, the VEU is subject to electricity loss factors in our calculation of the VDO.

Feed in tariff (Victoria)

In Victoria, the commission is required under the *Electricity Industry Act 2000 (Vic)* to determine one or more rates that an electricity retailer must pay its customers for electricity they export to the grid, referred to as the minimum feed-in tariff (FiT).[71]

The minimum FiT incorporates three components that represent costs a retailer *avoids* when a customer generates renewable electricity and supplies it into the network (wholesale costs, market fees and network losses). As such, there is no need to compensate retailers for these costs in the VDO. A fourth component, the value of avoided social cost of carbon, is not an avoided cost to the retailer and therefore we assume it is recovered by retailers from the wider customer base.

The commission proposes to estimate this additional cost based on the volume of rooftop renewable electricity exported to the grid divided by the total number of small Victorian electricity

[70] In this case we are using data received from TFS Green.

[71] See section 40FBB of the Electricity Industry Act 2000 (Vic).

customers. This responds to some of the feedback provided by St Vincent de Paul Society that retailers recover these costs in charges to other customers.[72]

There is limited data available on both actual distributed energy exports and forecasts of exports. As such, the commission proposes to use historical data as the best available proxy. The commission has received total renewable export data for small customers from each of the distribution businesses for 2017-18. The commission also collects customer number data for its Victorian Energy Market Report. The latest published data the commission has available on customer numbers is the average number of customers by retailer for 2017-18.[73]

The commission recognises that rooftop solar penetration continues to increase, which means that the estimate of exports from 2017-18 may understate what is expected from 1 July 2019. However, we believe this is partially mitigated by the fact that by using total small scale renewable exports we are including a number of systems that do not generate a social cost of carbon payment by retailers as they currently receive the premium feed-in tariff. We believe the proposed approach balances the two issues to deliver a reasonable estimate of the costs borne by retailers from 1 July 2019. Further detail on this approach is found in Appendix B.

AEMO market fees

Market fees include charges for participating in the market, full retail contestability and AEMO's role as the national transmission planner. Estimates and forecasts of these costs are reported in the AEMO's Energy Market Budget and Fees report.[74] The commission proposes to use the 2019-20 estimates of these relevant charges in the VDO to apply from 1 July 2019. If a full update to the fees report is available before we make our final recommendation we will include those estimates.

Ancillary charges

Ancillary services are used by AEMO to manage the power system safely, securely and reliably, with respect to standards such as frequency, voltage and system restart processes. Unlike other AEMO charges, AEMO operates separate markets for various ancillary services. As such, the relevant charges are dependent on the amount of service required at any particular time, which means the costs will vary from period to period.

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[72] St Vincent de Paul Society, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 2.

[73] Essential Services Commission, Victorian Energy Market Report: 2017-18, February 2019.

[74] AEMO, Electricity functions 2018-19 AEMO Final Budget and Fees, June 2018.

This data is regularly analysed by the AEMC as part of their residential price trends report. The commission proposes to use the forecasts from Ernst and Young for the AEMC's 2018 Residential Electricity Price Trends report for Victorian ancillary charges in 2019-20 in the VDO to apply from 1 July 2019.[75]

Reliability and Emergency Reserve Trader costs

The Reliability and Emergency Reserve Trader (RERT) is a function conferred on AEMO to maintain power system reliability and system security using reserve contracts.

The RERT is a type of strategic reserve that allows AEMO to pay for additional capacity to be on stand-by in case of emergencies when the demand and supply balance is tight.

As the RERT is only called upon in these circumstances it is difficult to predict when retailers will incur a cost associated with it. As such, the commission proposes to include the latest financial year RERT cost data in the VDO. This means that the actual costs of the RERT are included in the VDO, rather than forecasts, which could either overstate the cost (if RERT is not required in a certain year) or understate the cost (if RERT is required on multiple occasions). However, we note that even if a retailer's customer numbers significantly change, the impact of our lagged estimate for RERT costs on the total VDO price will be marginal.

In 2017-18 the RERT cost in Victoria was $50.76 million.[76] AEMO has estimated that these events cost on average $6 per customer.[77] The commission proposes to use this per customer estimate, which will be updated for inflation.

Essential Services Commission licence fees

Electricity retailers are charged a fee to be licensed by the commission to sell electricity to Victorian consumers. Licence fees are based on the costs incurred by the commission in performing its regulatory functions. The specific fee for each retailer is contingent on the number of customers served by that retailer.

The commission proposes to use a market wide average of all retailer licence fees when estimating the cost of a licence fee for the VDO to apply from 1 July 2019. The latest available data on licence fees is from 2017-18, these amounts will be updated for inflation for the VDO.

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[75] Ernst and Young, Residential Electricity Price Trends – Wholesale Market Costs Modelling 2018, December 2018, p. 31.

[76] AEMO, RERT 2017-18 cost update, accessed 21 February 2019, http://aemo.com.au/-/media/Files/Electricity/NEM/Security_and_Reliability/RERT-Update---cost-of-RERT-2017-18.pdf

[77] AEMO, Summer 2017-18 operations review, p. 32.

Proposed approach to environmental and other costs

- LRET – the 2019 RPP is multiplied by the market price for LGCs.
- SRES – the 2019 STP is multiplied by the clearing house price.
- VEU – the 2019 greenhouse reduction rate for electricity is multiplied by the 12 month average price for VEECs.
- The LRET, SRES and VEU costs are multiplied by network loss factors.
- Social cost of carbon – total renewable exports in 2017-18 divided by average total residential and small business customers in 2017-18, multiplied by 2.5 cents.
- AEMO market fees – 2019-20 estimates taken from the latest available publication.
- Ancillary fees – 2019-20 forecast taken from the AEMC's residential price trends.
- RERT – based on the latest 12 months of charges released by AEMO.
- ESC licence fees – customer weighted average of fees paid in 2017-18.
- Where necessary, fees will be updated for inflation.

2.5. Retail operating costs

This section addresses the costs incurred by retailers in conducting their business. These costs can be separated into two main sub-categories:

- Retail operating costs (also referred to as 'costs to serve') – a range of costs that include billing and revenue collection systems, IT systems costs, call centre costs, corporate overheads, energy trading costs, provision for bad and doubtful debts, and regulatory compliance costs.
- Customer acquisition and retention costs – could include the costs associated with acquiring new customers and retaining existing customers, or promotions and sponsorships.

The commission has not included the administrative costs of competition in our definition of customer acquisition and retention costs. We have instead included these administrative costs as part of broader retail operating costs. The terms of reference require the commission to include a modest allowance for customer acquisition and retention costs, which we describe separately in the section 2.6. In this section, we focus on other costs to serve, which we term 'retail operating costs'.

The commission has previously outlined two approaches to estimating retail operating costs:

- Bottom-up approach – based on detailed data provided by retailers that highlights each of the specific costs of operating in Victoria. It is likely to be most accurate, but is time and resource intensive for the commission and retailers.
- Benchmarking approach – based on publicly available aggregated data on operating costs for the retailers or a representative retailer. This data can be obtained from a variety sources, such as annual reports, previous regulatory decisions, and other reviews. This approach assumes that the benchmark data provides useful insights into the efficient costs of running a retail business as per our terms of reference.

In our staff working paper, we proposed to adopt a benchmarking approach to estimating retail operating costs including customer acquisition and retention costs for the first VDO to apply from 1 July 2019.

The recent analysis by the Australian Competition and Consumer Commission (ACCC) in its Retail Electricity Pricing Inquiry (REPI) provided some useful insights into average costs to serve and customer acquisition and retention costs.[78] In our staff working paper, we noted that we would like to verify this with information from retailers operating in Victoria, and invited retailers to provide us with their cost information to support our analysis.

Stakeholder feedback on the approach to estimating retail operating costs

Most stakeholders provided some support for the use of benchmarking to estimate the retail operating cost allowance, even where their preferred approach was to base the allowance on actual costs (such as via a bottom-up approach, or from publicly reported costs). For example, Onsite Energy Solutions stated:

> OES considers that a "bottom up" approach to develop a retail cost stack, using actual retailer data, would be preferable to benchmarking alone. However, for setting the inaugural VDO pricing we understand that benchmarking is the only feasible approach given the short time to complete the task (~ 3 months).[79]

The submissions also raised a number of points about the use of a benchmarking approach, including:

- Differences in the size and business models of retailers meant that benchmarks would not be reflective of efficient costs for retailers of different sizes. For example, Alinta Energy noted that the commission would need to be clear on which costs are included in retail operating costs,

[78] ACCC, Retail Electricity Pricing Inquiry – Final Report, July 2018.

[79] Onsite Energy Solutions, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 4.

and the business model and risk profile that will apply to the definition of an efficient retailer.[80] Origin Energy noted that no other regulators currently perform robust operating cost assessments, with the last estimation now too old to be relevant.[81]

- Jurisdictional differences meant that benchmarks from other jurisdictions would not necessarily reflect the Victorian market – although there was also some recognition that the ACCC's figures in the REPI recognised this difference.[82]
- The AEC noted that other regulators have tended to set their efficient benchmarks based on the costs of a new entrant retailer – but if the commission sets the VDO allowance based on a tier 1 (i.e. incumbent) retailer, the smaller retailers will be unable to recover their costs.[83] A number of other stakeholders raised similar issues around the importance and implications of the definition of the benchmark efficient entity.

In relation to differences between retailer size, business models and jurisdictions, we agree with stakeholders that these issues need to be considered when undertaking a benchmarking exercise. In the first instance, we consider that we can manage these issues by way of the following:

- Drawing on the work done by the ACCC in its REPI, which makes a clear distinction between costs of operating in different jurisdictions, and also considers the potential differences in costs for retailers of difference sizes.
- With respect to whether we should use a new entrant as the benchmark entity to establish the retail operating costs, we note that our terms of reference require us to recommend a VDO based on the efficient costs to run a retail business. Given that this is also based on the terms and conditions of a standard retail contract we have assumed that this means the retailer is already operating in the market.

A number of submissions also noted that it is important that the commission takes into account regulatory costs and any recent or future changes. Changes in the regulatory environment that were identified as driving changes in costs included:

- the introduction of the Payment Difficulty Framework (PDF) on 1 January 2019,
- new costs associated with the RERT mechanism,
- increased risks due to government intervention.

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[80] Alinta Energy, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 10.

[81] Origin Energy, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 6

[82] AGL, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 6

[83] Australian Energy Council, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 2

Our approach, as set out below, includes specific consideration of changes in regulatory costs where these can be quantified. However, apart from costs associated with the implementation of the Victorian PDF, submissions did not provide robust data sources that specifically estimated costs driven by regulation. These costs are embedded within the general category of retail operating costs. Costs of the RERT are discussed in the previous chapter on environmental scheme and other regulatory costs.

Our approach to estimating retail operating costs

We consider that the benchmarking approach is transparent, relatively simple to implement and can be completed in a timely manner. Therefore, we propose to continue with a benchmarking approach for retail operating costs for the first VDO to apply from 1 July 2019.

We note the various arguments raised in submissions about the applicability of a benchmarking approach, and in particular that a number of stakeholders expressed a preference for the commission to use a bottom-up approach. We will continue to consider the use of the bottom-up approach in any future reviews, but given the limited availability of data we have not undertaken a bottom-up approach for this review.

Our benchmarking approach has considered:

- the recent ACCC analysis of retail operating costs in its REPI – specifically, we consider that the work by the ACCC provides a clear reflection of the differences in retail operating costs between Victoria and other jurisdictions
- market data, both publicly available and that provided to us by stakeholders in submissions to our staff working paper
- recent regulatory changes that could have an impact on costs.

The commission engaged Frontier Economics to provide advice on the benchmark allowance for retail operating costs (and customer acquisition and retention costs).

ACCC analysis of retail operating costs

In the REPI, the ACCC sought information from 18 retailers on retail operating costs over the years 2007-08, 2010-11, and 2013-14 to 2017-18. The ACCC assessed retail operating costs (referred to in the REPI as ‘cost to serve’) by considering:

- differences in retail operating costs between states.
- differences in retail operating costs between different types of retailers.
- a breakdown of the eight largest categories of retail operating costs provided by each relevant retailer for 2016-17 for further insights.

Figure 5 below sets out the ACCC’s finding on retail operating costs by state for 2016-17. As shown in the figure, retail operating costs in Victoria were found to be broadly in line with the NEM

average, but up to $11 per customer higher than the other fully contestable markets in the NEM (NSW and South Australia).

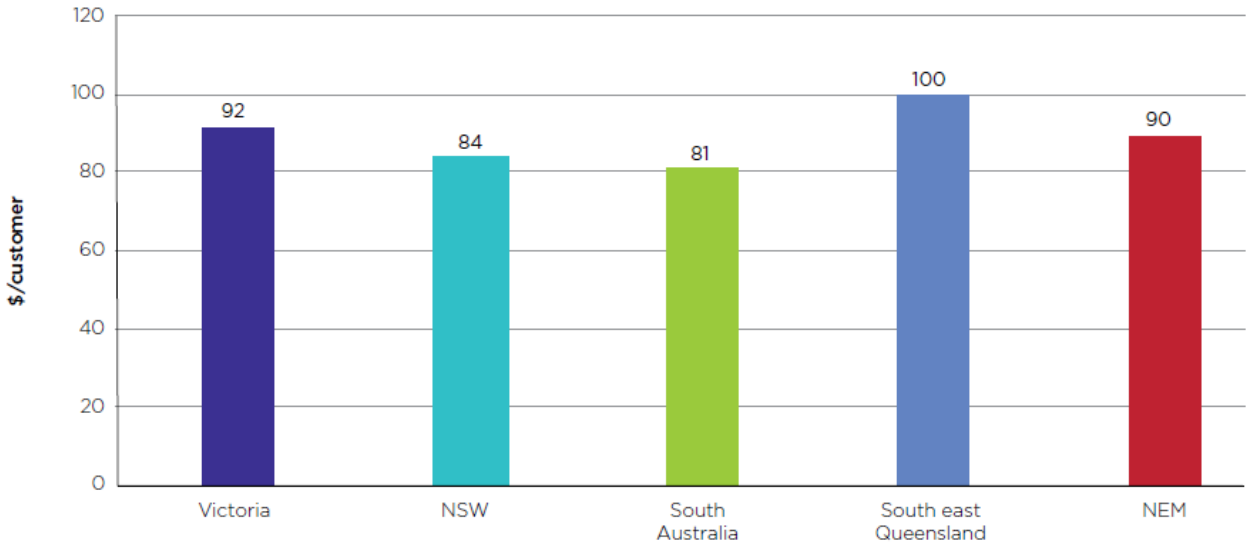

Figure 5 ACCC findings on average retail operating costs by state, 2016-17, $ per residential customer, ex GST

Source: ACCC, Retail Electricity Pricing Inquiry – Final Report, June 2018, p. 223.

The ACCC also reviewed differences in costs between different types of retailer. As shown in Figure 6 below, the ACCC found that the difference in costs between the tier 1 (Big three) retailers and other commercial retailers was significant.

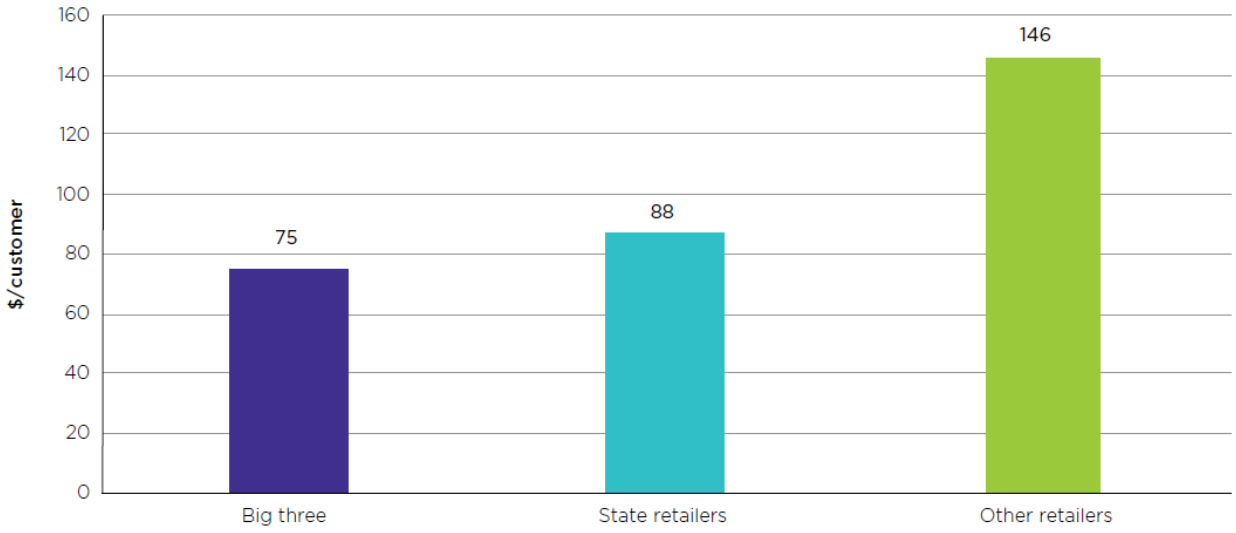

Figure 6 ACCC findings on average retail operating costs by retailer tier, 2016-17, $ per residential customer

Source: ACCC, Retail Electricity Pricing Inquiry – Final Report, June 2018, p. 224.

The ACCC noted that large retailers are likely to be able to spread fixed costs across a larger customer base, but that this did not appear to fully explain the differences. The ACCC assessed

the main drivers of retail operating costs in order to explain some of the differences between retailers. Major cost drivers identified by the ACCC included:

- Bad debts and debt collection – retailers provided a range of responses to the ACCC on the magnitude of these costs, with some (e.g. EnergyAustralia) noting that they are the most significant component of retail operating costs, and that changes in these costs can be a key contributor to overall retail operating costs
- Regulatory costs – in addition to Victoria operating under a separate regulatory regime to other states, there are a range of inconsistencies in the way that individual jurisdictions have implemented the National Energy Customer Framework (NECF), such as derogations and additional reporting requirements. Changes to the national regulatory regime (such as implementation of the Power of Choice reforms) were also identified as driving costs.[84]

Benchmarking against other regulatory decisions

Frontier Economics provided a summary of historical regulatory decisions on retail operating costs since 2007 by the following regulators:

- Essential Services Commission of South Australia (ESCOSA)
- Independent Competition and Regulatory Commission (ICRC) in the ACT
- Independent Pricing and Regulatory Tribunal (IPART) in NSW
- Office of the Tasmanian Economic Regulator (OTTER)
- Queensland Competition Authority (QCA)
- Office of Energy (OOE) in Western Australia.

Frontier Economics found that while the regulatory allowance for retail operating costs has been between $89-$129 per customer, in the more recent regulatory decisions since 2013 (which include decisions from IPART, the ICRC, the QCA and OTTER) the regulatory allowance for retail operating costs has been between $122-129 per customer (figure 7).[85]

[84] ACCC, Retail Electricity Pricing Inquiry – Final Report, July 2018, pp 226-229

[85] Frontier Economics, Retail costs and margin: A report for the Essential Services Commission, February 2019, p. 8. Note: these figures are quoted in $2018-19.

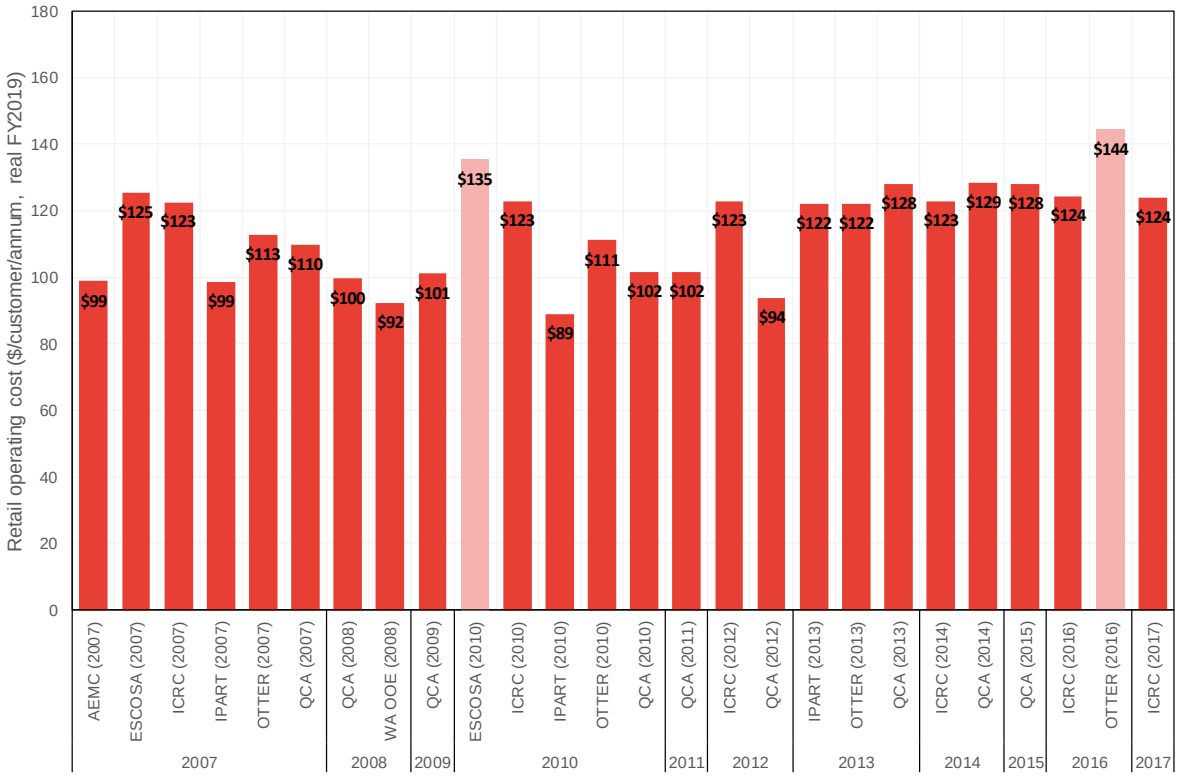

Figure 7 Regulatory allowances for retail operating costs, $ per customer, $2018-19

Source: Frontier Economics

Note: the figures for ESCOSA's 2010 decision and OTTER's 2017 decision both include CARC allowances

Market data

Frontier Economics also assessed publicly available data from Origin Energy and AGL in their annual reports. This data provided the following ranges of operating costs over the period from 2012-13 to 2017-18:

- For AGL, from $69-84 per customer
- For Origin Energy, from $119-168 per customer.

For the most recent year of data (2017-18), the range was $84 per customer (AGL) to $126 per customer (Origin Energy).

Frontier Economics noted that because of the difficulty identifying the basis on which the market data on ROC is reported, it has reservations in drawing too heavily on this data. However, Frontier Economics goes on to state that:

> "Given this, if we are to give any weight to AGL's market data we consider that we should also give some weight to Origin Energy's market data. Given that the estimates both show an

> apparent trend over time, we think the most recent estimates, which have shown some convergence, would be appropriate."[86]

We note that in submissions to our working paper, AGL submitted that to make its reported figures comparable to regulatory benchmarks, it is necessary to add a portion of its centrally managed expenses. AGL stated that this results in its retail operating costs being comparable to regulatory benchmarks. AGL also noted that its reported costs are national averages, and therefore do not reflect the additional costs to operate in Victoria (estimated by the ACCC at $11 per customer).[87]

Additional regulatory costs

As noted above, a number of retailers highlighted different regulatory costs of operating in Victoria relative to other jurisdictions. We consider that given that the analysis produced by the ACCC is jurisdictionally specific, we should adequately account for these differences in costs.

None of the submissions provided estimates of the additional costs imposed by these regulatory changes (although we note that VCOSS suggested that the PDF would reduce retailer costs over time).[88] In our final decision on the PDF in October 2017, we noted that the PDF was expected to result in additional annual costs to retailers in the order of $1.21-2.90 per customer (annualised over 10 years).[89]

Given that the benchmark data we have used is unlikely to fully include these costs, we consider that it is appropriate to include an allowance in the VDO for compliance with the PDF. Noting the range within these estimates, and potential for costs to vary across retailers depending on the nature of their systems and readiness to implement the PDF, our initial view is to include PDF related compliance costs at the upper end of the range for this first VDO to apply from 1 July 2019.

To the extent that retailers are able to substantiate any other material changes in costs since the ACCC's REPI analysis, we would consider these for inclusion in our final recommendation.

Recommendation on retail operating costs

The ACCC analysis indicates that larger retailers benefit from economies of scale. This means they generally have lower average retail operating costs (per customer) than smaller retailers. While this is not surprising, clearly these benefits of scale are not so great as to represent a barrier

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[86] Frontier Economics, Retail costs and margin: A report for the Essential Services Commission, February 2019, p. 9. Note these figures are quoted in $2018-19.

[87] AGL, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 6.

[88] The Victorian Council of Social Services submission, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p.14.

[89] Essential Services Commission, Payment difficulty framework – Final decision, October 2017, p.109.

to entry for other retailers. Indeed, while the three largest retailers service about 58 per cent of Victorian residential and small business electricity customers[90], over 20 other retailers of varying size have remained financially viable despite not having the same benefits of scale. Indeed, the commission continues to issue licences to new retailers on a regular basis.

It is worth noting that retailers may outsource many of their back-of-office functions to professional service firms who may service numerous other retailers at the same time. Across their multiple clients, these service firms could attain operational economies of scale that are not achievable by individual retailers. If access to some of these benefits of scale were not possible, smaller and newer retailers would not be procuring these services from outsourced providers.

While we accept that the larger retailers benefit from economies of scale, we consider other retailers are able to manage their retail operating costs using innovative and outsourced business models.

The data reported by the ACCC indicates that the average retail cost for Victoria sits closer to the average for the larger retailers. This means the majority of customers are serviced by retailers whose operating costs are lower than the average operating costs reported by the ACCC. We observe that there are a number of other retailers who have gained significant scale in the market, in addition to smaller retailers who would have access to outsourced business models.

The data published by the ACCC indicates that some retailers have much higher operating costs than the rest of the market. It is not clear why these retailers have reported such higher costs given the options available to them and the competitive pressures they face.

Over the years we have been monitoring the retail energy market, we have observed that an individual retailer's customer numbers can fluctuate quite significantly and that individual retailers can experience rapid growth in customer numbers with seemingly no disruption to their operations.[91] We interpret this as a sign that retailers generally have sufficient capacity in their operating systems to manage these fluctuations. We recognise that the larger the retailer, the greater this capacity is likely to be (at least in absolute terms).

If retailers have sufficient capacity in their operating systems to service additional customers, then there is little justification (in terms of efficient pricing) for including an allowance for retailer operating costs based on potentially higher cost service providers.

We also note that in jurisdictions where prices have been previously regulated in the absence of fully contestable markets, regulators generally have made allowances for retail operating costs that

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[90] Essential Services Commission, Victorian Energy Market Report 2017-18, February 2019, p. 25 and p. 28.

[91] Based on reported data in the past five years of the Victorian Energy Market Report, Simply Energy, Alinta Energy, Momentum Energy and MEA Group have shown significant year on year growth.

are notably higher than the average level more recently reported by the ACCC. We consider this demonstrates that retail competition has driven notable efficiencies in retailers' operating practices. As such, we do not believe the earlier regulatory benchmarks should be adopted for the VDO.

The arguments outlined above, tempered by the absence of more reliable data, lead us to conclude that in an efficiently operating market it would be unreasonable to assume that the marginal customer would be serviced by a retailer with costs notably higher than the average. We have therefore taken the ACCC's Victorian average for retail operating costs as our starting point and added a 5 per cent buffer in calculating the operating costs to be included in our cost stack for the VDO (see table 3). This approach recognises that the marginal retailer servicing the marginal customer in a more efficient market, is likely to be nearer the average retailer.

As noted above, we also consider it appropriate to include an additional allowance for recent regulatory changes, where they are material and can be reliably costed. We note with interest comments retailers that bad debt and debt collection are the most significant component of retail operating costs. The PDF in operation in Victoria since 1 January 2019 requires retailers to provide early and meaningful assistance to customers who have failed to pay their bills. These measures are designed to prevent customers and retailers finding themselves with levels of debt that are irretrievable. In other words, the PDF should reduce retailers' bad debt and debt collection costs in the years ahead. We have made an allowance for the cost of the new payment difficulty framework based on the cost-benefit allowance in our final decision in October 2017, adjusted for inflation (see Table 3).[92]

Similarly, the VDO, along with the other reforms now being implemented following the independent review, will see fewer customers on over-priced retail contracts. This too should prevent customers accumulating debt from which they cannot recover and which must be written-off by their retailer.

[92] Essential Services Commission, Payment Difficulty Framework – Final Decision , 10 October 2017

Table 3 Retail costs, $/customer ($2019)

Retail cost components	$/customer ($2019)
Retail operating costs (ACCC Victorian average)	$96.66
Five per cent adjustment	$4.83
Subtotal Retail Operating Costs	*$101.49*
Net regulatory costs (for PDF)	$3.01
Proposed allowance for retail costs	**$104.50**

It is apparent from the results provided by the ACCC that operating efficiencies are gained when markets are opened to competition. We would expect these efficiencies to continue in future. In other words, in coming years, as the suite of reforms now underway in Victoria takes hold, we would expect to see retailers' operating costs declining. We will undertake further analysis to identify if an annual productivity factor should be applied to future estimates of retailers' operating costs when calculating the VDO. This will be a major focus of our future work.

2.6. Customer acquisition and retention costs

Our terms of reference require us to include a "modest" allowance for customer acquisition and retention costs (CARC) in calculating a VDO. Our allowance for CARC reflects the costs of competing for customers in a contestable retail market. CARC includes the cost of acquisition channels (such as third party comparison websites and service providers, telemarketing or door-to-door sales), the cost of retention teams, and marketing costs targeted at driving customer acquisition or retention.

For timeliness and transparency, our staff paper proposed benchmarking regulatory decisions in other jurisdictions, relevant public information on costs and the ACCC's REPI final report as an interim measure in calculating a modest CARC allowance for the first VDO to apply from 1 July 2019.

Stakeholder feedback on customer acquisition and retention costs

The staff working paper asked stakeholders whether they agreed with our proposed benchmarking approach and whether there were appropriate alternatives we should consider. In response, AGL supported a benchmarking approach given many Australian regulators have used a range of regulatory benchmarks in similar price determinations and activities.[93]

Sumo noted that while the ACCC's review was thorough, caution is needed in applying the figures in Victoria on the grounds that it was skewed toward large retailers.[94] Simply Energy echoed this point, suggesting costs incurred by large retailers do not reflect the experience of other market participants.[95]

Our staff paper also sought stakeholder views on what they considered should be included in the calculation of a modest allowance for CARC, and how readily they can separate CARC from their other retail operating costs.

MEA Group noted that the breakdown of costs set out in our staff paper seemed reasonable.[96] Alinta provided advice on activities that comprise CARC – splitting it across direct acquisition activities (such as door-to-door sales, telesales and kiosk acquisition) and indirect acquisition (including the use of comparator services, above the line brand and marketing, and product innovation).[97]

VCOSS noted that CARC is the highest in Victoria (based on the ACCC REPI), and queried whether these costs are efficient:

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[93] AGL, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 5.

[94] Sumo, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 4.

[95] Simply Energy, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 2.

[96] MEA Group, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 6.

[97] Alinta Energy, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 10.

> "We query how much CARC is allocated to the development and promotion of inefficient and deliberately confusing marketing strategies such as discounts."[98]

VCOSS further noted that changes in the Victorian regulatory landscape may reduce CARC. In particular, VCOSS submitted that the Victorian Government's Energy Fairness Plan reforms[99], which include a ban on door-to-door energy sales and energy cold-calling, and restrictions on sales performance bonuses for retailer marketing, should reduce retailers' costs.[100]

Our approach to calculating CARC

We propose to use a benchmarking approach as it is transparent, relatively simple to implement and can be completed in a timely manner. Our approach to benchmarking CARC considers:

- the provision for CARC made in a range of regulatory decisions in other jurisdictions
- the findings of the ACCC's REPI final report
- information from retailers on their reported costs.

In coming to our proposed approach for calculating an allowance for CARC, we have also considered feedback received from stakeholders and advice from Frontier Economics who we engaged to provide advice on the benchmark allowance for CARC.

ACCC analysis of CARC

The REPI found that CARC across the NEM has increased from $33 per customer in 2007-08 to $48 per customer in 2016-17 (both figures in $2016-17 terms), an increase of around 45 per cent in real terms.[101]

On a state-by-state basis, the REPI also noted that in 2016-17 Victoria had the highest CARC at $59 per customer, and also the highest switching rates. The ACCC noted that while there appeared to be positive correlation between switching activity and CARC, causation was likely to be two-directional:

- more CARC activity may promote more switching, but

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[98] The Victorian Council of Social Services, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 12.

[99] Victorian Labor November 2018, "Labor's Energy Fairness Plan", accessed 21 February 2019, https://static1.squarespace.com/static/5b46af5a55b02cea2a648e93/t/5bf3264f21c67ce36dc6f142/1542661716026/CRACKING+DOWN+ON+DODGY+ENERGY+RETAILERS+%E2%80%93+LABOR%E2%80%99S+ENERGY+FAIRNESS+PLAN+%281%29.pdf

[100] The Victorian Council of Social Services, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 12.

[101] ACCC, Retail Electricity Pricing Inquiry – Final Report, July 2018, p 222.

- more switching may also promote efforts by retailers to retain existing customers.[102]

Benchmarking against other regulatory decisions

Frontier Economics provided advice on appropriate sources and estimates of benchmarking data. Several regulatory decisions were identified as suitable references on the grounds they separate CARC from other retail costs. Those decisions have been based, at least in part, on actual cost data provided by retailers. This includes IPART, the QCA[103], and OTTER.

Frontier Economics found that between 2007 and 2015 the regulatory allowance for CARC has been between $2 per customer per year and $65 per customer per year. However, in decisions since 2013, the regulatory allowance for CARC has been $44-49 per customer per year.[104]

Frontier Economics also provided a comparison to publicly available retail cost information on CARC. AGL reports that CARC level has been between $41 per customer in 2013 and $62 per customer in 2018, while Origin Energy has reported a range of $27 and $47 per customer per year between 2013 and 2018. The values shown in Figure 8 are in $2018-19.

Figure 8 provides a summary of the benchmarks highlighted by Frontier Economics as being relevant in the calculation of a CARC allowance.

[102] ACCC, Retail Electricity Pricing Inquiry – Final Report, July 2018, p 222.

[103] Frontier Economics analysis does not include the most recent decisions from the QCA as it did not separate an allowance for CARC from the retail margin.

[104] Frontier Economics, Retail costs and margin: A report for the Essential Services Commission, February 2019, p. 11. Note that these figures are quoted in $2018-19.

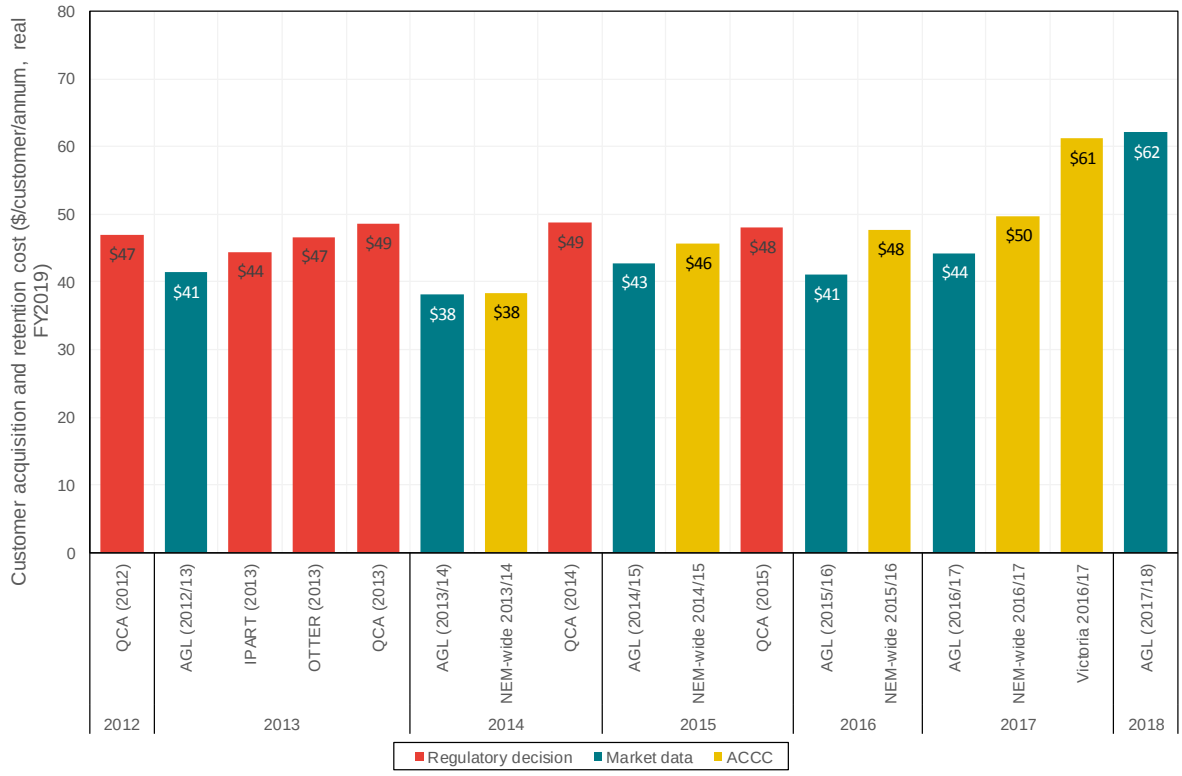

Figure 8 Summary of most relevant CARC benchmarks

Source: Frontier Economics

Recommendation for CARC

We propose to base our recommended allowance for the CARC component of the VDO on data from the ACCC REPI final report. We consider this the most applicable source of CARC benchmarking data on the basis that it is the most recent data available, and was developed using actual cost data gathered from retailers.

Our terms of reference require us to include a "modest" allowance for customer acquisition and retention costs. The ACCC's REPI final report identifies Victoria as having the highest CARC across the mainland NEM regions. Given the Victorian CARC appears to be the highest among contestable NEM regions we do not consider that taking the Victorian figure from the ACCC would be consistent with our terms of reference. Further, some submissions suggested that a higher allowance for CARC may be required to allow new or small entrants to gain market share. We note that in other markets higher costs for new entrants are likely to be funded from equity or foregone profits, not through higher prices.

We consider that taking the average CARC from competitive markets, as set out in the ACCC REPI, aligns with our terms of reference on the basis that:

- It represents an average across competitive NEM jurisdictions, representing a range of levels of competition (i.e. switching rates).

- It is broadly consistent with recent regulatory decisions on CARC, which we note have been determined with a view towards supporting competition in the retail market.

Proposed approach to CARC

An allowance for CARC will be based on the average for competitive markets from the ACCC REPI final report. Adjusting for inflation, this is estimated to be $51.48 per customer in 2019.

2.7. Retail operating margin

The terms of reference require the commission to include an allowance for a maximum retail profit margin in our recommendation for the VDO price(s).

The retail operating margin represents the return that a retailer requires to support sufficient capital in order to finance the ongoing operation of its business. The retail operating margin needs to compensate the investor for the capital invested in the business and the systematic, or non-diversifiable risks associated with the investment. For example, these systematic risks (also referred to as market or economic risk) might include:

- The risk of variation in load profile due to changes in economic conditions that affect the demand for electricity.
- The risk of variation in wholesale electricity spot and contract prices due to changes in economic conditions and demand.
- General business risk due to changes in economic conditions.[105]

It is important that risks accounted for in other costs are not double counted in the retail operating margin.

The commission has previously outlined three methods for estimating the retail margin:

- bottom-up approach
- benchmark approach
- expected returns approach.

In our staff working paper, we proposed to use a benchmark approach, basing our recommendation for the retail margin on decisions by other regulators and data provided by

[105] IPART, Review of regulated retail prices and charges for electricity From 1 July 2013 to 30 June 2016 – Electricity – Final Report, June 2013, p. 88

retailers (if possible). We also noted that we would explore adopting a transitional approach, where an initial retail operating margin is set that reduces at each subsequent price re-set.

Stakeholder feedback on the approach to estimating the retail operating margin

We received a range of submissions on the retail operating margin, with differing views on the proposed approach in our staff working paper:

- A number of submissions from retailers generally supported a benchmarking approach, given the timeframes.[106] However, a number of retailers either provided qualified support or opposed the use of benchmarking, due to issues around the comparability of the benchmarks. Where retailers opposed the use of benchmarking for estimating the retail operating margin, the submissions did not generally provide suggestions on alternative, preferred approaches.
- Submissions from consumer advocates typically supported estimating the retail margin using benchmarks against previous regulatory decisions, and noted that they considered that the margins estimated in these decisions (such as IPART's 2013 decision) were appropriate.[107]
- Some submissions supported the commission examining a range of approaches (benchmarking, expected returns, bottom-up calculation) including returns for other industries, particularly those with comparable risks.[108]

Questions, largely raised by retailers, about the benchmarking approach included:

- Whether decisions by regulators in other jurisdictions (such as the most recent IPART decisions, which the commission referred to in its working paper, and decisions from the ICRC) were reasonable due to differences in costs and risks between the jurisdictions, and also increases in costs and risks (including increases in costs from new regulatory requirements (specifically, the Payment Difficulties Framework) and increases in risks due to government intervention) since the original decisions were made.[109]

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[106] See for example, AGL, submission to the Essential Services Commission Victorian Default Offer staff paper, February 2019, p.2

[107] Brotherhood of St Laurence, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 2; and VCOSS, submission to the Essential Services Commission Victorian Default Offer staff paper, February 2019, p.14

[108] See for example, EnergyAustralia, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 10

[109] EnergyAustralia, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 10; Momentum Energy, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 2

- AGL and Simply Energy questioned the use of non-energy companies in benchmarks, given the inherently different risks faced.[110]
- A number of submissions noted that differences between retailers such as incumbency and size would mean the benchmarked margins would not be high enough to support new entrants or smaller retailers, or to facilitate competition. [111] For example, Alinta Energy noted:

> "Any approach to estimating a retail operating margin needs to ensure it accounts for the retailer capital investment and risk associated with that investment. All of which are unique across retailers.
>
> Historic retail margins used in previous regulatory determinations have been insufficient to stimulate robust competition and investment. Whilst also stifling new market entry and placing the viability of smaller retailers at risk creating the potential for market exit."[112]

Differing views were provided on the proposal in the working paper to set a transitional retail margin which would be adjusted in future years. Some stakeholders supported the approach in so far as it was associated with an initially cautious approach to setting the margin (and VDO),[113] while others queried the rationale, and noted that it might imply inaccuracies in the initial margin and uncertainty about how future margins would be set.[114]

A number of submissions also recognised the inter-relationships between the different components of the cost stack, and in particular, the relationship between CARC and margin.[115] We note these submissions, and agree with the principle that the treatment of risks and costs in other components of the cost stack could influence the selection of the appropriate retail margin. For example, we have included a volatility allowance to account for risk associated with wholesale costs.

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[110] AGL, submission to the Essential Services Commission Victorian Default Offer staff paper, February 2019, p.7; Simply Energy, submission to the Essential Services Commission Victorian Default Offer staff paper, February 2019, p.4

[111] Origin Energy, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 3; VCOSS, submission to the Essential Services Commission Victorian Default Offer staff paper, February 2019, p. 14; Sumo, submission to the Essential Services Commission Victorian Default Offer staff paper, February 2019, p. 6

[112] Alinta Energy, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 11

[113] AGL, submission to the Essential Services Commission Victorian Default Offer staff paper, February 2019, p. 7; EnergyAustralia, submission to the Essential Services Commission Victorian Default Offer staff paper, February 2019, p. 10; CALC, submission to the Essential Services Commission Victorian Default Offer staff paper, February 2019, p.12

[114] Alinta Energy, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 11; MEA Group, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 7.

[115] AGL, submission to the Essential Services Commission Victorian Default Offer staff paper, February 2019, p.7; CALC, submission to the Essential Services Commission Victorian Default Offer staff paper, February 2019, pp. 7, 11; Simply Energy, submission to the Essential Services Commission Victorian Default Offer staff paper, February 2019, p.3

Our approach to estimating the retail operating margin

After reviewing the submissions from stakeholders, the commission proposes using a regulatory benchmark approach to estimate the retail margin.

We note that while many submissions supported the use of benchmarking, a number of stakeholders expressed reservations around the use of benchmarking and there was also support for the commission investigating a range of approaches including bottom-up and expected returns. We agree that there is value in exploring other approaches, and have cross-checked our benchmarking results with the expected returns methodology in our draft advice. We will continue to consider the use of the bottom-up approach in future reviews, but given the availability of data we have not undertaken a bottom-up approach for this review. We may adjust our approach in future reviews where market conditions change or we get access to new or different information. We have engaged Frontier Economics to provide advice on the retail margin for the VDO to apply from 1 July 2019.

Benchmarking against other regulatory decisions

Our set of benchmarks includes the most recent regulatory allowances for the retail margin made in decisions by the QCA, the ICRC, OTTER and IPART (Table 4).

Table 4 Regulatory decisions on retail margin

Regulator	Margin	Decisions	Comment
QCA	5.7%	2013, 2015	Post-2015 decisions have been based on an approach that does not result in separate allowances for ROC, CARC and the retail margin. QCA concluded that the result of this approach was an allowance that was close to the previous allowance.
ICRC	5.7%	2014-2016	Based on the retail margin on the allowance used by IPART in its 2013 decision. The ICRC notes that in practice, calculating a margin of 5.7% involved multiplying each cost component by 6.04%.
OTTER	5.7%	2013, 2016	Benchmarked against the QCA, the ICRC and IPART.
IPART	5.7% 5.3%-6.1%	2013	IPART had regard to three approaches to estimating the retail margin: benchmarking, the expected returns approach and the bottom-up approach. The margin of

(range)	5.7% was chosen from within a recommended range of 5.3% to 6.1%.

Source: Frontier Economics

Expected returns approach

The commission asked Frontier Economics to estimate the retail margin for electricity retailers based on the expected returns approach to allow for comparison with the regulatory benchmarks in Table 4. The key objective of the expected returns approach is to estimate the minimum retail margin required in order to compensate equity investors in a notional electricity retailer for the systematic (i.e., non-diversifiable) risk they bear when committing equity capital to the firm.

The expected returns approach involves five main steps:

1. Derive an estimate of the benchmark Weighted Average Cost of Capital (WACC) for a notional retailer.
2. Forecast the future cash flows and returns of the notional retailer under different economic conditions.
3. Forecast the future returns on the market in different states of the market.[116]
4. Use the forecast returns of the notional retailer and the market to compute the implied systematic risk of the notional retailer.
5. Solve for the retail margin that equalises the systematic risk implied by the retailer's forecast cash flows and the systematic risk associated with the benchmark WACC.

Frontier Economics used this approach to estimate a range for the retail margin, with the range primarily determined by varying the assumption concerning the share of fixed costs of the notional retailer. This results in Frontier Economics' recommended range for the retail margin of 3.5 to 4.8 per cent.[117]

Frontier Economics also undertook sensitivity analysis on key input values for WACC (low, base and high), market volatility, demand (GDP) volatility and the share of total costs represented by fixed costs. The resulting range of the margin is between 3.1 to 6.1 per cent, as shown in the table

[116] The 'market' in this context refers to the market for all assets in the economy. In principle, this market would include all assets, tradeable (including all financial and real assets) and non-tradeable (including human capital). In practice, the returns on the market are estimated using data on the stock market, assuming that a well-diversified stock index such as the All Ordinaries Index is a reasonable proxy for the market as a whole (which is, by definition, a perfectly diversified asset).

below.

Table 5 Sensitivity of the estimated EBIT margin to four variables considered – Frontier Economics

Parameter varied	Low	Base	High
WACC	4.1%	4.2%	4.2%
Market volatility	6.1%	4.2%	3.1%
GDP volatility	3.1%	4.2%	5.3%
Fixed share	3.6%	4.2%	4.7%

Source: Frontier Economics

Given the range of margins previously allowed by regulators, and the nature of the assumptions used to estimate the retail margin using the expected returns approach, we consider that the range presented in Frontier Economics' sensitivity analysis provides a feasible range for the retail margin.

Consideration of the ACCC reported findings

In the ACCC's REPI final report it estimated an average retail margin of 11 per cent in Victoria (2017-18), compared to NEM-wide figure of 8 per cent.[118] The ACCC used earnings before interest, tax, depreciation and amortisation (EBITDA) in the analysis in its report as a measure of the retail margin, and based its analysis on data provided by retailers on their actual financial performance.[119]

A number of stakeholders suggested that the commission should adopt the retail margins identified by the ACCC for the purpose of calculating the VDO. We have several reservations about the suitability of the ACCC's findings in informing the allowance to be made for a retail operating margin in the VDO. This includes:

- The ACCC's findings simply reflect existing margins, as reported by retailers, at different points in time. There is no suggestion in the ACCC report, or elsewhere, that this is the level of return that retailers ought to be earning on their customer accounts. In other words, the ACCC's findings are positive rather than normative in nature.

[118] ACCC, Retail Electricity Pricing Inquiry – Final Report, June 2018, p. 8.

[119] ACCC, Retail Electricity Pricing Inquiry – Final Report, June 2018, pp. 4-5

- The possibility that the reported retail margins may include residual unallocated costs from elsewhere in retailers' cost-stacks. For example, if a retail business is a subsidiary of a larger business, corporate overhead costs may appear as a higher retail margin because these costs were not specifically allocated to the retail business in the data provided to the ACCC. While we are not suggesting this is necessarily the case, we cannot dismiss this possibility without access to additional data.[120]
- The ACCC's findings on retail margins may include the headroom that electricity retailers earned on their customer accounts, particularly from standing offers and market offers where access to discounts had been lost. Our terms of reference specifically require that there should be no allowance for headroom in the VDO.

In light of these issues, we do not consider it appropriate to use the figures from the ACCC as the basis for setting the retail margin for the VDO.

Discussion and recommendation

We consider that the selection of benchmark decisions (being the most recent regulatory decisions on retail energy margins in Australia) is appropriate, and likely to provide a suitable benchmark for the VDO. We also consider that this approach is consistent with our terms of reference, which requires us to consider the costs of an efficient retailer, in that the purpose of the regulatory decisions in our benchmark set was generally to establish an efficient allowance.

However, we also recognise that it is relevant to consider whether the current operating environment in the Victorian retail energy market is significantly different from the operating environment prevailing at the time of the decisions in our benchmark set:

- Some stakeholders suggested that the Victorian retail energy market is significantly different from the NSW market at the time of IPART's most recent decision, and that the margins set by IPART were not sufficient to facilitate market entry. We consider that the jurisdictional differences between retail energy markets, with respect to the systematic risks faced by energy retailers, is relatively immaterial in the context of our decision.
- Some stakeholders suggested that the increased risks of regulatory intervention had increased the riskiness of the market. Given the early stage of regulatory changes such as the PDF and VDO, it is difficult to tell whether these changes will have a material impact on the systematic risk of the electricity retail market. In general, we would consider these risks to be non-systemic risks, and it is more appropriate to compensate for these risks through other mechanisms. In

[120] In March 2018, we invited retailers to share with us the data they provided to the ACCC. We did not receive sufficient data to base any conclusions on. If the legislation before Parliament is passed, we could use our information gathering powers in support of determine future values of the VDO.

particular, where these risks can be quantified, our approach has been to include them in other components of the cost stack.

As already noted, in providing a retail operating margin, it is important that we do not compensate retailers for risks that have already been compensated elsewhere in the cost stack. Failure to do so would represent double counting of costs. We consider our cost-based approach has already provided for numerous risks. These include:

- Wholesale risk – we have provided a specific allowance for retailers to adopt an efficient hedging strategy against unexpected volatility in the cost of purchasing electricity in the wholesale market.
- Bad debt risk – the payment difficulty framework which took effect from 1 January 2019 has been specifically designed to reduce retailers' bad debt risks and the costs associated with debt recovery. We have made an allowance for the (net) cost of administering this framework.
- Switching risk – retailers face the risk that customers will switch to other retailers at short notice. The energy rules allow retailers to charge an exit fee to customers who switch away. Moreover, our cost-based approach to setting the VDO provides an allowance for retailers' customer acquisition and retention costs (CARC). This provides retailers with funds to manage this risk.

On balance, we are proposing to provide a retail operating margin in line with historical regulatory decisions to compensate retailers for systemic risks in addition to those that have been specifically compensated through our cost-based approach for determining the value of the VDO. In keeping with previous regulatory decisions, our allowance for a retail margin is determined on the basis that it is levied on the retailers' entire cost base. We believe this approach is consistent with the findings from the expected returns approach and will consider this approach in future decisions.

Proposed approach to the retail operating margin

- The commission will use a 5.7 per cent retail margin in the calculation of the VDO.
- This retail margin is based on recent decisions by Australian energy regulators. We consider that this approach meets the requirements of the terms of reference to recommend a VDO that can be offered by each licensed electricity retailer.
- We also note that this margin is comparable to, and within the feasible range of, the margin estimated by Frontier Economics using the expected returns approach.

3. Estimation of the Victorian Default Offer

This chapter provides detail of how the approach described in the previous chapter has been used to calculate the VDO. This includes a discussion of how we have reflected costs in tariffs along with indicative estimated annual bills for each distribution zone and customer segment.

Appendix B provides the full methodology and formulae applied in the calculation of the VDO.

3.1. The form and structure of the VDO

While our approach to estimating each element of the cost stack is described in chapter 2, an additional step is required to convert these costs into a set of VDO tariffs. The commission is guided by its terms of reference, which state that the VDO is to be a simple offer available to customers who are unwilling or unable to engage in the market. Based on this, our staff paper suggested that the VDO would be based on a simple tariff structure – a supply charge presented as dollars per day and a usage charge presented as cents per kilowatt hour (kWh).

To achieve this structure the staff paper proposed allocating costs that vary with consumption to the usage charge, while those costs that are fixed would be allocated to the supply charge. The staff paper noted that this would be based on the simplest network tariff option in each distribution zone, which includes a single flat usage for all distribution zones apart from AusNet Services and United Energy. In the AusNet Services distribution zone, this contains a charge for usage within a set 'block' or threshold of consumption, and then a different charge for any usage over this amount. In the United Energy distribution zone, this contains a charge for usage in summer and another for usage at all other times of the year.

Stakeholder feedback on the form and structure of the VDO

A number of stakeholders from different groups, supported the position proposed in the staff paper that the VDO should be based on a flat tariff. This included the Consumer Action Law Centre, AGL, Onsite Energy Solutions and the joint submission from the Victorian distribution businesses. Reasons for support included the simplicity provided to customers, on the basis that the majority of customers are currently on flat tariffs.

Despite this support, a number of stakeholders questioned whether the VDO should be set only for a flat tariff type. In particular, the questions we raised about the implications of offering a flat VDO tariff to a customer whose underlying network tariff was a non-flat option such as time of use.[121]

[121] See submissions from Origin Energy, Alinta Energy, and the Australian Energy Council.

Simply Energy and the AEC suggested that the margin allowed would need to increase to reflect this increased risk. Distribution businesses did not raise this as a current issue, but noted it may arise in future if changes are made to the default network tariffs in the determination period beginning 1 January 2021. The commission notes that no alternative solutions were proposed at this point in time, but we will monitor any future developments.

A more general concern was the prospect that the VDO would limit the flexibility for retailers to offer a variety of tariff types in their market offers.[122] MEA Group also noted that the introduction of a flat tariff VDO may negatively impact some particular customer types. As noted in section 2.3, MEA Group proposed that one solution would be to take a weighted average of different network tariffs based on VDO customers on each tariff type.[123] The commission does not propose to take this approach as this is unlikely to provide a simple option for customers, nor is there any publicly available information on the number of standing offer customers on each tariff type.

3.2. Proposed form and structure of the VDO

The commission notes that there are a variety of positions among stakeholders concerning the structure of the VDO. Ultimately we have had regard to the requirements under our terms of reference for the VDO to be a simple and reasonably priced offer for customers who are unwilling or unable to engage in the market. For this reason, we propose that the VDO only be set for the simplest underlying network tariff option in each distribution zone.

In making this proposal, we have had regard to the feedback from stakeholders in relation to the impact on customers, particularly those who are currently on a non-flat standing offer. The distribution networks' joint submission highlighted that depending on the distribution zone, the proportion of customers on a time of use tariff was up to a quarter of residential customers and half of small business customers. The commission has data that indicates that the proportion of standing offer customers on time of use tariffs is much lower than the proportion of total customers on time of use tariffs.

Despite proposing to set only a flat tariff option for the VDO, the commission does not see this as placing any constraints on retailers from making market offers that reflect other structures such as time of use or demand tariffs. Moreover, we are not aware of any barrier to the retailer passing on tariff reassignment costs that are levied by the network business where a customer currently assigned to a non-flat network tariff may wish to receive the VDO (which will be based on a flat

[122] For example, see submissions from St Vincent de Paul Society, Origin Energy and Alinta Energy.

[123] MEA Group, submission to the Essential Services Commission Victorian Default Offer staff paper, January 2019, p. 4.

network tariff).[124] The commission will monitor how distribution businesses cooperate with retailer request for network tariff reassignments prompted by customers requesting the VDO.

As discussed in section 2.3, the commission proposes that where a residential customer has a controlled load or dedicated circuit the VDO should allow for this arrangement. In many circumstances, a consumer will not have the choice whether they have a controlled load or not. Based on this, the commission proposes that where applicable, a VDO customer would have the option of a separate charge for consumption under a controlled load or dedicated circuit. As such, we have set an additional controlled load charge for each distribution zone that is the sum of the relevant network tariff and all other variable components (see equation 3). The final column in Table 14 shows the controlled load charge for each distribution zone.

Cost allocation formulae

As described in our staff paper, we propose to allocate those costs that are fixed to the supply charge, while those costs that vary by the amount of electricity consumed would be allocated to the usage charge. This is described in the equations below, with the final charges updated to include GST. Appendix B provides the full details of our process to allocating costs to each charge and the estimation of each cost stack component.

$$Supply\ charge = (Retail\ Operating\ Costs + CARC + Fixed\ Network\ Costs + Per\ customer\ market\ fees\ and\ charges) \times (1 + retail\ margin) \times (1 + GST)$$

Equation 1: Components of the proposed supply charge

$$Usage\ charge = (Wholesale\ costs + Network\ Losses + Environmental\ fees + Variable\ Network\ costs + Variable\ market\ fees\ and\ charges) \times (1 + retail\ margin) \times (1 + GST)$$

Equation 2: Components of the proposed usage charge

$$Controlled\ load\ charge = (Wholesale\ costs + Network\ Losses + Environmental\ fees + Controlled\ Load\ Network\ costs + Variable\ market\ fees\ and\ charges) \times (1 + retail\ margin) \times (1 + GST)$$

Equation 3: Components of the proposed controlled load charge

3.3. Estimating the cost stack components

This section details how we have calculated the VDO using the cost stack components in chapter 2. Where necessary, we have indexed all costs for inflation to December 2018. We have used the Australian Bureau of Statistics Consumer Price Index (All Groups, Original) to update data.

[124] See section 35A(3) of the Energy Retail Code.

Wholesale electricity costs

We engaged Frontier Economics to estimate wholesale electricity costs for 2019-20. As discussed in section 2.2, the commission proposes to use the median estimate based on a 12-month average of future contract prices. We have assumed hedging strategies that minimise the level of risk. We have also included a volatility allowance.

Wholesale costs vary across distribution zones due to differences in the load profiles of customers across Victoria. The estimates of wholesale electricity costs (including a volatility allowance) for the 2020 calendar year are shown in Table 6.

Table 6 Wholesale electricity forecasts for 2019-20 as at 15 February 2019 (GST exclusive)

Distribution zone	12 months ($ per MWh, nominal)	Volatility allowance ($ per MWh, nominal)
AusNet Services	$99.37	$0.18
Citipower	$94.21	$0.15
Jemena	$99.83	$0.16
Powercor	$94.92	$0.12
United Energy	$101.08	$0.17

Source: Frontier Economics, Wholesale electricity costs: A report for the Essential Services Commission, February 2019, p. 30 and 36

Network losses

Some electricity is lost in the process of being transported through the transmission and distribution networks. The total loss factor represents the additional electricity a retailer must purchase to serve the consumption load of its customers, given these losses. The estimates in Table 7 are based on 2018-19 loss factors.[125] However, our final advice will be updated to include 2019-20 loss factors if AEMO publishes an update prior to finalising our advice.

Table 7 Network losses

Distribution zone	**Distribution loss factor** (DLF)	**Transmission loss factor** (MLF)	**Combined loss factor** (DLF*MLF)
AusNet Services	1.0597	0.9857	1.0445
Citipower	1.0476	1.0006	1.0483
Jemena	1.0526	1.0013	1.0540
Powercor	1.0711	1.0069	1.0785
United Energy	1.0533	0.9987	1.0519

Source: AEMO

[125] Network losses based on the Distribution and Marginal loss factors published by AEMO. Accessed 21 February 2019. https://www.aemo.com.au/-/media/Files/Electricity/NEM/Security_and_Reliability/Loss_Factors_and_Regional_Boundaries/2018/Distribution-Loss-Factors-For-The-2018-2019-Financial-Year.pdf

https://www.aemo.com.au/-/media/Files/Electricity/NEM/Security_and_Reliability/Loss_Factors_and_Regional_Boundaries/2018/Marginal-Loss-Factors-for-the-2018-19-Financial-Year.pdf

Network costs

Electricity network costs consist of distribution, transmission and jurisdictional costs. Each distributor imposes both a fixed and variable charge on retail electricity businesses, as well as a charge for metering. We also include a controlled load or dedicated circuit tariff where it is applicable to residential customers. Network charges are regulated by the AER.

The network and metering charges for residential and small business customers for 2019 are summarised in the tables below.

Table 8 Residential electricity network charges ($2019 – GST exclusive)

Distribution zone	Daily charge ($/pa)	Variable charge structure	Variable charge ($ per kWh)	Controlled load (if applicable) ($ per kWh)
AusNet Services	$115.00	Block 1 (1020 kWh) Block 2 (>1020 kWh)	$0.10 $0.13	$0.04
Citipower	$90.00	Anytime	$0.07	$0.02
Jemena	$51.30	Anytime	$0.08	$0.03
Powercor	$130.00	Anytime	$0.07	$0.02
United Energy	$25.88	1 Nov to 31 Mar 1 Apr to 31 Oct	$0.09 $0.08	$0.02

Sources: Victorian distribution businesses' 2019 annual tariff statements

Table 9 Small business electricity network charges ($2019 – GST exclusive)

Distribution zone	Daily charge ($/pa)	Variable charge structure	Variable charge ($ per kWh)
AusNet Services	$115.00	Block 1 (1020 kWh)	$0.14
		Block 2 (>1020 kWh)	$0.18
Citipower	$150.00	Anytime	$0.08
Jemena	$95.53	Anytime	$0.10
Powercor	$170.00	Anytime	$0.08
United Energy	$43.91	1 Nov to 31 Mar	$0.11
		1 Apr to 31 Oct	$0.09

Sources: Victorian distribution businesses' 2019 annual tariff statements

Table 10 Metering charges ($2019 – GST exclusive)

Distribution zone	Annual charge ($)
AusNet Services	$57.80
Citipower	$73.00
Jemena	$79.84
Powercor	$73.00
United Energy	$57.00

Sources: Victorian distribution businesses' 2019 annual tariff statements

Environmental scheme costs

Electricity retailers in Victoria are required to fulfil obligations under three government environmental schemes – the Large-Scale Renewable Energy Target (LRET), the Small-Scale Renewable Energy Scheme (SRES), and the Victorian Energy Upgrades scheme (VEU).

Each scheme has a liability set for every financial year. We propose to take the most recent liability percentages for these schemes.

LRET

Under the LRET scheme, the liability percentage is called the Renewable Power Percentage (RPP). The Clean Energy Regulator set the default RPP for 2019 at 17.52 per cent.[126] In Victoria, this applies to the electricity acquired from the AEMO settlement point at the Victorian regional reference node. As such, the RPP is subject to electricity distribution loss factors.

Frontier Economics has calculated the cost of complying with the LRET by way of market prices for certificates under this scheme (LGCs) as reported by Mercari.[127]

SRES

The liability percentage under the SRES scheme is called the Small-Scale Technology Percentage (STP). Ernst and Young has estimated the STP for 2019 at 19.59 per cent. Historically, spot prices for certificates under the SRES (STCs) have been at or close to the clearing house price of $40. For this reason, Frontier Economics has assumed a market price for STCs as equal to the clearing house price.

VEU

For the cost of complying with the VEU scheme, we use the relevant greenhouse reduction rate for electricity of the reference price year being assessed. For the 2019 compliance year, the reduction rate is 0.15419.[128]

The cost of certificates under the VEU scheme (VEECs) is gathered from historic market prices. Based on currently available information, we estimate an average price of $21.50 per certificate for 2019.

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[126] Clean Energy Regulator, Renewable Power Percentage, accessed 21 February 2019, http://www.cleanenergyregulator.gov.au/RET/Scheme-participants-and-industry/the-renewable-power-percentage

[127] Mercari, LGC market, http://lgc.mercari.com.au.

[128] Essential Services Commission, Participating in the program, accessed 21 February 2019, https://www.esc.vic.gov.au/victorian-energy-upgrades-program/participating-veu-program/energy-retailers-veu-program

Table 11 Cost of complying with environmental schemes ($2019 – GST exclusive)

Environmental scheme	Certificate price	Scheme liability	Cost ($/MWh)
LRET	$44.72	17.52%	**$7.83**
SRES	$40.00	19.59%	**$7.84**
VEU	$21.50	15.42%	**$3.32**

Retail costs and margin

Our approach to benchmarking retail costs and margin is described in Chapter 2. Retail costs and margin do not differ across distribution zones.

Retail costs

Based on the analysis in sections 2.5 and 2.6, we have selected an allowance of $104.50 for retail operating costs and $51.48 for customer acquisition and retention costs (see table 12).

Retail margin

Based on analysis in section 2.8, the commission proposes to apply a retail margin of 5.7 per cent. The retail margin represents the margin in dollars as a proportion of the total revenue.

Table 12 Retail costs and margin ($2019 – GST exclusive)

Retail costs and margin	Annual allowance
Retail operating costs	**$104.50 per customer**
Customer acquisition and retention costs	**$51.48 per customer**
Retail margin	**5.7 per cent**

Other costs

Retailers incur other costs through fees, market operations and ancillary services. Information about these costs has been gathered primarily from AEMO's Budget and Fees report. The commission licence fee is derived from internal calculation of the amount. We have adopted a forecast of ancillary charges calculated by Ernst and Young for the AEMC's 2018 Residential Electricity Price Trends report.[129] The impact of the social cost of carbon on retailer costs is based on total small scale renewable exports in 2017-18 (as discussed in section 2.4).

Table 13 Other costs

Charge		Rate (GST excl.)
AEMO		
	NEM market fees	$0.50/MWh
	Full retail contestability	$0.08/MWh
	National Transmission Planner	$0.03/MWh
	Energy Consumers Australia	$0.52 /customer
	Ancillary services	$0.36/MWh
	RERT	$6.18 /customer
ESC licence fee		$0.56 /customer
Feed-in Tariff	(social cost of carbon)	$6.65 /customer
	Total per MWh	**$0.97/MWh**
	Total per customer	**$13.91/customer**

[129] Ernst and Young, Residential Electricity Price Trends - Wholesale Market Costs Modelling 2018, p. 31.

3.4. Estimating the VDO tariffs

Based on the estimates described above and the approach detailed in Appendix B we have calculated the VDO tariffs for each distribution zone. For each distribution zone, we have calculated a proposed VDO for residential customers and small business customers. Tables 14 and 15 below set out the VDO for each category of customer.

Table 14 Proposed VDO for residential customers (GST inclusive)

Distribution zone	Daily charge ($ per day)	Variable charge structure	Variable charge ($ per kWh)	Controlled load (if applicable) ($ per kWh)
AusNet Services	$1.10	Block 1 (1020 kWh) Block 2 (>1020 kWh)	$0.26 $0.29	$0.18
Citipower	$1.06	Anytime	$0.21	$0.16
Jemena	$0.96	Anytime	$0.23	$0.17
Powercor	$1.19	Anytime	$0.22	$0.16
United Energy	$0.81	1 Nov to 31 Mar 1 Apr to 31 Oct	$0.25 $0.23	$0.16

Table 15 Proposed VDO for small business customers less than 40 MWh per year (GST inclusive)

Distribution zone	Daily charge ($ per day)	Variable charge structure	Variable charge ($ per kWh)
AusNet Services	$1.10	Block 1 (1020 kWh)	$0.30
		Block 2 (>1020 kWh)	$0.35
Citipower	$1.26	Anytime	$0.23
Jemena	$1.10	Anytime	$0.26
Powercor	$1.32	Anytime	$0.23
United Energy	$0.87	1 Nov to 31 Mar	$0.27
		1 Apr to 31 Oct	$0.25

3.5. Indicative bill amounts under the VDO

The commission has calculated indicative bill amounts based on typical consumption profiles for a residential and small business customer. We have not calculated the indicative bill for a controlled load customer because it is highly dependent on individual circumstances.

Typical consumption profiles are based on our 2017-18 Victorian Energy Market Report[130] for residential households and analysis from Energy Consumers Australia for small business customers.[131] The typical residential customer is assumed to consume 4,000kWh per year, while the typical small business customer is assumed to consumer 20,000kWh per year.

Figures 9 and 10 show how different parts of the cost stack contribute to the total VDO bill for a typical residential and small business customer for each distribution zone. Network and wholesale costs are the largest factors in the cost stack, while the retail component (including retail profit margin) contributes between 17-19 per cent to the typical residential cost stack and 8-9 per cent to the typical small business cost stack.

[130] Essential Services Commission, Victorian Energy Market Report 2017-18, February 2019, p. 41.

[131] Energy Consumers Australia, SME Retail tariff tracker, June 2018, p. 32.

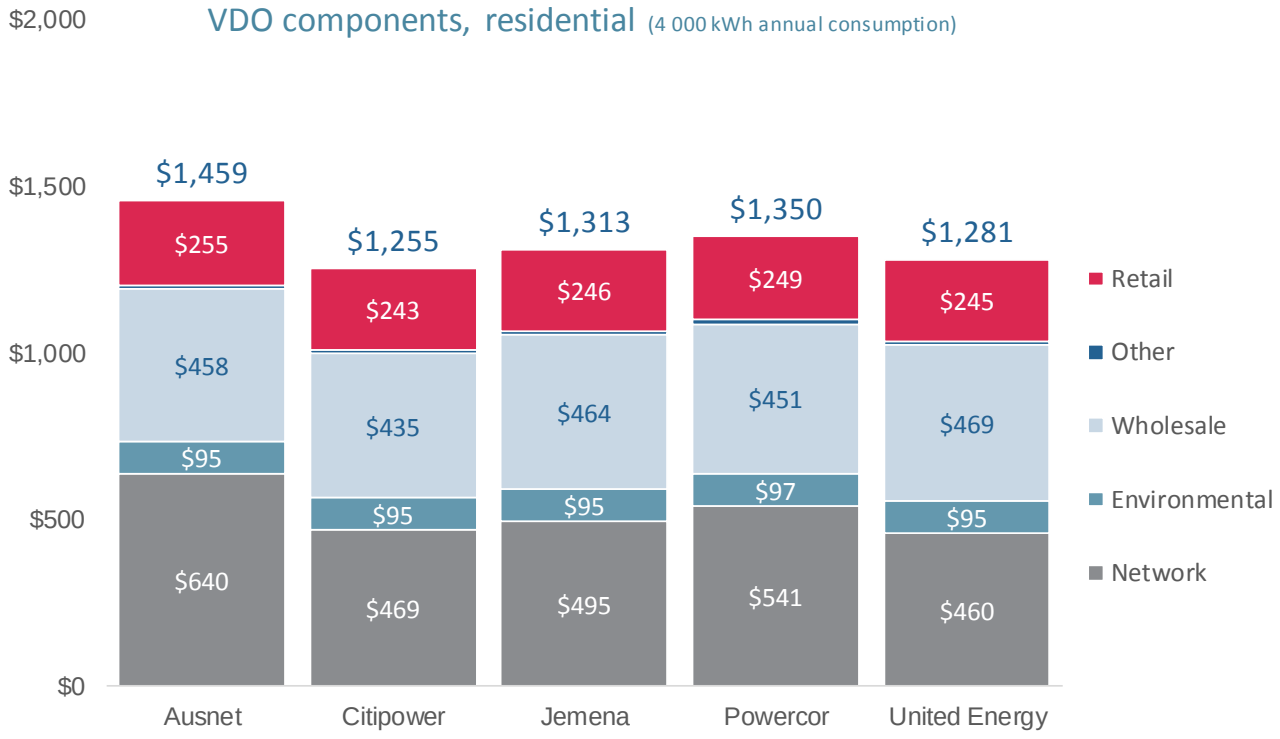

Figure 9 Cost components of the VDO, typical residential customer (GST inclusive)

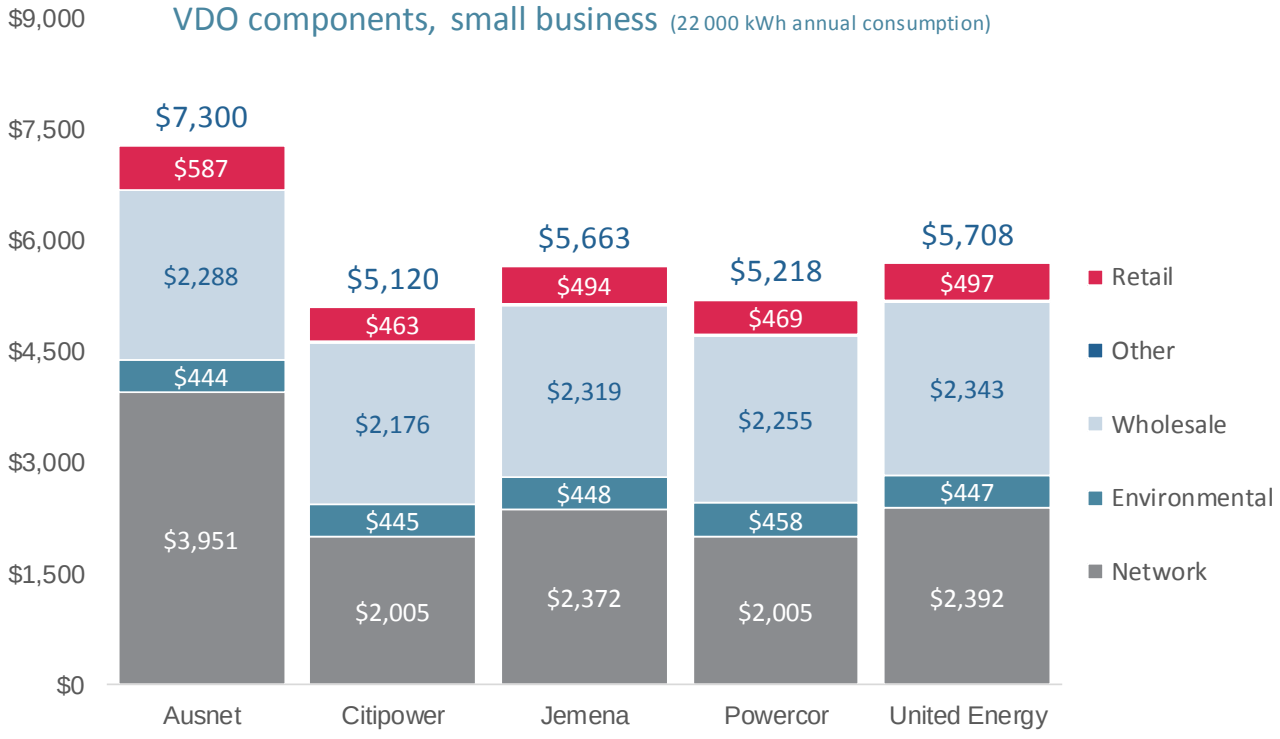

Figure 10 Cost components of the VDO, typical small business customer (GST inclusive)

Figures 11 and 12 show how the indicative VDO compares to current market and standing offers for both the typical residential and small business customer.[132] The indicative VDO bill estimate is between $390-520 lower than the median standing offer depending on the distribution zone for a typical residential customer consumption profile. For a typical small business customer this is between $1,830-2,300 lower than the median standing offer depending on the distribution zone.

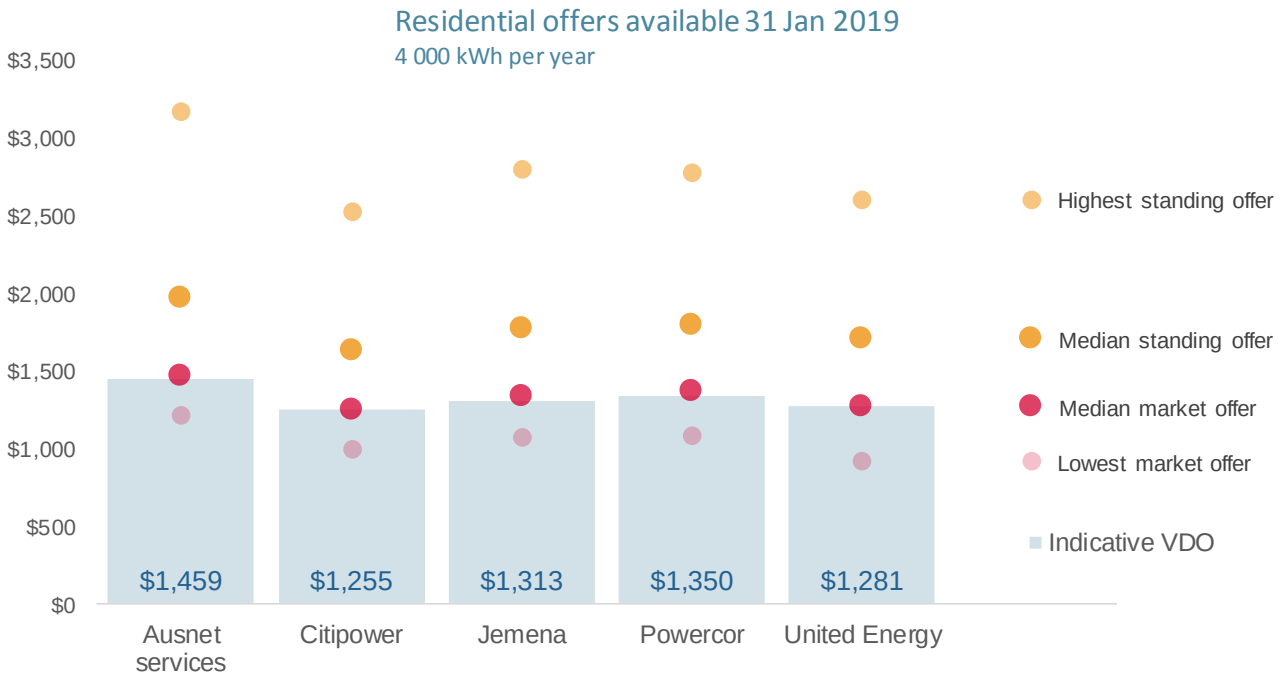

Figure 11 Comparison of the VDO with other available offers, typical residential customer (GST inclusive)

[132] Based on flat usage tariff offers only. Data collected from Victorian Energy Compare on 31 January 2019. Consumption profiles used to calculate indicative bills for AusNet and United Energy customers are based on usage consumption data provided by distribution networks.

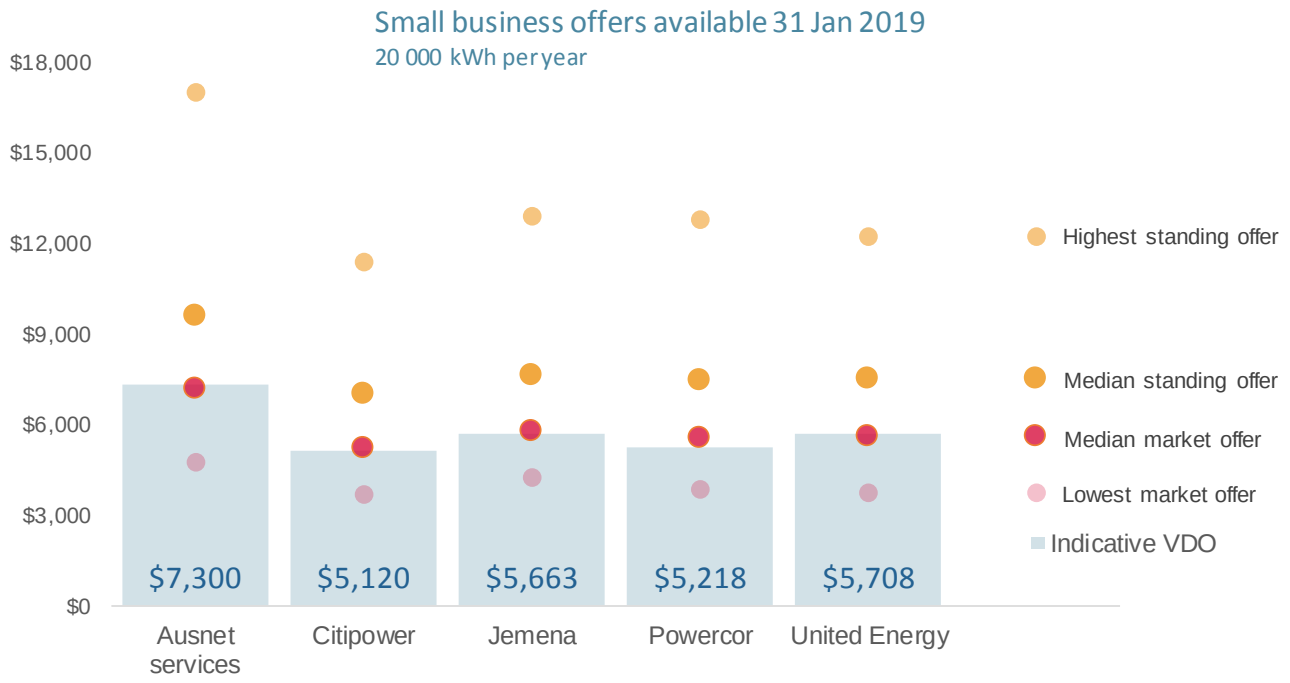

Figure 12 Comparison of the VDO with other available offers, typical small business customer (GST inclusive)

Table 16 details how the VDO might differ for residential customers with different consumption amounts across each of the distribution zone. In general, annual consumption of 2,000 kWh per year is likely to represent a small household, while 8,000 kWh per year would represent a large household. While we have provided these estimates for residential customers, we have not made this comparison for small business customers because the consumption profile of each small business is contingent on the activities of their business. Table 17 shows how what the indicative VDO bill savings could be for each of these residential customer types compared with the current median standing offer.

Table 16 Indicative VDO bill for different residential customers (GST inclusive)

Distribution zone	2 000 kWh	4 000 kWh	8 000 kWh
AusNet Services	$926	$1,459	$2,641
Citipower	$822	$1,255	$2,121
Jemena	$832	$1,313	$2,275
Powercor	$893	$1,350	$2,266
United Energy	$788	$1,281	$2,267

Source: ESC calculations

Table 15 Indicative VDO bill savings compared to the median standing offer for different residential customers (GST inclusive)

Distribution zone	2 000 kWh	4 000 kWh	8 000 kWh
Ausnet services	$320	$520	$870
Citipower	$230	$390	$720
Jemena	$300	$470	$860
Powercor	$270	$450	$890
United Energy	$270	$430	$710

Source: ESC calculations

3.6. How the VDO compares to other default offers

Soon after the Victorian government introduced its VDO legislation, the federal government released draft regulations confirming its intention of introducing a Default Market Offer (DMO) in jurisdictions which do not have regulated prices in place — namely, South Australia, New South Wales and South-East Queensland. At the same time, the Australian Energy Regulator (AER) released its draft determination for how it would determine the DMO in these states.

The AER has proposed a price-based top-down approach for determining DMO prices, where the DMO is the mid-point of median standing offers and median market offers in a particular distribution zone.[133] While the commission has not sought to calculate the DMO in Victoria, based on the AER's proposed methodology a hypothetical DMO would lie approximately half way between the dark orange (median standing offers) and dark red dots (median market offers) in Figures 11 and 12. Alternatively stated, the VDO would save a typical residential customer around $200 and the typical small business customer around $1,000 more than the DMO, if the VDO was not implemented.

This result is likely to be driven by an allowance for headroom that is driven by the high prices under the median standing offer.

[133] AER, Draft Determination: Default Market Offer Price, February 2019, p. 8.

4. Embedded network customers and the Victorian Default Offer

In September 2017, the Department of Environment, Land, Water and Planning delivered its final position paper that set out the policy for the licence exemptions framework (which applies to embedded network providers) and formed the basis for updating the General Exemption Order.[134]

In November 2017, the Victorian Government gazetted the updated General Exemption Order that set out its regulations to amend the categories of licence exemptions and tasked the commission with a number of activities, including the formulation of a maximum price for selling electricity under an exemption.[135] This maximum price (or range of prices) would apply in embedded networks.

The General Exemption Order also provides a transitional provision which states that until the commission formulates a maximum price (or range of prices), the maximum price an exempt person can sell electricity at "must not be more than the tariff that would apply to the customer if the customer purchased the electricity and related services pursuant to an offer made:

a) in accordance with section 35 of the Act (Electricity Industry Act 2000); and
b) by a licensee who is the local retailer for electricity supplied in the electricity distribution area in which the supply point for the supply of electricity to the customer is located; and
c) in accordance with any guidelines issued by the Essential Services Commission."[136]

The Bill being considered by the Victorian Parliament makes amendments meaning the VDO would replace current prices under section 35 of the Electricity Industry Act. As the VDO is intended to replace the standing offer prices of the local retailer in each electricity distribution area, it is the commission's view that the VDO would become the maximum price embedded network customers could be charged from 1 July 2019. We note that embedded network providers could offer a price below the VDO.

[134] Department of Environment, Land, Water and Planning, Victorian Government's Review of the Victorian Electricity Licence Exemptions Framework, Final Position Paper, September 2017.

[135] See clause 10 of the General Exemption Order 2017, November 2017, p. 6.

[136] Clause 27 General Exemption Order 2017, November 2017, p. 9.

5. Other considerations

The purpose of our staff working paper in December 2018 was to receive initial feedback from interested parties on our proposed methodology to calculate a VDO for residential and small business electricity customers. During the course of our consultation stakeholders raised a range of other points in relation to the VDO, some which extend beyond the scope of this draft advice. They are nonetheless important, and we will continue to give consideration to these matters in the future.

Transferring customers from standing offers to the VDO

Several stakeholders were interested to know how retail electricity consumers currently on a standing offer would be transferred onto a VDO.

In its submission, MEA Group noted that it was unclear how customers on standing offer contracts would transfer to a VDO, and how the government imposed price change (potential price increase for some) will be communicated.[137]

The Victorian Council of Social Services (VCOSS) suggested the Victorian Government can develop policy to ensure people can move onto the VDO where they are currently paying more than the VDO price – such as customers with expired benefit periods who have defaulted onto high-priced market offers. This can include using the 'best offer' notification on bills to alert people to the VDO where it is lower than the price of their current deal.[138]

The Brotherhood of St. Laurence recommended that the VDO should be the default for people who are currently on standing offers and people who are inactive in the market (if the VDO lowers their bills).[139]

Time of use (TOU) customers

Numerous stakeholders asked us how retail electricity consumers currently on a time of use (TOU) standing offer, would engage with the proposed simple tariff structure – a fixed and flat variable component.

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[137] MEA Group submission, submission to the Essential Services Commission 'Victorian default offer for domestic and small business electricity customers: staff working paper', January 2019, p. 7.

[138] The Victorian Council of Social Services, submission to the Essential Services Commission 'Victorian default offer for domestic and small business electricity customers: staff working paper', January 2019, p. 16.

[139] The Brotherhood of St. Laurence, submission to the Essential Services Commission 'Victorian default offer for domestic and small business electricity customers: staff working paper', January 2019, p. 3.

St Vincent de Paul Society (Victoria) sought clarity from us, as well as the Victorian Government, regarding the relationship of this price setting (the VDO) and the interaction of those households on a current "time variant" tariff.[140] VCOSS while supporting our proposed tariff structure, advised us to monitor whether a single-rate tariff causes any problems for customers, and whether a time of use tariff should also be offered.[141]

Time period for implementation and future reviews

Several stakeholders provided feedback on the proposed time period for implementation and future review. In its submission, the Consumer Action Law Centre suggested the first reset after implementation should occur on 1 January 2020, to align with AER's network determinations, allow us to apply learning's from the initial VDO and to accommodate other policies resulting from concurrent reviews.[142] AGL supported our proposal to calculate the initial VDO for a period of six months followed by an annual determination for 2020.[143]

EnergyAustralia considered it is in the interests of consumers to delay the implementation of the VDO until 1 January 2020.[144]

Interaction with other reforms

Many submissions noted interest in how implementing a VDO will interact with other regulatory changes taking place. MEA Group suggested that it was unclear how the implementation of a VDO will interact with, and complement forthcoming regulatory changes, citing the new requirements relating to the provision of clear advice and best offers, and the requirements for retailers to fix customer prices for a minimum of 12 months on all market offers.[145]

EnergyAustralia noted that several recommendations from the independent review relating to discounting (i.e. recommendations 3A, 4A, 4D and 4E) have been endorsed by the Government, noting:

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[140] St Vincent de Paul Society (Victoria), submission to the Essential Services Commission 'Victorian default offer for domestic and small business electricity customers: staff working paper', January 2019, p. 7.

[141] The Victorian Council of Social Services 2019, op. cit., p. 15.

[142] The Consumer Action Law Centre, submission to the Essential Services Commission 'Victorian default offer for domestic and small business electricity customers: staff working paper', January 2019, p. 8.

[143] AGL, submission to the Essential Services Commission 'Victorian default offer for domestic and small business electricity customers: staff working paper', January 2019, p. 4.

[144] Energy Australia, submission to the Essential Services Commission 'Victorian default offer for domestic and small business electricity customers: staff working paper', January 2019, p. 11.

[145] MEA Group 2019, op. cit., p. 7.

"..the VDO is being implemented during a time of significant regulatory change in how we communicate our offers to our customers in Victoria. From 1 July 2019, we will be required to ensure:

- customer bills and summaries include a 'best offer' message; all tariffs, fees, prices and charges are to be expressed in GST inclusive terms only
- customers receive prior notice of any price or benefit changes that could affect their bill
- customers are provided with key information prior to signing up for a contract (clear advice entitlement)
- a new energy fact sheet is available which will include a comparison tool to help customers compare plans based on how much they would cost per year for a range of typical customers."[146]

[146] Energy Australia, submission to the Essential Services Commission 'Victorian default offer for domestic and small business electricity customers: staff working paper', January 2019, p. 12.

6. Next steps

The commission invites stakeholders to make submissions in response to the release of the draft advice paper. In combination with written submissions, we plan to consult with stakeholders through a public forum.

The public forum will be held during the consultation period, before 4 April 2019. We will provide details once this is finalised.

Written submissions should be made by **5pm 4 April 2019**.

Submissions, preferably in electronic format, and marked Submission to Victorian Default Offer to apply from 1 July 2019 – draft advice, should be sent by email to: RetailEnergyReview@esc.vic.gov.au,

or by mail to:

Essential Services Commission
Level 37, 2 Lonsdale Street
Melbourne, Victoria 3000

Once we have received submissions, we will review these to inform the preparation of our final advice.

Submissions will be made available on the commission's website, except for any information that is commercially sensitive or confidential. Submissions should clearly identify which information is sensitive or confidential.

Appendix A – Terms of Reference

Robin Scott MP

Assistant Treasurer
Minister for Veterans

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Melbourne Victoria 3002
Telephone: +61 3 9651 1044
DX210759

Dr Ron Ben-David
Chairperson
Essential Services Commission
Level 37, 2 Lonsdale Street
MELBOURNE VIC 3000

14 DEC 2018

Dear Dr Ben-David

RETAIL MARKET REVIEW: TERMS OF REFERENCE FOR THE ESSENTIAL SERVICES COMMISSION

In accordance with my powers under section 10(g) of the *Essential Services Commission Act 2001*, I refer the Essential Services Commission the attached Terms of References to implement recommendations 1 and 2 and 4A to 4E of the *Independent Review of the Electricity and Gas Retail Markets in Victoria*.

If you have any queries on this matter please contact Annette van Rooyen, Director, Economic Division in the Department of Treasury and Finance on 9651 5351.

Yours sincerely

Robin Scott MP
Assistant Treasurer
Minister for Veterans

Fair Pricing in the Energy Market

Terms of Reference for the Essential Services Commission

The Essential Services Commission (the ESC) is requested to provide advice under Section 10(g) of the *Essential Services Commission Act 2001* to support the Government's decision to introduce a fairer-priced electricity offer, the "Victorian Default Offer", for domestic and small business customers.

Background

The *Independent Review of the Electricity & Gas Retail Markets in Victoria* (the Review), commissioned by the Victorian Government in November 2016, found that the deregulated energy market was not delivering the anticipated benefits to consumers. It made 29 recommendations designed to place consumers back on a level playing field, including changing retailer marketing practices, introducing a basic service offer and abolishing standing offer contracts.

On 26 October 2018, the government released its final response to the Review. The final response supported all recommendations, including recommendations 1 and 2 by requiring electricity retailers to offer a fairer price for energy, the "Victorian Default Offer" (VDO), and replace standing offers.

The VDO will provide a simple, trusted and reasonably priced electricity option that safeguards consumers unable or unwilling to engage in the retail electricity market without impeding the consumer benefits experienced by those who are active in the market.

Electricity VDO tariffs are to be available to customers from 1 July 2019.

Request

The ESC is requested to develop a methodology for determining an efficient price for electricity and use that methodology to recommend a VDO for Victoria that will:

- be offered unconditionally by each licensed electricity retailer to all domestic and small business customers[1] including those domestic and small business customers who export power under feed-in-tariffs;
- be the price that a retailer can charge under the VDO arrangements and is to be established as the basis for retail discounts;
- adopt the terms and conditions for standard retail contracts (i.e. standing offers); and
- be based on current marketing standards and approaches.

[1] "Domestic and small business customers" means customers who purchase power for personal, household or domestic use, and consume no more than 40 megawatt hours in a year for business use.

Fair Pricing in the Energy Market

Terms of Reference for the Essential Services Commission

The VDO price(s) should:

- be set for each distribution zone;
- be based on the efficient cost to run a retail business;
- include an allowance for a maximum retail profit margin;
- include a modest allowance for customer acquisition and retention costs; and
- not include an allowance for headroom.

In conducting its review, the ESC is required to have regard to its objectives under the *Essential Services Commission Act 2001* and *Electricity Industry Act 2000*, findings from the Review, the Government's published response to the Review, advice from relevant experts, and other matters it deems relevant.

The ESC should engage in its work with an expert panel including the Secretary of DELWP and members nominated by the Minister for Energy, Environment and Climate Change.

Reporting

Throughout the review, the ESC will advise the Assistant Treasurer and Minister for Energy, Environment and Climate Change about its progress and final approach.

Consultation

In undertaking its review, the ESC is required to consult publicly.

Completion

Unless otherwise determined by Government, the ESC must develop and apply a pricing methodology by 3 May 2019, so that retailers can offer customers the VDO by 1 July 2019.

Appendix B – Technical Methodology

Definitions

Regulatory period means the period commencing on 1 July 2019 and ending on 31 December 2019.

Distribution zone is the geographical area served by a particular distribution business.

VDO tariff formulae

The VDO consists of a fixed supply charge and a usage charge (and controlled load charge if applicable) based on the distribution zone. These are described below.

Supply charges for the VDO

The supply charge for the VDO is comprised of the retail operating costs, the fixed network charges, metering charges, and other fixed charges such as licence fees. The sum of these is multiplied by the retail margin and GST, then divided by 365 to give a dollar per day figure.

$$S_t^{i,k}(\$/day) = \left[\left(RC_t + NF_t^{i,k} + MET_t^{i,k} + FIT_t + OTHF_t\right) \times (1 + RM_t) \times (1 + GST)\right]/365$$

where:

i	Distribution business zones of AusNet Services, Citipower, Jemena, Powercor and United Energy.
t	The regulatory period t commencing 1 July 2019 and ending 31 December 2019.
k	Customer types of residential and small business.
$S_t^{i,k}(\$/day)$	Is the daily supply charge in dollars per day for customer type k in distribution zone i in regulatory period t.
RC_t	Retail costs as defined below.
$NF_t^{i,k}$	Fixed network costs as determined by the AER for the distribution zone in the regulatory period for a customer type. The applicable network tariffs are in Tables 8 and 9, excluding GST.
$MET_t^{i,k}$	Metering costs as determined by the Australian Energy Regulator for the distribution zone in the regulatory period for a customer type, excluding GST.
FIT_t	The cost to all energy users for the avoided social cost of carbon in the minimum

	feed in tariff as described below.
$OTHF_t$	Other costs as defined below.
RM_t	A figure of 6.04% is applied in our calculation, which is equivalent to a retail margin of 5.7% as a proportion of total earnings.
GST	GST has the meaning given in section 195-1 of the A New Tax System (Goods and Services) Tax Act 1999 (Cth). The GST rate applicable for this regulatory period is 10 per cent.

Usage charges for the VDO

The usage charge consists of those cost elements that vary based on electricity usage and include wholesale costs, environmental scheme costs, network losses and variable network charges (which may include block or seasonal charges depending on the distribution zone). The sum of these is multiplied by the retail margin and GST.

$$U_{t,w}^{i,k}(cents/kWh) = \left(WEC_t^i + ENV_t + EL_t^i + OTHV_t + NV_{t,w}^{i,k}\right) \times (1 + RM_t) \times (1 + GST)$$

where:

$U_{t,w}^{i,k}(cents/kWh)$	The usage charge for block w (where applicable) in cents per kWh for customer type k in distribution zone i in regulatory period t.
WEC_t^i	The forecast wholesale electricity purchase costs for regulatory period t in distribution zone i.
ENV_t	The costs of complying with environmental schemes as defined below.
EL_t^i	The network losses for distribution zone i in regulatory period t as described below.
$OTHV_t$	Other variable costs as described below.
$NV_{t,w}^{i,k}$	Variable network costs as outlined in Tables 8 and 9 (excluding GST). For AusNet Services and United Energy, two blocks apply.
w	For Citipower, Jemena and Powercor, there is only one usage charge. The other two distribution zones (AusNet Services and United Energy) have two usage charges. These are: - For AusNet Services, w is {1,2} where block 1 is all usage up to 4,080 kWh per year and block 2 is all other usage. - For United Energy, w is {summer, non-summer}, where summer is

applicable for consumption from 1 November to 30 April and non-summer is 1 May to 31 October in accordance with the prices determined by the AER.

Controlled load charges for the VDO

The controlled load charge consists of the relevant controlled load network charge in each distribution zone and those other cost elements that vary based on electricity usage (including wholesale costs, environmental scheme costs and network losses). The sum of these is multiplied by the retail margin and GST.

$$CL_t^{i,k}(cents/kWh) = \left[\left(WEC_t^i + ENV_t + EL_t^i + OTHV_t + NCL_t^{i,k}\right) \times (1 + RM_t) \times (1 + GST)\right]$$

where:

$CL_t^{i,k}(cents/kWh)$	The controlled load charge (if applicable) for a residential customer in cents per kWh in distribution zone i in regulatory period t. Our draft advice proposes to only apply the controlled load charge to residential customers, meaning type k customers are residential only.
$NCL_t^{i,k}$	The controlled load tariff as determined by the AER for the distribution zone in the regulatory period for a residential customer. The applicable network tariffs are in Table 8, excluding GST.

Cost components

Wholesale electricity costs (WEC_t^i)

Wholesale electricity costs are comprised of the contract costs for base, peak and cap, and a volatility allowance. The commission's proposal on wholesale electricity costs is shown in Table 6 of the main document.

Network and metering costs

Network costs are comprised of a fixed, or supply charge, and a variable, or usage charge. Network costs are determined by the AER and vary based on whether the customer is residential or non-residential and by distributor. The applicable tariff codes for the two customer types are listed in Tables 8 and 9.

Metering charges are detailed in Table 10.

Retail costs (RC_t)

Retail costs for the regulatory period are the sum of retail operating costs and customer acquisition and retention costs as detailed in Table 12.

$$RC_t = ROC_t + CARC_t$$

ROC_t	Cost to serve a small customer for one year in regulatory period t.
$CARC_t$	Customer Acquisition and Retention costs for one year in regulatory period t

Retail margin (RM_t)

As noted in section 2.7, we have proposed a retail margin of 5.7 per cent of total earnings. To calculate this margin means that all relevant costs are multiplied by 6.04%. The retail margin is added to all cost components prior to the addition of GST.

Environmental scheme costs (ENV_t)

Three environmental schemes operate in Victoria. The LRET and SRES are Commonwealth schemes, whereas the VEU is a Victorian based scheme. Details are found in Table 11. The schemes are calculated as follows:

$$ENV_t = (LGC_t \times RPP_t) + (STC_t \times STP_t) + (VEEC_t \times VEUL_t)$$

LGC_t	The price of an LRET certificate (in $ for 1 MWh)
RPP_t	The renewable power percentage for regulatory period t as published by the Clean Energy Regulator
STC_t	The small scale technology certificate price (in $ for 1 MWh)
STP_t	The small-scale technology percentage for regulatory period t as published by the Clean Energy Regulator
$VEEC_t$	The price of a VEU certificate (in $ per certificate)
$VEUL_t$	Greenhouse reduction rate for electricity for VEU.

Energy losses (EL_t^i)

When electricity is transported from generators to customers via the transmission and distribution network, some of it is lost. The energy loss factors are determined by AEMO. Our estimates for these are found in Table 7.

Energy loss factors are calculated as follows:

$$EL_t^i = \left(WEC_t^i + ENV_t + OTHV_t\right) \times \left(MLF_t^i \times DLF_t^i - 1\right)$$

MLF_t^i	The average of all nodes marginal loss factor applicable to distribution zone i for regulatory period t.
DLF_t^i	The distribution loss factor applicable to distribution zone i for regulatory period t

Other costs (FIT_t, $OTHV_t$, and $OTHF_t$)

Retailers incur costs associated with operating in the market charged by AEMO and the ESC, such as market fees and licence fees.

Market operator and other fees

$$OTHV_t = NEM_t + FRC_t + NTP_t + AS_t$$

NEM_t	NEM fees as set out by AEMO for the regulatory period t.
FRC_t	Costs of full retail contestability recovered by AEMO for the regulatory period t.
NTP_t	National Transmission Planner costs recovered by AEMO for the regulatory period t.
AS_t	Estimated ancillary service fees recovered by AEMO for the regulatory period t.

$$OTHF_t = CAP_t + RERT_t + ESC_t$$

CAP_t	Consumer advocacy panel fees recovered by AEMO for the regulatory period t.
$RERT_t$	Estimated reliability and emergency reserve fees recovered by AEMO.
ESC_t	ESC licence fees for the regulatory period t.

FiT

$$FIT_t = \frac{EXP_t}{CUST_t} \times AVC_t$$

EXP_t	The total export from small renewable for all distribution zones in 2017-18.
$CUST_t$	Average total small electricity customers in Victoria for 2017-18.
AVC_t	The avoided social cost of carbon included in the minimum feed-in tariff for the regulatory period t.

Appendix C – Proposed VDO tariffs to apply from 1 July 2019

Proposed VDO for residential customers (GST inclusive)

Distribution zone	Daily charge ($ per day)	Variable charge structure	Variable charge ($ per kWh)	Controlled load (if applicable) ($ per kWh)
AusNet Services	$1.10	Block 1 (1020 kWh) Block 2 (>1020 kWh)	$0.26 $0.29	$0.18
Citipower	$1.06	Anytime	$0.21	$0.16
Jemena	$0.96	Anytime	$0.23	$0.17
Powercor	$1.19	Anytime	$0.22	$0.16
United Energy	$0.81	1 Nov to 31 Mar 1 Apr to 31 Oct	$0.25 $0.23	$0.16

Proposed VDO for small business customers with consumption less than 40 MWh per year (GST inclusive)

Distribution zone	Daily charge ($ per day)	Variable charge structure	Variable charge ($ per kWh)
AusNet Services	$1.10	Block 1 (1020 kWh)	$0.30
		Block 2 (>1020 kWh)	$0.35
Citipower	$1.26	Anytime	$0.23
Jemena	$1.10	Anytime	$0.26
Powercor	$1.32	Anytime	$0.23
United Energy	$0.87	1 Nov to 31 Mar	$0.27
		1 Apr to 31 Oct	$0.25

Appendix D – Submissions received on our staff paper

Name or organisation	Date received
GloBird Energy	29 January 2019
Onsite Energy Solutions	30 January 2019
Consumer Action Law Centre	30 January 2019
MEA Group	30 January 2019
Uniting Church in Australia – Synod of Victoria and Tasmania	30 January 2019
Energy Australia	30 January 2019
Simply Energy	30 January 2019
Victorian Council of Social Service	30 January 2019
Australian Energy Council	30 January 2019
Alinta Energy	30 January 2019
Momentum Energy	30 January 2019
CitiPower, Powercor & United Energy	31 January 2019
AGL Energy	31 January 2019
St Vincent de Paul Society – Victoria	31 January 2019
Brotherhood of St Laurence	1 February 2019
Origin Energy	1 February 2019
Sumo	4 February 2019