KPMG

Evaluation of ESC draft advice on the Victorian Default Offer

A report to The Australian Energy Council
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Executive summary

The Essential Service Commission (ESC) has released its Draft Advice on implementation of the Victorian Default Offer (VDO). The Victorian Default Offer was one of the recommendations made by the Independent Review into the Electricity and Gas Retail Markets chaired by John Thwaites and aims to allow every Victorian household and small business to ask for a 'default offer' reflective of the efficient costs to run a retail business from their electricity retailer from 1 July 2019.

The Australian Energy Council has engaged KPMG to conduct an assessment of the ESC's Draft Advice. In particularly, KPMG has been asked to:

1. advise on the principles that are consistent with prudent and reasonable regulatory practice in the setting of regulated retail prices
2. evaluate the ESC's methodology and proposed level for the VDO against the identified principles.

This summary presents the findings of our assessments with further explanation provided in the attached report. While we understand some trade-offs were required to meet the timing constraints under the Terms of Reference; our assessment identifies a number of areas where the current methodology could be considered to be inconsistent with principles of good regulatory practice.

Given the short time-frame permitted for our assessment, KPMG only conducted a qualitative and concise analysis and there are a number of areas which would benefit from further consideration.

Our findings

Prudent regulatory practice covers both the outcome of the regulatory decision and the process employed by the regulator. Assessing the ESC's draft Advice against the criteria of prudent regulatory practice, this work can help to inform whether the ESC's methodology has:

- taken into account all relevant information
- identified and assessed the key consequences for customers; and
- evaluated any trade-offs in a credible and transparent manner.

Doing so would promote confidence and stability in the implementation of the VDO.

In Box 1, we have identified eight principles of prudent regulatory practice in setting a regulated retail price, drawing from decisions of other regulators, both in Australia and overseas, which we have applied in our assessment of the draft Advice.

Our analysis notes that the timeframes in the Terms of Reference have dictated the approaches available to the ESC and limited its ability to consult widely and incorporate input from stakeholders. In some elements of the advice, these circumstances have not stopped the ESC from meeting best practice principles, but there are a number of features of the proposed methodology that would benefit from further analysis for the Final advice. The focus of this report is on those areas which could be improved to better achieve good regulatory practice.

Box 1: Principles for prudent regulatory practice

1. The process for setting price regulation is clear, transparent and open to consultation with no perception of bias towards the certain retailers or undue interference.
2. The methodology employed for determining the price level is robust, reflects efficient costs and is credible. This is achieved through reasonably taking into account all available evidence and covers all costs.
3. The regulator provides sufficient justification and reasoning to support its decision. This includes how the regulator has weighed up and balanced trade-offs between conflicting issues.
4. There is consistency in how the regulator has approached all the decisions relating to the price setting process.
5. There is predictability and stability in the regulator's methodology. This minimises the risk of the retail price setting process impacting on retailer's entry and exit decisions.
6. There has been appropriate identification and allocation of risk.
7. The process has been comprehensive and all the potential impacts have been considered when reaching the decision.
8. The implications for customers and retailers transitioning to the regulated price have been evaluated.

The ESC's proposed approach to the development of VDO could be expanded

Setting a regulated retail price for a future period is a very difficult and complex exercise, not only due to the number of inputs and assumptions needed but also because of the effects introducing a regulated tariff will have on the retail market.

While noting these challenges, the ESC has taken a narrow perspective on the VDO and we question two key aspects of the draft Advice::

- The draft Advice focuses only on customers on higher default tariffs and has not considered the impacts on customers who are on market offers. 95 per cent of residential customers and 85 per cent of small business customers are on market offers.[1] Considering how the VDO will impact on tariff choice and levels for these customers would help to align with best practice.
- It has only viewed the efficiency of the VDO from the angle of productive efficiency in retail costs and not considered wider market impacts on efficiency such as innovation and demand response.

Customer and retailer behaviour could change under the VDO

The introduction of a regulated price into the Victorian retail market will have consequences for all customers. Some of these may take a few years to materialise, but experience demonstrates that a regulated price can act as a reference point for all other tariffs and influence retailer behaviour. There is the possibility that:

- Retailers may not be able to offer their own products at competitive prices if a certain portion of their customer base moves to the VDO, or the retailer perceives that there is a risk that its customers will do so in the future.

[1] Essential Services Commission, Victorian Energy Market Report 2017-18, Appendix: Performance of energy businesses, February 2019 p.13

- Customers generally become less engaged and fail to consider alternative offers on the presumption that the VDO is the best deal for them.
- Retailers would seek to copy the assumed retailer behaviour used in the VDO methodology in order to minimise any risks of under-recovery. The regulator effectively acts to set the standard for retailer commercial decisions (e.g., hedging strategy).
- Retailers cannot manage their wholesale risks through price signals due to the design of the VDO, leading to additional costs.
- The VDO could remove any incentives for consumers with high peak consumption patterns to manage their electricity consumption.

Approach to estimating wholesale purchase costs is not consistent with retailers' practice

We questioned whether the assumed hedging strategy is realistic and reflective of a prudent retailer given the practical limitations in hedging a full year in advance in the way Frontier Economics proposes. The liquidity of such contracts, increase in transaction costs, increased funding costs, and an inability to forecast load that far in advance means that most retailers hedge on a rolling quarterly basis. Applying this approach, which more closely resembles retailers' behaviour, would change the estimated wholesale costs.

Further, while the proposed methodology for estimating the wholesale electricity purchase cost is opaque, it clearly assumes that retailers will be comfortable having a proportion of load unhedged at peak times. It is not realistic for retailers to accept such risks, especially small retailers without generation assets. Prudent retailers will seek to cover absolute maximum demand in peak periods using derivative caps.

Reasonable commercial decisions are being categorised as inefficient

Retailers have entered into long term hedging arrangements to help manage their costs and would have done so prior to any knowledge of the introduction of the VDO or ESC proposed methodology. This means that there is a possibility that retailers' efficient costs are higher than the estimated costs under the VDO.

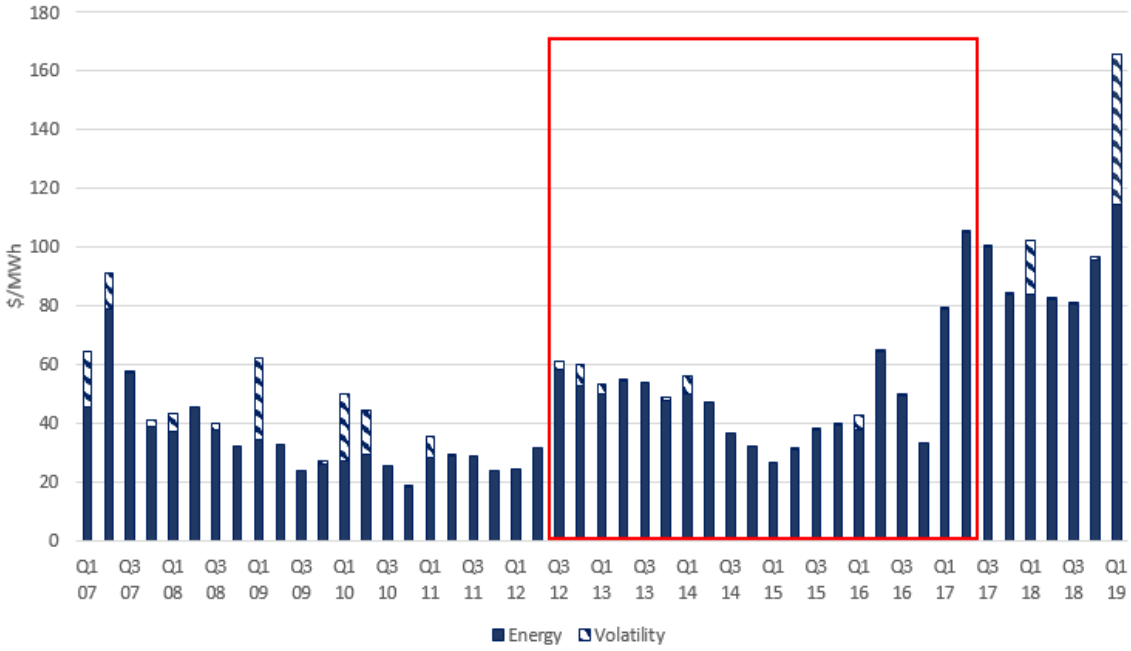
An example of this is in the approach for large scale renewable energy target costs. Estimating the price of LGCs using a 40 day average is not representative of how retailers contract and purchase LGCs, and could penalise those retailers who have entered into long term hedging arrangements.

We consider that there is value in the ESC applying a longer term average of LGCs to reflect a portfolio hedging approach. As a minimum the ESC could check the volume of certificates traded over the 40 day modelled period as a proportion of total LGC requirements to check whether their methodology is representative.

Increased volatility in Victorian wholesale prices is not fully considered

The ESC, through Frontier Economics, have had regard to historical data from the financial years 2012/2013 to 2016/17 as the basis for forecasting half-hourly load and half-hourly spot prices from 2019/20. Our analysis shows that the five years from 2012/13 to 2016/17 experienced relatively limited volatility compared to the most recent years, in particular the most recent quarter (Q1 2019).

Figure 1: Implied energy and volatility in Victoria



The development of the VDO could have regard to the most recently available information, which arguably is most representative of the near future – this would be more consistent with regulatory practice. Further, there is merit in conducting sensitivity analysis testing the implication of using historical data which included relatively little volatility. There have been significant changes to the Victorian energy sector in this period with the closure of Hazelwood and increased penetration of renewables. Given this, there is limited confidence in the ESC's proposed volatility allowance to fully forecast the market risks facing retailers.

The approach to estimating the cost stack for retailers is not consistent with best regulatory practice in setting regulated prices

The ESC has not been consistent in its proposed approach to estimating retailers' costs, nor has it provided sufficient detail or analysis to show that the information it uses is directly comparable and applicable in the context of the VDO.

For example, the ESC proposes using a 5.7 per cent retail margin based on regulated benchmarks. However these regulated decisions all stem from a 2013 decision by IPART. There is little consideration of the differences in the NSW market in 2013 compared with the Victorian market, or whether retail margins should be higher to account for the additional risks for retailers today (e.g. customer consumption patterns, distributed resources).

Further, any forecasts will have a degree of uncertainty. This means that there is the risk of compounding errors across the 22 decisions inputting into the cost stack, especially in those components where the ESC had to make an informed judgement on the appropriate costs. It would be prudent for a regulator to consider the risks of differences between actual costs and their forecasts and the implications of this risk.

We note that other modelling approaches are available to the ESC and that it would have been possible to take alternative views. Given the uncertainties and risks associated with wholesale costs, it would have prudent for ESC to test and inform their methodology with other approaches or through validating whether this methodology would have been a good estimator of wholesale costs in the past.

There was other analysis and information available to take into account that could have been incorporated into the ESC's proposed approach. The absence of these inputs affects the confidence the market has in whether the VDO reasonably reflects the retail costs of an efficient retailer in Victoria.

Re-introducing regulated retail prices in a mature competitive market has its own challenges

The re-introduction of regulated retail prices in Victoria is a substantial reform which will have significant consequences for customers and for businesses. This exercise is more complicated than the traditional role of setting a regulated price for incumbent retailers at the initiation of retail competition. Firstly, there is greater diversity in the nature of retail commercial models and therefore it is harder to model a representative retail business. Secondly, the outcomes under the VDO could be more pronounced given the range of tariff choice and dispersion currently existing in the market.

Some customers could pay more for their electricity following the introduction of the VDO

Price dispersion in retail offers is lower under a regulated price market than a non-regulated price as demonstrated in Australian and overseas markets. There is a strong possibility that tariffs will cluster around the VDO level and the extent of savings decreases. The ESC has not yet explained why this trend of clustering market offers around the regulated price would not occur under the VDO.

Choice for customers could be reduced under a low VDO.

It is important for the ESC to consider how the proposed VDO will impact on outcomes for all customers in the Victorian retail market to ensure that the VDO is set at the right level to best promote interests of customers.

There is evidence to suggest that the proposed VDO will reduce tariff choice. Retailers may find it harder to market alternative tariff products if there is decreased effort by customer to evaluate such choices on the presumption that the VDO is the fairest deal. The reduction in the allowance for Customer Acquisition and Retention Costs from actual costs could reduce marketing activity.

In addition to diminishing customer choice, a regulated price could have a material impact on the system costs (i.e. network and generation costs) and market efficiency of the Victorian energy sector. This is because demand side participation could be constrained due to limits on the scope for innovation in products and the flat tariff structure of the VDO.

Competitive markets are better placed to facilitate industry transformation

A healthy competitive retail market helps to facilitate the transformation of the energy industry as it adjusts to the introduction of new technologies, such as batteries and electric vehicles. Competitive retailers are more agile and are incentivised to move quickly into this space to develop matching products and services that add greater value to customers and allow them to maximise the benefits of such technologies. Customer awareness and engagement in the market tends to be higher.

The nature of electricity retailing is becoming more diverse. There is increased recognition by policy-makers of the need to better utilise the flexibility in the demand side to help manage the impacts under the transformation. However the proposed tariff structure of the VDO could act as a constraint on the uptake of demand side participation by limiting tariff innovation. This could lead to higher network and generation costs in the Victorian energy system over the long term.

Advice for the final Advice

There is limited time available before the ESC publishes its final Advice and the Victorian Government makes a decision on the price for the VDO. A number of elements of the ESC methodology are reasonable and consistent with good regulatory practice. However as identified in our report, there are several issues which affect the overall draft Advice.

Given the time available, we advise the following could be done:

- Investigate the relationship and sensitivities of retailers' different load profiles against the ESC's estimation of wholesale purchasing costs
- Estimate a long term average of LGC purchasing costs to better align with retailers' portfolio approach to managing their LRET obligations
- Re-examine the appropriate level for volatility allowance given expected market conditions for 2019/20
- Consider the possibility of the level of VDO being set too low through modelling the compounding impacts if actual outcomes are different from estimates across the 22 inputs
- Think through whether the VDO at the level in the draft Advice remains appropriate if there is a substantial transfer of customers on to the default tariff
- Justify that the VDO is set at a level which promotes overall market efficiency
- Change the approach for any costs which the retailer cannot control to a lagged pass through mechanism in order to better manage the risks under the VDO.

Way forward for future VDO

We also recognise that the ESC will be likely to be asked to set the VDO in future years. There are a number of actions consistent with the principles of best regulatory practice which could be implemented to help provide more credibility and certainty to the market. For example, the ESC could:

- Investigate and evaluate the range of alternative methodologies to estimating wholesale purchasing costs. Checking the accuracy of methodologies with past market prices would help validate their approach
- Assess the impacts of the VDO on customer and retailer behaviour and report on these in their market monitoring reports. Such impacts could be fed back into future VDO decisions
- Continued assessment of actual retail costs against the allowance under VDO
- Evaluate whether existing performance reporting requirements for retailers remain appropriate to reflect the changes to the market.
- Monitor and estimate the costs of regulatory reforms on retailers and incorporate into future VDO decisions.
- Commit to a timetable to do more thorough work-ups of each element of the cost stack so that progressively the methodology overcomes the limitations resulting from the short time frame for the original advice

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Glossary

AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
ACCC	Australian Competition and Consumer Commission
AMI	Advanced Metering Infrastructure
ASX	Australian Stock Exchange
BSO	Basic Service Offer
BTM	Behind the Meter
CARC	Customer Acquisition and Retention Costs
CPI	Consumer Price Index
DTF	Department of Treasury and Finance
ESC	Essential Services Commission
ESCOSA	Essential Services Commission of South Australia
FiT	Feed-in Tariff
IPART	Independent Pricing and Regulatory Tribunal of New South Wales
KWh	Kilowatt hour
LGC	Large-scale Generation Certificate
LRET	Large Scale Renewable Energy Target
MRIM	Manually Read Interval Meter
MWh	Megawatt hour
NEM	National Electricity Market
NUOS	Network Use of System
OFGEM	Office of Gas and Electricity Markets UK
OTTER	Office of the Tasmanian Regulator
PDF	Payment Difficulty Framework
PPA	Power Purchase Agreement

REPI	Retail Energy Pricing Inquiry
RERT	Reliability and Emergency Reserve Trader
ROC	Retail Operating Charge
ROLR	Retailer of Last Resort
RPP	Renewable Power Percentage
SME	Small to Medium Enterprise
SRES	Small Scale Renewable Energy Scheme
STC	Small scale Technology Certificate
STP	Small scale Technology Percentage
QCA	Queensland Competition Authority
VDO	Victorian Default Offer
VEEC	Victorian Energy Efficiency Certificate
WACC	Weighted Average Cost of Capital
WEC	Wholesale Energy Cost

1 Scope and Approach

1.1 Background to the introduction of the VDO

In November 2016 the Victorian Government announced an independent review of electricity and gas retail markets in Victoria to be chaired by John Thwaites (the Thwaites Review). The Thwaites review was prompted by concerns, following the closure of the Hazelwood power station, that competition in the energy market was not delivering the expected benefits to consumers.

The final report of the Thwaites review was delivered in August 2017, with the conclusion that there was evidence of market failure in the retail electricity and gas markets in Victoria, leading to unusually high prices.

The review made 11 recommendations, including the introduction of a Basic Service Offer (BSO). This was envisaged as a 'no frills' service available to all consumers at a reasonable price, providing 'an option for customers who just want affordable energy without the fuss.' The review suggested that the price for the BSO should be determined by the ESC. The other recommendations covered marketing, price disclosure, contract practices, protections for vulnerable customers, access to smart meter data, improved market monitoring and a revised Energy Retail Code.

The BSO was the central recommendation, and the most sweeping reform proposed – reintroducing a regulated price with the intention that it is as low as would be expected from a perfectly functioning competitive market.

The Government made an interim response in March 2018 supporting for the 10 of the 11 recommendations, including the introduction of a regulated price for small customers. In their Final response in October 2018 the Government committed to legislate to implement the new BSO price, which they called the Victorian Default Offer (VDO), by 1 July 2019.

On 18 December 2018 the Government provided Terms of Reference to the Essential Services Commission to prepare advice on a price for the VDO for small electricity customers. The terms of reference requested a methodology for a price that will:

- be offered unconditionally by each licensed electricity retailer to all domestic and small business customers including those with 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 (ie standing offers); and
- be based on current marketing standards and approaches.
- The Terms of reference specified that the VDO price or prices 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.

The ESC was required to have regard to its objectives under the *Essential Services Commission Act 2001*, and *Electricity Industry Act 2000*, findings from and the Government's response to the Thwaites Review, advice from relevant experts, and other matters it deems relevant. The advice was required by 3 May 2019, for implementation by 1 July 2019.

The ESC published a staff working paper on 21 December calling for submissions on the appropriate methodology to calculate the VDO. The Commission published its draft advice, including the VDO prices and the methodology used to calculate them on 8 March 2019. The draft advice set prices for residential and small business customers in each of the five distribution areas and described the methodology for building up costs used as a basis for the prices. The draft advice noted that the prices will be effective from 1 July 2019, and will be amended on 1 January 2020 to align with adjustments to regulated network charges after which the prices will be updated annually.

Legislation amending the *Electricity Industry Act 2000* to abolish standing offers and to implement the VDO was passed on 26 March 2019. Under the amendments the VDO prices will be set through an Order in Council, and the ESC may be directed to determine the price.

Submissions to the draft advice closed on 4 April, and the final Advice and recommendation is expected in May.

1.2 Purpose of this report

The purpose of this report is two fold:

a) To consider the principles of best regulatory practice for setting regulated retail prices;

b) To provide a high level assessment of the ESC methodology employed in its draft Advice for the ESC.

This report has been prepared for the Australian Energy Council who wish to understand whether there are any potential oversights and limitations in the methodology compared with what would be considered best practice. This included consideration of whether the risks impacts of introducing the VDO have been taken into account.

KPMG has been asked to only provide qualitative analysis and was not required to provide any additional modelling of individual cost components to the VDO price. Given the short time-frame permitted for our assessment, we provided a concise analysis and there are a number of areas which would benefit from further consideration. Further KPMG was not asked to provide an alternative methodology to the ESC's proposed approach.

This report is not an evaluation nor provides any commentary on the Victorian Government's decision to introduce a VDO from 1 July 2019 and should not be interpreted as such.

Our analysis notes that the timeframes in the Terms of Reference have dictated the approaches available to the ESC and limited its ability to consult widely and incorporate input from stakeholders. In some elements of the advice, these circumstances have not stopped the ESC from meeting best practice principles, but there are a number of features of the proposed methodology that would benefit from further analysis for the Final advice. The focus of this report on those areas which could be improved be better achieve good regulatory practice.

1.3 Structure of this report

The report is structured as follows:

- Chapter 2 considers best practice in the context of an independent regulator introducing a price into a competitive market.
- Chapter 3 looks at the cost stack that the ESC has used to calculate the efficient retail costs that the VDO is based on.
- Chapter 4 explores the market outcomes that would be expected following the introduction of the proposed VDO in the Victorian retail electricity market.
- Chapter 5 considers the changes to risks facing customers and retailers following the introduction of the VDO.

2 Defining Best Practice

Key findings:

- The ESC has been asked to have regard to multiple objectives in the Terms of Reference, some of which could be consider to be not aligned with each other. The draft advice does not acknowledge how the Commission has made the trade-offs between the directions from the Government and its legislative objectives in coming to its decision.
- Prudent regulatory practice covers both the outcome of the regulatory decision and the process employed by the regulator. Given the range of legislative requirements applicable to ESC's task, prudent practice would dictate that there is transparency and predictability in the explanation included by the ESC's draft advice, including on how the ESC have balance potential trade-offs between objectives.
- Best practice would also be promoted through the advice evaluating the long term effects of the VDO on the structure of the Victorian energy market.

2.1 Prudent regulatory practice for regulated retail prices

An over-arching objective of regulation is to protect customers and ensure that markets work in the interests of consumers. Regulatory practice covers how the regulator operates and makes decisions under this objective. In the case of the VDO, regulatory practice covers how the ESC has conducted its analysis, evaluated the evidence and decided on the proposed level for the VDO.

This section sets out our considerations on the desired criteria and characteristics of prudent and reasonable regulatory practice in the setting of the VDO. This is based on what is accepted as reasonable practice by regulators on how to make regulatory decisions which work for customers.

In developing this criteria, we have had regard to the ESC's statutory objectives and the direction from the Victorian Government for the VDO advice.

2.2 Regulatory objectives

A key reason for independent economic regulation, particularly in essential services, is to provide certainty through transparent and consultative decision making that is accountable to a legislated objective. Legislated objectives provide this discipline on regulatory decision making; requiring all regulatory decisions to be linked back to the objectives.

The Commission's objective under its enabling Act is "to promote the long term interests of Victorian Consumers". The Commission also has three objectives under the Electricity Industry Act 2001;

a) to the extent that it is efficient and practicable to do so, to promote a consistent regulatory approach between the electricity industry and the gas industry; and

b) to promote the development of full retail competition; and

c) to promote protections for customers, including in relation to assisting customers who are facing payment difficulties.

The terms of reference provided by the Assistant Treasurer for advising on a VDO price required the ESC to have regard to its objectives under these two acts as well as the findings from the Thwaites review, the Government's response, advice from relevant experts and other matters it deems relevant. The Government chose the ESC to set the VDO, knowing the decision would be made in the long term interests of consumers, will continue to develop full retail competition and will promote protections for vulnerable customers.

The Terms of Reference are the framework for setting the VDO, and the request under s.10 of the Essential Services Commission Act 2001 (ESC Act) also represents a legislative requirement. In its preparation of advice to the Government, the Commission has had to balance multiple objectives and directions. When a regulator is required to balance multiple and possibly conflicting objectives, it is important that this is acknowledged in the decision to avoid the appearance of arbitrary decision-making and to promote long term confidence in the regulatory arrangements.

The difficulty of getting this balance right in reviews is not unfamiliar to the Commission and was explored in DTF's Review of the ESC Act in 2016.[2] The Report found that the Commission:

> *"in the delivery of its traditional economic pricing functions, has exercised its powers and processes effectively and is generally meeting its objective of promoting the long term interests of Victorian consumers. However, in performing its non-economic regulatory roles or when asked to have specific regard to issues other than economic efficiency, it is not clear whether the Commission is achieving its objective and whether the objective remains appropriate for such roles".*

A best-practice regulatory decision would clearly acknowledge where objectives and Terms of Reference are in conflict, and justify how trade-offs have been made. The introductory sections indicate that the advice has been prepared with particular emphasis on creating a price that is "fair", which is equated to "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".

The Draft Advice states that retailers are still free to compete for customers, making the approach consistent with the objective relating to full retail competition, but does not state specifically how the proposed price, in keeping with the directions of the Terms of Reference could *promote* Full Retail Competition.

The legislative framework applicable to the ESC draft decision should ensure that the chosen methodology is the best approach for the long term interests of consumers. Hence there is a level of judgement required by the ESC in considering what outcomes would be in the long term interests of consumers, and a need for the ESC to weigh up and evaluate the outcome of the introduction of the VDO. These types of discussions form an important part of the transparent decision-making process.

Prudent regulatory practice covers both the outcome of the regulatory decision and the process employed by the regulator. Given the range of legislative requirements applicable to ESC's task, prudent practice would dictate that there is transparency and predictability in the explanation included

[2] ttps://www.parliament.vic.gov.au/file_uploads/Review_of_the_Essential_Services_Commission_Act_2001_QJfqXBtY.PDF Department of Treasury and Finance, Review of the Essential Services Commission Act 2001-Report to the Minister for Finance, December 2016

by the ESC's draft advice, and that the advice would acknowledge the long term effects of the VDO on the structure of the Victorian energy market.

2.2.1 Challenges of regulated price setting

Setting a regulated retail price is a very difficult and complex exercise, not only due to the number of inputs, but also the effects introducing a regulated tariff will have on the retail market.

Unlike market offers, which may be tailored to suit a certain type of customer, default regulated tariffs are made available to consumers without knowledge of customer consumption levels, customer loyalty, the potential transaction costs arising from switching, or credit characteristics. A default tariff must therefore account for considerable information asymmetries, including the potential for the customer to switch on and off the tariff at any time without penalty.

Regulated retail prices present some risks for both customers and retailers. While the ESC's primary objective is the long term interests of consumers, the implications of the VDO should be also be viewed from the perspective of retailers. This is because implications for retailers, for example through higher risks, will ultimately feed through to customers through changes in market conduct and outcomes. Fitting with the market settings that govern the Victorian energy market, the VDO must be based on the assumption that the long term interests of electricity consumers is best met through an effective competitive retail market.

Principles for prudent regulatory practice

From our analysis and experience in other markets, we believe the setting of a regulated retail price would be considered to be prudent regulatory practice if the following principles are met:

1. The process for setting price regulation is clear, transparent and open to consultation with no perception of bias towards the certain retailers or undue interference.
2. The methodology employed for determining the price level is robust, reflects efficient costs and is credible. This is achieved through reasonably taking into account all available evidence and covers all costs.
3. The regulator provides sufficient justification and reasoning to support its decision. This includes how the regulator has weighed up and balanced trade-offs between conflicting issues.
4. There is consistency in how the regulator has approached all the decisions relating to the price setting process.
5. There is predictability and stability in the regulator's methodology. This minimises the risk of the retail price setting process impacting on retailer's entry and exit decisions.
6. There has been appropriate identification and allocation of risk.
7. The process has been comprehensive and all the potential impacts have been considered when reaching the decision.

The *re-introduction* of regulated retail prices in an established competitive market has some specific characteristics, and we have included an additional criteria to reflect this:

8. The implications for customers and retailers transitioning to the regulated price have been evaluated.

This criteria has been informed by the AEMC's 2013 paper which set out principles for best practice price regulation[3] and are based on the most common arrangements for price regulation which is prior to, or for a period after, the introduction of retail contestability.

We note that failure to follow best regulatory practice may not necessarily mean that the VDO is set at the wrong level. However, not following prudent regulatory practices will have material consequences by undermining the credibility of the regulatory framework and weakening market confidence. This will impact on retailers' commercial decisions.

Given the existence of retail competition and the proposed obligations under the VDO, the ESC methodology should be representative of the majority of retailers and their commercial models. If not, it could create perception of bias and unfavourably promote certain retailers over others, and act as a barrier to entry.

This paper explores how the ESC draft Advice and the methodology employed performs against these principles. There are three parts to this assessment:

1) Review of ESC's methodology for estimating individual cost stack in determining the VDO level and any issues with methodology, consistency, reasonableness of approach
2) Consideration of the market outcomes that could result from the VDO as proposed in the Draft Advice and considering how the ESC have taken these into account
3) Evaluation of the draft Advice from the perspective of how it will affect risks for customers and the sharing of risks across different types of customers

This is a very difficult proposition to balance and achieve these criteria. In some elements, the ESC has reasonably achieved these criteria. However the Draft Advice does not include any discussion of the likely market outcomes from the introduction of the price – in particular the effect of the proposed tariff structure and price level. The risks of making an incomplete decision need to be recognised.

[3] AEMC 2013, Advice on best practice retail price methodology, Final Report, 27 September 2013, Sydney

3 Evaluation of VDO cost estimates

Key findings:

- The ESC has been tasked with basing the VDO on the efficient cost to run a retail business. This is not a straightforward exercise and the ESC has made 22 separate forecasts in its Draft Advice on individual cost components for a deemed efficient retailer (under its cost stack approach).
- We have found that the ESC's approach to estimating the cost stack for retailers falls short of best regulatory practice in setting regulated prices. While the time and data constraints noted by ESC are valid, the methodologies employed are not consistently transparent, replicable, well accepted or representative of efficient costs faced by retailers in Victoria.
- Any forecasts will have a degree of uncertainty. Generally, we note that the ESC has not appreciated the risk of compounding errors across its 22 decisions, especially in those components where the ESC had to make an informed judgement on the appropriate costs.
- We note that other modelling approaches are available to the ESC and that it would have been possible to take alternatives views, for example on future wholesale costs. Given the uncertainties and risks associated with this cost element, it could have been prudent to test and inform their methodology with other approaches and run sensitivity analysis (e.g. modelling cost of generation, historical trends).
- In regards to the individual components that make up the cost stack, there are the following issues:
    - The proposed methodology for estimating the wholesale electricity purchase cost is opaque, and the ESC has not validated whether this methodology would have been a good estimator of wholesale costs in the past.

      We question whether the proposed hedging strategy is reflective of a prudent retailer, given the practical limitations in hedging a full year in advance in the way proposes. Further, the methodology may fail to fully recognise that volatility has increased in Victorian wholesale prices, and therefore undervalues current market risks.

      There are issues associated with using the historical Manually Read Interval Meter (MRIM) load data for customers using up to 160 MWh and whether this is reasonably representative of the load profile for all retailers (for example a retailer with mainly residential customers).
    - Estimating the price of LGCs using a 40 day average is not representative of how retailers contract and purchase LGCs. Typically retailers would have purchased LGCs over a longer period of time (including through long term PPAs) when prices were higher.

      We consider that a prudent, efficient retailer would have entered into some long term contracts to manage its risks. Therefore the ESC could consider a longer term average of LGCs, and going forward, consider if an alternative approach is more appropriate to reflect a portfolio hedged cost.

- The ESC's proposed approach could understate the retail costs of an efficient retailer in Victoria. There is some inconsistencies in the methodology to estimating retailer operating costs, nor has it provided sufficient detail or analysis to show that the information it uses is directly comparable and applicable in the context of the VDO.
- The ESC proposes using a 5.7 per cent margin based on regulated benchmarks. However these regulated decisions all stem from a 2013 decision by IPART. There is merit in consideration of the differences in the NSW market in 2013 compared to the Victorian market, or whether retail margins should be higher due to the additional risks for retailers today (e.g. customer consumption patterns, distributed resources).
- Some cost components are outside the control of retailers – such as licence fees, AEMO costs and ancillary charges. The draft Advice has employed a mixture of different techniques in regard to these components with some based on historical data, while others are based on forecasts.

  For these costs, the actual cost will be known (and in some cases paid) retrospectively. Therefore we suggest the Commission consider a common approach of including the latest financial year data amended for any expected changes. This would mean that retailers would recover their actual costs (after a one year lag), ensuring that retailers do not have any cost risks under the VDO for these components.

3.1 Overall methodology

The ESC has applied a cost based approach to estimating the VDO that will apply from 1 July 2019, with the aim of estimating the efficient costs of running a retail business. The approach involves estimating each component of a 'cost stack' that makes up the total costs of running a retail business. We present our assessment of each of the components in the cost stack in this chapter, but first make some general observations in regards to the overall methodology.

First, we note that the ESC has set out to estimate the efficient costs of running a retail business, rather than reasonable or conservative estimates of costs facing a retailer. Many of the components of the cost stack are difficult to forecast with a high level of certainty, and variations between actual and estimates are likely to occur.

Calculating the VDO through the cost stack requires the ESC to make 22 separate decisions on individual components. The ESC has not accounted for the risk of compounding errors across its 22 decisions especially in those components where the ESC had to make an informed judgement on the appropriate costs. Small deviations can all add up to a material impact.

In summary, by proposing to estimate efficient costs, the ESC has left no room for forecasting error; that is of the VDO price being set lower than actual efficient costs incurred by retailers.

We discuss the risks of setting the VDO below retailer costs in more detail in section 5.

Second, we note that it is important that any methodology applied by the ESC in regard to individual components of the cost stack, and the cost stack as a whole, is transparent, replicable, well accepted and representative of costs faced by retailers in Victoria.

To satisfy the principles of good regulatory practices described in section 2, the methodologies applied to estimate the various components also need to be internally consistent with one another, and have regard to as much relevant information as is reasonably possible. This needs to include reasonable expectations about the circumstances that will face retailers looking forward, not least in

light of the fast changing environment of the energy industry. We find that the draft Advice is limited with this overarching aim for several of the cost components, or for the cost stack a whole, and describe the reasons for this in subsequent sections.

Third, it is important that a clear process for revising any or all components of the cost stack is established, and for revising the methodologies, should the need arise. For example, the introduction of any new environmental policies or regulatory obligations will likely have a substantial impact on the ultimate wholesale price of electricity, and this could be reflected in the VDO. Further, in several instances it is not clear how the proposed methodology will be applied into the future.

This is important as uncertainty about future VDO estimates may create a barrier to entry for retailers.

The remainder of this chapter sets out at a high level our view of the approach the ESC has proposed to each component of the cost stack.

3.2 Wholesale electricity purchase costs

Key findings:

- The ESC could have had regard to more than one methodology in determining the wholesale electricity purchase cost, to minimise the risk of under- or overestimating the cost.
- The methodology applied by the ESC, via Frontier Economics' proprietary STRIKE model, to estimate the wholesale electricity purchase costs is not transparent, replicable or well accepted. Rather, in many parts the approach is a "black box".
- We have reservations in regards to the data utilised by the ESC to simulate price and load forecasts for the year 2019-20, including that:
    - It is modelled from a five year period with relatively little volatility in price and does not include the most recent experience in the Victorian electricity market (i.e. Q1 2019), and therefore the simulation may not represent a very wide range of distributions.
    - The MRIM data includes all customers up to 160 MWh per year usage, whereas the VDO will only apply to customers with less than 40 MWh usage per year. Residential and SME customers have different load profiles, and aggregating the two creates a flatter load profile than is the case for either segment on its own. This can be disadvantageous for retailers without a balance of loads between residential and SME customers, as a higher level of peak load relative to the average load results in higher hedging costs.
    - The MRIM data is not adjusted from its historical levels to account for the increased penetration of solar, which also creates a higher level of peak load relative to average load. The Victorian Government is aiming to have 650,000 new homes installed with solar power by over the next ten years under the Solar Homes package[4], compared with 382,308 installed small solar units (deemed) at the end of 2018[5].
- Based on what is presented in the Draft Advice and associated reports, we question that the hedging methodology is representative of the expected behaviour of an efficient retailer:

  While our analysis is constrained to the extent by the opacity of Frontier Economics' proprietary model there are questions as to whether the assumed hedging strategy is realistic and reflective of a prudent retailer. There are practical limitations in hedging a full year in advance in the way

[4] Victorian Premier (2018), Cutting Power Bills With Solar Panels for 650,000 Homes, 19 August 2018.
[5] Clean Energy Regulator (2019) Postcode data for small-scale installations, updated 25 March 2019.

proposed in the advice, including the liquidity of such contracts, increased transaction costs, increased funding costs, and (in)ability to forecast load that far in advance. Most retailers hedge quarterly.

- We question whether an efficient retailer would take the level of price risk at peak demand times that is proposed by Frontier Economics. The draft Advice could have provided more detail on the assumed hedging strategy, and take into account that prudent retailers could choose to cover average peak demand with swaps (not just average demand), and to purchase caps to cover a historical maximum demand (not just peak demand) to avoid exposure to the high pool prices.
- No information has been provided on how the proposed methodology would have performed in the past. For example, testing the outcomes against actual Victorian wholesale prices could help to validate the proposed approach.
- The ESC could more effectively use trade weighted, rather than time weighted, average contract prices in its analysis.

3.2.1 Wholesale electricity purchase cost

The ESC is proposing to use a futures market approach using MRIM data and Victorian spot prices from 1 July 2012 to 30 June 2017. It is proposing to take the median from a Monte Carlo simulation producing 500 simulated forecasts of the year 2019/20 using this data and ASX contract prices for base and peak swaps and $300 caps for the 12 month up to 15 February 2019, with 12 month average contract prices. It then proposes to minimize the risk contract position by purchasing swaps to cover average demand and caps to cover peak demand and incurring a small amount of pool exposure. The approach also includes a small volatility allowance to reflect the cost of holding working capital to cover the small amount of pool exposure.

The ESC, via Frontier Economics, has calculated the wholesale electricity purchase cost by way of a single methodology, which we discuss in more detail below.

We note that forecasting wholesale electricity purchase costs presents a number of challenges. For example, forecasts of wholesale electricity prices are driven by a large number of assumptions, including matters that are very difficult to forecast with any certainty, such as the weather and Government policy. It is highly likely that any one forecast of electricity wholesale prices is not going to turn out. Given the risks associated with getting the wholesale electricity purchase cost, and thereby the VDO, wrong, the ESC should have regard to estimates under alternative methodologies for determining the wholesale electricity costs, including a bottom up assessment. This combination approach could have provided a reasonable band of potential outcomes for wholesale purchase costs.

In regards to the methodology used in the Draft Advice there has not been any analysis presented to demonstrate how the methodology would have performed historically. That is, has the methodology resulted in a reasonable estimate of the wholesale electricity purchase cost in the past? How well does ASX futures predict actual wholesale prices? This could be tested by comparing historical futures data with actual wholesale price data.

Consideration of evidence of what level of reasonable contract cover retailers are typically seeking would help to validate the Draft Advice. Further, the methodology is heavily reliant on Frontier's portfolio optimisation model – STRIKE – which is effectively a black box, and the Monte Carlo analysis performed by Frontier Economics is not readily replicable.

It is not consistent with regulatory best practice to rely so heavily an opaque and non-replicable methodology, which cannot be readily scrutinised by other stakeholders. The use of a proprietary

model in particular means that it is impossible for stakeholders to analyse the extent to which the methodology has performed adequately in history, or indeed if can be expected to perform well into the future. In our view, it is important that the ESC apply a more transparent and replicable approach, which has regard to more than one forecasting methodology for the advice to comply with best practice regulatory principles.

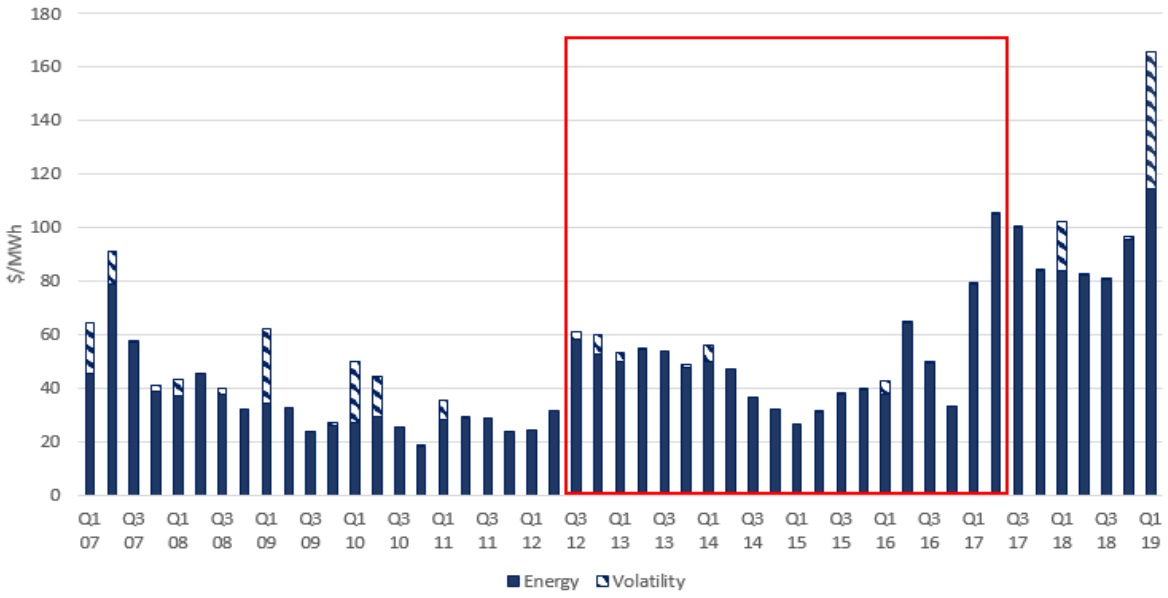
Price and load forecasts for 2019/20

The ESC, through Frontier Economics, have had regard to historical data from the financial years 2012/2013 to 2016/17 as the basis for forecasting half-hourly load and half-hourly spot prices from 2019/20. Rather than take one year as representative out the 2019/20 outcomes, they have performed a Monte Carlo simulation on the five years of data, and scaled the prices so that the time-weighted average price in each quarter is equal to the relevant quarterly base swap prices for 2019/20 from ASXEnergy, less an assumed premium of 5 per cent of the underlying prices.[6]

Whilst historical information is a good source of data to inform future prices and load, the five years from 2012/13 to 2016/17 do not necessarily represent the widest range of distributions. The following chart illustrates the implied energy and volatility in each quarter since Q1 2007.

The chart shows that the five years from 2012/13 to 2016/17 experienced relatively limited volatility compared to the most recent years, in particular the most recent quarter (Q1 2019). The ESC and Frontier Economics should have regard to the most recently available information, which arguably is most representative of the near future. Further, at a minimum, the ESC and Frontier could provide a sensitivity analysis on the implication of using historical data which included relatively little volatility.

Figure 1: Implied energy and volatility in Victoria[7]



[6] This, in their view, increases the likelihood that the analysis is based on a representative set of conditions, and also allows them to create a distribution of market conditions. The half hourly data is created by randomly drawing one day of data (both price and load to maintain the correlation between the two), from the pool of available historical days, for each day in the forecast year. The drawing is done from a pool of like days, e.g. quarter and weekday/weekend. This is done 500 times to get a distribution of forecasts. After the simulation is complete, no further adjustment is made to the load data, however a further adjustment is made to the half-hourly price data. The prices are scaled so that the time-weighted average price in each quarter is equal to the relevant quarterly base swap prices for 2019/20 from ASXEnergy, less an assumed premium of 5 per cent of the underlying prices.

[7] The volatility refers to the contribution of high priced events (i.e. above $300/MWh) to the average price, so called cap returns. The cap returns is the sum of the NEM half hourly price minus the $300 cap price for every half hour in the contract

Source: KPMG analysis

Load profile

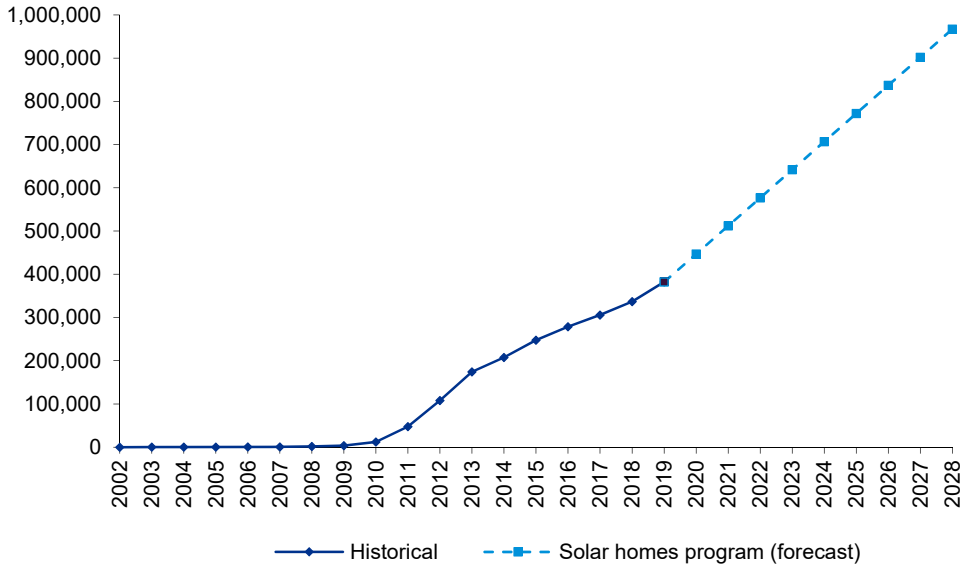
The ESC and Frontier have relied on MRIM data, which includes large business customer loads (up to 160 MWh usage per year), while the VDO will only apply to customers with less than 40 MWh usage per year. Residential and SME customers have different load profiles, and aggregating the two creates a flatter load profile than is the case for either segment on its own. This is important because a retailer's wholesale cost is sensitive to the load shape. For a retailer that does not actually have a load which balances residential and SME, this can be disadvantageous, as a higher level of peak load relative to the average load results in higher hedging costs. Further, the more volatile load profile of a residential customer means that the hedging cost is materially higher for residential customers than for SME customers.

The VDO as proposed in the Draft Advice willl therefore create extra risks for retailers who predominantly serve residential customers. The impact of these risks on customer outcomes are discussed further in section 5.

The MRIM data is not adjusted from its historical levels to account for the increased penetration of solar, which also creates a higher level of peak load relative to average load.

According to data from the Clear Energy Regulator, the number of deemed small scale solar generation units has more than doubled from 2012 (174,125 units) to 2018 (382,308 units)[8]. The increase in small solar units over time is illustrated in Figure 2. The Victorian Government's Solar Homes program will see solar panels installed on 650,000 new homes over ten years[9].

Figure 2 Small scale solar installations (deemed) Victoria



Source: Clean Energy Regulator

quarter where the pool price exceeded $300/MWh, divided by the number of half hours in the quarter. This method is applied by AEMO in its quarterly energy dynamics, see p. 9 Figure 10 and p. 10 footnote 15.
https://www.aemo.com.au/-/media/Files/Media_Centre/2018/QED-Q1-2018.pdf

[8] Clean Energy Regulator (2019) Postcode data for small-scale installations, updated 25 March 2019.

[9] Victorian Premier (2019), Cutting Power Bills With Solar Panels for 650,000 Homes, 19 August 2018.

Hedging strategy

The proposed approach may not be representative of the expected hedging behaviour of an efficient retailer.Based on what is presented in the Draft Advice and associated reports, the methodology best practice in terms of transparency, replicability, predictability and stability.

Timing

The ESC is implicitly assuming that an efficient retailer would hedge its entire load 12 months in advance. We note that many retailers would purchase hedges on a quarterly basis, meaning that while the load for the nearest quarter to the VDO's starting point is likely fully hedged or near fully hedged, the load for the last quarter of VDO is not necessarily fully hedged yet. This may be for a number of reasons, including that liquidity for contracts may be low so far in advance, and transaction costs are higher further out in the future. Further, by hedging far in advance retailers expose themselves to greater volume risk, as they are less likely to know their load the further into the future they look, given the difficulty associated with predicting growth (or churn). The ESC's methodology would be strengthened if it took actual hedging behaviour of prudent retailers into consideration in calculating the wholesale electricity cost.

In regard to futures contract prices, we agree with the approach of using a longer term average price than 40 days, to reflect the actions taken by retailers in securing hedging products. The ESC and Frontier Economics appear to have relied on a time weighted average future contract prices. In our view a trade weighted contract price would more closely reflect the contract prices that retailers have actually paid than a time weighted average.

Pool price exposure

We question whether an efficient retailer would take the level of price risk at peak demand times that is proposed by Frontier Economics' methodology. The ESC needs to provide more detail on the assumed hedging strategy, and take into account that prudent retailers could choose to cover average peak demand with swaps (not just average demand), and to purchase caps to cover a historical maximum demand (not just peak demand) to avoid exposure to the high pool prices.

The ESC notes that the proposed hedging strategy leaves some level of exposure to volatile spot prices, which can be accounted for by holding cash (working capital) to fund spot market purchases (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, to fund "the energy costs associated with a very rare run of high spot prices in a year". Frontier Economics report elaborates on this: *"The working capital requirement is based on the difference between WEC that we have estimated for the median simulated year and the WEC for the most costly simulated year for each distribution area"*[10]. This has been estimated by applying a WACC of 7.5%.

As noted above, we question if a prudent retailer would take on this level of price risk. Further, the ESC should provide a sensitivity analysis on the volatility allowance, including the implications of using more recent data than 2016/17, and also compare its allowance to the cost that a stand-alone retailer might actually incur in hedging this exposure, for example through a load following hedge.

Our analysis indicates that the proposed hedging strategy and volatility allowance may not be reflective of current market volatility and risks, and may not be the most appropriate inputs to an efficient wholesale cost allowance.

10 Frontier Economics (2019), Wholesale Electricity Costs, p. 36

3.2.2 Network losses

The ESC is proposing to use data from AEMO for distribution loss factors and marginal loss factors.

The ESC has calculated a combined loss factor for each network by multiplying AEMO's average distribution loss factors with the marginal loss factors.

We agree that these losses must be factored in to the electricity purchased, to ensure that supply and demand are matched, and we agree with the approach of relying on published information from AEMO in this regard.

3.3 Network costs

Key findings:

- We agree with the ESC's approach to pass through the network costs (including published metering charges) directly to the end user, i.e. the residential or small business customer.
- The ESC needs to consider the trade-off between the simplicity of having only one retail tariff type for the VDO against the potential implication of retailers bearing the risk for customers on non-flat network tariffs.

3.3.1 Network costs

The ESC is proposing to directly include 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. The ESC also proposes that, where applicable, the VDO should include a controlled load or dedicated circuit option, and that the network charges should include published AMI charges for each distribution zone as a cost per customer.

Network costs are an important component of the costs which will make up the VDO, and reflect the cost of both the distribution and transmission networks. We agree with the ESC's approach to pass through the network costs (including published metering charges) directly to the end user, i.e. the residential or small business customer.

However, we note that there are a number of possible tariff structures available to both residential and business customers, including single rate, time of use and flexible pricing, and that using the single rate tariffs in each distribution zone may lead to retailers bearing the risk for customers who have non-flat network tariffs. Whilst we recognise that the intention is for the VDO to be a simple price for consumers unwilling or unable to engage in the retail electricity market, the cost-recovery risk could become substantial with significant uptake of the VDO.

We discuss the implications of using a flat regulated price for the VDO in more detail in Chapter 4.

3.4 Environmental costs

Key findings:

- We do not believe that estimating the price of LGCs using a 40 day average is the most appropriate way to estimate costs. LGC prices are falling, and are expected to continue to fall as the pipeline grows beyond what is required for the 2020 LRET target. However, a prudent retailer would have purchased LGCs over a longer time horizon (for example through long term PPAs),

including when LGC prices were much higher. As a result, prudent retailers are likely to have a portfolio cost of LGCs which is above the current (or recent) LGC spot price.

- The ESC could review the volume of certificates traded over the 40 day modelled period as a proportion of total retailer requirement for Victoria to check whether their methodology represents actual retailer behaviour on purchasing LGCs.
- A reasonable estimate would consider a longer term average of LGCs, and, going forward, the ESC needs to consider if an alternative method is more appropriate to reflect a portfolio cost.
- We agree with the ESC's proposed approach to estimating the allowance for the SRES and VEC schemes.

3.4.1 Large Scale Renewable Energy Target (LRET)

The ESC is proposing to use a 40-day average of LGC prices ($44.72/LGC), to determine an allowance for complying with the LRET scheme, and to apply the renewable power percentage (RPP) for 2019 from the Clean Energy Regulator.

In order to comply with the Large Scale Renewable Energy Target (LRET), retailers need to surrender a certain number of LGCs each year. The Clean Energy Regulator determines the number of LGCs that must be surrendered by 31 March each year, and this percentage is known at the renewable power percentage (RPP). The RRP has now been set for 2019 by the Clean Energy Regulator, and should be reflected in the final advice [11].

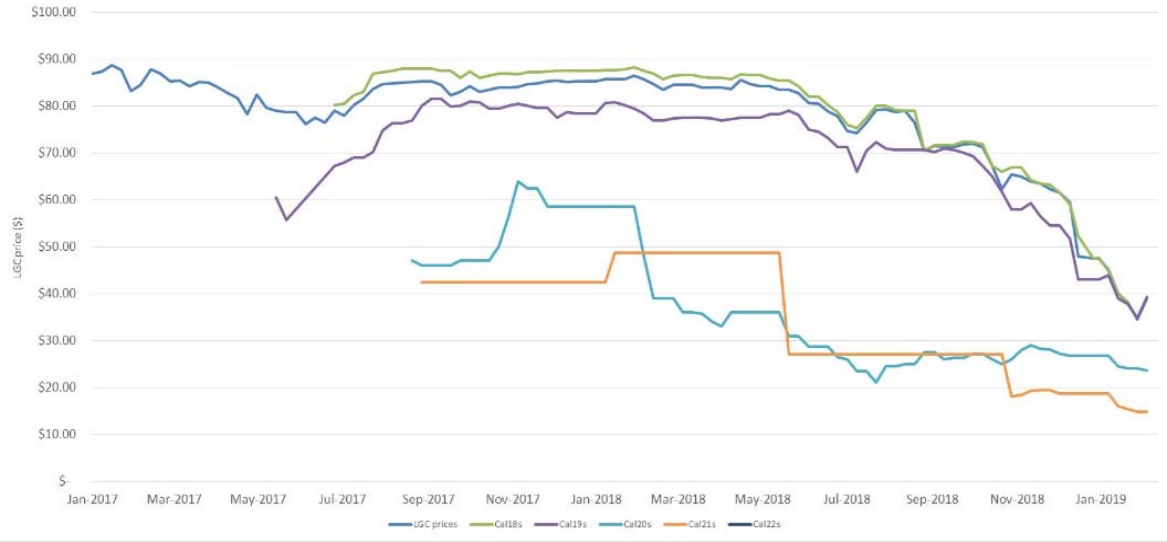
As noted by Frontier Economics and the ESC, the cost of a retailer obtaining LGCs can be determined either on the basis of the cost of creating LGCs, or on the basis of their market price.

This approach is questionable because the price of LGCs is rapidly falling, and is expected to continue to fall. This fall in both spot and forward LGC prices is illustrated in the following chart from the Clean Energy Regulator, published on 1 March 2019.

This fall, and expected future fall, in LGC prices is important because many prudent retailers have secured LGCs over several years – when the cost and spot price of LGCs was higher than it is now. That is, prudent retailers are likely to have a portfolio cost of LGCs which is above the current (or recent) LGC spot price. In adopting a 40 day average of spot LGC prices, retailers who have acted prudently in securing longer term contracts for LGCs will not be able to recover costs under the VDO. This problem is likely to exacerbate as we get nearer to the 2020 target, and the discrepancy between the portfolio cost and market price grows.

[11] Clean Energy Regulator, The renewable power percentage, 12 March 2019.

Figure 3: LGC prices from January 2017 to February 2019



Source: TFS Green via the Clean Energy Regulator

The market price of LGCs has fallen not only because of the cost of creation coming down, but also because the pipeline of renewable energy is growing above what is required to meet the 2020 target, meaning that the pipeline of supply is growing above demand.

In March 2019, the Clean Energy Regulator reported that from July 2016 to June 2018, the LGC prices remained consistently above $80/LGC. However, *"as the pipeline of renewable energy projects continued to grow above what was required to meet the 2020 target LGC spot prices halved from June 2018 to December 2018 and reduced even further to $34.50 in early 2019 before rebounding slightly to $39 at the shortfall deadline"*. The Clean Energy Regulator also observed that this fall in LGC prices has affected future contracts, with Cal20 and Cal21 also falling (as seen in the figure above).[12]

In light of this, it is our view that the ESC needs to have regard to a portfolio cost of LGCs of a prudent retailer, rather than relying only on a recent 40 day average of LGC spot prices. This is necessary to avoid underestimating the VDO from 1 July 2019, and going forward. This would at a minimum involve considering a longer term average of LGC prices than 40 days. We consider that a prudent, efficient retailer would have entered into some long term contracts for LGCs to manage its risks.

Going forward, if the trend of declining LGC prices continues, the ESC will need to consider if an alternative approach to a long term average is more appropriate.

3.4.2 Small Scale Renewable Energy Target (SRES)

The ESC is proposing to use a price for STCs equal to the STC Clearing House price and to apply the small-scale technology percentage (STP) for 2019 from the Clean Energy Regulator.

In order to comply with the small-scale renewable energy scheme (SRES), retailers need to surrender a certain number of STCs each year. As is the case with the LRET, the Clean Energy Regulator determines the number of STCs that need to be surrendered by 31 March each year, and this

[12] Clean Energy Regulator, Large-scale generation certificate market update – February 2019, 1 March 2019.

percentage is known as the small-scale technology percentage (STP). The STP has now been set for 2019 by the Clean Energy Regulator, and should be reflected in the final decision[13].

For the purposes of the Final Advice, the price of STCs should be assumed to be equal to the STC Clearing House price.

3.4.3 Victorian Energy Upgrades

The ESC is proposing to use a simple average of 12 months of spot prices for VEECs, received by TFS Green, due to the lack of a sufficiently liquid forward market for VEECs. The ESC notes that this 12 month average is closely related to the longer term average as well as the small number of forward contract prices they have observed for 2019 and 2020.

In order to comply with the Victorian Energy Upgrades program, relevant entities such as retailers need to surrender a certain number of VEECs each year. The VEEC liability is calculated by multiplying the retailers' annual VEEC electricity acquisition (in MWh) by the greenhouse gas reduction rate for electricity. This reduction rate is already known for the 2019 compliance year (2019 calendar year) and should be reflected in the final advice.

The ESC's methodology would be more representative if it had regard to both a longer term history and expectations for the future, including forward contract prices, in determining a value for the VEECs in the VDO. We also note that the ESC should adopt a consistent approach to averaging across different components of the cost stack, including for futures contracts, unless a material reason exists to do otherwise (as is the case of the cost of LGCs and STCs, as discussed above).

3.5 Other costs

Key findings:

- The ESC has included additional costs in the cost stack to reflect AEMO's market fees, full retail contestability, national transmission planner, Energy Consumers Australia, ancillary fees and RERT. It also includes the ESC's licence fees, and the social cost of carbon in the feed-in-tariff.
- For fees which cannot be readily forecasted due to their uncertain nature, but for which an actual cost will be known (and in some cases paid) retrospectively, we suggest the ESC consider including the latest financial year data, as has been proposed in the context of the Reliability and Emergency Reserve Trader (RERT) to ensure that actual, efficient costs incurred are recovered.
- This would mean that retailers would recover their actual costs (after a one year lag), ensuring that retailers do not have any cost risks under the VDO for these components.

3.5.1 AEMO fees

AEMO market fees

The ESC proposes to use the 2019-20 estimates of the AEMO market charges from AEMO's Energy Market Budget and Fees report for the purposes of the VDO, which amounts to $0.50/MWh.

AEMO charges market participants' market fees to recover the cost of operating market. In the NEM, this is based on the operational expenditure of AEMO. We suggest that the Commission consider

[13] Clean Energy Regulator, The small-scale technology percentage, 12 March 2019.

reflecting last years' fees (or the appropriate part thereof) in the VDO to ensure that all actual, efficient costs incurred are recovered going forward.

Ancillary charges

The ESC is proposing to use the forecasts of Ernst & Young for the AEMC's 2018 Residential Electricity Price Trends report for Victorian ancillary charges for the VDO to apply from 1 July 2019. This amounts to $0.36/MWh for the proposed VDO.

Ancillary services are used by AEMO to safely, securely and reliably manage the power system; for example in regards to frequency, voltage and system restart processes. The charges for these services are a function of how much of the service is required at a given time. That is, the costs are variable over time. We suggest that the ESC consider reflecting the previous years' fees (or the appropriate part thereof) in the VDO to ensure that all actual, efficient costs incurred are recovered going forward.

Reliability and Emergency Reserve Trader Costs

The ESC has proposed including the latest financial year RERT data in VDO. It notes that, whilst this could over- or under estimate the actual costs for RERT, the impact of the lagged estimate for the RERT cost will be marginal. The ESC notes that in 2017-18 the RERT cost in Victoria was $50.76 million, which AEMO estimates to be on average $6 per customer.

The RERT is a type of strategic reserve, whereby AEMO can pay for additional capacity to be on stand-by in case it is required. It is inherently difficult to predict when the RERT will be required, and therefore when retailers will incur a cost. AEMO noted that it was not able to publish any anticipated costs of RERT ahead of the 2018/19 summer because *"it would be misleading of AEMO to publish any costs ahead of summer and prior to the actual activation and dispatch of any RERT, given that total costs will not be known until then".*[14]

While relying on historical data to inform the cost of the RERT component in the cost stack is reasonable, it is our view that the ESC needs to conduct more sensitivity analysis around the implications of price volatility and extreme price events on components of the cost stack, including for both the RERT and the wholesale electricity cost and volatility allowance.

3.5.2 ESC licence fees

The ESC is proposing to use a market wide average of all the retailers licence fees when estimating the cost of the licence fee in the VDO, using the latest available data (2017-18), and updating this for inflation.

The ESC charges electricity retailers a fee to be licensed to sell electricity in Victoria. The fee paid by a retailer is dependent on the number of customers that retailer services. The size of the annual licence fees are not known to retailers in advance, and can change over time in a way that is not necessarily reflected by an increase in inflation. According to the ESC's annual reports, the retail licence fees (which are combined for both electricity and gas) have increased by much more than inflation in the last five years, as is illustrated in the table below.

[14] AEMO (2018) AEMO's 2018-19 summer readiness program and publication of RERT-related costs.

Table 1: ESC retail licence fees 2013/14 to 2017/18

2013/14	2014/15	2015/16	2016/17	2017/18
1,791,941	1,986,348	2,207,900	2,631,362	2,626,866

In our view, CPI does not reflect the annual movement in licence fees. Rather, the ESC should commit an allowance for the licence fee when it sets the VDO which signals the likely cost to retailers (and ultimately consumers) for regulation of the retail market.

We suggest that the Commission considers reflecting the previous years' fees (or the appropriate part thereof) in the VDO to ensure that all actual, efficient costs incurred are recovered going forward.

3.5.3 Victorian Feed-in-Tariffs

The ESC is proposing to estimate the avoided social cost of carbon based on the volume of rooftop renewable electricity exported to the grid, divided by the total number of small Victorian electricity customers, using historical data from 2017-18.

The ESC is required to determine one or more rates payable by retailers to customers that export electricity to the grid. This is called the minimum feed-in-tariff (FiT). The FiT comprises three components that the retailer avoids when a customer generates electricity and supplies it to the network: Wholesale costs, market fees and network losses. It also comprises a fourth component, the value of avoided social cost of carbon, which recovered from the customer base.

The ESC has proposed to use the most recent historical data to estimate the avoided social cost of carbon. This approach is consistent with our expectations, although we note that this could understate the cost given the continuous increase in rooftop solar PV. The increasing penetration of rooftop solar PV also needs to be considered in the context of the load curve used to estimate the wholesale electricity purchased cost, as discussed earlier in this chapter.

3.6 Retail costs

Key findings:

- The Draft Advice would have benefited from more detail and analysis on the inputs into the proposed allowance for retailer costs. For example, the ESC could investigate in more detail if the retail margin in the IPART decision made in 2013 (which is effectively proposed to be used to set the margin in the VDO) is comparable and relevant to retailers in Victoria in 2019. In our view this is not the case, and the retail operating margin is set too low.
- The ESC could investigate in more detail the ACCC REPI data to ensure that the cost allocations made in the context of that review to retail operating costs make the outputs suitable for inclusion in the VDO, as well as undertake more analysis in regard to the expected returns approach, especially in relation to the assumed WACC parameters.
- Further, there is some inconsistency in the different sources of information used to estimate the different components of retail costs to avoid underestimating these costs. For example, the Commission has relied on regulatory benchmarking for the retail operating margin, but dismissed the same decisions in the context of the retail operating costs, and vice versa in regards to the ACCC REPI analysis.

3.6.1 Retail operating costs

The ESC proposes to take the ACCC's Victorian average for retail operating costs for inclusion in the VDO, and add a five per cent buffer. The ESC is also proposing to include an additional allowance for recent regulatory changes which are material and can be reliably costed, which in the Draft Advice amounts to an allowance for the Payment Difficulty Framework (PDF). Taken together this results in a proposed allowance for retail costs of $104.50 per customer in 2019, out of which $3.01 is for the net regulatory costs for the PDF.

The ESC has considered the ACCC's Retail Electricity Pricing Inquiry (REPI) data, historical regulatory decisions and market data in its assessment of retail operating costs. We consider each of these data sources in turn.

ACCC REPI data

The ACCC REPI relies on data provided to the ACCC for the 2016/17 year, which is already several years old, and presents a number of challenges.

First, there is no commentary in the Draft Advice to confirm that the "cost to serve" from the ACCC's REPI is comparable to a retailer operating margin allowance suitable for the VDO. Frontier Economics recognises this shortcoming[15]:

> *"It is also important to recognise that there are some shortcomings with the benchmarking approach. In particular, because the available benchmark information tends to be information on total retail costs, with very little disaggregated line-item cost data available, there is limited information available to adjust for the any differences in costs between the characteristics of benchmark firms or jurisdictions and the characteristics of retail supply to small customers in Victoria"*.

Frontier Economics do not, however, expect this to be a major issue.

AGL, on the other hand, has submitted that[16]

> *"there is no transparency in how [its data provided to the ACCC] was processed and then applied to establish the costs that were reported in the REPI. It is unclear how AGL's financial structure was considered and how its Centrally Managed Expenses were allocated. These costs are significant and AGL provided a consultant report to the ACCC on how these costs should be allocated appropriately. Whilst it is unclear, the outcomes of the REPI suggest that these costs may not have been adequately included. What is clear from the REPI is that operating costs are well below AGL's assessment of fully allocated costs for operating a retail business and furthermore, do not reflect recent increases in operating costs."*

Origin, in its submission noted that, because the data is averaged, it is difficult to determine if relevant 'other costs' have been included. Origin notes that a significant proportion of its retail operating costs are in this 'other costs' category. Origin also questions how its operating costs are well above the ACCC average, and AGL's are well below, and notes that

> *"We believe this highlights that there are imperfections in how the ACCC has used its data and how it has derived average costs".*[17]

[15] Frontier Economics, Retail Costs and Margin, A report for the Essential Services Commission, February 2019, p.4
[16] AGL (2019), Submission on the Draft Advice, p. 6
[17] Origin (2019), Submission on the Draft Advice, p. 6

By taking a conservative approach to this element, the Draft Advice may be passing considerable risks onto retailers.

Second, whilst this data is likely to be the most comprehensive available, it is probable that adjusting this data for 'step changes', such as the PDF and other regulatory requirements, into the future is going to be practically difficult, given that different retailers have different sizes and also different business models, and therefore different costs.

Step changes will by necessity include costs such as those stemming from recommendations of the Independent Bipartisan Review of Electricity and Gas Retail Markets, the costs of moving to five minute settlement, and indeed the cost of implementing the VDO itself.

We note that it is difficult to estimate with a high level of certainty in advance the implication of new regulatory requirements. For example, while implementing the PDF framework will come at a cost to retailers, the actual cost is not definitive yet, nor is it clear if the framework will result in a reduction of bad debts (nor how big those reductions will be in relation to the cost of implementation). This will only become evident as the framework is implemented and has been in use for some time. In the absence of conclusive evidence of the implications of this type of regulatory intervention, the ESC has an obligation to ensure that the VDO is not set too low, given the implications that this is likely to have on the retail electricity market in Victoria (discussed in more detail in Chapter 5).

Third, retail operating costs will not all necessarily increase in line with inflation. Some costs may fall over time, and some costs may increase faster than inflation. The ESC has flagged that it will undertake further analysis to identify if an annual productivity factor should be applied to retailers operating costs in calculating the VDO. The ESC might also consider changes in labour, IT system and capital costs in the context of this analysis. Plus understanding the relationship between customer queries and costs might be useful.

Fourth, the ACCC REPI revealed a large spread of average retail operating costs between the big three and other retailers, which further suggests that the ESC could err on the side of caution, to ensure that 'other', smaller, retailers can compete in the market. The ESC appears to have taken this into account by adding a five per cent buffer, however, it does not provide any detailed analysis or justification for this number. This type of adjustment also appears to be a "one off" in the context of the broader methodology, which does not provide the level of justification and reasoning consistent with the best practice principles.

Historical regulatory allowances

The ESC has also had regard to historical regulatory allowances, including those depicted in the figure below, which is reproduced from the Draft Advice. The figure shows that the regulatory allowance for retail costs since 2013 has been between $122-129 per customer. Whilst it is important to consider the extent to which these decisions are relevant and comparable in terms of the objective of the VDO and the circumstances of the Victorian retail electricity market in 2019, as well as how these estimates have been derived, it is clear from the chart that the proposed retail operating costs ($104.50) are $17.50 below the low end of the range since 2013. This does not take into account the relative higher cost of operating in Victoria evidenced in the ACCC REPI data (up to $11 per customer higher than other fully contestable markets in the NEM, according to the Draft Advice[18]).

In this context, it is also important that consistency is retained in terms of the value that the ESC is placing on other regulatory decisions. The ESC places high value on regulatory decisions in the

[18] Essential Services Commission, 019, Victorian Default Offer to apply from 1 July 2019: Draft advice, 8 March, p45

context of the operating retail margin (discussed in the section on the retail operating margin), but dismisses them in the context of the retail operating costs. This is not consistent with best practice and undermines the credibility of the Draft Advice.

Figure 4: Regulatory allowances for retail operating costs, $ per customer, $2018/19 (reproduced from the ESC Draft Advice)

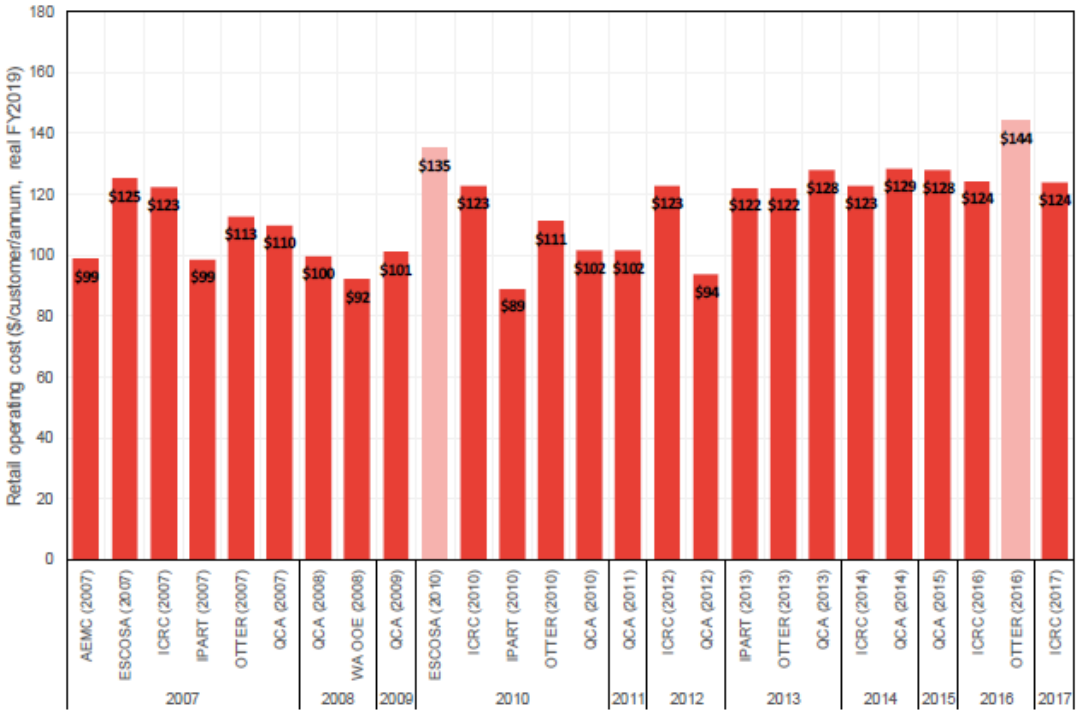


Figure 7 Regulatory allowances for retail operating costs, $ per customer, $2018-19

Source: Frontier Economics

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

Market data

The ESC also considered publicly available data from AGL and Origin Energy from their annual reports from 2012/13 to 2017/18. For AGL, the Draft Advice reports a figure of $69 to $84 per customer, and for Origin Energy a figure of $119 to $168 per customer. In the most recent year the relevant number was $84 per customer for AGL and $126 per customer for Origin Energy.

AGL, in its submission to the Draft Advice, notes that although it cannot be confident as to what this market data reflects, it does appear very similar to the 'cost to serve' in its financial statements. AGL goes on to comment that AGL's published cost to serve "is not equivalent to retail operating cost as it does not include all the costs required to operate an efficient retail business", in particular because it does not include centrally managed expenses. That is, using the cost to serve from AGL's annual reports appears to understate their actual retail operating costs.[19]

Origin Energy also raises concerns about the way costs are allocated, especially 'other costs', as noted earlier.

[19] AGL (2019), Submission of Draft Advice, p. 7

All relevant information used to assess appropriate retailer operating costs for the VDO should be well understood and comparable, to avoid understating the costs of an efficient retailer.

Assessment of retailer operating costs

To uphold the principle that the price setting process is comprehensive and all impacts have been considered, the ESC has some justification in considering a more conservative estimate of retailer operating costs given the lack of detail provided on how the ACCC estimates have been derived, the uncertainty around estimating 'step changes' and general changes over time to the retail operating costs. In light of the different retail operating costs that stem from businesses of different sizes and running different business models, a more conservative estimate would also ensure the impact on retailers of the transition to the VDO has been considered. The ESC could also be more consistent in the value it places on benchmarking of regulatory decisions across the various components of the cost stack, to avoid underestimating the VDO.

3.6.2 Customer acquisition and retention costs (CARC)

The ESC is proposing to use the average for competitive markets from the ACCC REPI final report, which, adjusted for inflation, amounts to $51.48 per customer in 2019.

The ESC notes in its Draft Advice that the Terms of Reference require the allowance of "modest" CARC costs.[20] The ESC has had regard to regulatory decisions in other jurisdictions, relevant public information on costs and the ACCC REPI final report for calculating the CARC allowance to apply from 1 July 2019.

The proposed CARC allowance of $51.48 per customer compares to a regulatory allowance for CARC of between $44 and $49 per customer in regulatory decisions since 2013, $41 and $62 per customer reported publicly by AGL between 2013 and 2018, and a range of $27 to $47 per customer between 2013 and 2018 reported publicly by Origin Energy, according to the Draft Advice. This information (in chart form) from the Draft Advice is reproduced below. The chart shows that the most relevant value to Victorian retailers, the ACCC REPI Victorian value, is around $10 higher than that used by the ESC.

[20] the costs of competing for customers in a constable retail market

Figure 5: Summary of most relevant CARC benchmarks (reproduced from Draft Advice)

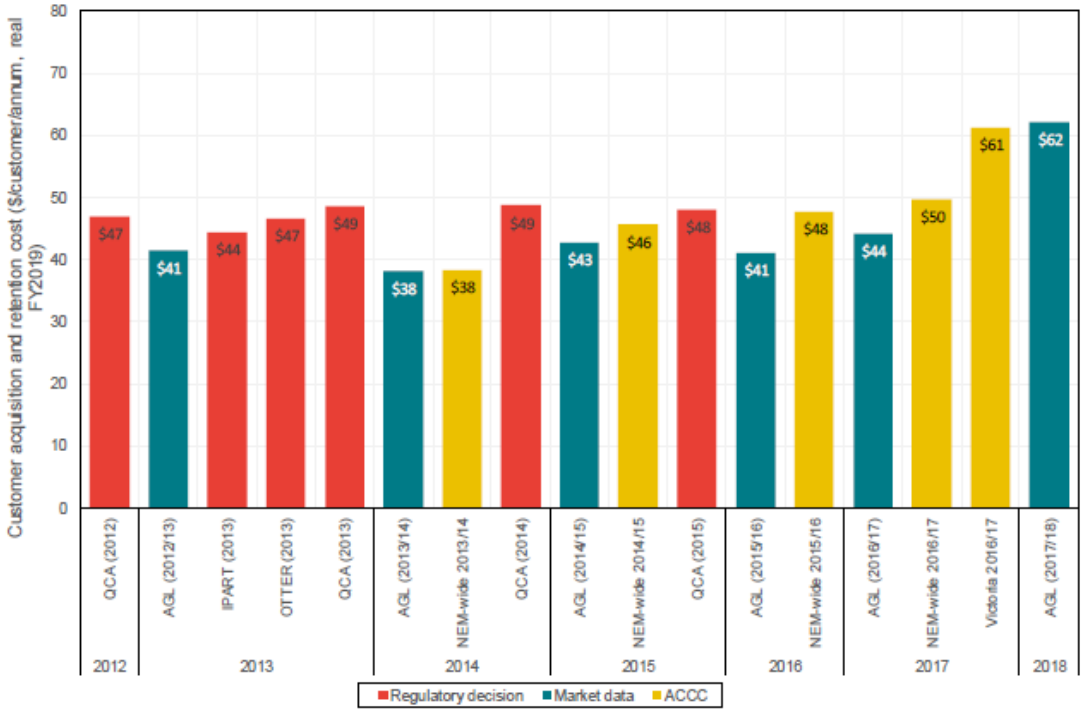


Figure 8 Summary of most relevant CARC benchmarks

Source: Frontier Economics

The Victorian retail electricity market is characterised by a high level of competition and choice, which is funded by CARC. A low allowance for CARC is likely to negatively affect the level of competition in the Victorian market.

The best practice principles would be best achieved through showing how it has weighed up the trade-offs between the directions in the Terms of Reference and the objective to promote full retail competition. A more conservative estimate based on the Victorian ACCC REPI CARC, rather than a national average would have reduced the magnitude of this trade off.

The national average is internally consistent with the use of Victorian data for the retail operating margin allowance. In light of these methodological issues, the ESC could provide greater certainty by clarifying if, and how, the CARC allowance will be updated to reflect any step changes going forward.

3.6.3 Retail operating margin

The ESC is proposing to use a 5.7% retail operating margin in the calculation of the VDO based on benchmarking of other regulatory decisions, to reflect an allowance for retail profit.

The 5.7% retail operating margin proposed by the ESC is based on benchmarking of other regulatory decisions on retailer operating margins. The ESC has also considered an expected returns approach, which returned a margin range of between 3.1 to 6.1per cent. This compares to the ACCC's REPI report, which estimated an average margin for Victoria of 11per cent, and a NEM-wide margin of 8 per cent, which the ESC expressed several reservations about using.

While allowable margins should be stable across regulated decisions and over time, it is important that the ESC provides reasons why these precedents are applicable to the current Victorian market. It

is important that the decisions on costs are robust and credible. Also, as noted above, the ESC has not placed consistent value on other regulatory decisions (or the ACCC REPI decisions) across the retail cost components.

First, in any industry, margins reflect the skills and effort of the retailer and the risks taken. However, in electricity it is important to distinguish between margins earned under a regulated price cap versus those earned in a competitive market environment. This is because the nature of the services provided to the customer and the retail operating environment are different. Therefore it would be prudent for the ESC to consider whether the benchmarks for regulated prices reflect current expectations for margins.

Margins in an environment where prices are set competitively could be expected to be higher than in a regulated market, reflecting a range of different factors. These include higher levels of effort, risks, innovation/diversity in services, cost savings initiatives by retailers plus efforts to maintain brand loyalty. Once competition is introduced and promoted under deregulation, retailers must seek new and innovative ways to win customers. The costs of doing so are reflected in the higher retail margins seen in competitive markets.

Second, there is a strong element of circularity in the benchmarked regulatory decisions, with basically all the regulatory decisions used by Frontier Economics leading back to a decision made by IPART in 2013. According to the Frontier Economics report on retail costs and margins[21]:

- The QCA's 2015 decision was rolled forward from the QCA's 2013 decision, when the QCA based their retail margin allowance on the 5.7% used by IPART in its 2013 decision.
- The ICRC's allowance was also based on the retail margin allowance of 5.7% used by IPART in 2013.
- The OTTER decisions from 2013 and 2016 were benchmarked against the QCA, the OCRC and IPART (i.e. effectively IPART 2013).
- The IPART decision itself had regard to three approaches, one of which involved benchmarking.

Third, the benchmarked decisions will each reflect their own objectives and the specific circumstances of that decision, which are unlikely to be directly comparable to the objectives of the VDO or the circumstances in the Victorian retail electricity market in 2019.

The following table illustrates the differences between the electricity retailing market in New South Wales and Victoria in 2014 through to 2018, as reported in the AEMC 2018 Retail Energy Competition Review (all available competition reviews). It also shows key market statistics for NSW from the jurisdiction specific 2013 Review of Competition in the Retail Electricity and Natural Gas Markets in New South Wales. The table shows that in NSW in 2012 – when the analysis upon which the benchmarking substantively relies, as discussed above - the big three retailers had 95% market share, compared to 59% in Victoria in 2018. It also shows that in 2012 NSW had 12 retailers competing for customers, compared to 25 brands and 21 businesses in Victoria in 2018. These are completely different competitive environments, in which one would expect to see different retail margins.

[21] Frontier Economics (2019) Retail costs and margin, p. 22-23

Table 2: Key market statistics from AEMC Retail Competition Reviews

	Market share of top three retailers		Range of competitive retail prices		Number of retail brands / businesses	
	NSW	VIC	NSW (Ausgrid)	VIC (Jemena)	NSW	VIC
2012*	95%				12	
2014	96%	70%			15 / 13	18 / 16
2015	93%	65%	$517	$566	20 / 16	21 / 17
2016	91%	63%	$561	$502	26 / 22	25 / 22
2017	89%	61%	$682	$798	26 / 22	25 / 22
2018	85%	59%	$812	$1,764	28 / 23	25 / 21

Source: AEMC Competition Retail Review 2018 and Review of Competition in Retail Electricity and Natural Gas Markets in New South Wales 2013

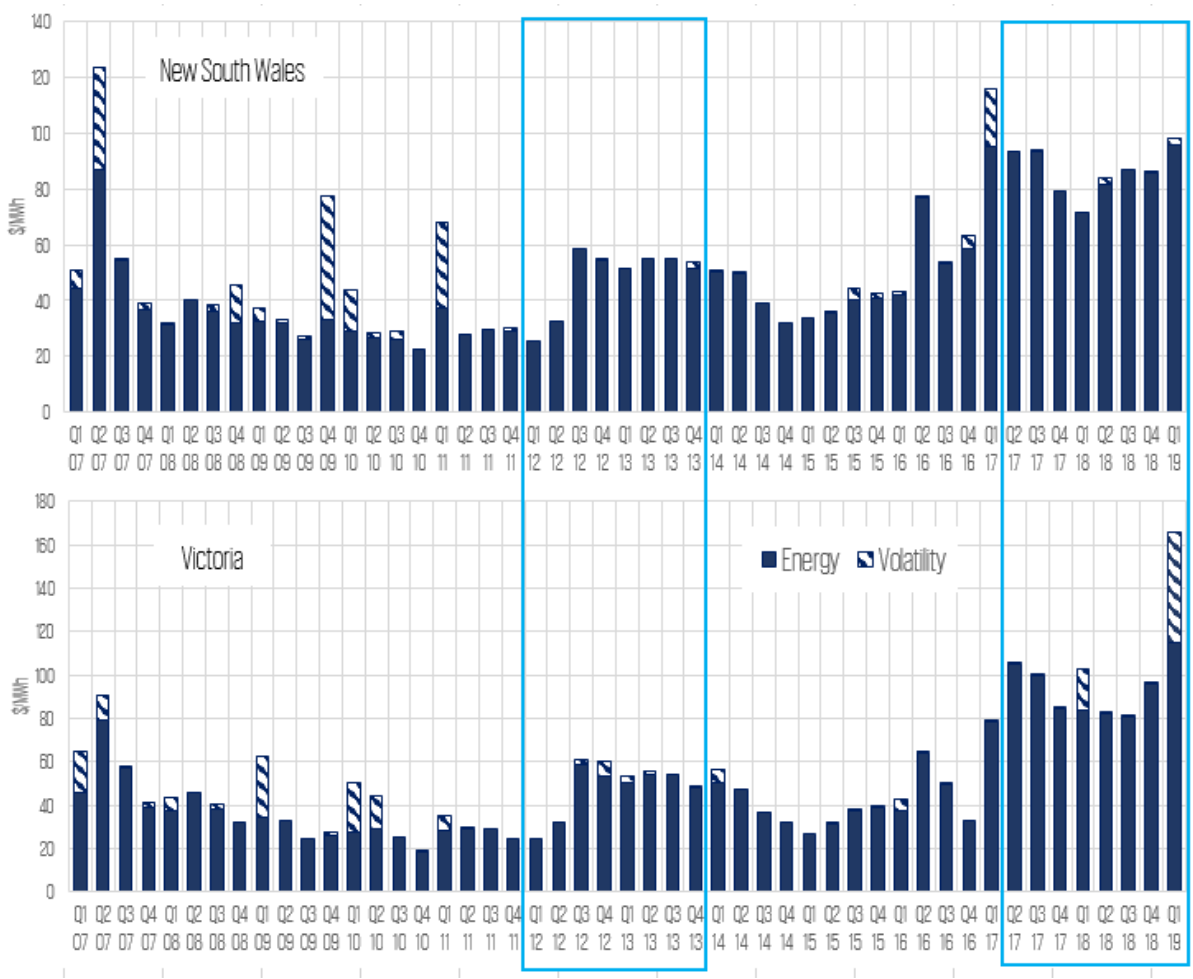
Further, the level of risk in the electricity industry has increased since 2013, as a consequence of uncertainty around government policy, the introduction of new regulatory requirements, changing generation mix and the rapid development of technology, among other things. The ESC notes that it prefers to reflect this type of risk in the components of the cost stack, however, this is only explicitly addressed for the PDF for bad debts, with a small volatility allowance and through a modest CARC for switching risks.

We explained earlier that these allowances may not be sufficient. Arguably there are other types of risks created for example by the overarching uncertainty around Government policy and/or intervention which need to be considered before relying on a benchmark from six years ago. The following chart illustrates how wholesale energy prices have increased between the period of the 2013 decision and more recent time. In regard to the expected returns modelling completed by Frontier Economics, we consider that more analysis and consultation with retailers could to be undertaken on the assumptions that go into this approach, especially in regard to the assumed WACC parameters[22], before this could be used to inform the retail operating margin.

It is crucial that the proposed allowance on retail margins is robust and credible. We suggest that more consideration is given to the characteristics of the current market, with regard to the relevance of a benchmark estimate set in a different time and under different circumstances. Best practice dictates that the ESC would be consistent in the value it places on benchmarking of regulatory decisions across the various components of the cost stack, to avoid underestimating the VDO. Further, the Draft Advice could clarify if, and how, the retail margin will be updated to reflect any step changes going forward.

[22] We note that the process for setting the WACC for network businesses is very rigorous.

Figure 6: Energy and volatility in NSW and Victoria 2007 – 2019[23]



Source: KPMG analysis

[23] The analysis in Figure 1 is the same as demonstrated in Figure 1. See footnote 4 for explanation.

4 Identifying outcomes under VDO

Key findings:

- It is important to consider how the proposed VDO will impact on outcomes for all customers in the Victorian retail market to ensure that the VDO is set at the right level to best promote interests of customers.
- Efficiency of the retail market means more than price efficiency in the short term. There are other trade-offs to consider, in terms of innovation, competitive behaviour and entry and exit of retailers. There is a risk that retailers will not be able to offer their own products at competitive prices if a certain portion of the customer base moves to the VDO, or the retailer perceives that there is a risk that its customers will do so in the future.
- There are four market outcomes which the ESC could consider in its reaching its final advice. These are consistent with its legislative duties:

  Lower retail competition: Business that were currently viable could become uneconomic under the VDO without the business itself being inefficient for a number of reasons, including if the VDO is set too low, is not representative of the diversity in business models, or the regulatory risks discourage investors.

  Reduced tariff choices: Retailers may find it harder to market alternative tariff products if there is decreased effort by customer to evaluate such choices on the presumption that the VDO is the best deal. The VDO acts as an anchor point, where over time retailers migrate their tariff options towards the determined level and structure.

  Higher system costs and lower market efficiency: The proposed structure of the VDO could act as a constraint on the uptake of demand side participation through limiting tariff innovation. This could lead to higher network and generation costs in the Victorian energy system

  Transformation in the electricity sector is constrained: Competitive markets are more flexible and responsive than regulated environments. Consequently, a competitive market is likely to be better placed to facilitate the transformation of the energy industry as it shifts from customers being passive consumers of electricity to being more active and engaged "prosumers" that generate, as well as consume electricity. The VDO could act as a brake on this change.

- It is important the ESC and Government considers the impacts of the introduction of the VDO. Thoroughly working through the second order impacts of changes in retailer behaviour and market conditions will help to assess whether the VDO is set at the level which best promotes the interests of all Victorian customers.

4.1 Evaluating the market outcomes resulting from the VDO

This chapter explores the proposed VDO in terms of market outcomes on customers. Customer outcomes in a retail market covers a wide range of factors including cost efficiency, diversity of choice, quality of service, and level of engagement.

We consider that this analysis is important for the consideration of the VDO because it provides a more complete picture of the impacts on Victorian customers, and also recognises that the reintroduction of a regulated price is likely to change behaviour and market characteristics. In this analysis, we have considered how electricity retail markets perform under regulated retail prices both in Australia and overseas.

This section explores two key aspects:

- Does the draft Advice promote market outcomes which, on balance, promote the long term interest of customers
- Are there likely market outcomes from the ESC's methodology for determining the VDO level which are inconsistent with the Commission's intentions

The role of energy retailers is to cushion customers from the volatile and complex energy supply chain. Retail products provide customers with electricity at an agreed price, while retailers utilise a number of methods to purchase at varying rates. The retail market in Victoria is based on the premise that retailers competing for customers will drive price toward an efficient level as they adapt to customers and create a range of new products that suit different needs and strive to contain costs in order to attract and retain customers.

All customers are different and so will have different needs, expectations and experiences. Customers will interact and use the electricity market in different ways, with varying levels of interest and motivation to engage. Therefore what one customer views as a benefit, another might view as a disadvantage. It is important for the ESC to approach their task from the perspective of all residential and small commercial businesses.

Further, customer experiences and outcomes evolve over time in competitive retail markets. Customers become more aware and engaged in the market, and retailers get more confidence to test and introduce new products. The Final Advice would be more comprehensive if it considered how the application of the VDO would impact on the path-way toward more effective competition. The analysis could evaluate the likely behavioural changes and market decisions plus second order impacts of introducing a regulated price into a competitive market. It is useful to think through what will happen if the VDO is introduced at the proposed level – this helps to assess whether the VDO will be consistent with the interests of Victorian Customers.

This consideration of market outcomes should also feed back into the methodology for estimating retail costs. Are there any assumptions which may no longer be valid if retailers changes their behaviour following the VDO? For example, what would be the reasonable hedging strategy for retailers if competition decreases and/or if the VDO acts as a constraint on their ability to incentivise consumption decisions through price signals?

4.2 Considering efficiency under a regulated retail price

In relation to the VDO draft advice, we consider that "efficiency" of the price is not solely captured by whether the VDO is equal to efficient costs of a single retailer supplying electricity to the average customer. Efficiency and the interests of customers should cover all impacts of the VDO, showing how market outcomes have been identified and taken into consideration.

This analysis has not been part of the ESC's draft advice on the VDO. Therefore it is not clear that the proposed VDO would be the best price to promote market outcomes for all customers which minimise costs and promote innovation and dynamic efficiency.

It is useful to also consider how the ESC has approached this matter in other regulated decisions. The ESC's taxi fare determinations – where their task is also to provide a regulated price to an established, competitive industry – contain modelling and commentary on the supply and demand effects of their determined price. This is necessary to illustrate how the decision is serving the long term interests of consumers. For example, setting a taxi price at a level that is very affordable may serve the interests of consumers in the short term, but not if it renders the service uneconomic, and drives taxi operators out of business. This is equally true in the electricity sector, where the effects of setting a price the price too low could be significant.

The ESC has stated that the objective of the VDO is to remove the perceived cross subsidy between disengaged and engaged customers. However cross subsidy between customers is inherent in the electricity markets given tariff design and market arrangements. The retailer buys a portfolio of generation to meet the aggregated demand of its customer base. The efficient strategy for managing this transaction is achieved by retailers through their tariff design. A diverse range of tariffs in the market is a sign that the retail market is functioning effectively. When all these tariffs are applied to a single customer profile such as average household, a wide variety of bill outcomes will be presented. This can be interpreted as a sign of cross-subsidy between different customers, when it also reflects the different retailers' method for efficiently distributing their costs to their diverse customer base.

The ESC has made a number of assumptions in its draft advice on the VDO which need to be assessed in terms of retailers' ongoing ability to manage their costs, continue to offer a variety of products and respond to customer needs and service requirements.

Any regulated price which leads to these benefits being diminished could not be considered an outcome in the best long term interests of consumers. The risk of this increases if the price of the VDO is set at a level which is lower than the efficient costs. Our analysis in the previous chapter has highlighted a number of factors indicating why this may be the case.

This chapters covers the following market outcomes which could undermine the ability of the VDO to promote efficiency in the retail market:

- Lower retail competition
- Lower tariff diversity
- New products to promote market transformation
- Impact on retail competition

The Commission has used a conventional "bottom-up methodology" to determine a cost stack, accounting for the difference in network costs, but otherwise assuming that this stack is representative of the efficient costs for all retailers, on average. This approach is commonly used for

regulatory price setting in markets where competition is developing, where there are a small number of dominant retailers, and it is reasonably safe to assume that the average cost is representative across the entire customer base.

Victoria has a competitive market with a large number of established second and third tier retailers whose portfolio of customers and business models may not align with the average. This does not necessarily mean they are inefficient. Their business strategies, (for example marketing, tariff design, incentives) allow them to provide a competitive product. The revenue from the VDO, while it is efficient based on the industry average, may not be sufficient to cover costs for individual retailers' circumstances, which will significantly disadvantage these businesses.

There is a risk that retailers will not be able to offer their own products at competitive prices if a certain portion of the customer base moves to the VDO (or the retailer perceives that there is a risk that its customers will do so in the future). Retailers have no ability to manage the level of take-up of this offer, and will have to decide whether their business model can be sustained on the VDO, and if not how they will react.

In the first instance, retailers faced with the risk to revenue from a capped price with a fixed tariff structure will have to revise their market offers to manage their costs. The prices for lowest priced offers will likely be raised, as customers on the highest priced market offers migrate to the VDO.

If the price for the VDO is set too far below costs for some retailers, they will choose, or be forced, to exit the market.

4.2.1 Retailer exit

Retailers can exit the market in two ways; by selling their portfolio of customers to another retailer, or if they default in the wholesale market their customers will be transferred away under Retailer of Last Resort (ROLR) arrangements.

Retailer exit following the introduction of the VDO could be characterised as a clearing out of inefficient businesses, but it could also signal that the VDO is limiting some retailers' ability to operate within the constraints of the regulated tariff structure. Business models that were viable could become uneconomic under the regulated price without the business itself being inefficient. Exit of this kind, which singles out certain models over others, could not be considered to be promoting full retail competition.

Large retailers have more scale to absorb customers from exiting retailers due to their lower fixed costs per customer. As a result, exit – whether voluntary or involuntary – is likely to reverse the trend of decreasing market concentration which has been an indicator of the improving competitiveness of the retail market over the last ten years.

A retailer who no longer wishes to trade in Victoria will need to consider the impact this decision will have on its operations in other states; for example recovery of the costs of investment in systems to support AMI and Victoria's separate regulatory framework. An alternative to exit is to cut costs, which will lead to reduced quality of service, or the removal of customer benefits above the minimum standard[24]. At a certain point, a retailer has to consider whether it can pursue the retail strategy it brought to the market if a significant proportion of its small customers move to the VDO.

The ESC's draft advice assumes that all retailers will be able to adapt to the market under the VDO on the basis that the cost stack represents efficient cost to serve. However this is based on the

[24] eg. customer service, collection and credit practices, billing options

behaviour of a notional retailer. In the absence of information about how different retailers manage wholesale risk, market strategically or structure their costs, the draft advice cannot ensure that it will not reduce the number of retail options in the market.

An equivalent decision under best practice principles would include analysis showing how the cost stack and regulated price have been mapped against existing market conditions and how the price will affect the supply side.

4.2.2 Barriers to entry

From 1 July, the test of a new entrant's financial viability will have to be based on whether they can deliver the VDO. As the default price is set without "headroom" there is an absence of economic profits available to new entrants to enter the market and challenge existing models. An entrant with a strategy of a higher priced offering that is being marketed to customers as 'value for money' will need to consider how to account for customers who take up this offer initially, but then elect to move on to the VDO.

This scenario is particularly relevant for retailers whose value proposition is based around sharing the peak demand risk with consumers, for example through strong tariff signals at high price times[25] Customers who receive the signal will have the option to change their behaviour, or opt out of the program by moving on to the VDO. Accounting for that scenario reduces the retailer's ability to design a product that is truly cost-reflective.

Low barriers to entry promotes effective competition. Over time if there is no new entry, it will create conditions that are more favourable to large, established retailers serving a growing proportion of customers on the VDO. If the price is revised annually based on retailer costs, there will be an incentive for large retailers to optimise their operations to maximise revenue from the regulated price. In effect, returning the market to a less competitive state. Prices may be lower on average, compared with the inputs to the original VDO calculations in 2019, but incentives for overall efficiency improvements in the market will be diminished.

The Commission could have considered the impact of introducing the VDO at different price levels on entry and exit and demonstrated how the effects on the market of introducing chosen price structure and level had been assessed.

4.2.3 Lower tariff diversity

The ESC have decided to set one VDO with a flat tariff structure in each Distribution area. Having a single, flat tariff was not a direction of the Terms of Reference. This is a draft decision made by the ESC on the basis that it would be simplest to have one tariff for each area and that flat tariffs are the easiest for consumers to understand. This decision will have consequences for the market which we believe have not been explored in the draft advice.

Flat tariffs provide no signal to consumers about the additional network and wholesale costs of consuming at peak times. A key innovation that has entered the market since retail competition and the roll out of AMI meters are products which allow retailers to monitor and manage peak demand, which is their major cost driver. Competition and improvements in technology have allowed new tariff structures to be created, which may be more complex, but are more reflective of the underlying costs

[25] eg. rewards for load reduction or penalties for exceeding thresholds at certain times

of electricity. All consumers share the cost of increased peak demand through higher network charges and retail charges that reflect the higher cost of wholesale energy.

A variety of policies and initiatives have been introduced to encourage consumers to reduce their peak usage in order to reduce the shared cost, particularly for network tariffs. Products that encourage customers to move their load away from peak times will have to compete with the VDO[26] which offers a fixed price for all usage at any time. A migration of high peak-time users from products which contain a price signal over to the VDO will be of concern to retailers. The tariffs and products they provide to the market will have to acknowledge the changing landscape, and it is likely this will lead to tariffs concentrating around the VDO as a way to socialise the cost of high peak usage.

This also create a potential risk of the retailer being squeezed between a cost reflective network tariff and a flat retail tariff. We understand that the Victorian Government and the ESC is considering this issue further.

The VDO removes the ability for retailers to send a signal about peak use, which is a key factor in differentiating tariffs and a way for customers to use their behaviour to save on energy costs. The overall effect will be a return to a set of flat tariffs clustered around the VDO. This resembles the tariff diversity in the early 2000s when competition was limited and accumulation metering precluded retailers from offering anything other than flat tariffs.

Case Study: Ontario

A competitive retail electricity market was introduced in Ontario in May 2002. Almost 1 million customers opted to take a contract with a competitive provider in the first few months after the market opened. The remaining 3.4 million customers continued to be supplied by their local utility.

Seven months later the Government effectively halted the deregulation process when it enacted legislation to cap prices for all small customers at 4.3c per kWh. This was in response to significant wholesale price volatility in the first few months that the market had been in operation, when the spot price ranged from 3.01 to 6.2 cents per kWh. This was caused by tightening of supply due to a hot, dry summer. The retail price freeze remained in place for several years with retail prices disconnected from costs.

In 2005 the Ontario Energy Board (OEB) re-introduced price regulation, and set a regulated retail price (RRP). In 2010, following a roll-out of smart meters the OEB mandated Time of Use (TOU) prices for customers receiving the regulated price. As a consequence 90 per cent of customers are on a regulated TOU tariff. Studies of the Ontario market have shown patterns of load shifting by residential customers as a result of the policy[27] although very little change in aggregate use, illustrating that customers are not sufficiently incentivised to manage their peak load on low, regulated flat tariffs.

Anchoring

The need for the government to introduce a regulated price can give customers a perception that there is something risky or wrong with alternative tariffs. Retailers will need to convince consumers that a more complex tariff is good value compared with the regulator-sanctioned "fair price". In international jurisdictions, such as France, public interest groups advised customers to select and remain on the regulated price and not to consider selecting an alternative offer, which increased

[26] A customer with a profile of high peak use will almost certainly cost more to serve than the revenue from the VDO will provide, especially if they have an underlying network tariff with higher costs at peak times. This risk is explored further in the next section.

[27] The Brattle Group, *Analysis of Ontario's Full Scale Roll-out of TOU Rates - Final Study*, February 2016

mistrust and made it harder for retailers to win over customers, even when the product was attractive and more efficient. There is a possibility that this could happen in Victoria.

Evidence from other jurisdictions and the theory of 'anchor points', show that a regulated price will create the benchmark against which all offers are compared. If the VDO is presented as the 'fair' price, it could be perceived that all other tariffs are unfair. Retailers will have to find a way to compete with this logic and show 'value for money'. This provides a discipline on retailers but the ESC should consider, in light of evidence on consumer behaviour, the difficulties of engaging with customers to make this choice.

Tariff diversity is a two way process and requires action by both retailers and customers. Under the VDO there is a risk that customers become less engaged and willing to evaluate different choices on the presumption that the VDO presents the best tariff. This potential toward disengagement may take a few years to come to fruition but it is a valid risk under the implementation of the VDO.

Tariff diversity is illustrated by the number and variety of offers and products in the market. This can contribute to the market being complex and difficult to navigate, but it also distributes costs efficiently between different customer types. Further, it helps customers to get the best tariff design to match its preferences and choices.

In the context of the Victorian electricity market, retailers have been free to structure their tariffs and offers without restrictions since 2009, and the key characteristic that influences product design is consumption; that is there are products that are more attractive to customers with high or low usage.

The fact that the ESC is proposing to set the allowance for Customer acquisition and retention costs at below current costs incurred by retailers will, by definition, lead to lower retail marketing and customer activities. Some stakeholders may view this as a positive development and it is up to the ESC to weigh up the trade-offs in this regard. However customer participation in the energy market requires action by both the retailer and the customer. If retailers are less active due to the low VDO, does this mean that customers will have to invest more time and costs to search out the best deal and engage in the market?

A study of international telecommunications markets has shown that in markets where tariff diversification is limited by public policy, there was slower take up of broadband services[28] in the transition from legacy telephony networks. Fast internet may not be entirely analogous to electricity, but as the energy sector adapts to support new technology such as battery storage and electric vehicles the similarity will be more evident as customer requirements diverge. The report suggests that the traditional regulatory approach of service-based competition with limited ability for price discrimination is outmoded. It suggests that 'facility-based' competition with a diversity of tariffs is a stronger driver of demand.

In a recent study it was found that the customers who are on the highest discounts use up to 18 per cent more energy than customers on the standing offer[29]. Price discrimination of this kind can be characterised as a threat to consumer welfare, but it is a sign of market efficiency, with gains available to those with the incentive to look for savings. The activity of these engaged customers drives savings from efficiency and the development of innovative new products. The products may be complex to compare, but for those with high usage, the search costs are justified. If these customers

[28] Lange, Mirjam R. J. (2017) : Tariff diversity and competition policy: Drivers for broadband adoption in the European Union, DICE Discussion Paper, No. 262, ISBN 978-3-86304-261-5, Düsseldorf Institute for Competition Economics (DICE), Düsseldorf

[29] Price dispersion in Australian retail electricity markets, Energy Economics, February 2018, p.158-169

stop searching to take up the VDO, they may not be worse off individually, but the market will suffer as a whole if retailers have less reason to design the products to attract these customers.

4.2.4 Impact on market efficiency

The impediments to creating complex products after the introduction of the VDO will decrease the ability of individual customers to find a tariff which bests matches their preferences and characteristics and will limit the ability of retailers to use pricing to provide incentives to promote efficient consumption behaviour.

We also note that limiting retailer's ability to promote efficient energy use is in conflict with the policy behind the Victorian Energy Efficiency Scheme which relies on the competitive and commercial imperatives of retailers to meet their responsibilities with savings from efficient consumption rather than VEECs.

In addition to diminishing customer choice, a regulated price could have a material impact on the system costs (i.e. network and generation costs) and market efficiency of the Victorian energy sector. This is because demand side participation could be constrained due to the flat tariff structure of the VDO.

Given the increased volatility and transformation in the electricity sector, there is a focus on promoting demand flexibility to manage the supply costs to serve customers. This is aided by technology advances such as small scale battery storage and smart communications. Getting customers to play a greater role through their electricity decisions will be important in minimising system costs.

However the existing framework for consumer electricity pricing tends to under-incentivise flexible customers and the efficient integration of distributed energy resources. This creates challenges for generation and network cost recovery in the long term. Hence, getting retail prices right is essential; however the introduction of the VDO and the potential anchoring of offers could act as a constraint on retail tariff design.

The result is that tariffs which promote demand side or energy efficiency are less likely to be made available and market efficiency is impacted. In the next chapter, we discuss the risk that customers with peak consumption profiles will opt for the VDO in order to avoid any penalty for consumption at peak times.

A separate but related point to this is whether the VDO will act as a constraint on the retailers' ability to manage its price risks through tariff choices. The constraint on the retailers' ability to use pricing to manage its risks is not considered by the ESC. Nor does the methodology for estimating wholesale prices consider whether the retailer's hedging strategy would change under the introduction of the VDO. We cannot fully assess this given that the assumed hedging strategy underlying Frontier's model has not been explained.

4.2.5 A competitive market is better placed to transform the energy industry

The energy Industry is on the brink of a transformation as technology and decarbonisation initiative drive change in generation and usage. The three main arms of the transformation are;

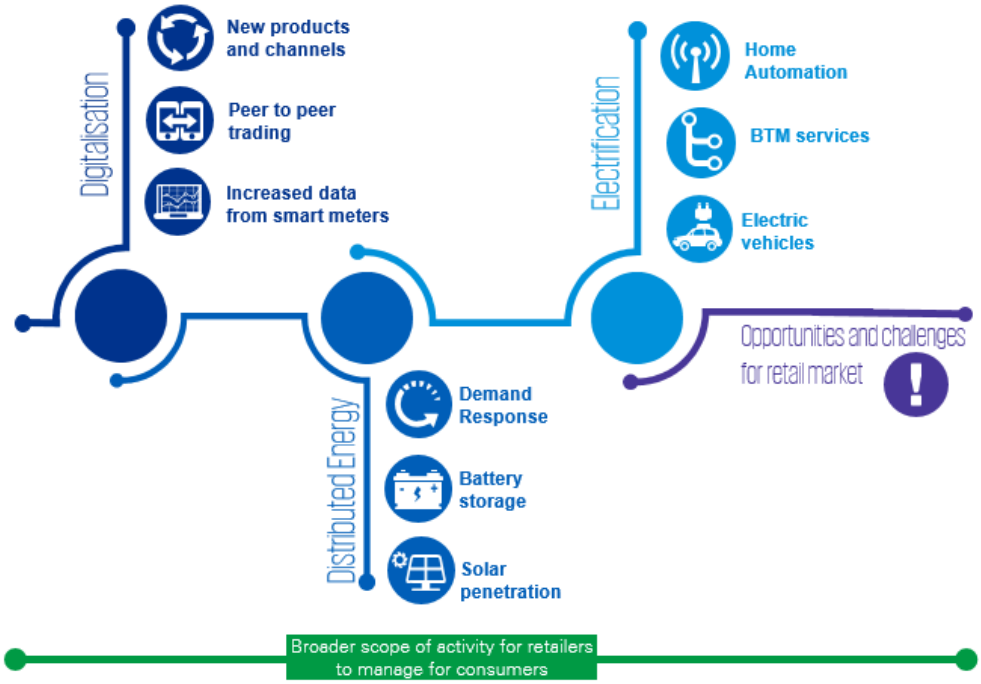
> **Digitalisation** – as new channels to consumers are opened up, the opportunities for new business models and platforms for energy become apparent

Distributed Energy – growth in the ability to coordinate and optimise distributed energy resources to provide benefits to consumers, retailers and networks

Electrification – through the rise of electric vehicles and automation

Victoria, with almost 100 per cent take-up of smart meters, is well positioned to face the transformation, but it will also need the right market conditions to allow supporting products to emerge.

Figure 7: Energy Transformation



Competitive markets are more flexible and responsive than regulated environments. Consequently, a competitive market is likely to be better placed to facilitate the transformation of the energy industry as it shifts from customers being passive consumers of electricity to being more active and engaged "prosumers" that generate, as well as consume electricity.

Participants in a price-regulated market respond to the regulated price provided to it, and over time can lose flexibility. As noted in the previous sections, retail product development and design becomes very dependent on the price determination process to manage cost-recovery and revenue risk, and the outcome of the VDO as a price anchor.

The advantages of a competitive market which is flexible and responsive will become crucial as new technology becomes available and/or more cost effective for consumers. For example, while many customers have already embraced solar PV, the reduction in price of battery storage and electric vehicles will further change the way in which customers expect to be able to use electricity. Examples in other industries such as telecommunications show how rapidly a market can transform with mass take-up of new technology.

Competitive retailers will be best placed to move quickly into this space to develop matching products and services that add value to customers and allow them to maximise the benefits of such technologies.

This transformation will be held back if the conditions don't exist to keep a large number of different providers competing in the market. Equally, these businesses must have sufficient motivation to

respond to these technological developments by finding new and innovative ways to serve customers, or else consumers will not benefit from the advances available. In France, Illinois and Ontario where low priced default offers are in place, a high proportion of customers are on the regulated tariff, and competing offers are generally similar in structure to the default[30]. As noted in the previous chapter, price regulation can hold back 'facility-based' competition resulting in reduced take-up of productive technology.

There is evidence that competitive markets improve over time – that is, they provide increasing benefits for customers – because competition drives retailers to win and retain customers by offering them a range of service and price offerings, tailored and responsive to customer preferences. This can already be seen in the emergence of retailers that specialise in serving particular segments of the market. In Victoria for example, Diamond Energy specialises in renewable energy and solar PV customers, ERM supplies energy services to the business sector, and Powershop specialises in flexible wholesale pass-through products. All of these retailers have developed services that share benefits from demand response with customers, and would be expected to extend their offerings as the transformation proceeds.

The gains from the transformation are going to require growing engagement between consumers and the retail market, and there is a risk that a low regulated price that allows mildly engaged customers to 'tune out' will be detrimental to Victoria's ability to capitalise on the foundation of AMI to provide consumers with products to support the energy transformation.

Innovative smart products and renewable and distributed technologies, digitalisation, the internet of things and much more are all wrapped up in New Business Models emerging in electricity market. These developments and continuous progress toward more innovative, customer-centric approaches will hopefully contribute to additional customer benefits. However the VDO could disincentivise retailers from launching such products that are in the interests of all users of the electricity system because discussion of complex products with customers is demanding compared with the VDO.

Case Study: Importance of price signals for electric vehicle charging

In 2018, KPMG provided advice to Infrastructure Victoria (IV) on the impacts on the Victorian energy network that would result from the introduction of autonomous and zero emissions vehicles[31]. This was part of a project where IV briefed the State of Victoria on the infrastructure required to enable and support the use of such vehicles on Victorian roads.

KPMG's analysis showed that 100 per cnet uptake of EVs by 2046 would increase total electricity consumption by about 50 per cent, and that new generation capacity would be required to absorb this extra consumption. However, the type (and cost) of generation required, and the impact on the networks, depended on the charging profile of the EVs. For example, if EV charging is concentrated in the early evening, when overall demand for electricity is already very high (peak demand) and renewable energy is not readily available, then this will have very different impacts on the energy markets than if EV charging occurs in the middle of the night when electricity demand from other sources is lower, and/or during the day when the sun is shining. Similarly, if charging occurs in areas of the network that are already constrained, this will have different impacts than if it occurs in areas where there is spare capacity.

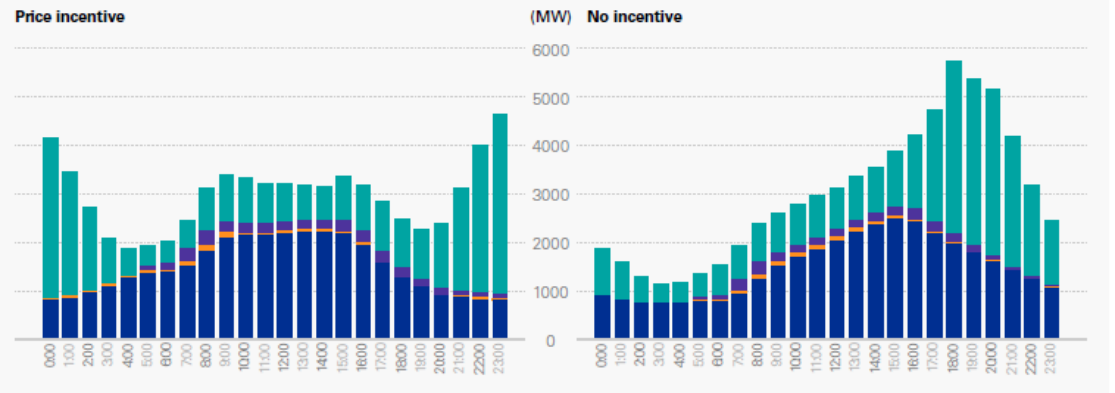
[30] The Brattle Group, *International Experiences in Retail Electricity Markets: Consumer Issues*, June 2018 p.56

[31] https://s3.ap-southeast-2.amazonaws.com/hdp.au.prod.app.iv-yoursay.files/1715/3318/4370/Automated_and_Zero_Emissions_Vehicle_Infrastructure_Advice_-_Energy_Impacts_Modelling.PDF

Demand that occurs during peak times requires 'dispatchable' generation or storage capacity. That is, capacity that can 'turn on' when it is required. Peak demand currently occurs in the early evening, when standalone renewable energy is not generally readily available. The more that EV charging is concentrated into this peak, the more new dispatchable capacity and investment into the distribution and transmission networks will be required. Based on trials of EVs overseas, unmanaged (or non-incentivised) charging will naturally concentrate around the evening, when many EV owners return home for the day and plug in their car.

The charts below show the hourly demand profile for Victoria in a scenario where every vehicle is an EV which is privately owned. The chart on the left shows the cumulative charging profile where the EV drivers are exposed to a price incentive to discourage charging at peak times. The chart on the right shows the profile in the absence of any incentive on charging. This shows that non incentivised charging can significantly increase the peak demand relative to managed (or incentivised) charging under a scenario of where all vehicles are electric and remain privately owned.

Hourly energy demand profile for Victoria with price and no price incentives



The total generation investment required to support 100 per cent uptake of EVs by 2046 under the incentivised scenario (chart on left) was 12,669 MW, compared to 15,513 MW in a non-incentivised scenario (chart on right). The total estimated cost in generation and network investment under the incentivised scenario (in NPV terms) amounted to $6.4 billion, compared to $8.8 billion under the non-incentivised scenario. In other words, incentivised charging, to avoid concentrating demand in the system peak hours, reduced total costs by around $2.5 billion.

5 Changing the risks facing customers

Key findings:

- Evaluation of how the VDO will impact on the risks facing retail customers will support the credibility of the final Advice
- The purpose of the VDO is primarily to address the risks for some customers of over-paying for their electricity supply and being subject to a "loyalty tax". However our assessment has identified that the VDO could create other risks for customers.
- There are three risk related issues that would benefit from further analysis:

  Some customers could result in paying more for their electricity following the introduction of the VDO. Price dispersion is lower under a regulated price market than a non-regulated price as demonstrated in Australian and overseas markets. This may take a few years to materialise following the introduction of the VDO, but there is a strong possibility that tariffs will cluster around the VDO level. The ESC has not contemplated whether this trend will occur under the VDO, and the implications if it does.

  The risk of retailers not being able to cover their costs and defaulting - while retailer exit is a feature of any competitive market, such events will have implications for customers and the wider market. As explained in chapter 3, the use of a notional retailer to calculate the cost stack unfairly penalises some retailers. Insufficient allowance for uncertainty and risks of errors in the cost stack methodology will impact on cash flows and cost recovery.

  New cross subsidies between customers under the VDO: The profile of "peaky" customers (and hence the hedging costs) is materially different from the load profile used in the ESC methodology. While these customers would benefit from the VDO, there could be a negative impact on retailers through the higher cost to serve. To the extent possible, retailers could try to avoid or reduce other costs associated with such customers (which could lead to lower quality of service).

- According to our analysis, certain elements of the VDO are set below cost, for example retail operating costs and retail margins. This introduces risk for retailers which in turn could be impact on risks facing customers. Similar to our advice on considering the impact on market outcomes, the Draft Advice could have included a comprehensive explanation of changes to the risks and distribution of such risks for customers under the proposed VDO.

Participation in the electricity retail markets has risks for both customers and the businesses, and this risk is shared through the tariff, for example a tariff with a larger fixed component and lower variable charge could offset some of the retailer's wholesale risk, and would be more attractive to a customer with high, inelastic use than to a customer with low use and the ability to reduce costs by changing usage. The variety of tariffs in the market illustrates the different risk sharing between retailers and customers.

This section of the report provides an evaluation of the ESC's draft advice from the perspective of the affect risks for customers and the sharing of risks across different types of customers. It is also important to consider the risks for retailers and how this will feed through into market outcomes for customers. The way that retailers perceive the risks of operating in the Victorian market will influence how they engage with customers and their commercial models.

As electricity is an essential service, customers are required to participate in the market by selecting and engaging with a retailer. Due to the risk that this could lead to the abuse of market power, sector-specific regulation is in place to provide sufficient protections to safeguard customers from the risks of compulsory participation in the market.

The purpose of the VDO is primarily to address the risks for customers of over-paying for their electricity supply, in the sense that the price they are being charged is more than the reasonable costs of supply. The Thwaites review identified this as a common situation for customers who were not actively engaged in the market. Overpayment of this kind has been referred to as the "loyalty tax", and the recommendation for the introduction of a basic product at an efficient price was designed to remove the loyalty tax.

Through seeking to address this specific risk to disengaged customers, the VDO could impact on the allocation of other risks, possibly to the detriment of customers. This section covers three examples:

- Some customers could end up paying more for their electricity after the VDO is introduced
- The risk of retailers not being able to cover their costs and defaulting
- Extra risks for retailers resulting in certain customers becoming less attractive

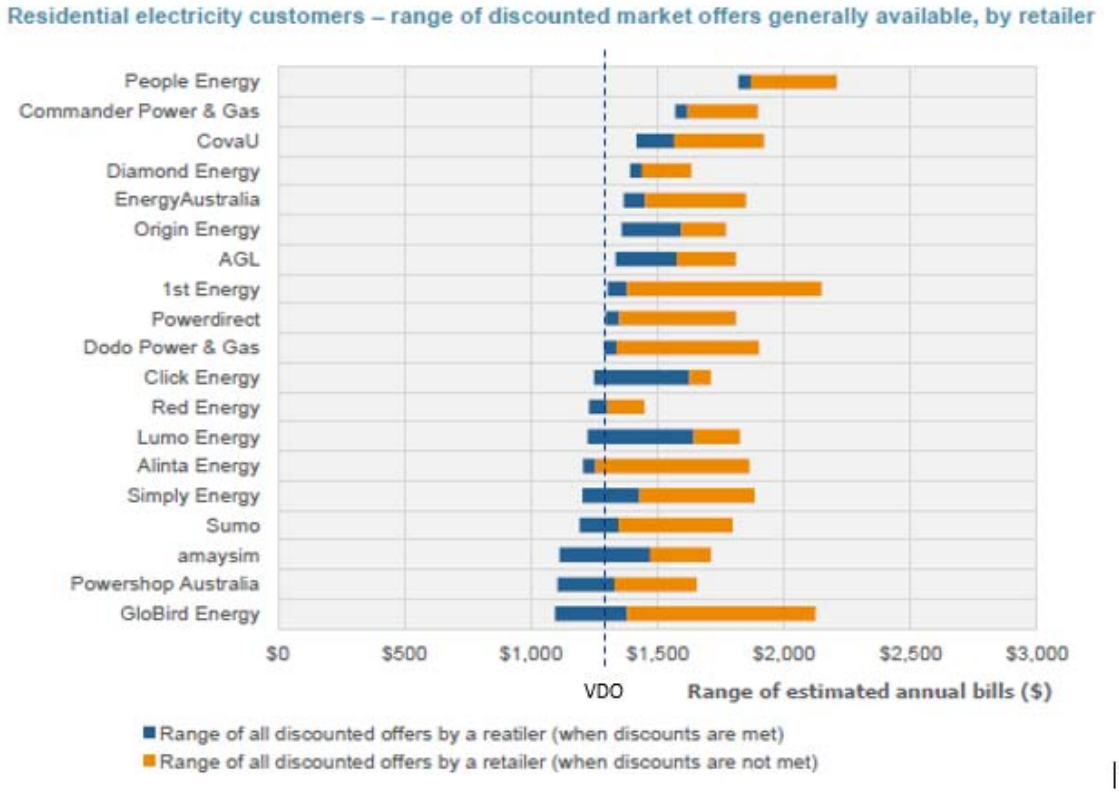
The re-introduction of retail price regulation creates a number of trade-offs. Stakeholders will have different views on how best to balance such trade-offs. The role of the regulator includes ensuring that all the trade-offs have been identified and there is sufficient consideration of all the impacts under its decisions.

5.1.1 Risk of declining price dispersion

As discussed in Chapter 4, price dispersion facilitates greater competition as it enables retailers to distinguish their products and offer savings to attract different types of customers. It also encourages customers to be active and participate in the market by finding the deal that is best for them, by weighing up different options.

Evidence from the AEMC and ACCC retail reviews state that there is currently a high level of price dispersion in the Victorian market. The Victorian Energy Market Report shows a spread of around $700 between the lowest and highest price generally available market offer for an average household when all conditions are met (in the Jemena area).

Figure 8



Note: This figure represents 41 offers, as some retailers have multiple products.

It would be prudent for the ESC to consider the level of price dispersion in the market under the VDO, noting that the graph above does not include average bills for customers on peak/off-peak and flexible tariffs which are not included in the ESC's reporting or "off-market" offers that are not generally available[32].

Evidence from Australia prior to the removal of price regulation and from international markets demonstrates that there is a strong possibility that price dispersion will decrease under the VDO – both in terms of removal of higher priced offers and an increase in the price of the lowest market offers, and migration of customers to the regulated price. This has been the case in Great Britain since the introduction of the price cap in 2018. In the first instance this demonstrates the end of the cross subsidy between engaged and disengaged customers, but it can become a sustained pattern, where the regulated price becomes a focus point to which all market offers are compared, and also as retailers set prices to match the risk built into the cost stack. This limits tariff options, with results such as the reduction or removal of discounts.

Price dispersion will also be affected by changes in the marketing of offers, which from 1 July 2019 will require that offers are expressed in reference to the VDO and in a new standardised format. This form of intervention can lead to tariffs designed not to meet any consumer demands, but to appear attractive against the regulated price. Several other regulatory changes being introduced will contribute to this effect. From 1 July 2020, the Energy Retail Code will be updated so that conditional pay on time discounts will be capped to a "reasonable cost" to the retailer, and prices in market contracts will have to be fixed for a minimum of 12 months. These factors will make offers less

[32] eg. low cost 'retention' offers made to customers who advise they are switching away

diverse, as more of the trade-offs between retailers and customers – credit, price certainty – are locked in to resemble the VDO.

This scenario has played out in other Australian jurisdictions. Lower levels of product differentiation prior to deregulation of prices in New South Wales in comparison to Victoria were attributed to, amongst other things, the regulated tariff serving as a focal point for retailers.[33]

Competition in South East Queensland declined following the decision by the Government to freeze residential tariffs in 2012-13. Retailers claimed that this action prompted a number of retailers to stop actively marketing and caused some prospective entrants to defer their plans to enter the market. Retailers also claimed that the price freeze led to an increase in the perceived degree of regulatory risk in Queensland, which has further discouraged entry and expansion in this market.

The correlation between the deregulation of prices and reduced price dispersion has also been reported by the Agency for Cooperation of Energy Regulators (ACER). In its 2015 market monitoring report, it found that price dispersion is greater in the capital cities of those countries where liberalisation is more mature, and which therefore maintain more available offers and have more varying characteristics (e.g. Belgium, Germany, Great Britain and Italy). In countries applying regulated electricity prices, and countries with a share of the market where regulated and liberalised prices co-exist, price dispersion is lower and clustered around the regulated price.[34]

There is no evidence provided by the ESC to support its statement that customers on offers below the median market offer will not be worse off. This may be true in the short term, but it is likely that the lowest-priced offers will be removed from the market along with the highest, and retail offers will progressively cluster around the VDO.

While the VDO is being represented by the ESC as removing the loyalty tax it could also be viewed as reducing the benefits for the most engaged customers in the market. For the most price sensitive customers, who find their way to the lowest priced offers, the gains from the introduction of the VDO may diminish the benefits they derive from engaging with the market and managing their payment. If the difference between the lowest available market offer and the VDO falls below a certain level, search costs will not be justified, and the overall level of market engagement will decline.

5.1.2 The risk of retailer default

Entry and exit of business are a feature of any competitive market. However the exit of an electricity retailer from the market has some specific arrangements to ensure that customers maintain supply of an essential service.

Retailer entry and exit will be affected by the framework under which prices are regulated, including the manner in which the regulated price is set, and the transparency and predictability of the regulated price-setting process. A business needs some certainty about the revenue that it can expect from customers on the regulated price before it can decide whether to enter the market. Unreliable methodology, or failure to recognise costs accurately could lead to a price that does not reflect retailer costs – this will impact on retailer's financial viability.

[33] AEMC 2013, *Review of Competition in the Retail Electricity and Natural Gas Markets in New South Wales*, Final Report, 3 October 2013, p25.
[34] ACER Market Monitoring Report 2015, p125
http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER_Market_Monitoring_Report_2015.pdf

AEMO has strict credit requirements to maintain the integrity of the wholesale electricity market. Retailers must settle for their customers' use in full daily. In addition, retailers must have sufficient liquidity to cover expected exposure over a settlement period. If a retailer is unable to meet the credit standards they will be considered in default and will be suspended from the NEM immediately and their customers will be transferred to another supplier known as the 'Retailer of Last Resort' (ROLR). In Victoria, customers are transferred to the 'local' retailer[35].

Two factors contribute to a retailer's viability in the NEM:

- **revenue/cash-flow** – the retailer's capacity to meet payments and prudential requirements
- **exposure** – the value of the electricity that is being settled through the wholesale market

Every retailer has its own strategy to manage these elements. Efficient wholesale market strategy is a key factor that allows retailers to provide competitive prices to customers.

Under the VDO, the retailer will have less ability to predict and manage its revenue, as the tariff is locked in, and customers can take it up at any time. Retailers that may have used tariff design to limit their exposure will have to make adjustments based on their predictions under the VDO.

According to our analysis, certain elements of the VDO are set below cost, for example retail operating costs and retail margins. Therefore retailers have to reduce costs for those customers who transition to the VDO. Further, for other cost components such as wholesale purchasing costs and environmental costs, the retailer may not be able to reduce its costs to match the Draft Advice due to its hedging strategy.

There is a real risk that some retailers will be unfairly penalised for making reasonable commercial decisions regarding hedging without knowledge of the VDO cost stack methodology employed by the ESC. This increases the risk of retailers facing financial pressures under the VDO, particularly in the transition phase.

Retailers are limited in how they can manage their cost-recovery risk in the wholesale market under the VDO. The risk to cash flow is also increased for retailers if customers move from products with Pay on Time Discounts to the VDO. During the transition to the VDO, there is a risk that retailers will face challenges forecasting the effect of the new tariff on their revenue and cash-flow which could trigger default. In the UK, when a regulated price cap was re-introduced, twelve retailers exited within the first year affecting 1.3m customers.

If a retailer defaults and goes through the ROLR process, they lose all their customers and are no longer able to trade in the wholesale market. There is no tolerance for temporary misjudgement. The electricity market is national, and it is not possible for a retailer to be suspended in one jurisdiction only. There is a risk that a sudden tightening of margins in Victoria could affect a retailer's operations, and therefore customers in other states.

There have been three small ROLR events in Victoria, affecting a total of around 30,000 customers. The exits were managed in an orderly way and supply was maintained, but the effect on customers can be confusing. Forced exit through a last resort event, even if it rids the market of an inefficient operator, can shake consumer confidence. In the current environment of low trust, a ROLR event could further reduce customers' engagement in the market and prompt customers to move to the 'safety' of the VDO.

[35] AGL, Origin or EnergyAustralia depending on the customer's location

The ESC cannot dismiss the risk of ROLR resulting from the introduction of a very low regulated price, and the cost to the market if some business models cannot adapt immediately to this intervention.

It could be prudent for ESC to review and revise their ROLR procedures. These may need to be changed to reflect the cost to ROLRs of taking on customers at short notice. Given the difference between current standing offers and VDO could mean that the ROLR additional charge might be employed on affected customers. We also note that regulated water businesses can re-open price decisions when their financial viability is threatened.

There could be some merit in having transitional arrangement for retailers in the first couple of years of VDO to avoid ROLR if cash flow is materially affected while they adapt to a new regulatory framework. This could help the market transition to the new arrangements and also minimise disruptions to customers.

5.1.3 Customer characteristics creating cross subsidies under the VDO

The ESC has commented on the role of the VDO to remove the cross subsidies between customers who engage and those who do not. The higher prices paid by disengaged customers, labelled as a "loyalty tax" was found by the Thwaites review to be the source of unusually high prices in the market. The unwinding of this cross-subsidy through the introduction of a regulated price presents a risk that other cross-subsidies will be created, and certain customers will become more attractive to retailers under the VDO.

A retailer will assess the cost to serve different customers in comparison with the VDO inputs and methodology on the cost stack. Customers whose costs are lower than the VDO assumptions will become more attractive. Customers will also get better or worse 'value' from the VDO depending on their characteristics.

Implications for high peak use customers

As mentioned in chapter 4, flat tariffs provide no signals to reduce peak use. Managing peak demand will be a problem for retailers when the VDO is introduced and wholesale price risk is pushed more onto retailers. A regulated price set too low will create a class of customers in the market who are guaranteed supply below cost due to their load profile, making it difficult for retailers to find a way to offer better value for money for these customers.

High peak use customers on market offers that contain a time of use element[36] will benefit from taking up the VDO if it allows them to pay the same or less than they do on their current offer without having to limit use at peak times. In fact, the removal of a pricing constraint at peak times could be very attractive for such customers (and may encourage more consumption at peak times).

However for the retailer, the VDO will not provide adequate cost recovery for such customers. This is because the profile of those customers (and hence the hedging costs) is materially different from the load profile used in the ESC methodology. To the extent possible, retailers will try to avoid or reduce other costs associated with such customers (which could lead to lower quality of services).

[36] retail offers are aligned with a customer's underlying network tariff, and as such flat retail tariffs are currently unavailable to certain customers

It is not reasonable for the regulator to assume that the load profile issue will balance out in aggregate – some retailers will be materially affected. This ignores the risk that the VDO is creating a perverse incentive for retailers to target some types of customers over others.

The subsidy between engaged and disengaged customers on a range of different tariffs will be replaced by other subsidies between customers on the VDO.

Implications for timely and non-timely payers

The value of conditional pay-on-time discounts is likely to change when the VDO is introduced. To receive the lowest prices in the market customers must pay on time to earn discounts; undiscounted, the price is much higher. From the retailer's perspective, the revenue from the unmet discounts reduces their credit risk and allows the deeper discounting for those that pay on time. The ACCC report examined the proportion of customers who achieved conditional discounts[37], and found that 73 per cent of customers met the conditions. If the 27 per cent who have missed payments move to the VDO and avoid penalties, the discounts available to the other 73 percent will likely be reduced, increasing the level of the lowest prices in the market, and the bills for customers paying on time.

According to the ESC's methodology of modelling the average customer, if every customer was assigned to the VDO on 1 July 2019 there would be sufficient revenue for the market to operate efficiently, but this does not recognise any increased risks arising from the introduction of price regulation and the effects of this intervention in combination with the other reforms being implemented.

The cost stack, or the structure of the price should recognise that the VDO will change the way retailers' value and allocate risk. Under full retail competition, the market serves as a way to allocate risks between suppliers and consumers. The ESC's draft advice would be more credible if it acknowledged the fact that even in an imperfect market, this risk allocation is the result of an enormous amount of information, which cannot easily be replicated, and certainly not in the short time available.

[37] ACCC, Restoring electricity affordability and Australia's competitive advantage, Retail Electricity Pricing Inquiry—Final Report, June 2018 p.264

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