



2019 Victorian energy open forum

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energy outcomes

27 August 2019

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Victorian Default Offer

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Session agenda

1. Introduction and overview
2. VDO compliant maximum annual bill
3. Wholesale costs
4. Q & A

Opportunity for participants to provide feedback, and for us to take views into account as we prepare our draft decision (late September 2019)

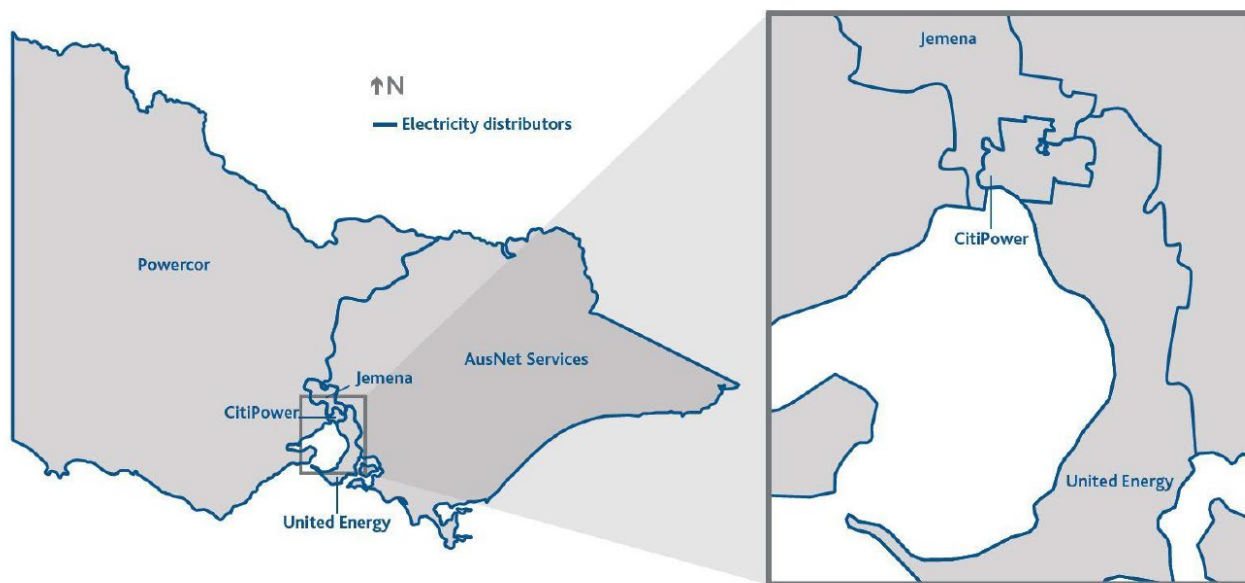
What is the Victorian Default Offer (VDO)?

- The VDO is a framework for regulating prices for standing offers
- Government objective: that the VDO provides a simple, trusted and reasonably priced electricity option that safeguards consumers unable or unwilling to engage in the electricity retail market
- Customers on a standing offer with a flat tariff structure (that is, a daily supply charge and a flat anytime usage charge) started receiving the VDO tariffs on 1 July 2019
- Generally available to all Victorian domestic and small business customers*
- VDO does not preclude electricity retailers from offering customers different prices and terms through market contracts

* Those consuming less than 40MWh per annum

What is the flat tariff VDO?

- Two VDOs in each of the five distribution zones in Victoria
 - One domestic
 - One small business.
- A controlled load tariff applies to domestic customers where applicable.



Victorian Electricity Distribution zones

Commission's role

- For the first VDO (1 July 2019 to 31 December 2019) we provided advice on VDO flat tariffs to government, which were accepted.
- Under a Governor in Council Order, from 1 January 2020, we will determine the VDO under the *Essential Services Commission Act 2001* (Vic.)
- **Key change from 1 January 2020:** all standing offers – not only those with flat tariffs – will fall under the VDO framework regulated by the commission.

Commission's role

From 1 January 2020, we will determine:

- tariffs that are to apply to flat standing offer tariffs (including controlled load tariffs for domestic customers where relevant), and
- the maximum annual electricity bill amount that a customer is to pay under a standing offer that provides for tariffs that are not flat tariffs; i.e. the VDO compliant maximum annual bill.

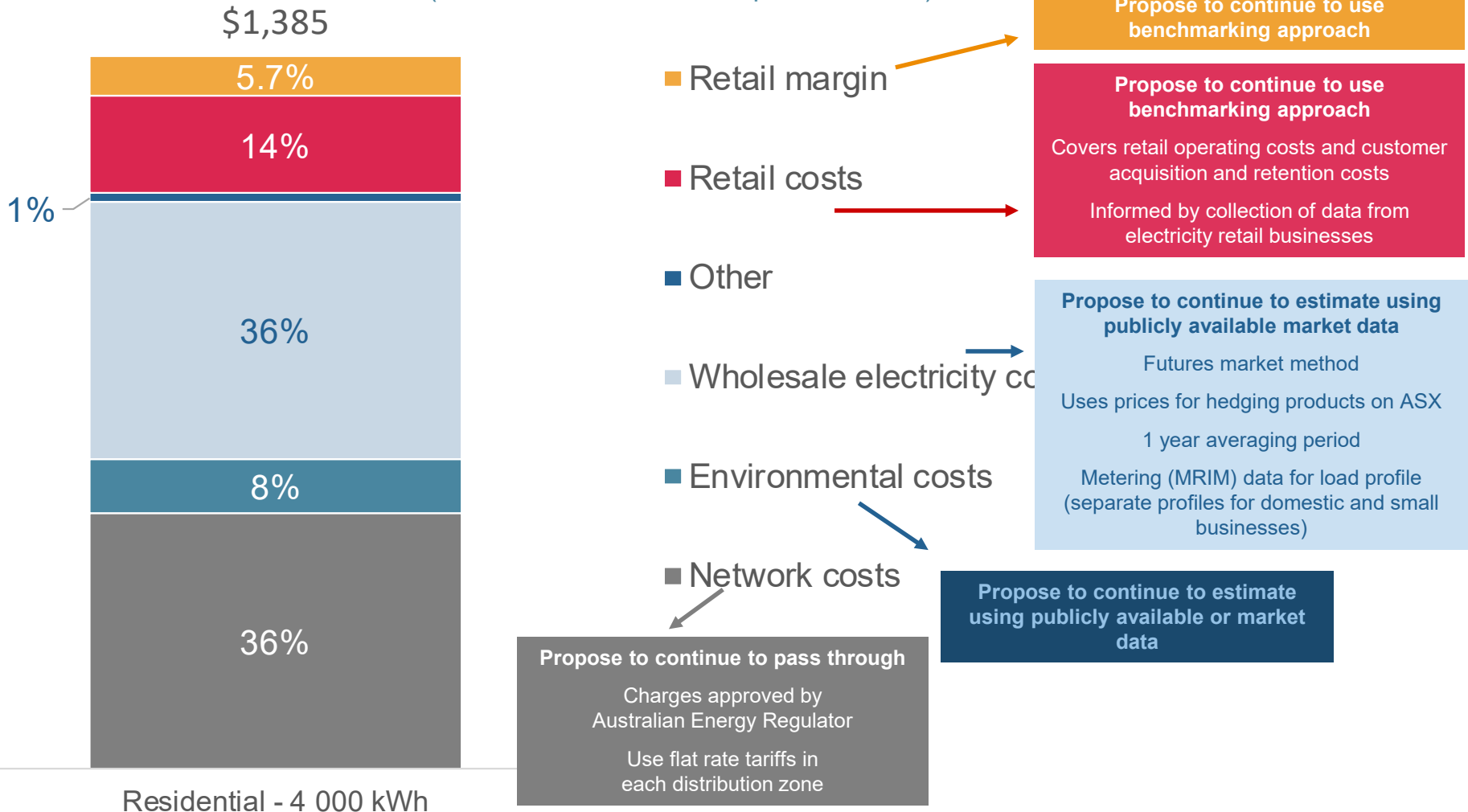
Issues Paper on 2020 VDO

Set out our initial views on methodology and sought feedback.

- Continue to use “cost stack” to estimate a benchmark cost
- Update costs for new information or changes in market data relied upon
- Convert costs into tariffs (based on cost allocation rules) to determine a daily supply charge and a flat anytime usage charge (VDO tariffs)
- Use the VDO tariffs to inform the determination of the VDO compliant maximum annual bill – provided two options for feedback in the issues paper

Issues paper on 2020 VDO

VDO components, residential customers in Jemena zone
(4 000 kWh annual consumption, GST incl)



Residential - 4 000 kWh

Feedback we received to issues paper

We received 16 submissions to our VDO 2020 issues paper

Submissions covered a range of issues

Main focus was the compliant maximum annual bill

Submissions also addressed other areas of our approach:

- *wholesale electricity costs*
- *environmental costs*
- *cost data collection*

Discussion – VDO compliant maximum annual bill

This session provides an opportunity to discuss options for the compliant maximum annual bill

- From 1 January 2020 we must determine the maximum annual electricity bill amount that the prescribed customer is to pay under a non-flat standing offer tariff in the regulatory period.
- We may also provide for how any overpayment by customers in the regulatory period is to be dealt with.

What is a compliant maximum annual bill?

The maximum annual bill must be based on:

- the tariffs we determine are to apply to flat tariff standing offers, and
- the prescribed customer's usage.

Proposed compliant maximum annual bill options

Our issues paper proposed two options for the maximum annual bill

1. Setting the maximum annual bill at a specific level of consumption.
2. The maximum annual bill is calculated for each individual customer at their specific level of consumption (during the regulatory period). A maximum annual bill would then be available for every level of consumption between zero and 40 MWh per year.

Proposed compliant maximum annual bill options

On option 1 – our issues paper noted

- While retailers could structure non-flat standing offer tariffs to comply at a specific point, the impact on consumers with different electricity consumptions (to the point chosen) would be uncertain.

On option 2 – our issues paper noted

- It is transparent and easy for a customer to calculate their relevant maximum annual bill and compare this to what they paid in the regulatory period.
- More clearly linked to the requirement for the maximum annual bill to be based on the prescribed customer's usage.

Feedback we received to issues paper

Risks to retailers

- A number of retailers raised concerns that basing the maximum annual bill on the flat tariff under option 2 would distort price signals for consumers and result in significant numbers of bill adjustments.
- Retailers would bear the risk of network costs not being aligned, particularly if a network tariff reassignment didn't occur.

Protections for consumers

- Consumer groups were strongly supportive of option 2 to provide simple and appropriate protections to customers.

Alternative approach

- Some retailers proposed that the commission should set specific tariffs for all non-flat standing offer tariffs.

Workshop activity

Examining how each option impacts consumers, retailers and meets the objectives of the ESC Act, EI Act and the order

1. Tables will be allocated as either assessing the impact for consumers or retailers.
2. Table discussion about each option – with focus on how each meets the requirements of the order, and what the practical experience of consumers and retailers would be under each option (10 minutes).
3. Based on your table allocation (consumer or retailer) develop a list of the advantages and disadvantages of each option. Tables to provide short report back (1 minute max). 10 minutes for this section.

Workshop activity

Refining the options: impacts on consumers and retailers, and meeting the requirements of the order

1. Based on the report back session, tables to discuss how either one/or both options could be refined, or whether an alternative approach is more suitable. Tables to report back on their proposals (10 minutes total)

Note: consider whether the proposals meet the requirements of the order

WHOLESALE ELECTRICITY COST



Prepared for the ESC's Victorian Default Offer workshop

27th August 2019



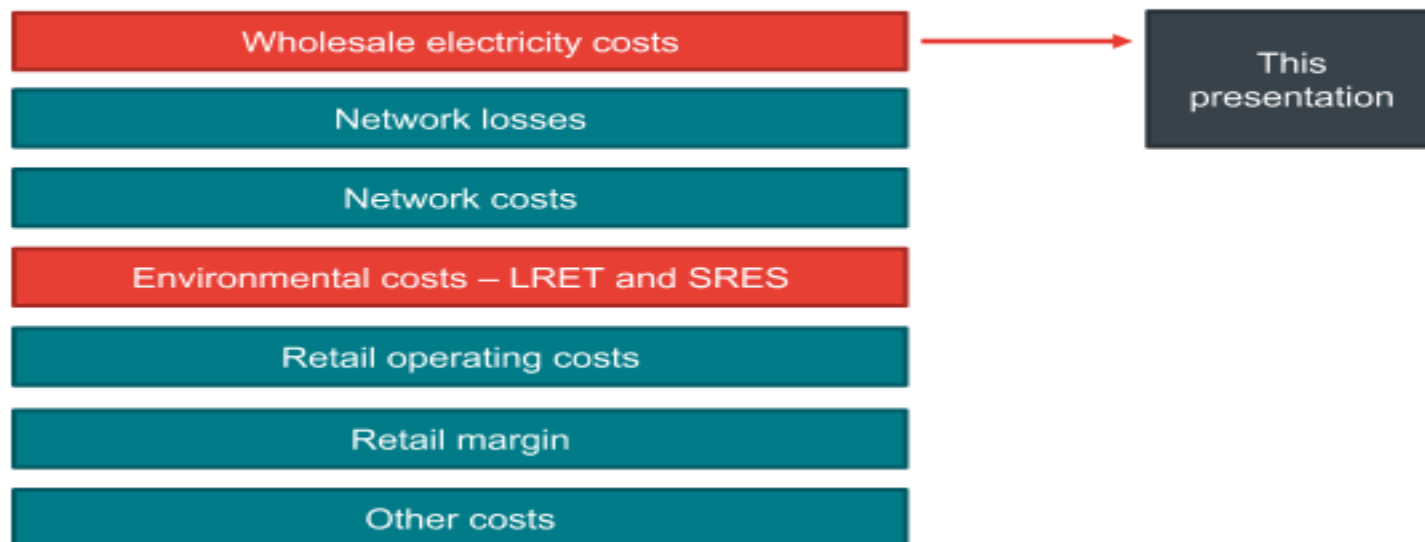
CONTENTS

1. Our engagement
2. Methodology – wholesale electricity costs
3. Our results spreadsheet



1. Our engagement

FRONTIER HAS BEEN ENGAGED TO ADVISE ON TWO COMPONENTS OF THE VDO FOR 2020



2. Methodology – wholesale electricity costs

OUR PROPOSED METHODOLOGY

- We propose to use a **market-based methodology** to estimate wholesale electricity costs – this estimates the average annual cost to a retailer of settlement with AEMO for its electricity purchases and difference payments for financial hedging contracts
- To use this methodology, we need to answer four questions:

1. What is the likely **half-hourly load** of retailers' customers?

- Based on historical MRIM data

2. What are the likely **half-hourly spot prices** that retailers will face?

- Based on historical spot prices

3. What is the **cost of financial hedging contracts** available to retailers?

- Based on ASXEnergy contract prices

4. What kind of **hedging position** is a prudent retailer likely to adopt?

- Based on STRIKE modelling

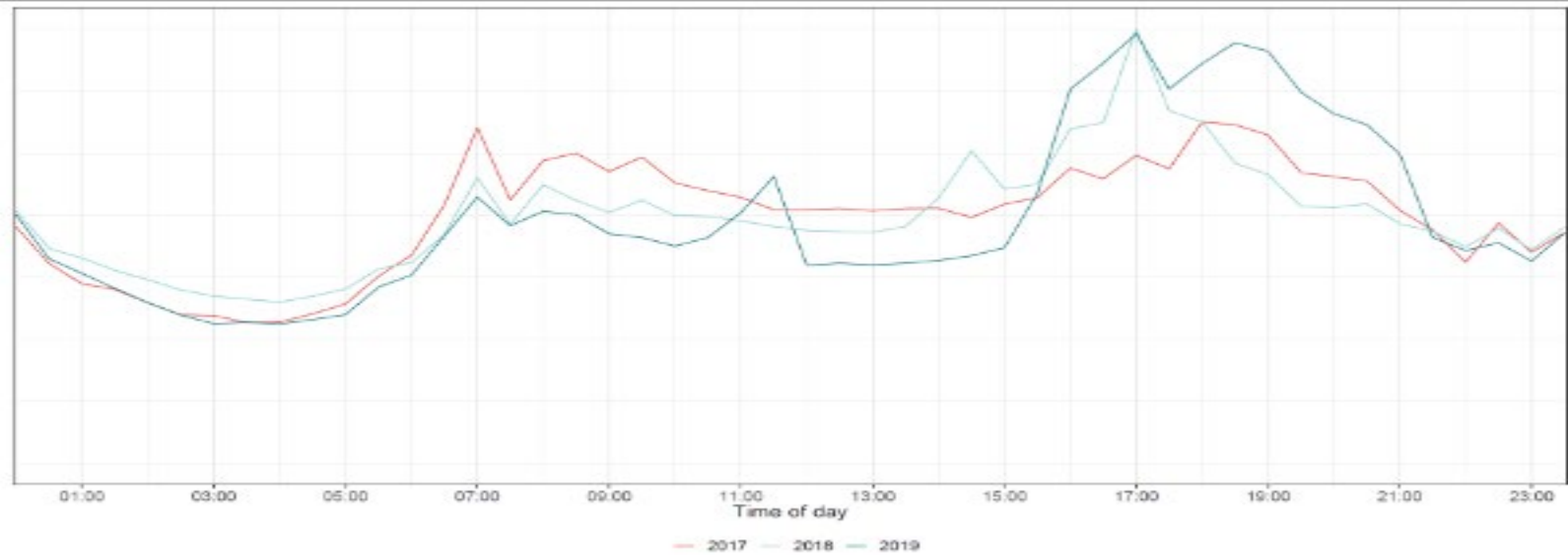
1. WHAT IS THE LIKELY HALF-HOURLY LOAD OF RETAILERS' CUSTOMERS?

- What matters for the wholesale electricity cost for retailers is the half-hourly pattern of consumption of retailer's customers, including its relationship to the half-hourly pattern of spot prices
- In our view, the best information on this is the MRIM data published by AEMO for each Victorian DNSP
- We propose to use this as the basis for determining the half-hourly pattern of consumption for 2020:
 - We can assume the half-hourly pattern for 2020 is identical to the half-hourly pattern from a specific historical year
 - We can undertake a Monte Carlo simulation on multiple historical years and choose, for example, the median year as the half-hourly pattern for 2020 – as we did for 2019/20

2. WHAT ARE THE LIKELY HALF-HOURLY SPOT PRICES THAT RETAILERS WILL FACE?

- It is crucial that the **half-hourly pattern** of electricity spot prices is properly related to the half-hourly pattern of consumption of retailer's customers
- For that reason, we propose base the half-hourly pattern of electricity spot prices on the same approach that we use for the half-hourly pattern of consumption:
 - We can assume the half-hourly pattern for 2020 is identical to the half-hourly pattern for the same specific historical year
 - We can undertake a Monte Carlo simulation on multiple historical years simultaneously for half-hourly load and half-hourly prices – as we did for 2019/20
- We propose to base the **annual level** of electricity spot prices on the ASXEnergy forward price for 2020, accounting for an assumed contract premium of 5%

SPOT PRICE PROFILE FOR VICTORIAN RRN



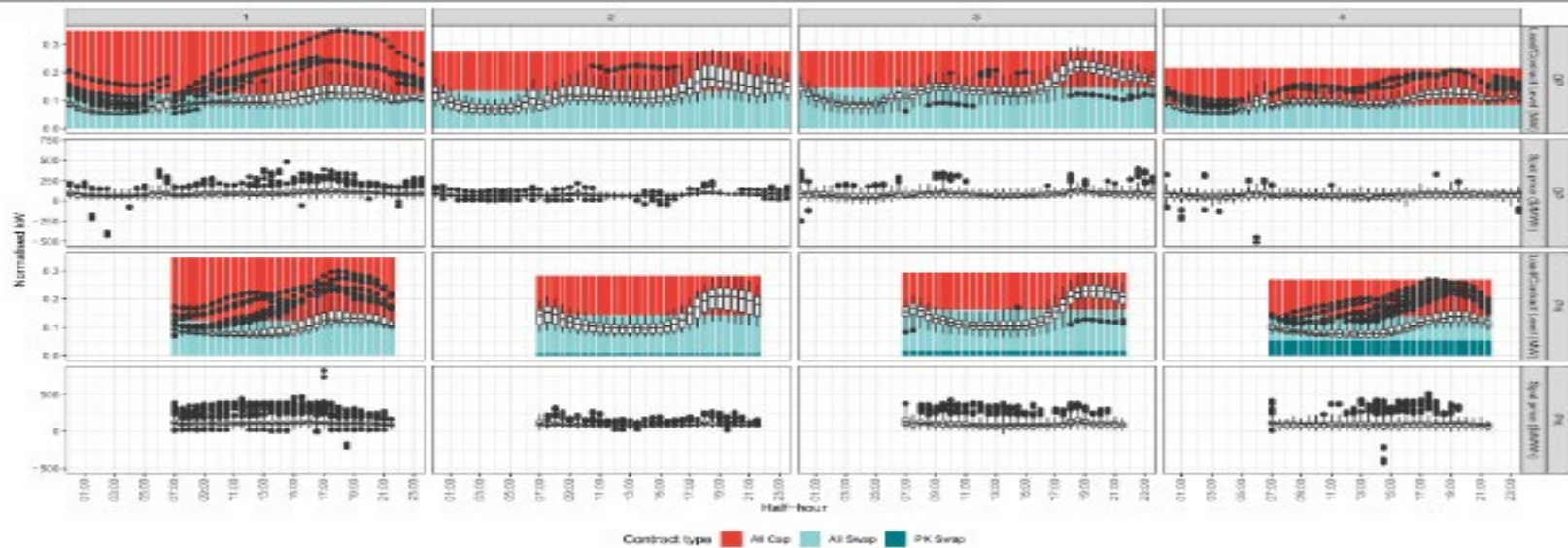
3. WHAT IS THE COST OF FINANCIAL HEDGING CONTRACTS AVAILABLE TO RETAILERS?

- Financial hedging contracts are traded on the ASX, and daily prices are available
- Contracts trade for several years
- ESC's decision for 2019/20 was to use 12-month average ASX prices to determine the price of hedging contracts

4. WHAT KIND OF HEDGING POSITION IS A PRUDENT RETAILER LIKELY TO ADOPT?

- Even when only considering standard ASXEnergy hedging contracts, there are many difference hedge positions available to retailers
- We propose to use our portfolio optimisation model – *STRIKE* – to determine the efficient hedge position of a prudent retailer
- *STRIKE* applies the concepts of portfolio theory to determine the efficient hedge positions available to a retailer – an efficient hedge position is defined as one that provides the lowest cost for a given level of risk
- Our typical approach is to base wholesale electricity costs on the most conservative of these efficient contract positions (that is, the contract position with least risk)

WHAT STRIKE IS DOING



3. Our results spreadsheet

DETERMINING WHOLESALE ELECTRICITY COSTS



- Once we have answered the four questions, we can determine wholesale electricity costs:
 - For each half-hour, we calculate payments to AEMO and difference payments on financial hedging contracts
 - We sum these payments over the year and calculate an average cost, measured in \$/MWh

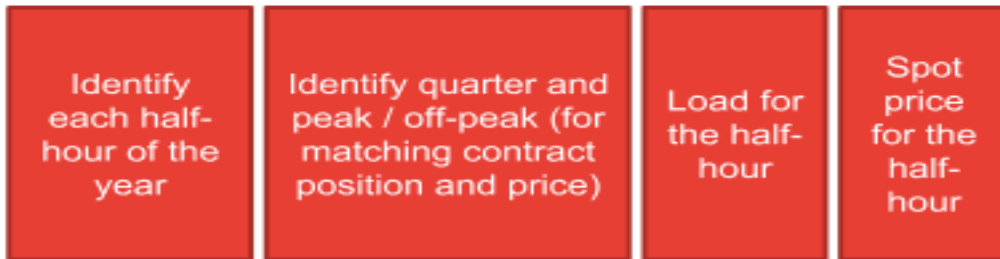
OUR CONTRACT SETTLEMENT SPREADSHEET – QUARTERLY INPUTS

Quarter	Base swap position	Base swap price	Peak swap position	Peak swap price	Base cap position	Base cap price
1	0.122	\$104.54	0.063	\$151.59	0.131	\$28.99
2	0.052	\$73.16	0.125	\$96.42	0.113	\$3.57
3	0.067	\$84.42	0.133	\$101.08	0.093	\$3.35
4	0.058	\$74.55	0.135	\$88.46	0.119	\$5.51

- At the top of the spreadsheet we have some key assumptions:
 - Contract position in MW – for each contract type and quarter:
 - § these are based on *STRIKE* output
 - § sized for an annual load of 1,000 MWh
 - Contract price in \$/MWh – for each contract type and quarter:
 - § these are based on ASXEnergy 12 months average prices

OUR CONTRACT SETTLEMENT SPREADSHEET – HALF-HOURLY INPUTS

Datetime	Quarter	Period	Load	Spot price
-	-	-	MW	\$/MWh
1/07/2019 0:00	3	OP	0.065	\$32.57
1/07/2019 0:30	3	OP	0.064	\$32.61



OUR CONTRACT SETTLEMENT SPREADSHEET – AEMO SETTLEMENT PAYMENTS

Datetime	Quarter	Period	Load	Spot price
-	-	-	MW	\$/MWh
1/07/2019 0:00	3	OP	0.065	\$32.57
1/07/2019 0:30	3	OP	0.064	\$32.61

AEMO payment
\$
-\$1.06
-\$1.04



Identify each half-hour of the year

Identify quarter and peak / off-peak (for matching contract position and price)

Load for the half-hour

Spot price for the half-hour



Settlement payments to AEMO – this is calculated as the load multiplied by the spot price (multiplied by 1/2 to convert MW to MWh)

OUR CONTRACT SETTLEMENT SPREADSHEET – BASE SWAP PAYMENTS



Datetime	Quarter	Period	Load	Spot price
-	-	-	MW	\$/MWh
1/07/2019 0:00	3	OP	0.065	\$32.57
1/07/2019 0:30	3	OP	0.064	\$32.61

Base swap position	Base swap price	Base swap payment
MW	\$/MWh	\$
0.067	\$84.42	-\$1.74
0.067	\$84.42	-\$1.73



Identify each half-hour of the year

Identify quarter and peak / off-peak (for matching contract position and price)

Load for the half-hour

Spot price for the half-hour

Contract inputs seen earlier

Difference payments to contract counterparty – this is calculated as the contract volume multiplied by the difference between spot price and strike price (multiplied by 1/2 to convert MW to MWh)

OUR CONTRACT SETTLEMENT SPREADSHEET – PEAK SWAP PAYMENTS

Datetime	Quarter	Period	Load	Spot price
-	-	-	MW	\$/MWh
1/07/2019 0:00	3	OP	0.065	\$32.57
1/07/2019 0:30	3	OP	0.064	\$32.61

Peak swap position	Peak swap price	Peak swap payment
MW	\$/MWh	\$
0.133	\$101.08	\$0.00
0.133	\$101.08	\$0.00



Identify each half-hour of the year

Identify quarter and peak / off-peak (for matching contract position and price)

Load for the half-hour

Spot price for the half-hour

Contract inputs seen earlier

Calculated in the same way as base swap payments – zero for these half-hours because these are off-peak half-hours

OUR CONTRACT SETTLEMENT SPREADSHEET – PEAK SWAP PAYMENTS

Datetime	Quarter	Period	Load	Spot price
-	-	-	MW	\$/MWh
1/07/2019 0:00	3	OP	0.065	\$32.57
1/07/2019 0:30	3	OP	0.064	\$32.61

Base cap position	Base cap price	Base cap payment
MW	\$/MWh	\$
0.093	\$3.35	-\$0.16
0.093	\$3.35	-\$0.16



Identify each half-hour of the year

Identify quarter and peak / off-peak (for matching contract position and price)

Load for the half-hour

Spot price for the half-hour

Contract inputs seen earlier

Two components:

1. Contract premium multiplied by volume
2. When spot price > \$300, difference in prices multiplied by volume

OUR CONTRACT SETTLEMENT SPREADSHEET – HALF-HOURLY INPUTS

Datetime	Quarter	Period	Load	Spot price	AEMO payment	Base swap payment	Peak swap payment	Base cap payment
-	-	-	MW	\$/MWh	\$	\$	\$	\$
1/07/2019 0:00	3	OP	0.065	\$32.57	-\$1.06	-\$1.74	\$0.00	-\$0.16
1/07/2019 0:30	3	OP	0.064	\$32.61	-\$1.04	-\$1.73	\$0.00	-\$0.16



Identify each half-hour of the year

Identify quarter and peak / off-peak (for matching contract position and price)

Load for the half-hour

Spot price for the half-hour



Add all components



Total cash flow
\$
-\$2.96
-\$2.93

4. Discussion

WE APPLY ECONOMICS TO MARKETS, ORGANISATIONS AND POLICIES



Frontier Economics specialises in utility regulation, transaction advisory services, market reform, trade practices, competition analysis and public policy evaluation.

We use economics to help clients improve performance, make better decisions and keep ahead of the competition.

We have offices in Australia (Brisbane, Melbourne and Sydney), Singapore and a sister company that operates in Europe.

We work with a wide range of clients from the private sector, government, regulators, and other public authorities.

We work across a wide range of industries from airports to water networks. Our cross-industry experience means that we can transfer commercial and regulatory insights between sectors to bring fresh, new perspectives to all the work we do.

Because we work globally, we can offer commercial and regulatory experience from a wide range of markets, including Australia, New Zealand, Asia and Europe to support clients successfully.

We can draw on expertise from 200 consulting economists around the world. Our international team gives us coverage across multiple time zones and allows us to turn around deliverables rapidly.



We apply economics to markets, organisations and policies

Next steps

- Releasing draft decision on VDO 2020 – Late September
- Consultation period – Closing mid-October
- Final decision and determination – due by 25 November

Contact us



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