

Establishing a Victorian default offer

Workshop

21 January 2019



Welcome and agenda

Marcus Crudden – Essential Services
Commission

Today's workshop

- We've received terms of reference from the Victorian Government to recommend a VDO
- Released staff paper in December 2018
- Focus of today's agenda is on how we might establish a methodology for a VDO price
- Opportunity to have your say
- Take into account feedback and views raised today
- Help to inform your submissions responding to staff paper – responses due 30 January 2019

Today's workshop

Delivering a clear, transparent and reproducible methodology is a key objective

Agenda

Time	Session
10.00 am	Welcome and agenda – Marcus Crudden (ESC)
10.10 am	VDO Policy – Sarah Sheppard (DELWP)
10.20 am	Overview of task and approach – Dean Wickenton (ESC)
10.40 am	Wholesale electricity costs – Andrew Harpham and Andrew Newnham (Frontier)
12.00 pm	Lunch
12.45 pm	Retail operating costs and retail margins – Andrew Harpham and Dinesh Kumareswaran (Frontier)
2.15 pm	Other matters related to VDO – Jordan Tasker (ESC)
2.55 pm	Closing comments and next steps

Victorian default offer – policy

Sarah Sheppard – Director, Department of Environment, Land, Water and Planning

ESC stakeholder forum: Implementing the Victorian Default Offer



Sarah Sheppard
Director, Energy Consumer and
Affordability Policy, Department of
Environment, Land Water and Planning
21 January 2018



Environment,
Land, Water
and Planning

The Victorian Government Final Response released on 26 October 2018

Recommendations 1A and 2A – delivering a fair price for energy

- Energy retailers will be required to offer a fair price for energy – called the Victorian Default Offer (VDO) – and abolish costly standing offers.
- The VDO will include a modest allowance for customer acquisition and retention costs (CARC).
- The Government will legislate for the VDO to be implemented from 1 July 2019.

Recommendations 4A to 4E – ensuring contracts are clear and fair

- By 1 July 2020, energy retailers will be required to make contract pricing arrangements clearer.

- The Victorian Government is now implementing its response to the Review.
- Terms of reference have been issued to the ESC:
 - *Fair Pricing in the Energy Market*; and
 - *Ensuring Contracts are Clear and Fair*.
- The electricity VDO under new legislation will be available to all Victorian small customers from 1 July 2019.

- **The VDO will:**
 - ✓ Provide a simple, trusted and reasonably priced electricity option that safeguards consumers;
 - ✓ Be offered by each retailer selling to small customers, unconditionally;
 - small customers are residential customers and business customers consuming up to 40 MWh per annum.
 - ✓ Not prevent retailers' ability to make other market offers;
 - ✓ Replace standing offers for default purposes;
 - ✓ Be the “reference” for all market offer discounts; and
 - ✓ Be offered on terms consistent with each retailer's current Standard Retail Contract.
- **The VDO is not being implemented for gas at this stage.**

- **The VDO price will:**
 - be set by the ESC;
 - comprise a flat tariff 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 CARC; and
 - not include an allowance for headroom.

In summary:

- The Victorian Government is now implementing its response to the Review.
- The electricity VDO under new legislation will be available to all Victorian small customers from 1 July 2019.
- The Victorian Government will consult with stakeholders during the legislative implementation of the VDO.

Overview of task and approach

Dean Wickenton – Essential Services
Commission

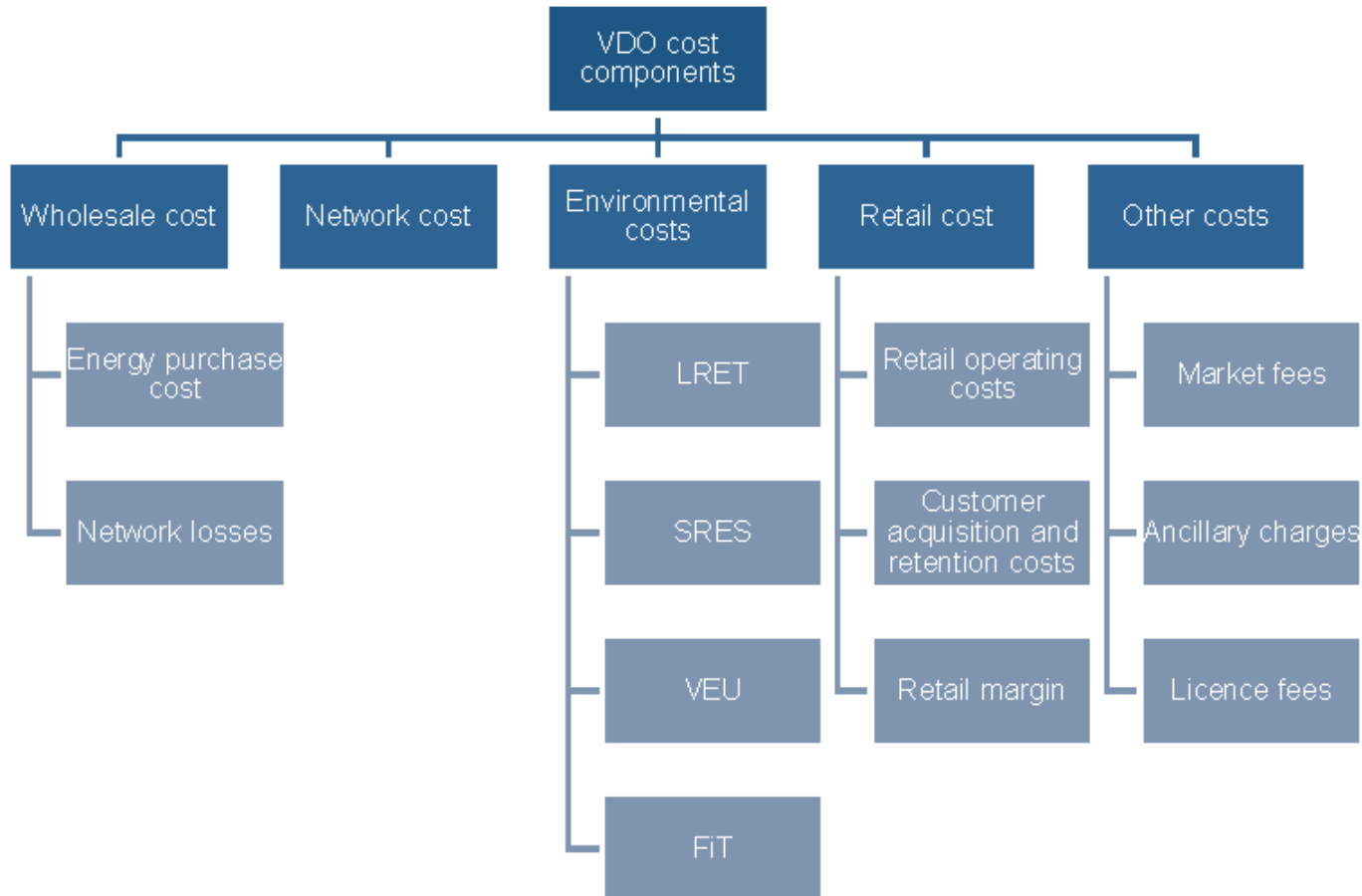
Victorian default offer – approach

- Starting point: build on 2018 work on a reference price
 - Similarities between VDO and reference price
 - Achievable within timelines
 - Valuable research and stakeholder feedback
 - Consistency in approach
- Have regard to various matters listed in terms of reference – e.g. Acts, Independent Review and government response, experts, stakeholder feedback

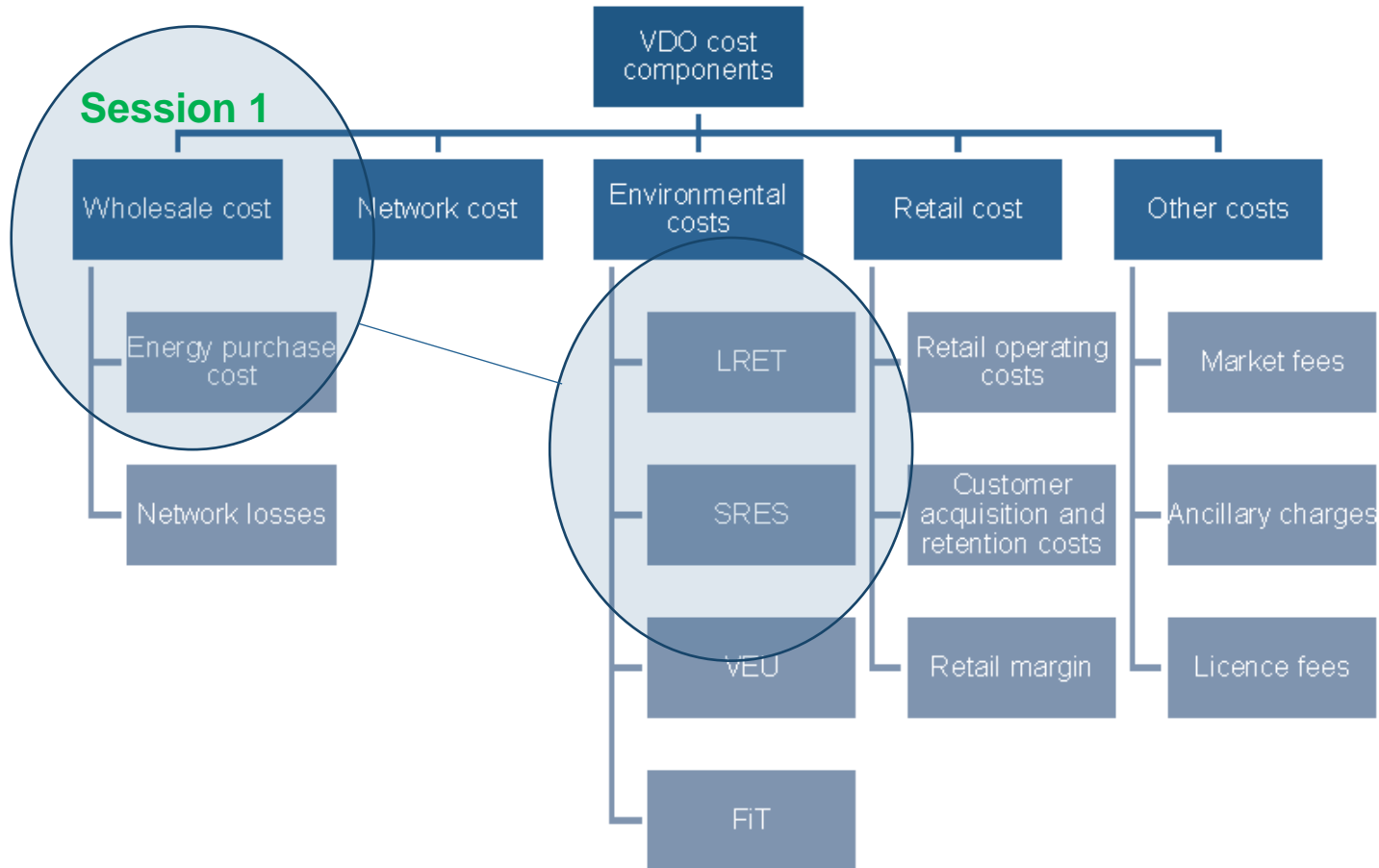
Victorian default offer – approach

- VDO will be based on efficient costs as per ToR
- For the first VDO (following from 2018 work):
 - Use a cost-stack, drawing on existing research and commonly used approaches to estimate components
 - Scope for discussion about how applied
 - Open to alternatives if practical
- Use a “reference” or “benchmark” firm to establish efficient costs benchmarks – we are not seeking to replicate costs / cost structure of a particular firm
- Expect to refine approach to VDO over time

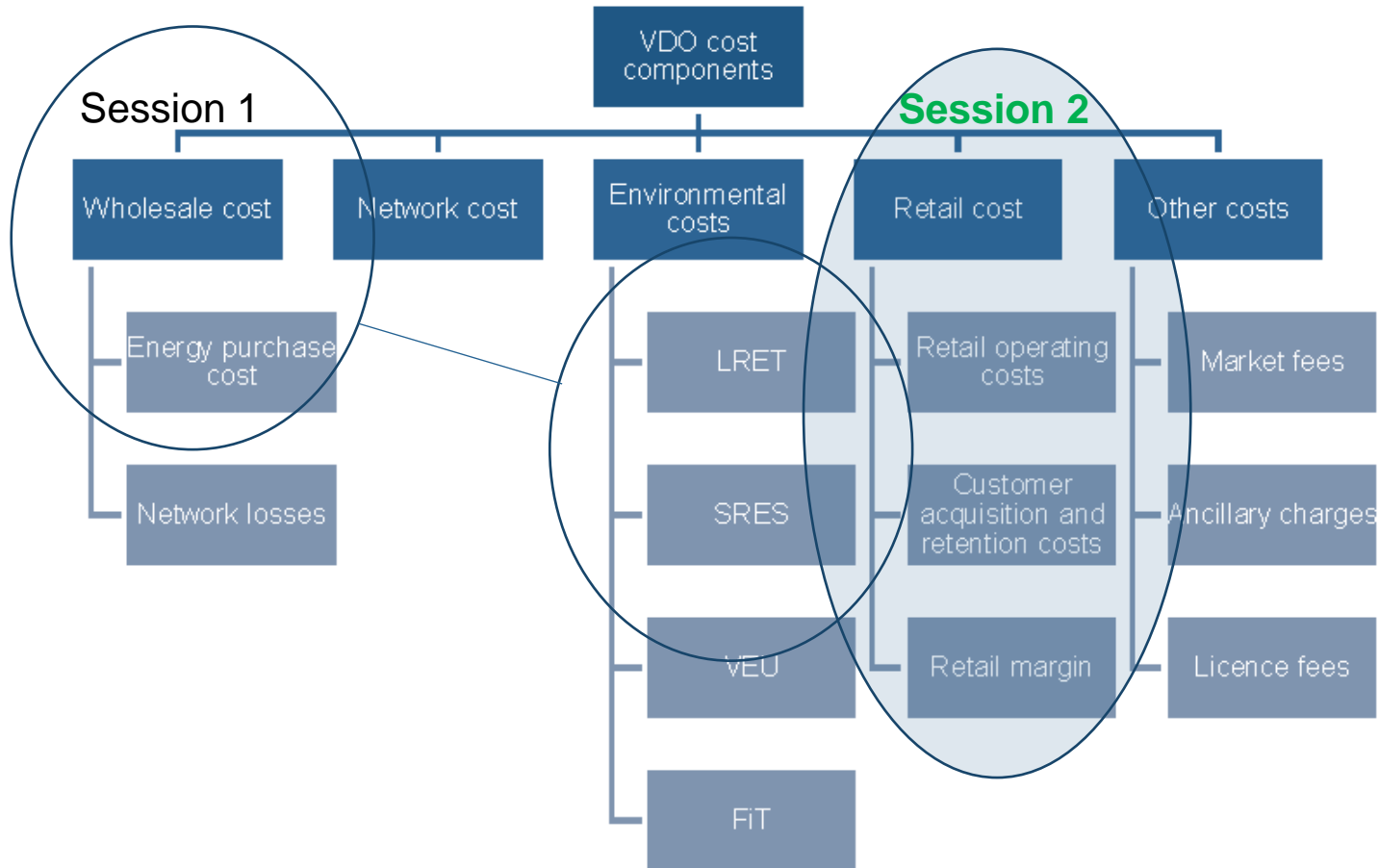
Victorian default offer – approach



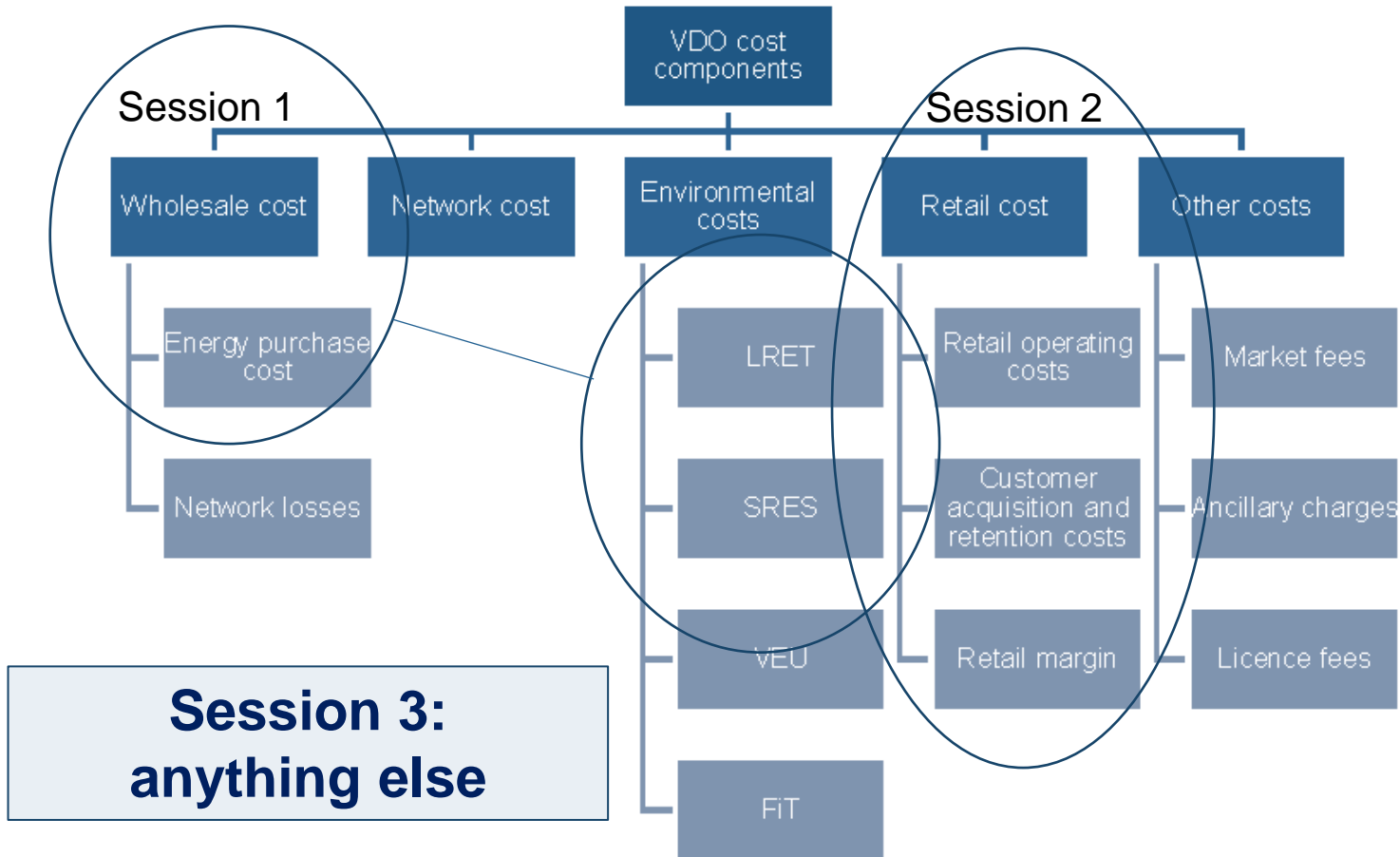
Victorian default offer – approach



Victorian default offer – approach



Victorian default offer – approach



Estimating wholesale costs

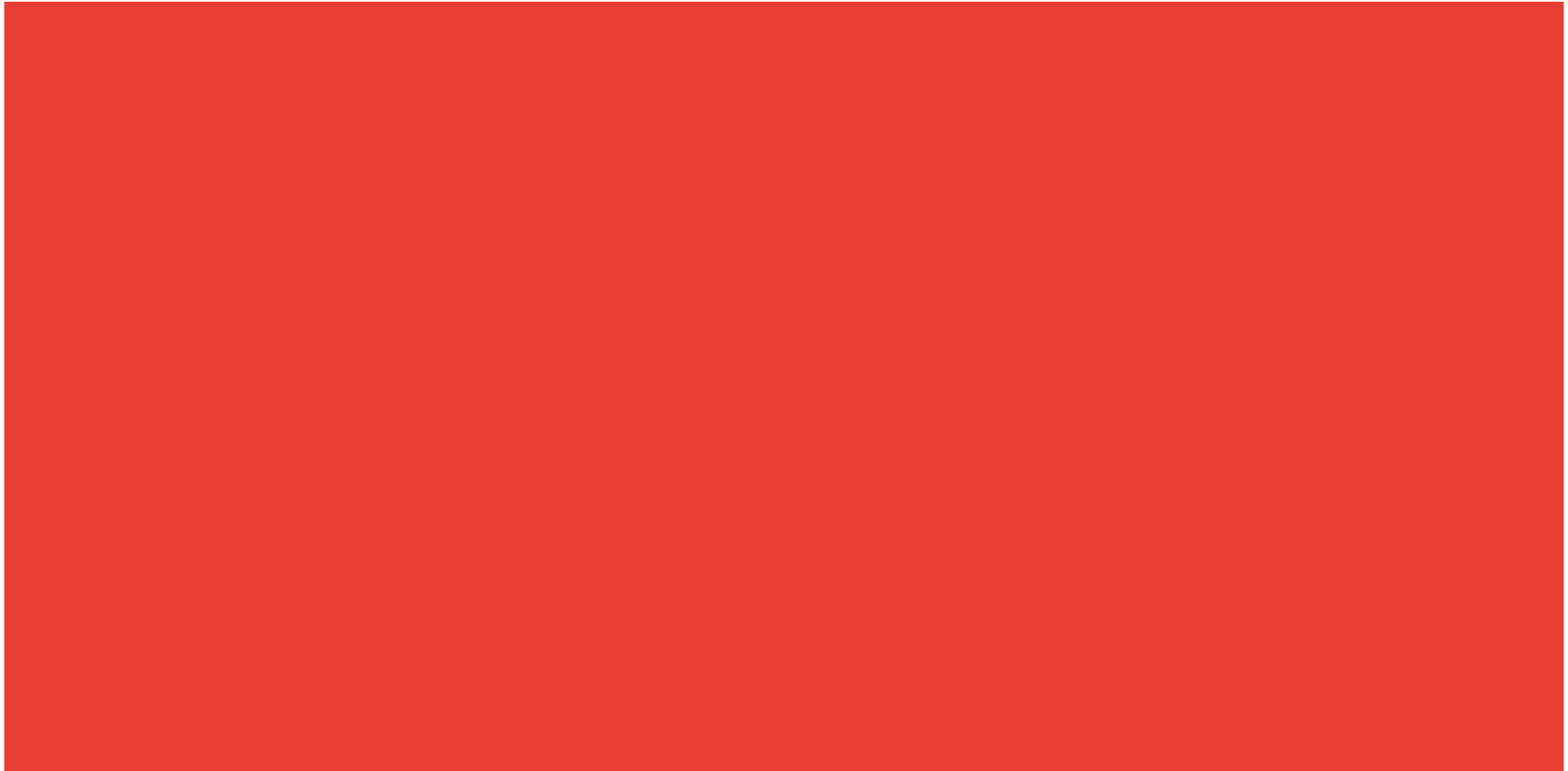
Andrew Harpham and Andrew Newnham –
Frontier Economics

WHOLESALE ELECTRICITY COST



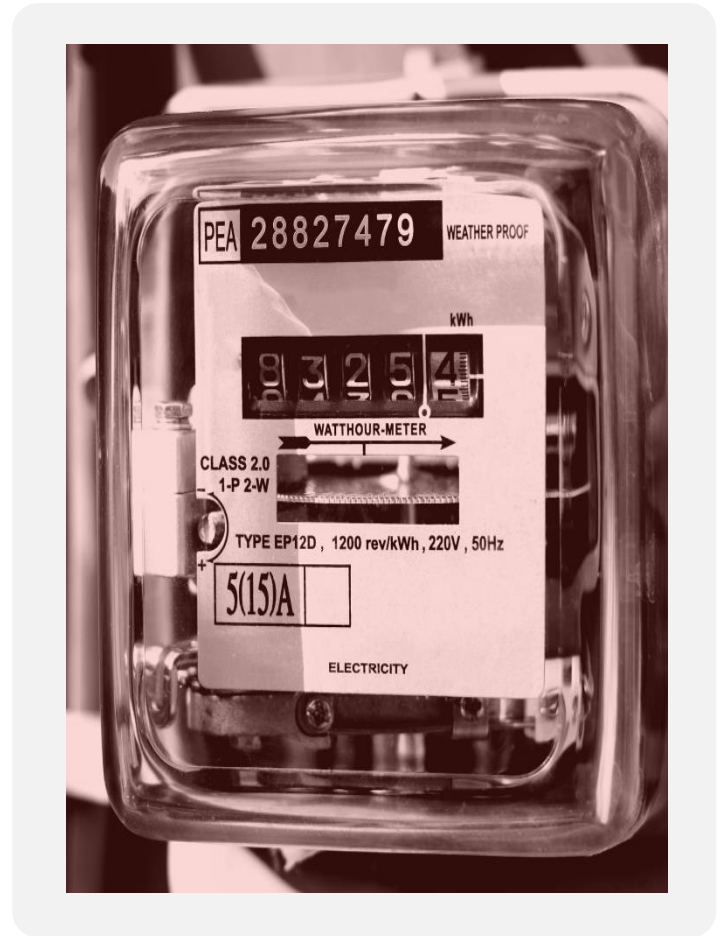
Prepared for the ESC's Victorian Default Offer technical workshop

21st January 2019



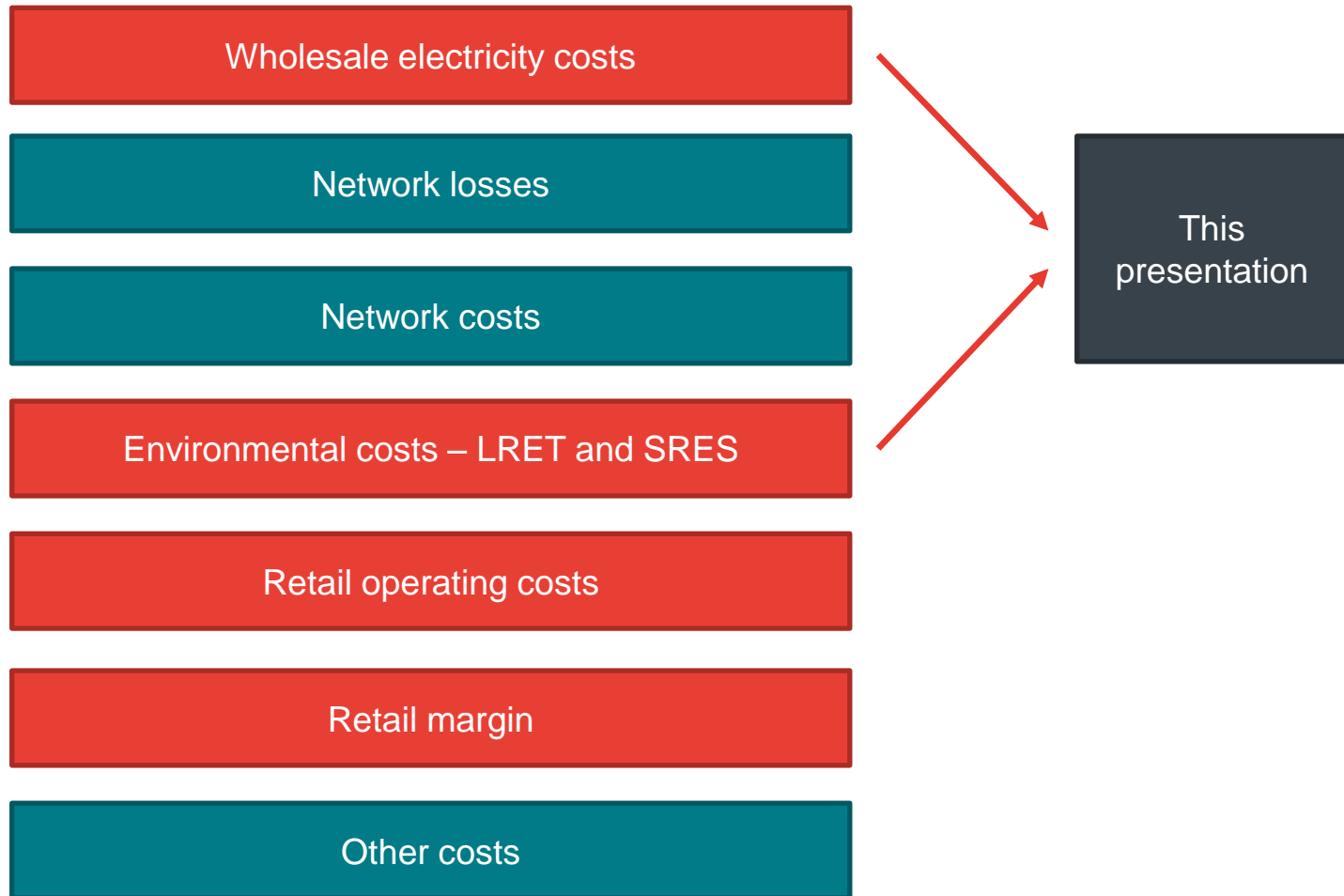
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1. Our engagement
2. Methodology –
wholesale
electricity costs
3. Methodology –
LRET and SRES



1. Our engagement

FRONTIER HAS BEEN ENGAGED TO ADVISE ON SEVERAL COMPONENTS OF THE VDO FOR 2019/20



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?

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

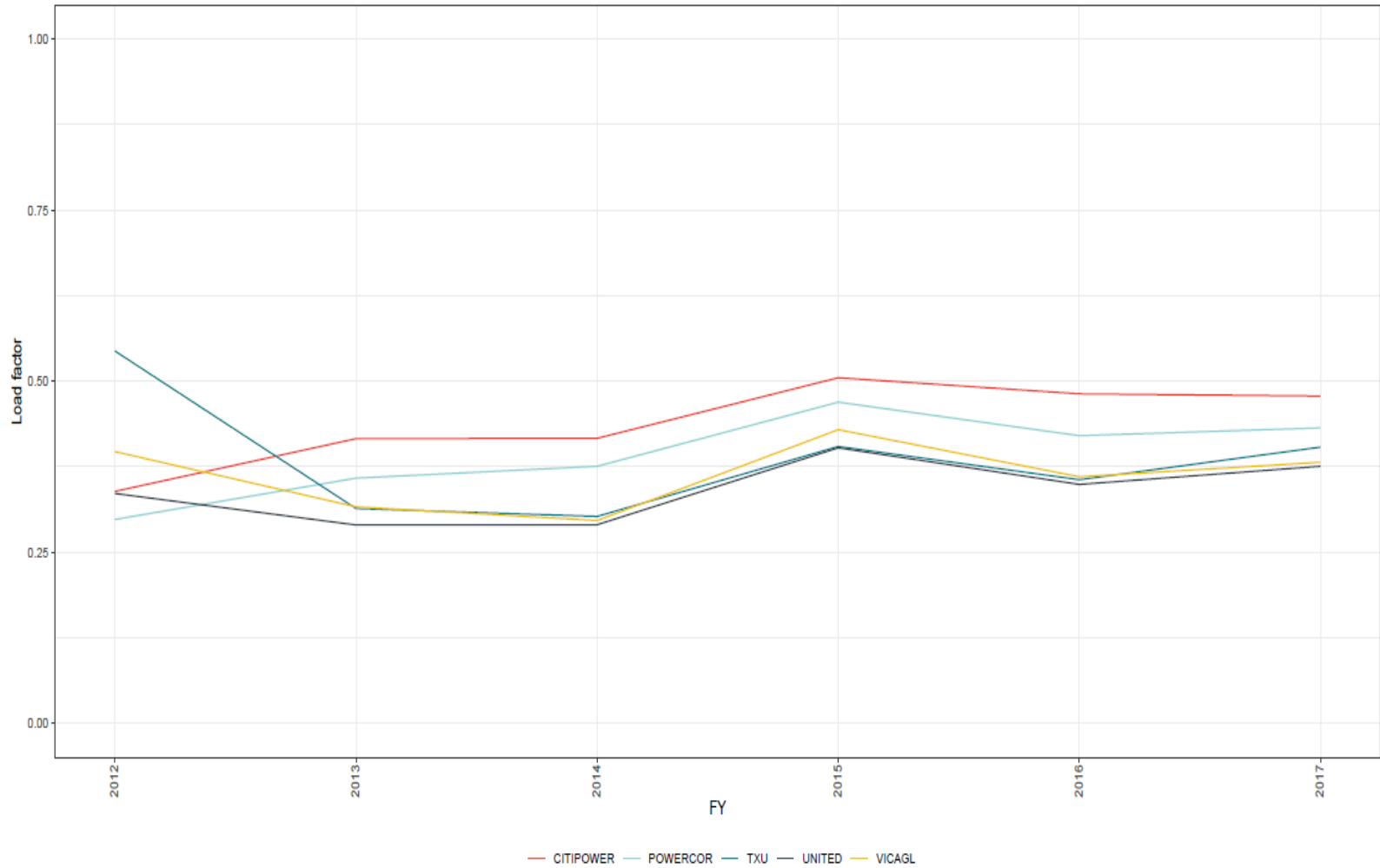
3. What is the cost of financial hedging contracts available to retailers?

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

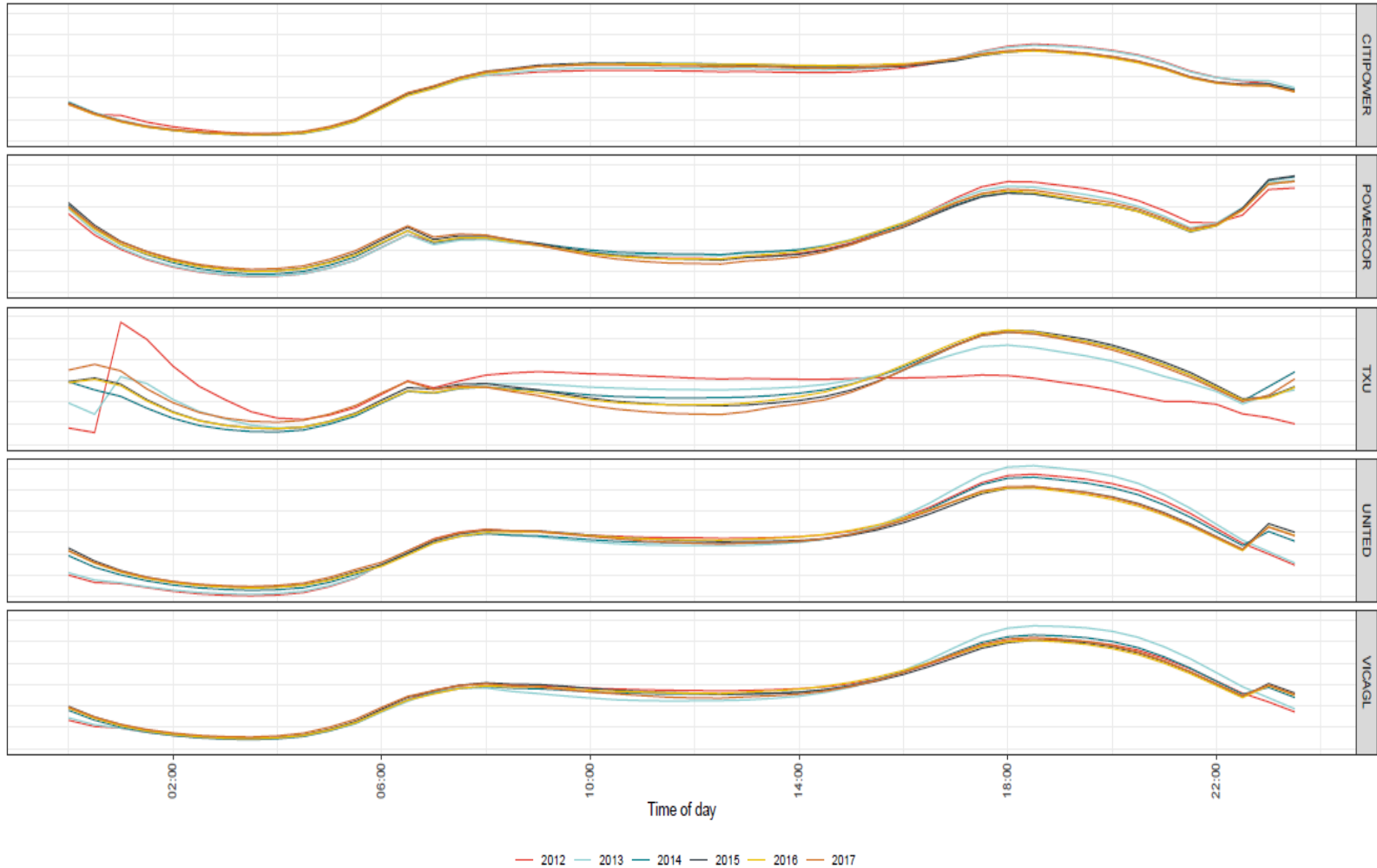
1. WHAT IS THE LIKELY HALF-HOURLY LOAD OF RETAILERS' CUSTOMERS?

-
- 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 2019/20:
 - We can assume the half-hourly pattern for 2019/20 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 2019/20

LOAD FACTOR FOR VICTORIAN DNSPS



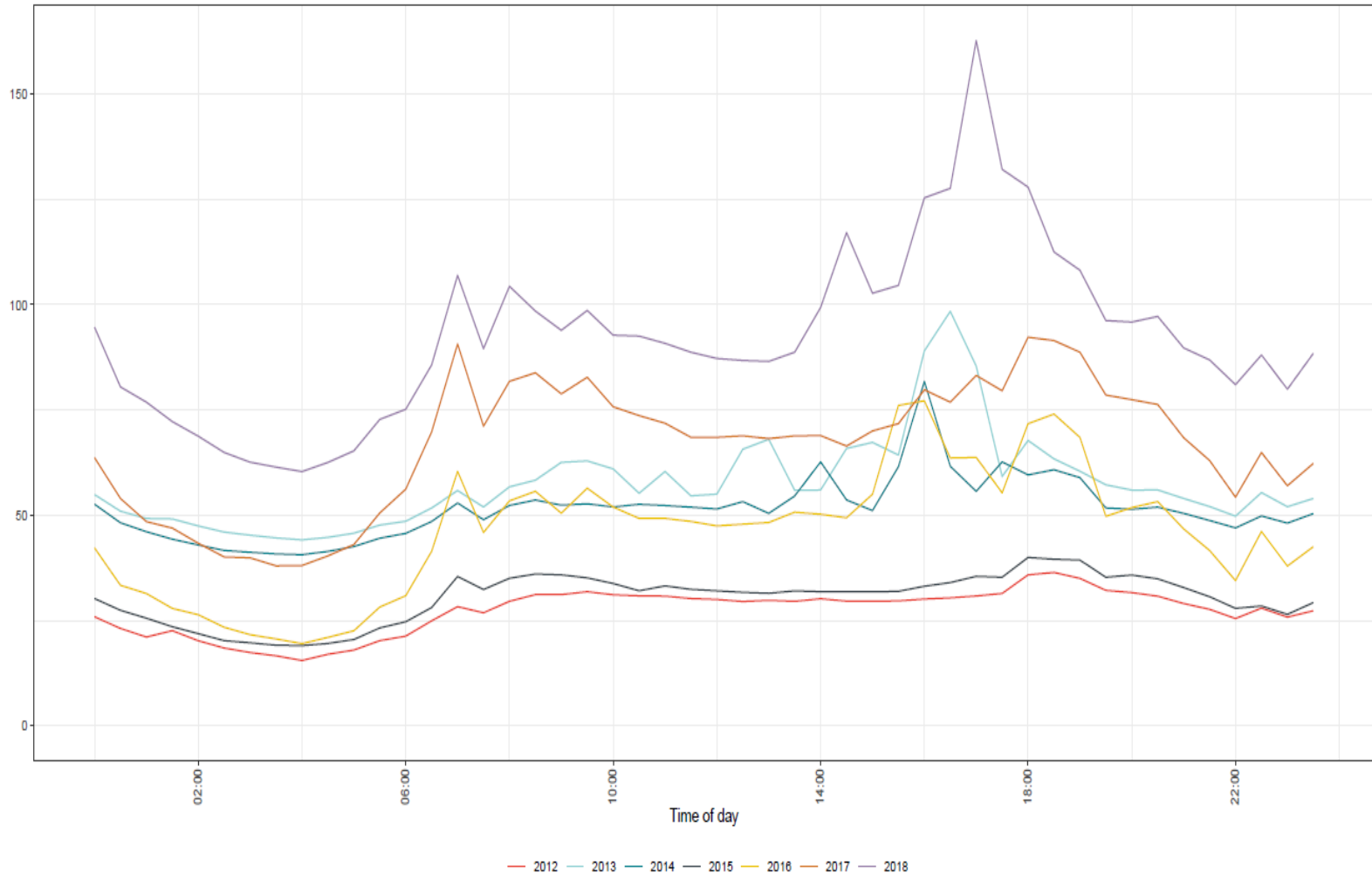
LOAD PROFILE FOR VICTORIAN DNSPS



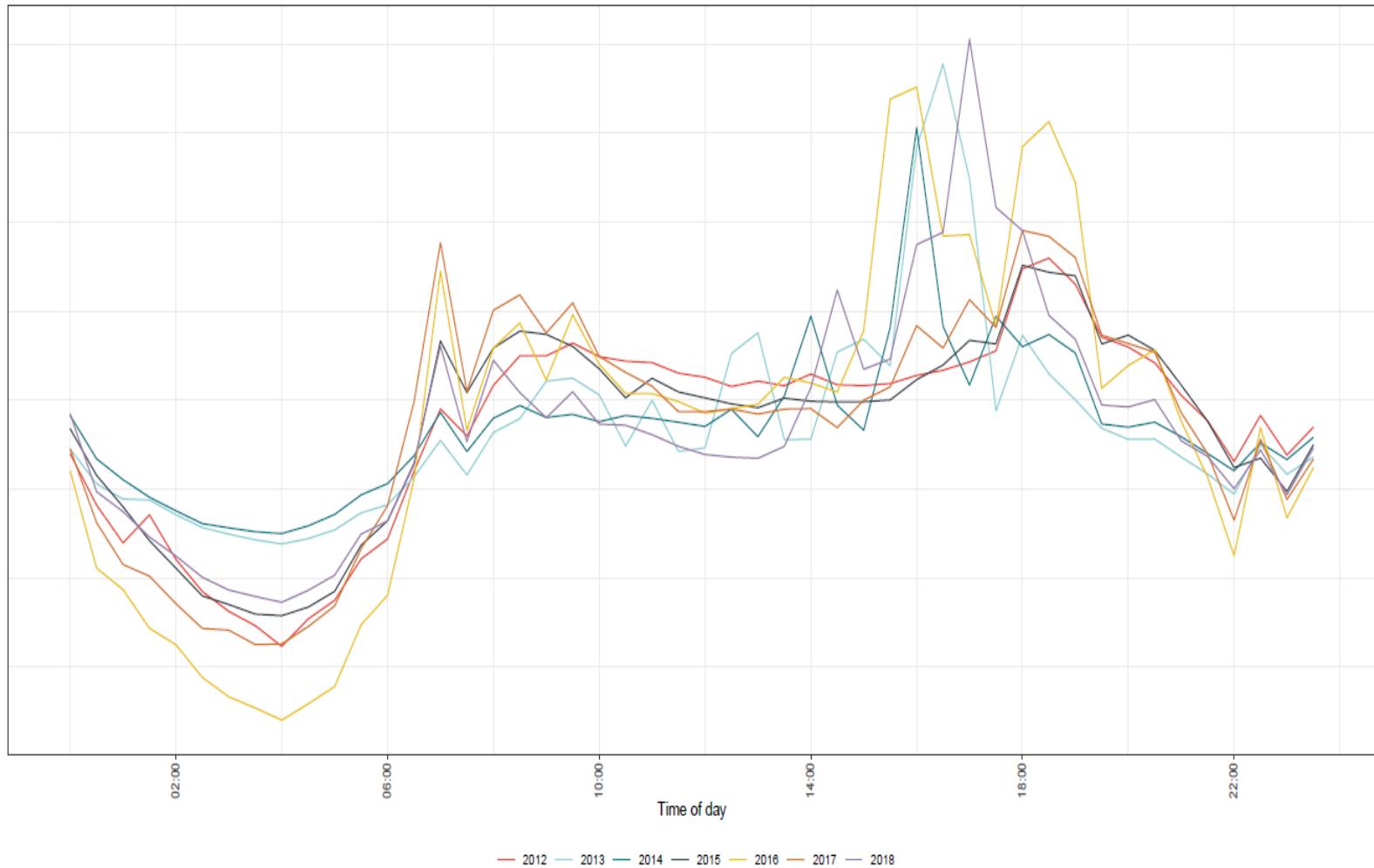
2. WHAT ARE THE LIKELY HALF-HOURLY SPOT PRICES THAT RETAILERS WILL FACE?

- 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 2019/20 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
- We propose to base the **annual level** of electricity spot prices on the ASXEnergy forward price for 2019/20, accounting for an assumed contract premium of 5%

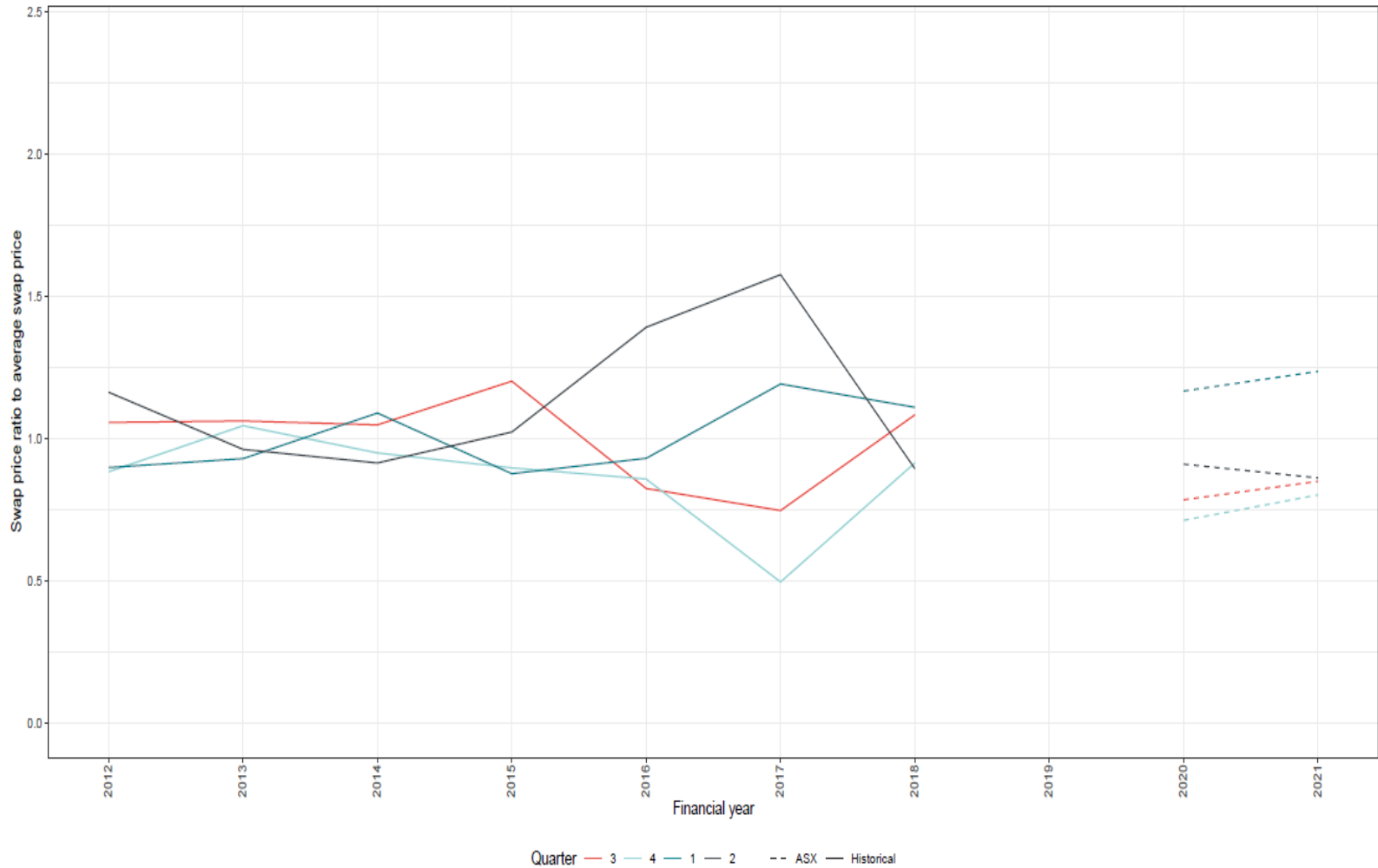
SPOT PRICE PROFILE FOR VICTORIAN RRN



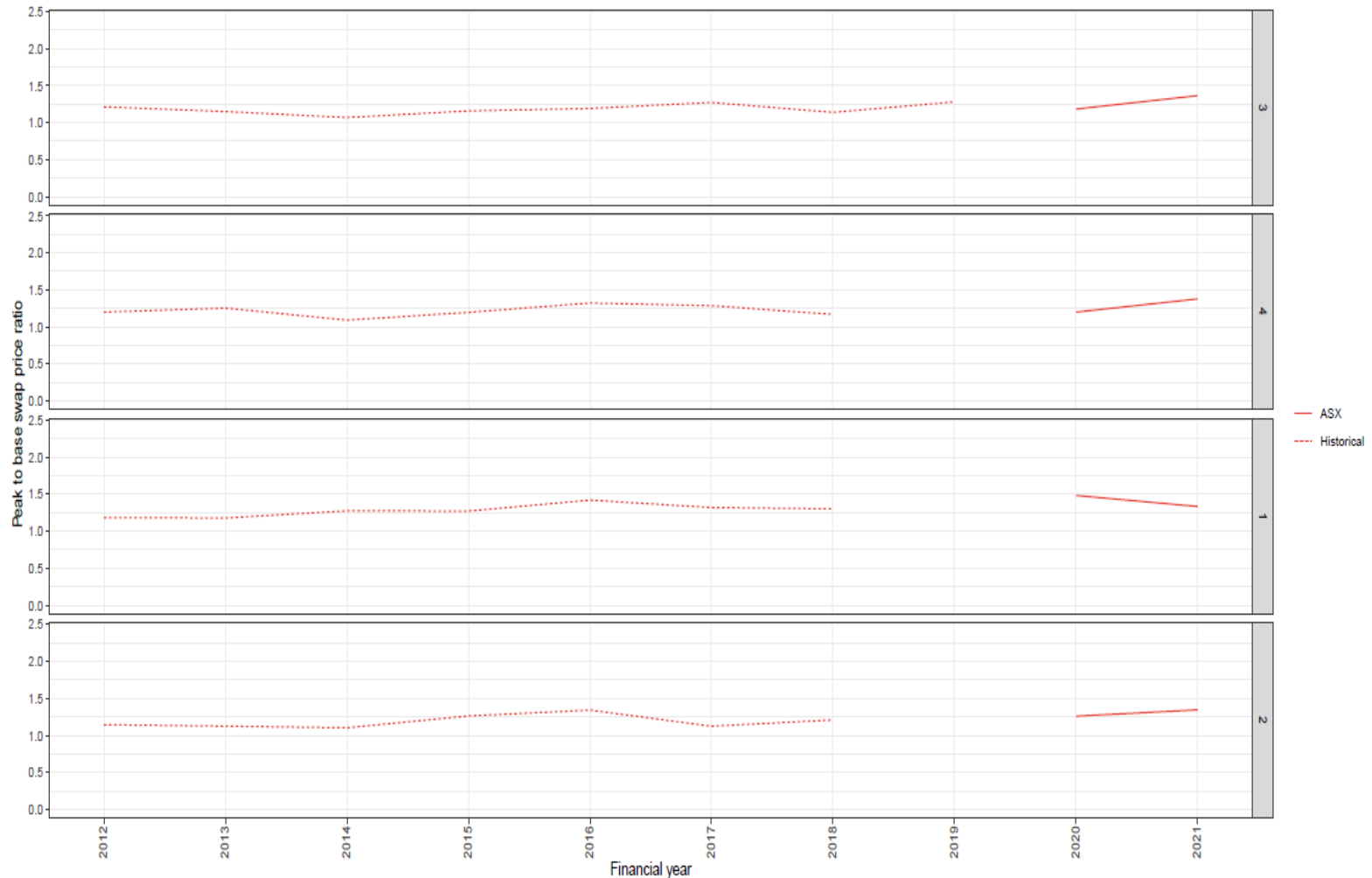
SPOT PRICE PROFILE FOR VICTORIAN RRN



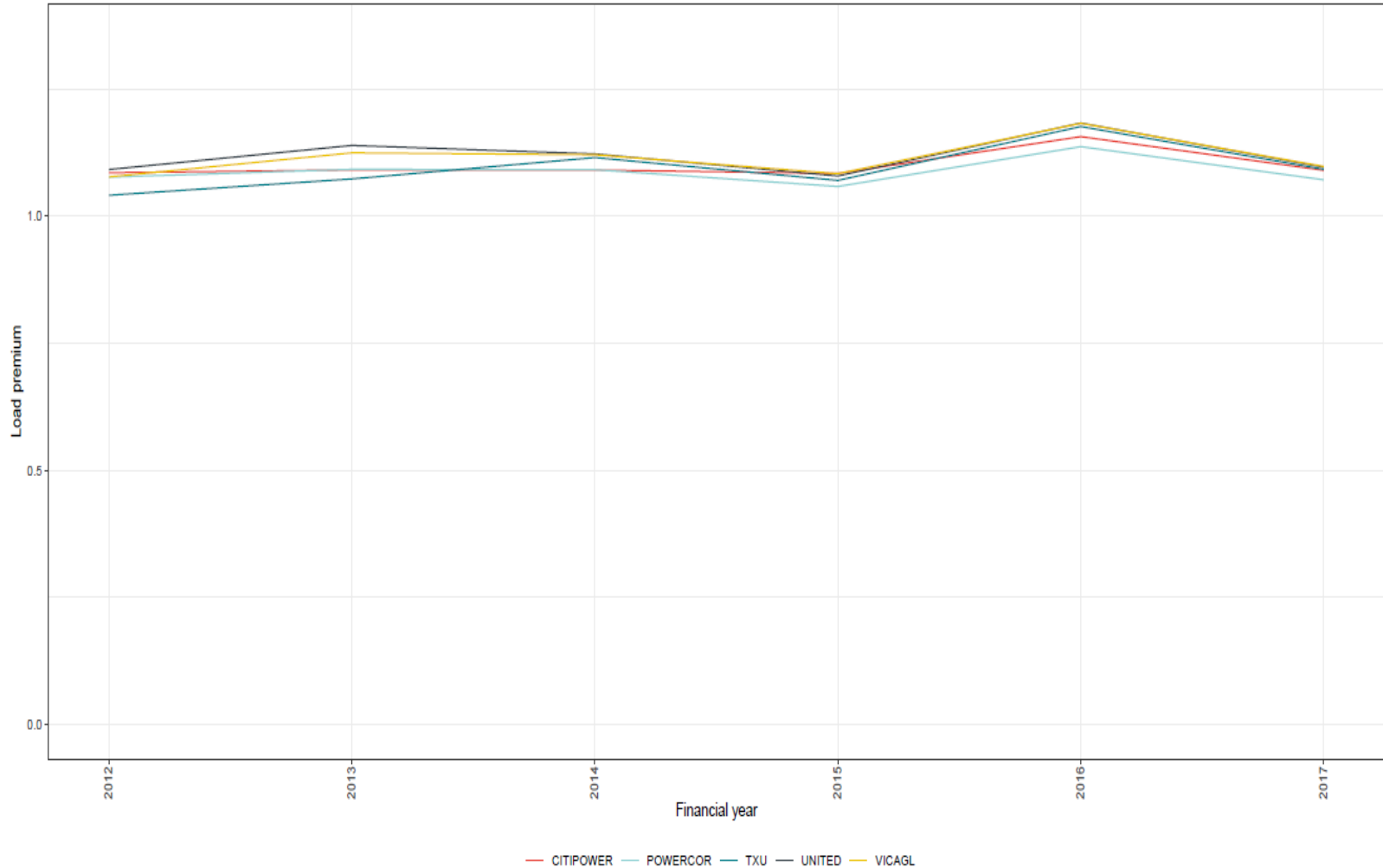
RELATIONSHIP BETWEEN HISTORICAL SPOT PRICES AND ASXENERGY FORWARD PRICES – QUARTERS



RELATIONSHIP BETWEEN HISTORICAL SPOT PRICES AND ASXENERGY CONTRACT PRICES – BASE TO PEAK



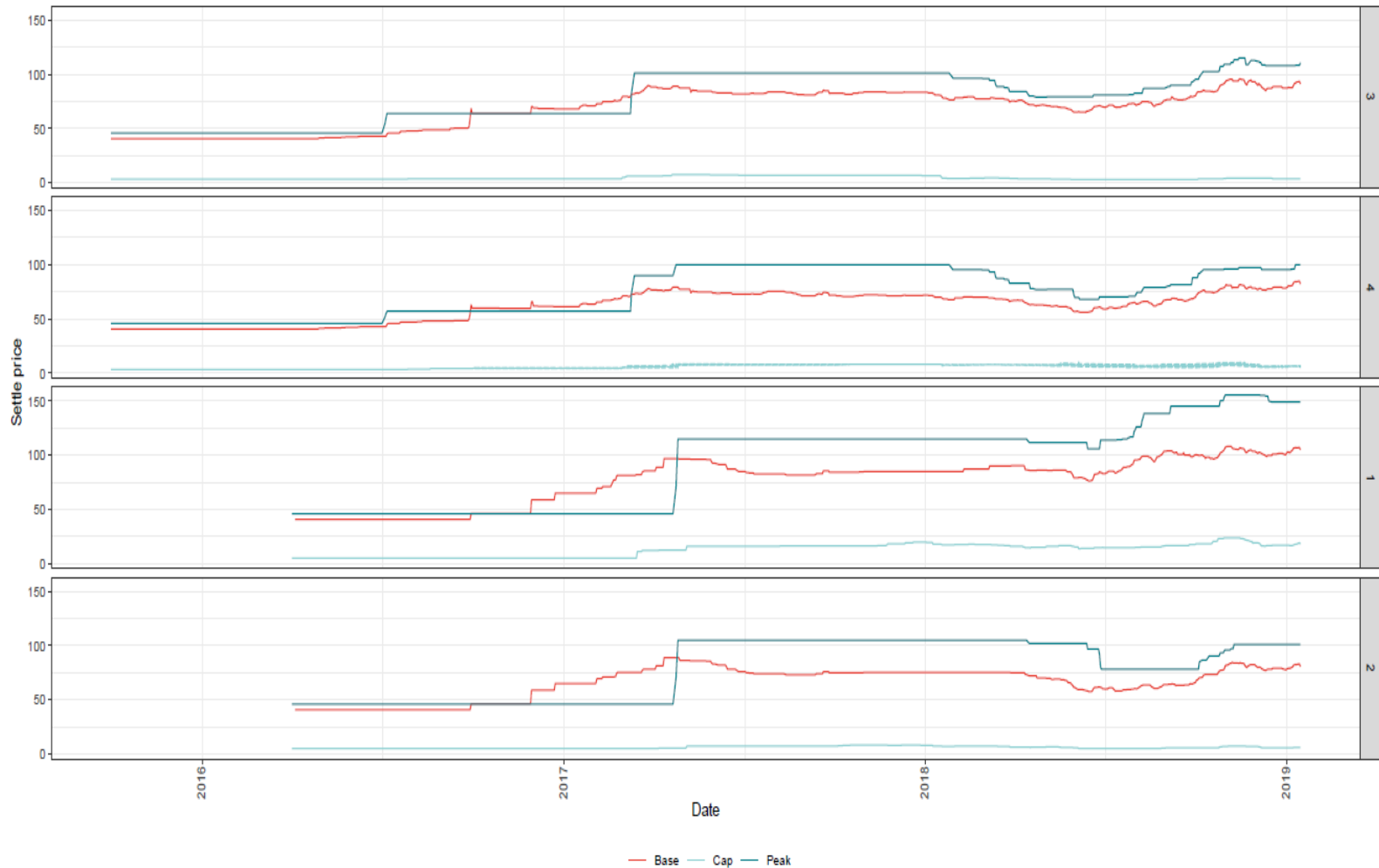
LOAD PREMIUM FOR VICTORIAN DNSPS



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
 - We propose to base the cost of financial hedging contracts as these ASXEnergy contract prices. Key question is what prices to use:
 - Our preferred approach is to use the most recent prices (generally we use a 40-day average) because we think economic decisions will be based on the current market value of these contracts – this is often referred to as the mark-to-market approach
 - An alternative approach is to use a longer term average price (generally two years) because this reflects the period over which retailers will tend to buy contracts

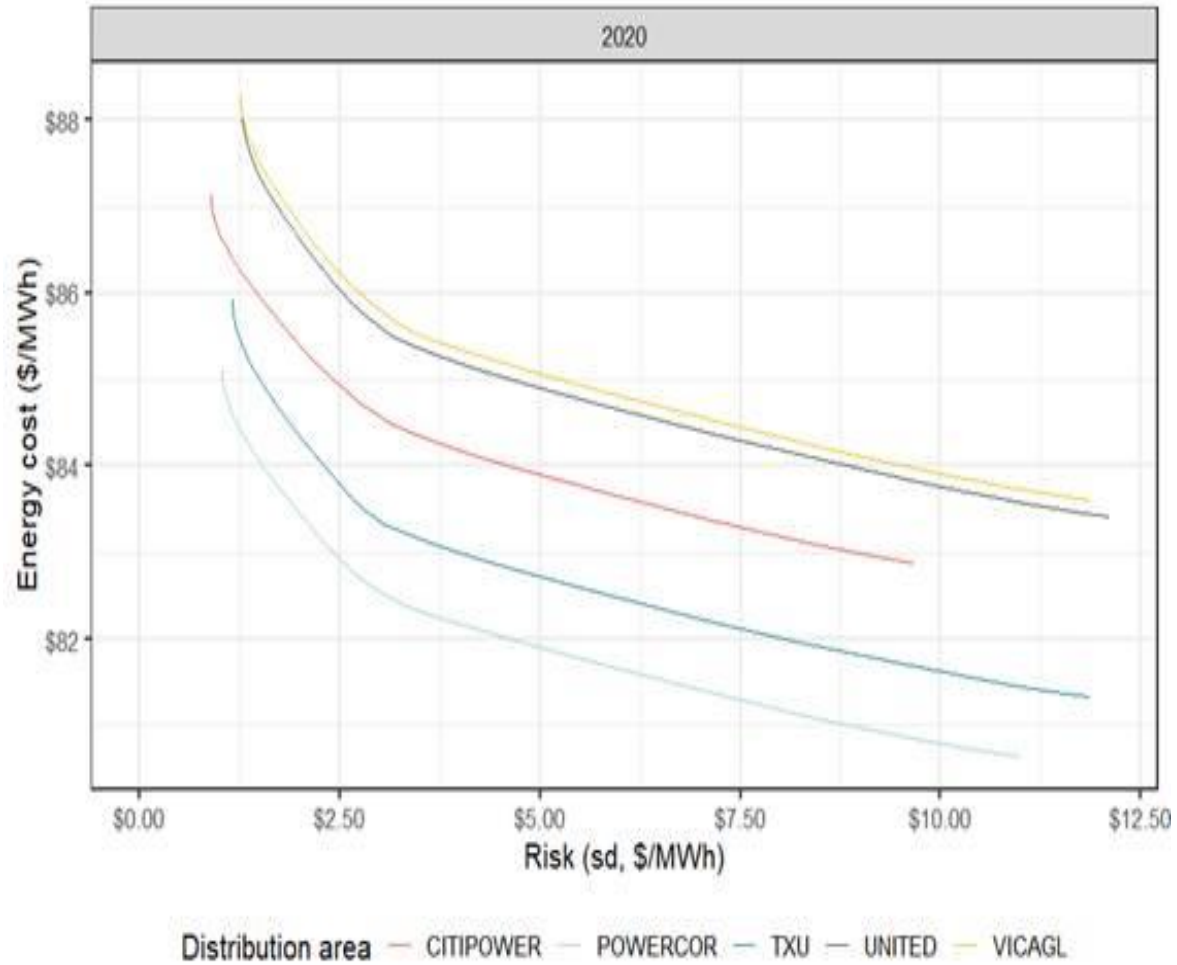
ASXENERGY CONTRACT PRICES



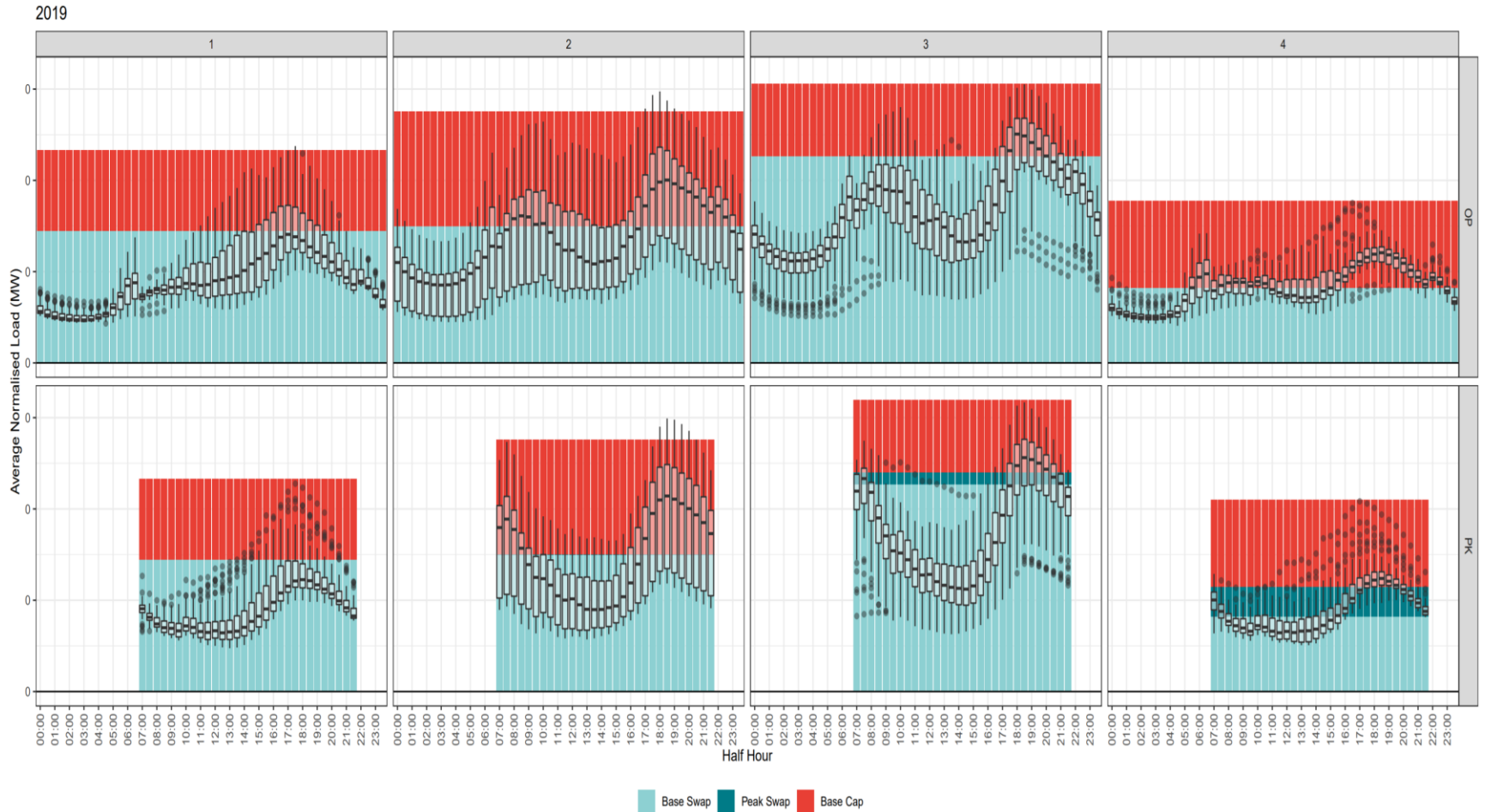
4. WHAT KIND OF HEDGING POSITION IS A PRUDENT RETAILER LIKELY TO ADOPT?

-
- 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



WHAT STRIKE IS DOING



DETERMINING WHOLESALE ELECTRICITY COSTS

- Once we have answered these 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

DETERMINING THE VOLATILITY ALLOWANCE

- Retailers need to hold cash to avoid default in the case of higher than expected energy purchase costs, termed here a volatility allowance
- Amount of working capital required determined by the following formula:

$$3.5 \times sd \times WACC$$

- Where
 - 3.5 represents 3.5 standard deviations
 - *sd* is the standard deviation in energy costs
 - *WACC* is the retailer's cost of capital

3. Methodology – LRET and SRES

DETERMINING LRET AND SRES COSTS

LRET costs

$$\text{RPP} \times \text{Cost of LGCs} = \text{Cost of LRET}$$

SRES costs

$$\text{STP} \times \text{Cost of STCs} = \text{Cost of SRES}$$

4. Discussion

Estimating retail operating costs and retail margins

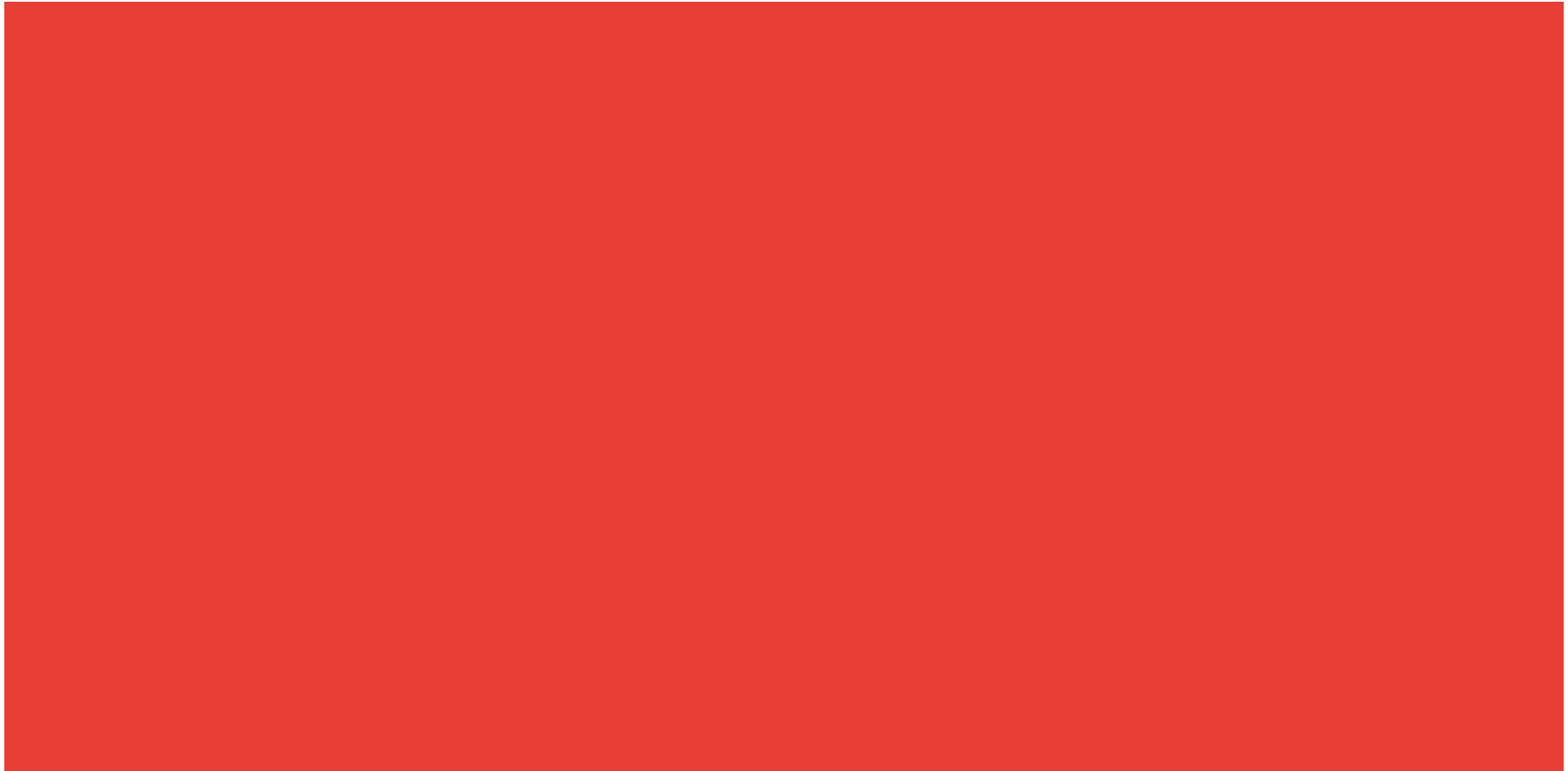
Andrew Harpham and Dinesh Kumareswaran –
Frontier Economics

RETAIL OPERATING COSTS AND MARGIN



Prepared for the ESC's Victorian Default Offer technical workshop

21st January 2019



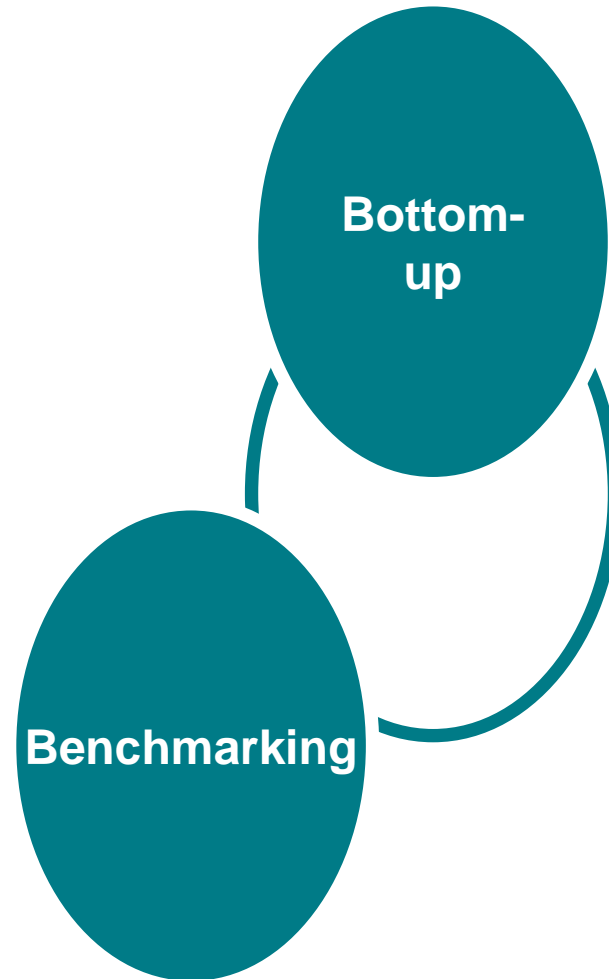
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3. Retail margin approaches
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 2. Benchmarking
 3. Expected returns
4. Discussion

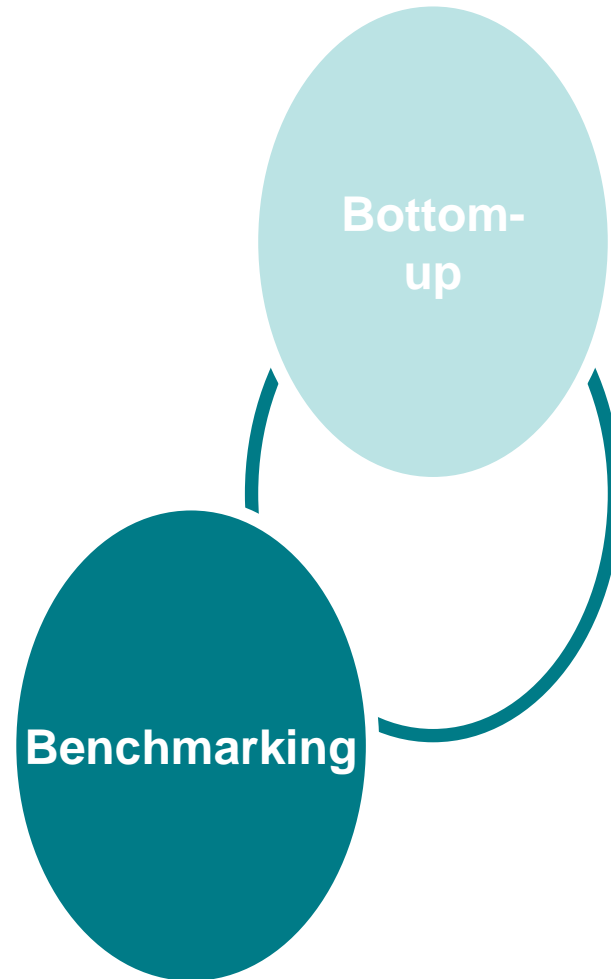


1. Retail operating costs

REGULATORS HAVE TYPICALLY USED TWO DIFFERENT APPROACHES FOR ESTIMATING OPERATING COSTS



WE WILL BE USING THE BENCHMARKING APPROACH



1. BENCHMARKING APPROACH



Regulated operating costs informed by **benchmarking** to publicly available data on:

1

Past **regulatory decisions**
on retail operating costs

2

Reported retail operating
costs of **electricity retailers**

In each case, it is important to ensure a like-for-like comparison of costs – we trying to estimate efficient retail costs for Victoria in 2019/20

1. BENCHMARKING APPROACH



Retail operating costs are often split into two components:

1

Retail operating costs

2

Customer acquisition costs

2. Retail margin – Key concepts

What is the ROM?

Minimum operating profit margin required to compensate investors for capital invested.

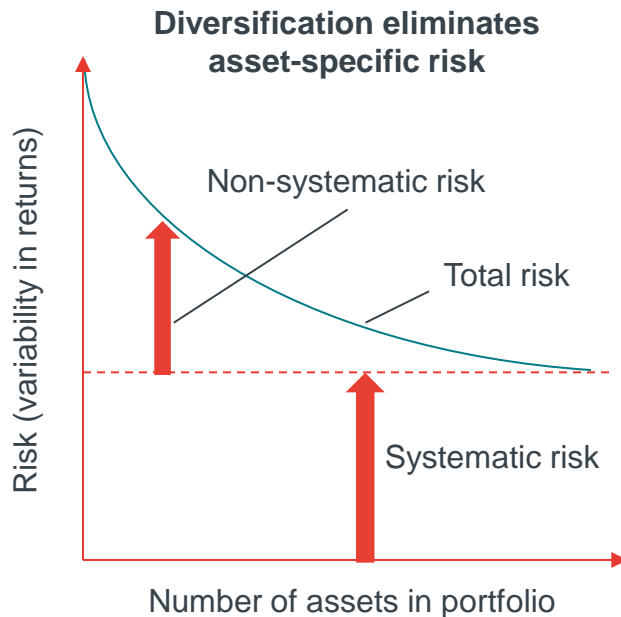
Must be **just sufficient** to cover:

- Opportunity cost of capital
- Systematic (non-diversifiable) risks associated with investment

WHAT IS SYSTEMATIC RISK?

The total risk associated with an asset has two components

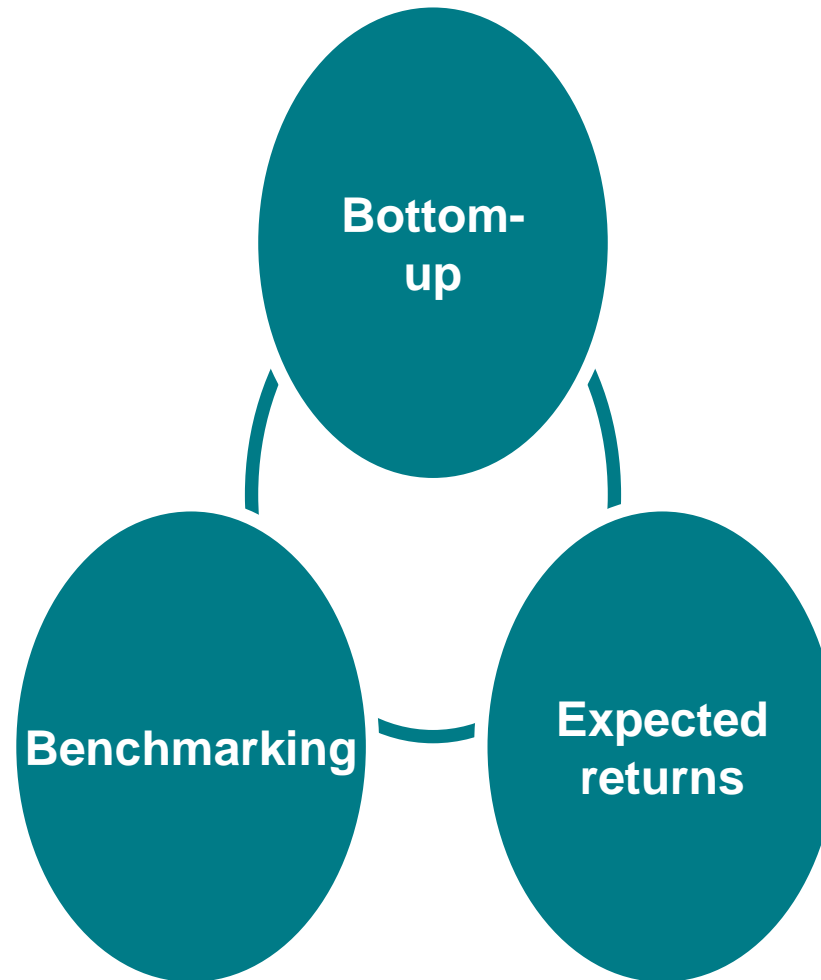
Total Risk = Systematic (non-diversifiable) risk + Non-systematic (diversifiable) risk



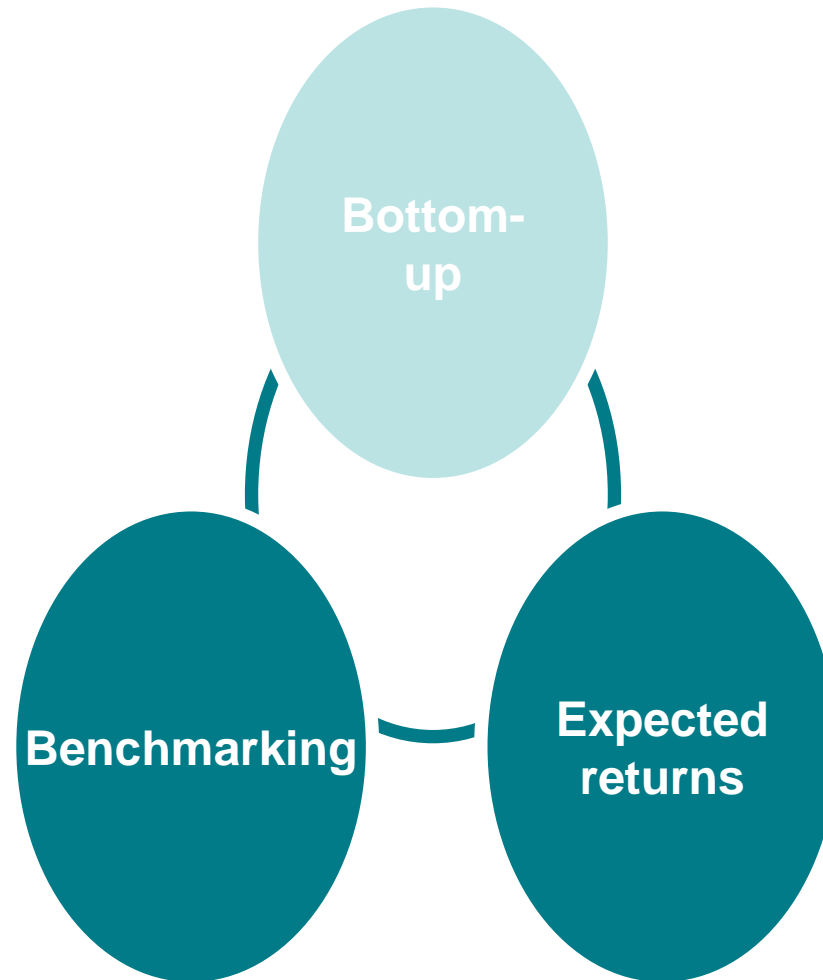
- In competitive capital markets, investors can expect to be compensated only for systematic risk
- Investors in a competitive firm can only expect to be compensated for the risks they bear and the opportunity costs of funds
- Regulators seek to mimic the outcomes in competitive markets when setting prices by setting cost allowances equal to the efficient level
- So regulated margin (efficient price of capital) should only compensate investors for bearing systematic risk. Non-systematic risk could be addressed through other cost allowances.

3. Approaches for estimating the retail operating margin

REGULATORS HAVE DEVELOPED THREE DIFFERENT APPROACHES FOR ESTIMATING THE ROM



WE WILL BE USING THE BENCHMARKING APPROACH AND PROVIDING RESULTS FOR THE EXPECTED RETURNS APPROACH



1. BOTTOM-UP APPROACH



What is the margin needed for firm to pay investors' **minimum required return on capital**, but no more?

1

Estimate the **Weighted Average Cost of Capital (WACC)** of a hypothetical efficient retailer

2

Estimate **asset value** (incl. intangibles and working capital)

3

Required return on capital
 $= \text{WACC} \times \text{Asset value}$

4

Solve for **margin** that just delivers required return on capital (given other costs)

1. BOTTOM-UP APPROACH

Pros

- Makes a direct link between regulated operating margin and systematic risk
- Rationale mirrors well-understood approach used to regulate networks

Cons

- Estimates sensitive to asset values used
- Asset values very difficult to estimate reliably

Example: IPART 2013

- Range for margin of 5.7% to 7.1%

Proposed approach

Given challenges in estimating asset values, we propose to not use this approach at the present time. Could be explored at a later time.

2. BENCHMARKING APPROACH



Regulated margin informed by **benchmarking** to publicly available data on:

1

Past **regulatory decisions** on retail margins

Typically, regulated margins ~ 5% to 6% of sales

2

Reported margins of **listed retail firms** operating in competitive industries

2. BENCHMARKING APPROACH – LISTED RETAILERS

Pros

- Typically, large sample size so more statistically robust

Cons

- Data intensive
- Typically firms are non-electricity retailers so only partially comparable

Example: IPART 2013

- 692 retailers from Australia, UK, US and Canada (between 1980 and 2012)
- 7,990 annual observations
- Retail sectors: Pharmaceuticals, food & beverage, apparel, broadline, home improvement, specialty retailers
- Range for margin of 6.3% to 6.6%

2. BENCHMARKING APPROACH – REGULATORY DECISIONS

Pros

- Simple to implement and interpret
- Regulatory decisions have drawn on a range of different approaches

Cons

- Small sample (trade-off between timeliness/relevance and sample size)
- Circularity problem – use judiciously

Example: ESCOSA 2010

Table 7.2 - Retail margin allowances granted by other jurisdictional regulators(% of sales revenue)

Decision	Retail Margin
IPART Electricity (2010)	5.4%
ICRC Electricity (2010)	5.4%
QCA Electricity (2010)	5.0%

Proposed approach

On balance, we think benchmarking to regulatory decisions is a good approach to start with. ESC should explore other options in future

3. EXPECTED RETURNS APPROACH



What margin is required in order to just compensate investors for **systematic risk**, but no more?

1

Estimate the **benchmark beta** (systematic risk) of a hypothetical efficient retailer

2

Forecast future expected **cash flows** and **returns** of retailer using an assumed margin

3

Use forecast returns of retailer and the stock market to compute retailer's **implied beta**

4

Solve for the **margin** that equalises the benchmark and implied betas

3. EXPECTED RETURNS APPROACH

Pros

- Theoretically appealing
- Makes a direct link between regulated operating margin and systematic risk

Cons

- Complex
- May take time for stakeholders to get comfortable with approach and inputs

Example: IPART 2013

- Range for margin of 3.9% to 4.8%

Proposed approach

We will provide results from the expected returns approach to the ESC for consideration

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

Other issues

Jordan Tasker – Essential Services Commission

First Victorian default offer – other issues

- Tariff structure
 - Given the VDO ToR we have proposed a simple tariff structure – a supply charge presented as dollars per day and a usage charge presented as cents per kilowatt hour.
 - Allocating variable costs to usage charge and fixed costs to the supply charge.
- Network tariffs
 - Propose using the ‘simplest’ network tariffs for each distribution zone.
 - How to deal with 1 January tariff variations?

First Victorian default offer – other issues

- Network losses
 - Using data published by AEMO.
- Environmental costs
 - LRET, SRES, VEU and feed-in tariff (social cost of carbon). Mix of market and publicly available data.
- Other costs
 - Publicly available data, largely from AEMO.

First Victorian default offer – key timelines

Date	
21 January 2019	Technical workshop – methodology
30 January 2019	Responses to staff paper due
Early-mid March 2019	Draft recommendation for VDO
3 May 2019	Final recommendation for VDO