Evaluation of Vector's 2013 Pricing Methodology

What we have been asked to do

The Electricity Authority engaged Castalia to carry out an independent evaluation of the pricing methodologies published by the 29 electricity distributors in New Zealand. This document provides our evaluation of Vector's 2013 pricing methodology[1] against:

- The **Information Disclosure Guidelines** (Table 1). The guidelines set out the information that should be provided in distributor pricing methodologies.
- The **Pricing Principles** (Table 2). The principles contain economic benchmarks that should be reflected in pricing methodologies to the extent practicable.

The purpose of this review is to understand how distributors interpret the guidelines and principles, and to provide suggestions on how to improve distributor pricing methodologies. This review does not focus on ensuring compliance with the guidelines and principles.

Our understanding of Vector's methodology

The table below summarises our understanding of the methodology that Vector uses to determine prices for its tertiary service class. The purpose of this example is to explain our understanding of Vector's pricing methodology using the example of one consumer group.

	Approach	Rationale
Customer categories	The service classes are defined corresponding to their connection type. Tertiary connections are made up of end consumers that are supplied from Vector's low voltage network (through 400V three phase or 230V single and two phase connections)	The rationale is to define service classes based on assets used, since assets are the primary type of costs to be recovered
Cost allocation	Vector apportions the costs of owning and operating its electricity distribution business into Primary, Secondary and Tertiary consumer segments using specified allocators	The rationale is to target the costs of different assets towards the customers that use those assets. For example, low voltage assets are not allocated to high voltage end consumers
Charging basis	The tariffs charged to low voltage consumers are comprised of fixed, variable, capacity, demand and power factor charges. Low fixed charge regulations apply.	Prices aim to reflect economies of scale, i.e. charges increase at a decreasing rate as volumes/capacity requirements increase

[1] Vector's 2013 pricing methodology is available online at: http://www.vector.co.nz/sites/vector.co.nz/files/Electricity%20%20Pricing%20Methodology%202013.pdf

Overview of our evaluation of Vector's methodology

Overall, Vector's pricing methodology is robust and complete. The methodology clearly explains why customer groupings, cost allocation, and tariff design have been selected, which allows the reader to understand the rationale for the pricing approaches adopted by Vector. The methodology follows an appropriate structure and is easy to read, and the tables presented throughout the document provide useful information in a clear way. Figure 1 in the methodology is particularly informative. In an easy to understand way, this figure describes the cost allocation process applied by Vector.

The information in the methodology could be strengthened by more explicitly describing the link between how costs are allocated and how tariffs are derived. The methodology does a good job of illustrating Vector's tariffs in Appendix 3, yet we believe that a step is missing that shows how the costs allocated to each service class (as described in section 7) are then recovered through the tariff design. In addition, it would be good to see an explanation of the fixed and variable ratio used in the tariff design.

The methodology could also be improved by giving more thought to how prices might signal the level of available service capacity and the impact of additional usage on future investment costs. The methodology should explain whether any relationship exists between the prices charged by Vector and how the network is used and expanded. Measures of levels of capacity and how much is currently being used to meet demand, as well as forecasts of future investment costs, would provide valuable support to this analysis. This appears to require a stronger link between preparing the Asset Management Plan and the pricing methodology.

Table 1: Evaluation of the Pricing Methodology against the Information Disclosure Guidelines

Guideline	What is done well?	What is missing?
(a) Prices should be based on a well-defined, clearly explained and published methodology, with any material revisions to the methodology notified and clearly marked	▪ The methodology provides a summary of price changes on page 18 ▪ The document is published on Vector's website ▪ The methodology follows a logical structure and presents relevant information in tables in a clear way. Figure 1 is particularly helpful	
(b) The pricing methodology disclosed should demonstrate: **(i)** How the methodology links to the pricing principles and any non-compliance	▪ The methodology explicitly links to the pricing principles by including a section showing its consistency with the pricing principles	▪ The methodology hints at cases of cross subsidy on paragraph 8.4 but does not clearly identify them ▪ We have identified further instances of non-alignment to the pricing principles and have noted them in our pricing principles review
(ii) The rationale for consumer groupings and the method for determining the allocation of consumers to the consumer groupings	▪ The methodology clearly identifies three consumer groups, referred to as service classes ▪ The methodology identifies connection types as the factors for grouping consumers ▪ The rationale for defining service classes is provided on paragraph 4.2	
(iii) Quantification of key components of costs and revenues	▪ Figure 1 presents a breakdown of target revenue into key components	▪ The components could be more descriptive of the costs that are included
(iv) An explanation of the cost allocation methodology and the rationale for the allocation to each consumer grouping	▪ An overall rationale for allocation of costs is presented on paragraph 7.4 ▪ A description of the allocators used is given ▪ Table 6 provides the method of cost allocation and a rationale for each allocator used	▪ The rationale is not provided for the choice of allocators used for non-system fixed assets, indirect and other costs, and regulatory tax. The methodology could mention what alternatives exist, such as using asset value as the allocator for indirect costs, and then describe the rationale used in support of the allocator chosen (kWh and ICP in the case of indirect costs)
(v) An explanation of the derivation of the tariffs to be charged to each consumer group and the rationale for the tariff design	▪ The rationale for the tariff design is provided on paragraph 4.3 ▪ The tables in Appendix 3 provide clear data on the composition and rate of charges	▪ The methodology should show how the costs allocated to service classes are derived to obtain the tariffs presented in Appendix 3 ▪ There is no explanation for the way that the fixed and variable ratio for tariffs is established

Guideline	What is done well?	What is missing?
(vi) Pricing arrangements that will be used to share the value of any deferral of investment in distribution and transmission assets, with the investors in alternatives such as distributed generation or load management, where alternatives are practicable and where network economics warrant.	▪ Section 11 summarizes Vector's approach to pricing distributed generation	▪ The methodology could be more descriptive of these pricing arrangements
(c) The pricing methodology should: **(i)** Employ industry standard terminology, where possible	The methodology uses industry standard terminology	
(ii) Where a change to the previous pricing methodology is implemented, describe the impact on consumer classes and the transition arrangements implemented to introduce the new methodology.	▪ The methodology identifies situations where prices have changed and describes those changes ▪ Vector describes transitional arrangements to limit price shock on page 10 and limits price changes for most consumption patterns to no more than 10% each year	▪ The methodology should explain the impact of the price changes described on page 18 to the different service classes ▪ The impact of the increase in power factor charges appears significant, i.e. power factor charges increased from $0.0011/kVAr/day to $0.0658/kVAr/day. The implications of this increase for consumers with half hourly metering should be assessed and described

Key to evaluation	Does not guidelines	Partially follows guidelines	Follows guidelines

Table 2: Evaluation of the Pricing Methodology against the Pricing Principles

Pricing principles	What is done well	What is missing
(a) Prices are to signal the economic costs of service provision by: **(i)** being subsidy free (equal to or greater than incremental costs, and less than or equal to standalone costs), except where subsidies arise from compliance with legislation and/or other regulation	▪ The methodology provides a brief description of its approach to recovering short run incremental costs ▪ The methodology identifies the primary driver of the long run incremental cost of a connection ▪ The methodology states that short run incremental costs are nil where spare capacity exists	▪ The methodology hints in paragraph 8.4 to cases of cross-subsidization, but does not highlight where or why they occur ▪ We would expect to see an estimate of standalone costs and the incremental cost of adding a new customer to the system
(ii) having regard, to the extent practicable, to the level of available service capacity	▪ The methodology provides a measure of the useful life remaining in Vector's assets ▪ Vector offers TOU tariffs that should provide incentives to use spare network capacity when it is available	▪ We would expect to see: – A description of current service capacity and how much of that capacity is used to meet demand – An explanation of the relationship between prices and service capacity
(iii) signalling, to the extent practicable, the impact of additional usage on future investment costs	▪ The methodology recognizes that consumers need to be charged for the full or proportionate cost of assets (new and existing) that they will use ▪ Vector offers controlled load prices	▪ In order to see whether Vector's charges account for the cost of new and existing assets, the methodology should explain any relationship between prices and future investment ▪ We would expect to see forecasts of investment needs to meet future demand
(b) Where prices based on 'efficient' incremental costs would under-recover allowed revenues, the shortfall should be made up by setting prices in a manner that has regard to consumers' demand responsiveness, to the extent practicable	▪ The methodology states that some residential and small commercial customers are sensitive to the level of fixed charges and therefore places more weight on their variable charge ▪ Vector considers connection size a reasonable proxy for responsiveness to the level of fixed charge and therefore increases the daily fixed fee with the size of the connection while decreasing the rate of the variable charge	▪ The methodology could present supporting analysis for its assessments of price responsiveness of demand

Pricing principles	What is done well	What is missing
(c) Provided that prices satisfy (a) above, prices should be responsive to the requirements and circumstances of stakeholders in order to: **(i)** discourage uneconomic bypass	▪ The methodology provides a description of how non-standard contracts are negotiated with large customers to reflect the cost of service	▪ The methodology provides a good explanation of when economic bypass might occur however we would expect to see this done for uneconomic bypass instead. The methodology should describe where it finds risk of uneconomic bypass occurring and how that risk is mitigated
(ii) allow for negotiation to better reflect the economic value of services and enable stakeholders to make price/quality trade-offs or non-standard arrangements for services	▪ The methodology presents a complete approach to non-standard arrangements in pages 19 through 21 ▪ The number and size of non-standard contracts is provided ▪ Price/quality trade-offs are offered to customers through non-standard contracts	
(iii) where network economics warrant, and to the extent practicable, encourage investment in transmission and distribution alternatives and technology innovation	▪ The methodology complies with Part 6 of the Electricity Industry Participation Code 2010 in its approach to pricing distributed generation	▪ The methodology could show ways in which Vector encourages these activities beyond compliance with the Code
(d) Development of prices should be transparent, promote price stability and certainty for stakeholders, and changes to prices should have regard to the impact to stakeholders	▪ The methodology lists the data sources used for its cost of service model ▪ Vector has transitional arrangements and price increase limits to promote price stability ▪ Vector consults annually with retailers on its price setting process	▪ The methodology confuses publication of its pricing methodology with transparency
(e) Development of prices should have regard to the impact of transaction costs on retailers, consumers and other stakeholders and should be economically equivalent across retailers	▪ Vector offers the same network pricing to all end consumers irrespective of which retailer they use	▪ The methodology could point out which transaction costs are most relevant and how they are addressed ▪ The amount of tariffs presented in Appendix 3 appears to be significant. The methodology should explain the reason for having two different tariff schedules for different parts of the network

Key to Assessment	Does not align with principles	Partially aligns with principles	Aligns with principles