Evaluation of Powerco 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 Powerco'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 Powerco's methodology

The table summarises our understanding of the methodology that Powerco uses to determine prices for one mass market consumer group—the E1 group on the Western Network. This example is provided to explain our understanding of Powerco's pricing methodology.

	Approach	Rationale
Customer categories	Consumers are allocated to a pricing zone by their associated GXP, then to their group by the installed capacity of their connection (kVA)	The costs of servicing different customers vary by location on the network (GXP), and the maximum demand that is consumed (kVA)
Cost allocation	Where possible, costs are directly allocated to regions (using GXPs and asset values). Costs are then allocated to consumer groups within each region by a 80:20 weighted average of the total ICPs and group contribution to system demand	Rationale is not clearly provided, particularly for costs that are not directly attributable to the E1 group
Charging basis	▪ Variable volume charge (c/kWh) with different rates for day and night consumption ▪ Variable demand charge ($/kW) based on single anytime maximum demand in a month ▪ Fixed charge ($/day)	The demand charges reflect consumers impact on peak demand, with the remaining charges intended to cover the balance of costs

[1] Powerco's 2013 pricing methodology is available online at: http://www.powerco.co.nz/uploaded_files/Publications-and-Disclosures/New/pricing/2013-Elec-Pricing-Methodology.pdf

Overview of our evaluation of Powerco's methodology

There is a lot of useful information provided in Powerco's pricing methodology. The methodology uses tables and graphs effectively to convey key messages and data, and generally follows a good narrative. However, some of the information provided is unnecessary (such as description of Powerco's corporate history and listing all of the legal requirements at the start of the document), making the methodology longer than it should be. The logic also appears to break down in places, particularly when describing the allocation of costs to different customer groups. It would be useful to provide a visual summary of each step in the pricing methodology showing how company-wide costs/revenues are allocated to different customer groups and how these costs are recovered through tariffs.

The major concern highlighted through our review is that we are unsure whether the methodology in fact describes the pricing approach applied to Powerco's eastern network. The methodology states that a cost of service model has been developed for the eastern network to achieve consistency with the approach on the western network. However, the methodology also indicates that the cost of service model has not yet been applied (see paragraph 78). This leaves the reader unsure how prices are determined on the eastern network.

We also find that Powerco's pricing methodology does not signal the economic costs of service provision to all of its customers. The methodology does not assess how available service capacity or the need to invest in new capacity drives network costs, and how these costs are reflected in tariffs to smaller customers. However, Powerco does charge larger customers based in part on their contribution to regional coincident peak demand, which allocates costs to those customers creating the need for any new investment.

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 is publically available on the Powerco website, and is presented in a clear format with good use of summary tables throughout	Our main concern with the methodology is that the approach for setting prices on its eastern network does not seem to be presented. Powerco states that it will move to a new methodology for pricing on the eastern network that is aligned with the western network in the future, but only describes the western network methodology. As a result, we are unsure how prices are currently set on the eastern network. We also identified a number of less significant issues: ▪ The E1C load group (identified in paragraph 25) is not defined ▪ The tables are clear, but require more explanation to link the methodology from one step to the next ▪ The consultation diagram (on page 50) is not legible
(b) The pricing methodology disclosed should demonstrate: **(i)** How the methodology links to the pricing principles and any non-compliance	Powerco presents a direct statement of compliance with the pricing principles in section 13. A statement of compliance with the Commerce Commission information disclosure determination (clauses 2.4.1 to 2.4.5) is also provided in section 14	

Guideline	What is done well?	What is missing?
(ii) The rationale for consumer groupings and the method for determining the allocation of consumers to the consumer groupings	Consumer groupings are identified, and diagrams provide helpful illustrations	The method for allocating consumers to groups raises some questions: ▪ Six consumer groupings are defined in the eastern network using different drivers (such as fuse size and installed capacity). It therefore appears that a consumer could fall into more than one category ▪ The tree diagram (on page 23) could more clearly link to the six consumer categories, and explicitly state which groups no longer exist (e.g. T43) ▪ The rationale for sub-categories of consumers within the six consumer groups is not fully explained. For example, the separation of residential customers into Region A and Region B (page 32) does not provide any evidence to suggest that customers groups have been properly defined. It appears that relatively urbanised areas (such as Masterton city) have been grouped into Region B, despite having relatively high levels of population density
(iii) Quantification of key components of costs and revenues	Good use of a tables to present the quantification of costs and revenues	▪ The methodology identifies that data is unavailable for most consumers' anytime maximum peak demand or peak demand, but does not explain the assumptions used in the methodology ▪ Although not required, it would be good to identify if any changes in prices are driven by changes in methodology, or by changes in costs and revenues
(iv) An explanation of the cost allocation methodology and the rationale for the allocation to each consumer grouping		▪ Paragraph 78 describes a cost of supply model for the eastern network, but it appears that the model has not actually been used to set prices. If an old model is being used in the eastern region then this approach should be described in this methodology ▪ There is not clear description of how costs are allocated to different consumer groups, or the relationship between costs drivers and consumer groups. For example, in the western region how costs have been allocated to zones is unclear, and the allocation to customer groups appears to be technically infeasible due to the lack of data on contribution to regional coincidental peak demand (RCPD)

Guideline	What is done well?	What is missing?
(v) An explanation of the derivation of the tariffs to be charged to each consumer group and the rationale for the tariff design	The methodology includes a good description of theory behind the tariff design, and an explanation of the different costs imposed by some consumers	▪ The methodology should provide a link between pricing theory and how the theory is translated into Powerco's tariffs. For example, there is no description of the basis for determining the proportion of variable, demand, and fixed charges that are applied to each consumer group
(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.	▪ A clear description is provided of the discount provided to the E1 group in the western region ▪ Several tariff options are identified for the eastern network (including "NITE")	▪ The methodology should provide a paragraph that explains how the distributed generation policy complies with this guideline ▪ The methodology asserts that there are options for discounted tariffs to shift load from peak to off peak times and that the tariffs are available online. However, a link to the location of this information should be provided (we could not find the relevant information online).
(c) The pricing methodology should:		
(i) Employ industry standard terminology, where possible		
(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.	Section 4 clearly presents all changes upfront, and the changes appear to be reasonable	It is unclear whether the changes listed in section 4 are material or small, technical changes to the methodology. It would be useful to present a sense of the impact of these changes on consumers (are particular prices going up or down, and are any transition arrangements in place?)

Key to evaluation	Does not follow 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	A clear description of the interpretation of these economic principles is presented in Section 13. Graphs are used well to illustrate the subsidy free zone	▪ Not convincing that a solar PV unit is the best alternative source of electricity for estimating standalone cost. Will solar provide the same level of service as Powerco's network? This analysis would be bolstered by illustrating cost of a range of technologies that might provide equivalent services, and then choosing the lowest cost alternative. One option might include the cost of Powerco's BASEPOWER network alternative (described in paragraph 183) ▪ Paragraph 163 states that the approach recognises differences in cost between regions, but does not explain how the methodology accounts for these differences to determine incremental or standalone cost in each region ▪ Paragraph 163 appears to identify a subsidy between urban and rural customers: "the averaging could mask the difference between rural and urban customers and obscure the few specific customers that are supplied at below marginal cost"
(ii) having regard, to the extent practicable, to the level of available service capacity	Good summary tables and information is presented on capacity, consumer groups characteristics and locational factors throughout the methodology and in the Annex	No relationship is drawn between available service capacity and prices. For example, no clear links are drawn between customer locations or characteristics and their impact on capacity
(iii) signalling, to the extent practicable, the impact of additional usage on future investment costs	▪ Investment requirements for different groups are provided in the Annex, and the pricing structure for each consumer group is presented ▪ Demand tariffs are included in the western network to address the need for capacity	▪ Forecasts of investment costs are not provided ▪ No links are drawn between the impact of additional usage or investments on prices

Pricing principles	What is done well	What is missing
(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	This has been done well—the costs that are not directly attributable to a consumer group are charged to customers based on a weighting of 80:20 for consumers' contribution to RCPD and ICPs in that group. This approach should target the least price responsive customers	
(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	▪ Identifies the main risk of uneconomic bypass, and the approach to negotiate non-standard contracts ▪ Identifies an example in the Wairarapa where negotiations took place with a large customer to agree on a non-standard contract	▪ Would be good to explain how the risk of uneconomic bypass is identified in the case of each customer. It is unclear whether customers need to raise the prospect of bypassing the network to Powerco, or whether Powerco actively identifies those customers that might be better off under an alternative supply arrangement
(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	▪ Identifies that price-quality trade-offs for individual customers in the mass market are not possible, but are for non-standard customers ▪ Describes the consultation approach to check customer satisfaction with price and quality, and the consultation with customers proposed investments that may require increased prices	The consultation diagram is unreadable and therefore adds little to the methodology
(iii) where network economics warrant, and to the extent practicable, encourage investment in transmission and distribution alternatives and technology innovation	▪ Identifies approach to pricing for customers with distributed generation ▪ Identifies additional circumstances where prices signals and incentives encourage innovation or load management	▪ Explanation of table 12 would be helpful ▪ No explanation what price signals or incentives are actually provided to encourage innovation or load management

Pricing principles	What is done well	What is missing
(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	▪ Good illustration of transparency, and the agreement with the principles of price stability and certainty for stakeholders	▪ The methodology does not describe how the impact on stakeholders is assessed, any transition arrangements for changes to the prices, or how any conflicts would be managed
(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	▪ Identifies the move towards rationalising tariff groups to minimise transaction costs for retailers ▪ Identifies economic equivalence across retailers and early consultation each year in relation to determining the methodology	

Key to evaluation	Does not comply with principles	Partially complies with principles	Complies with principles