Evaluation of OtagoNet 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 OtagoNet'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 OtagoNet's methodology

The table below summarises our understanding of the methodology that OtagoNet uses to determine prices for its domestic installations. The purpose of this example is to explain our understanding of OtagoNet's pricing methodology using the example of one consumer group (this is not a comprehensive summary of the pricing methodology that applies to all customers).

	Approach	Rationale
Customer categories	The main distinguishing factor between customer groups is the customer's contract capacity and type of metering	The rationale is to separate customers based on their impact on the network design and operation
Cost allocation	The basis in which costs are allocated include ADMD, peak, shoulder and low period energy calculations, load flow calculations, length of line segments, transformer size, and other variables	Individual rationales are presented for allocating each type of cost, but no overall objective for the cost allocation methodology is given
Charging basis	Domestic customers are charged an annual fixed charge at a rate per kVA of their supply capacity (10kVA in general) and a variable day/night tariff per kWh. Low user fixed charge available	A rationale for the charging basis is not provided

[1] OtagoNet's 2013 pricing methodology is available online at: http://www.otagonet.co.nz/files/20130327151418-1364350458-0.pdf

Overview of our evaluation of OtagoNet's methodology

OtagoNet's methodology is clearly written and the language is easy to understand. However, the structure of the document is not as well organised as it could be. For example, when describing customer categories, the methodology explains the charging structure for group customers. Although this information certainly needs to be included in the methodology, it falls outside the scope of defining customer groups and should instead be raised as a separate step in the pricing process. We think that a good structure to follow is to first define customer groups, then describe how costs are allocated to those groups, and finally how tariffs are designed to recover the costs that are allocated to each consumer group.

The methodology presents good reasons for grouping customers and allocating costs. However, we did not find a rationale for the tariff design for group customers.

The area where the methodology could improve the most is in its understanding and discussion of cross-subsidies. The methodology appears contradictory in stating that OtagoNet has subsidy free prices, yet recognizes cases of subsidisation between urban and rural consumers. This situation could be clarified by estimating the incremental costs of serving these different customers, and checking whether the revenues earned from different consumers are at least sufficient to recover those costs. We consider it unlikely that tariffs would under recover incremental costs, and in fact what the methodology describes as cases of cross-subsidy may be instances of price discrimination—with customers making different contributions to recovering network fixed costs, while still being charged above incremental costs.

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 states that there have been no material changes to the pricing methodology since 2002 ▪ The methodology is published on OtagoNet's website and is clearly written	▪ We would expect to see how changes to the allocation of costs to customer groups (p. 35) do not involve material changes
(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 through a section showing how it complies with the principles	▪ The methodology is contradictory when referring to cross-subsidisation of tariffs. While in several instances it states that the network's tariffs are subsidy free (p. 36 for example) it recognizes on page 8 the existence of urban-rural subsidisation ▪ We have identified further instances of non-alignment and have noted them on our pricing principles review
(ii) The rationale for consumer groupings and the method for determining the allocation of consumers to the consumer groupings	▪ The factors leading to each customer group are identified ▪ The rationale behind the use of these factors and therefore for grouping customers is provided on page 16	▪ A potential overlap of customer categories could occur if a consumer were to have TOU metering and a capacity of up to 150 kVA. The methodology's customer categorisation should be clearer so as to dissipate such cases
(iii) Quantification of key components of costs and revenues	▪ The key cost components are illustrated on a table on page 14	▪ OtagoNet's rate of return of at least 10% on equity is calculated over the total asset value, while it should be comprised of equity and debt. Stripping out the debt component would lower OtagoNet's required return, thus lowering the apparent under recovery of costs
(iv) An explanation of the cost allocation methodology and the rationale for the allocation to each consumer grouping	▪ A good description of the cost drivers (customer attributes) and how they are applied is presented ▪ An explanation of why the drivers are relevant is provided ▪ The cost allocators used are provided ▪ Rationales for the cost drivers and cost allocators are given	▪ The charges are presented at a GXP level instead of being assorted by customer groups

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 design of the charging structure for group customers is provided on page 18 ▪ The design and the rationale for the design of the charging structure for individual customers is presented on page 33	▪ The rationale for the tariff design for group customers is not provided ▪ We would expect the methodology to justify having an arbitrary fixed/variable ratio, and why a 50:50 ratio is used ▪ We would expect to see how tariffs are derived to recover costs ▪ On page 34 there is a reference to section 15 yet the methodology ends on section 13
(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.	▪ OtagoNet's approach to distributed generation is clearly described on pages 12-13. The methodology clearly lays out the financial transactions that can occur with distributed generators	
(c) The pricing methodology should: **(i)** Employ industry standard terminology, where possible	▪ The methodology uses industry standard terminology	▪ 'Customer attributes' are generally labelled 'cost drivers'
(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.	▪ No changes have taken place to the pricing methodology	▪ We would expect to see the impacts to customer groups as a result of the cost allocation changes mentioned on page 35

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	▪ The methodology recognises cases of cross-subsidisation between urban and rural groups ▪ A good definition of subsidy free prices is given	▪ The methodology asserts subsidy free prices, while recognizing urban-rural subsidisation and subsidies between individual customers and also in between individual and group customers. It appears that these could be cases of price discrimination where customers are making different contributions to recovering costs yet they may all still be paying above incremental cost, i.e. being subsidy free ▪ We would expect to see estimates of the incremental and standalone costs
(ii) having regard, to the extent practicable, to the level of available service capacity	▪ The capacity of distribution transformers is presented on table 9-H ▪ The contract capacity and the maximum demand of three typical individual customers is presented on table 10-A ▪ The methodology offers TOU metering and has a day/night component to its tariffs	▪ The methodology would be strengthened by providing an explanation of the relationship between prices and service capacity ▪ We would expect to see the amount of service capacity currently being used at a transformer level, i.e. an extra column on table 9-H showing how much of the capacities is being used to meet demand
(iii) signalling, to the extent practicable, the impact of additional usage on future investment costs	▪ Capacity based and peak demand charges for individual customers signal the impact of additional demand on future investment costs	▪ We would expect to see: – forecasts of investment needs to meet future demand – a forward-looking relationship between prices and future investment
(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	▪ OtagoNet has split its customers on the basis of their ability to respond to price signals, i.e. it considers individual customers to be more responsive than group customers ▪ The methodology has a good definition of Ramsey pricing and provides a rule of thumb measure of price responsiveness	▪ Variable charges are not a form of Ramsey pricing if the same variable charges are offered to customers regardless of their price responsiveness ▪ For the rule of thumb to be useful in terms of applying Ramsey Pricing it should be assessed for different customer groups so as to understand each one's price responsiveness relative to others

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 states those cases where it would expect uneconomic bypass to occur ▪ The methodology addresses the risk of uneconomic bypass by negotiating pricing arrangements that reflect as closely as possible the network costs incurred by each consumer ▪ The pricing model allows customers to own their own distribution transformers, passing on the savings made by ownership	
(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	▪ Widespread consultation is carried out asking consumers' opinions on price/quality trade-offs, noting the role of the quality targets set by the Commerce Commission ▪ A description is provided of the approach to non-standard contracts and an idea of the size and number of these contracts is given	
(iii) where network economics warrant, and to the extent practicable, encourage investment in transmission and distribution alternatives and technology innovation	▪ OtagoNet's peak demand component of the line charge provides a large reward to customers who invest in distribution alternatives	▪ The methodology could do more to encourage distributed generation, such as not collecting injection charges
(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 current price structure has been in place since 2002 ▪ Stakeholder impact is assessed through annual surveys and other channels of interaction with customers	▪ See comment in guidelines regarding changes to cost allocation
(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	▪ Economical equivalence between retailers is considered and maintained by applying the same tariff schedules to all retailers ▪ The methodology identifies the trade-off between equitability of pricing and minimising transaction costs to retailers	▪ Considering that retailers charge on an ICP billing level it is not clear that a GXP billing approach will considerably save on administrative billing costs for retailers ▪ It is not clear why individual customers cannot all be grouped into a standardized tariff

Pricing principles	What is done well	What is missing

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