Evaluation of Westpower 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 Westpower'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 Westpower's methodology

The table below summarises our understanding of the methodology that Westpower uses to determine prices for its Category 1 customers. The purpose of this example is to explain our understanding of Westpower'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	All customers with load of less than 15kVA are grouped together (households and businesses)	The expected load pattern is given as the reason for customer allocation. However, the methodology also states that domestic consumers and businesses place different demands on the network
Cost allocation	Distribution asset related costs (capital and operating) are allocated on the basis of Anytime Maximum Demand. For domestic customers, AMD is calculated as the residual after the AMD of other customer groups is measured. Transmission costs are allocated according to Coincident Maximum Demand (CMD)	Most assets are used by most customer groups. CMD is used for transmission because it more closely proxies Transpower's charges
Charging basis	All Category 1 customers face a fixed charge of 15c/day, and variable charges of 8.245c/kWh for distribution and 1.778c/kWh for transmission	Complies with low user fixed charge regulations, while recovering the costs allocated to the group ($7 million)

[1] Westpower Network's 2013 pricing methodology is available online at: http://www.westpower.co.nz/pdfs/pricemethod2013.pdf

Overview of our evaluation of Westpower's methodology

Wetspower's pricing methodology closely follows the information disclosure guidelines by using a logical structure and clear descriptions of customer grouping, cost allocation, and tariff derivation. We identified two areas where the descriptions of how the pricing methodology operates could be improved—by ensuring that all customers can clearly identify which group they belong to and by explaining the challenges of identifying anytime maximum demand from residential customers.

The pricing methodology does not appear to grasp the importance that the pricing principles place on the recovery of network fixed costs (specifically through principles a(i), b, and c(i)). The principles encourage distributors to think carefully about how fixed costs are recovered by ensuring that prices exceed incremental cost, but do not discourage use of the network either through demand reductions or bypass. Given the importance of this concept, we would expect to see estimates presented of the incremental cost of serving different customer groups and how tariffs reflect the recovery of fixed network costs.

One element that Westpower does relatively well is to describe the physical characteristics of its network and how these characteristics interact with prices (including with reference to Orion's network). It would be good to complement the descriptive statements about the physical characteristics of Westpower's network with numerical analysis (for example, comparing available service capacity and demand at different times of day and across different seasons).

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 summarises nine document revisions made since 2004, highlighting that no material changes have been made to the pricing approach over that timeframe ▪ The methodology is published on Westpower's website	
(b) The pricing methodology disclosed should demonstrate: **(i)** How the methodology links to the pricing principles and any non-compliance	▪ The methodology provides a summary of conformance in section 9	▪ Note: 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	▪ Customer groups are primarily defined by the kVA capacity of connections	▪ There is some ambiguity about whether a particular customer would fall into Category 2 if it had a connection of between 15-100 kVA, but undertook an "industrial" activity ▪ The rationale for grouping domestic and small businesses together should be better explained. The methodology states that "consumers are allocated to groups on the basis of their expected load patterns", and then states that domestic and small business customers "place different demands on the network and hence have different tariff structures" (p7). The methodology should be clearer about whether load patterns and resulting costs are dealt with through grouping customers or through tariff design
(iii) Quantification of key components of costs and revenues	▪ Total costs to be recovered (of around $20 million) are listed in a table on p10	

Guideline	What is done well?	What is missing?
(iv) An explanation of the cost allocation methodology and the rationale for the allocation to each consumer grouping	▪ The methodology explains that asset related costs are allocated using the Anytime Maximum Demand of each customer group ▪ The methodology presents the revenues to be recovered from each customer group on p14	▪ For domestic customers, AMD is calculated as the residual after the AMD of other customer groups is measured. This approach appears to inevitably understate domestic AMD by taking network peak and subtracting the AMD of other groups (which may not occur during network peaks). As a result, domestic AMD is a much lower proportion of total AMD than domestic Coincident Maximum Demand (CMD) ▪ It is unclear how the resulting return on asset value in the table on p14 has been calculated. For example, the allocation made for the cost of capital for domestic consumers is $1.7 million. The asset base allocated to these customers has a value of $32.2 million. This implies a return on assets of 5% (not 1.9% as stated)
(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 presents the different tariffs for each consumer group in Section 6, and the rationale for the tariff design ▪ Westpower clearly links the tariffs to the forecast revenue recovery, and the target revenue required to recover costs, for each consumer group (using the same excellent format as Orion)	▪ The tables in section 6 could be improved by more clearly labelling the variables used to estimate the revenue to be earned from fixed charges. For example, fixed charges for domestic customers are derived from a variable with the value 10,386 that is placed under a heading labelled "Chargeable quantity kWh". In fact, this variable appears to represent ICP numbers
(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.	▪ The methodology explains that Westpower pays avoided transmission costs to distributed generators of $1.6 million per year, and does not charge distributed generators for injecting power into Westpower's network	
(c) The pricing methodology should: **(i)** Employ industry standard terminology, where possible	▪ The methodology uses standard terminology	

Guideline	What is done well?	What is missing?
(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 to the methodology have been introduced	

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 identifies two particular cases where regulation/legislation creates cross-subsidies: – To low users – To rural customers	▪ To demonstrate subsidy free prices, the methodology should demonstrate that the prices charged to each customer group exceed the incremental cost of service provision. This analysis may in fact suggest that low users and rural customers are not receiving cross-subsidies, but rather making a lower contribution towards network fixed costs than other customers ▪ The claim (on p22) that increases in cost components above CPI cannot be recovered is somewhat misplaced. CPI represents price changes in a bundle of goods (including those containing oil, copper, aluminium etc), and the prices of other goods in the bundle will increase at rates lower than CPI. Therefore, CPI should be a reasonable measure for the average cost increases facing Westpower
(ii) having regard, to the extent practicable, to the level of available service capacity	▪ The methodology provides useful information linking prices with the physical characteristics of the network (long stringy network) and demands (mild summers and winters, with not much hot water load)	▪ It would be good to see a comparison of peak demands by season and time of day, and available service capacity during those time periods ▪ It would also be good to know whether there are any particular locations on the network that have unique characteristics (such as large amounts of spare capacity due to the withdrawal of mining demand)
(iii) signalling, to the extent practicable, the impact of additional usage on future investment costs	▪ The methodology describes how aspects of the methodology (such as controlled tariffs) provide signals to respond to network peaks	▪ The methodology should present information on the network investments that have been planned, and whether price changes could defer any of these investments

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 pricing principle calls for the recovery of network fixed costs to be directed to the least responsive customers or customer groups ▪ This requires the methodology to attempt to gauge how different customer groups would respond to charges that recover a greater or lesser proportion of Westpower's fixed costs (i.e. costs above incremental costs)
(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 identifies that uneconomic bypass is discouraged through prices that are less than standalone cost	▪ The methodology should provide an estimate of the standalone cost of serving different customers to demonstrate that bypass is in fact discouraged ▪ Prices that fall below standalone cost can still encourage uneconomic bypass if the recovery of network fixed costs leads customers to adopt an alternative supply option that would cost more than the incremental cost of providing network services ▪ The methodology should identify where prices that fall between incremental and standalone costs would risk creating uneconomic bypass, and what Westpower would do to manage this issue (for example, by negotiating discounts with affected customers)
(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 refers to a specific case when an industrial customer was able to select a higher quality/cost option	▪ The methodology should describe what information Westpower uses to understand the quality/cost demands of other customers (such as domestic customers)
(iii) where network economics warrant, and to the extent practicable, encourage investment in transmission and distribution alternatives and technology innovation	▪ Approach to paying and encouraging distributed generation connections is provided	

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	▪ Westpower places significant weight on having a methodology that retains the same approach from year to year	
(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	▪ The methodology explains that a simple pricing approach helps to manage costs to retailers ▪ Economic equivalence is maintained across competing retailers	

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