Evaluation of Aurora 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 Aurora'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 distributor 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 Aurora's methodology

The table below summarises our understanding of the methodology that Aurora uses to determine prices for its standard domestic connections (load groups 1 and 2). The purpose of this example is to explain our understanding of Aurora's pricing methodology using the example of one consumer group.

	Approach	Rationale
Customer categories	Consumers are categorised to load groups based first on location, and then according to physically distinguishable assets (e.g. single phase connections)	Consumers utilise shared network assets differently, leading to different impacts on the network and different costs
Cost allocation	Required revenues are allocated to asset classes, which are allocated to load groups, depending on their use of the assets. Assets are allocated based on annual demand, group anytime demand, sum of installed capacity, and group congestion period demand	The rationale for using the four allocators is not explicitly stated
Charging basis	Costs are recovered through kVA capacity charges, and kW demand charges. Not clear how congestion period demand is assessed. The smallest domestic consumers (L1 and L1A) are charged a fixed charge per ICP and kWh charges (based periodic consumption)	Capacity and demand are considered to be the key drivers, and are reflective of the costs incurred (particularly standalone). The smallest consumers' fixed charge is based on the low user fixed charge regulations

[1] Aurora's 2013 pricing methodology is available online at: http://www.auroraenergy.co.nz/userfiles/file/20130305%20Use-of-System%20Pricing%20Methodology.pdf

Our evaluation of Aurora's methodology

Aurora's pricing methodology is very clearly written, with a good use of diagrams and tables. From our evaluation, we found that the methodology was easy to read, and did not include much information that was unnecessary. It was good to see clear methodologies presented for distributed generation and seasonal loads. However, we found that the rationale for allocating costs to consumers was not presented as clearly as other parts of the methodology. Specifically, it would be good to include a brief summary of the rationale for using particular cost allocators (group anytime demand, group congestion period demand, etc) and to explain how these allocators are estimated if direct network data is not available.

In our view, the methodology reflects a good understanding of the economics behind the pricing principles. Aurora includes explicit links to the pricing principles throughout the methodology, in addition to clear descriptions of its understanding of the principles. This helps to ensure that the approach taken is clearly described to the reader. However, we believe that there are two areas where Aurora could strengthen its alignment with the principles. Firstly, Aurora should include estimates of the short-run incremental and standalone costs of serving different consumer groups on its network. This would help to identify where instances of cross-subsidies occur (if any), and whether in fact the network risks encouraging uneconomic bypass. Secondly, it would be helpful to present current forecasts of demand and the investments needed to meet this demand. That would help to identify whether Aurora's prices do signal the costs of additional 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 very clearly written, and presented in a logical structure with good use of diagrams and tables. For example, Figure 5 increases the clarity of the approach to allocating revenues ▪ The methodology is published clearly on the website ▪ Aurora identifies that there are no major revisions to the methodology	
(b) The pricing methodology disclosed should demonstrate: **(i)** How the methodology links to the pricing principles and any non-compliance	▪ The methodology provides a high level summary of compliance with the pricing principles on pages 5-7. Explicit references to the principles are also found accurately throughout the methodology	▪ Aurora has identified areas where there are risks of non-compliance, but it is not clear whether the non-compliance actually exists (e.g. cross-subsidies)
(ii) The rationale for consumer groupings and the method for determining the allocation of consumers to the consumer groupings	▪ Aurora clearly categorises consumers into regions and then into the same load groups within each region ▪ Rationale is described as based on physical service delivery characteristics	▪ It is unclear if the definition of Load group 2 means "all remaining single phase connections" or if this group might also include three phase connections (page 17)
(iii) Quantification of key components of costs and revenues	▪ Aurora includes tables that present valuable information on costs and required revenues very clearly	
(iv) An explanation of the cost allocation methodology and the rationale for the allocation to each consumer grouping	▪ The cost allocation methodology is clearly explained in a three step process (Page 17), and the rationale for allocating costs to regions is presented ▪ Pages 17-21 present the relationships between costs and consumer groups and load groups	▪ The rationale for allocating costs to load groups is not clearly presented. Page 11 describes that the load groups are allocated costs proportional to their differentiated use of system's assets. However, no rationale is provided for using different cost allocators (e.g. group anytime demand, or group congestion period demand)
(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 tariff design is presented on page 11, including a summary of the different tariff types for each group of small and large consumers ▪ Table 18 presents the allocation of target revenue to the different price components (e.g. fixed, variable, KVA-km), and additional summary tables are in the attached schedules for each region	

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.	▪ A detailed methodology for large distributed generation is presented from page 27 ▪ The methodology identifies the arrangement for small scale distributed generation, but this is dependent on retailers. ▪ Aurora also presents a policy for seasonal loads (e.g. irrigators, fruit packing houses)	▪ Aurora could be more clear about which generation the policy applies to – terms like 'high voltage' and 'behind load' require further clarification
(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.	▪ Aurora has identified that there are no changes to the methodology, but that there are changes to prices (page 1). The drivers for the price changes are also clearly identified on page 16 ▪ Aurora mentions that transition arrangements were used in the past, but are non-applicable this year	▪ Aurora does not identify which consumer groups have been impacted by the price changes, or to what extent

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	▪ Aurora defines incremental and standalone cost on page 4 ▪ Page 5 identifies that some cross-subsidies exist, partly due to the low user fixed charge regulations, and all other customer groups are subsidy free	▪ The methodology does not clearly identify whether Aurora is referring to short run incremental costs (which do not include cost of connection) or long run incremental costs (includes cost of connection) on page 4. We would also expect to see some estimates for the incremental and standalone costs. Comparing these to the current charges would identify cases of cross-subsidies (where charges are below incremental cost) ▪ We would also expect to see a clearer identification of which customers groups are being cross-subsidised. It appears that there may also be cross-subsidies for rural or remote rural loads as indicated on page 26
(ii) having regard, to the extent practicable, to the level of available service capacity	▪ For non-domestic customers, Aurora has defined 'assessed capacity charges' that reflect the capacity of individual connections ▪ Prices for domestic consumers provide discounts for controlled loads to reflect lower contribution to peak demand ▪ By allocating part of the revenues by congestion period demand, Aurora is providing a signal to customers to shift their demand into non-peak periods, to use available service capacity (pages 22-24) ▪ Table 1 on page 14 provides an indication of utilisation of asset value (which could proxy as available capacity)	
(iii) signalling, to the extent practicable, the impact of additional usage on future investment costs	▪ Aurora states their intention to earn sufficient revenues for their investment programmes (page 1). The pricing structure signals the investment costs of transmission through connection charges to load groups based on their share of anytime demand (page 24) ▪ The congestion period demand charges signal higher prices at congestion during peak times for non-domestic customers	▪ Aurora does not include any descriptions or quantifications of forecast demand or required investments in the methodology

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	▪ Aurora identifies that there is a risk that total costs will be under-recovered (page 6) ▪ Aurora attempts to recover the larger sunk costs from larger consumers by demand and capacity charges, while charging domestic consumers predominantly variable consumption charges	▪ We are not convinced that higher transaction costs flow from Ramsey pricing. In fact the approach to charge non-domestic consumers larger fixed charges, and domestic consumers more variable charges, may be a form of Ramsey pricing ▪ It is not obvious from the methodology where the risks of under-recovery are occurring or are likely to occur
(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	▪ Aurora describes an approach to mitigating uneconomic bypass—the inclusion of a kVA-km tariff for larger customers, but allows for prudent discounts (page 23)	▪ It would be good to explain more about the prudent discount policy, and how that policy discourages uneconomic bypass. For example, what are the minimum requirements for customers to prove they should receive a discount? ▪ The methodology identifies that uneconomic bypass may occur due to overpricing, but where this may occur is not detailed. As a result the reader cannot identify if this is actually occurring, likely to occur, or just a theoretical risk
(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	▪ There are no non-standard contracts currently in place, but Aurora has identified one standard large contract, and their openness to negotiate contracts where appropriate ▪ On page 1, Aurora describes their consumer survey and consumer responses to options of price quality trade-offs ▪ The methodology identifies that there is an option for consumers to pay for higher quality equipment to get higher service (although there is no indication if consumers have used this offer)	
(iii) where network economics warrant, and to the extent practicable, encourage investment in transmission and distribution alternatives and technology innovation	▪ Congestion period demand charges (for large consumers) provide a signal for alternative investments ▪ A strong methodology for distributed generation (DG) is provided for high voltage connections. Good use of tables and formulae. Small DG connections may be able to avoid variable charges and some line charges (depending on the retailer)	

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	▪ Page 1 identifies some non-material changes to prices, and the underlying drivers for these changes are on page 16 ▪ Aurora indicates that transition arrangements have been used in the past to promote price stability (e.g. phasing in for the introduction of kVA-km charges). Transparent methodology and strong stakeholder consultation is also included	▪ Aurora has not identified the scale of the changes to the overall prices for each consumer group. If they are substantial for a particular consumer group, then it would be good to see any transition approaches
(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	▪ Aurora explicitly keeps the methodology clear for their key stakeholders (retailers as well as consumers). The methodology clearly identifies the impact on retailers (e.g. seasonal load advice for retailers on page 26). The methodology also identifies the trade-off between cost-reflectivity and the complexity of a greater number of tariffs	▪ A description of the most relevant transaction costs would be welcome

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