



# **DS1001**

## **Pricing Methodology Disclosure 2013**

**Pursuant to: Electricity Distribution (Information Disclosure) Requirements 2012**

**For prices applying from 1 April 2013**

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# DS1001 Pricing Methodology Disclosure 2013

## Overview

### Document status

Draft In Service Under Review Archived 

### Document purpose

Pricing Methodology Disclosure for the 2013-14 pricing year, provided pursuant to the Electricity Distribution (Information Disclosure) Requirements 2012.

### Intended audience

This disclosure document is supplied to the Commerce Commission and made publically available at [www.unison.co.nz](http://www.unison.co.nz).

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### Board certification

Refer to *Appendix B - Certification for Year Beginning Disclosure*.

### Key dates

**Published Date** 31/03/2013

### Related references

#### Legislation

- Commerce Act 1986
- Electricity Distribution (Information Disclosure) Requirements 2012
- Electricity Information Disclosure Requirements issued 31 March 2004
- Electricity Industry Act 2010
- Electricity Participation Code 2010
- Distribution Pricing Principles and Information Disclosure Guidelines (Guidelines)
- Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004 (SR 2004/272) (as at 01 April 2009) section 14 and 15

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## Overview, Continued

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**Publication** The approved Price Methodology Disclosure shall be published on the Unison website [www.unison.co.nz](http://www.unison.co.nz).

**Content** This disclosure document contains the following topics:

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# 1. Definitions/Abbreviations

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<b>½ RC</b>	Means half the replacement cost of network assets.
<b>Electricity Industry Act</b>	Means the Electricity Industry Act 2010.
<b>Anytime Maximum Demand (AMD)</b>	Means the anytime maximum demand of an ICP in kWh's over one half hour for the year
<b>Authority</b>	Electricity Authority
<b>Avoided transmission</b>	Means the expenses incurred by Unison as a direct result of payments to generators for generation or any other activity which substitutes for the use of the transmission system.
<b>Code</b>	Means the Electricity Industry Participation Code 2010.
<b>Commission</b>	Commerce Commission
<b>Consumer</b>	Means any person who is supplied electricity.
<b>Consumer group</b>	A category of consumers for which Unison develops its tariffs (e.g. commercial consumers).
<b>Cost Allocation model</b>	Means the model used by Unison to allocate costs to consumer groups.
<b>Demand</b>	The rate of expending electrical energy expressed in kilowatts (kW) or kilovolt amperes (kVA).
<b>Distributor or Electricity Distribution Business</b>	Means any electricity industry participant who owns or operates a network (that is not an embedded network) other than Transpower.

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## Definitions/Abbreviations, Continued

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<b>Embedded</b>	Means where a generator or another distribution company are physically connected within Unison's network.
<b>Grid Exit Point (GXP)</b>	Means any point of connection to the national grid.
<b>ICP</b>	Means the installation control point.
<b>K Factor</b>	Means the sum of all pass through and recoverable costs in a given pricing period.
<b>kVA</b>	Kilovolt amp
<b>kVA<sub>r</sub></b>	Kilovolt-Amps reactive
<b>kVA<sub>r</sub>h</b>	Kilovolt-Amps reactive hour
<b>kW</b>	Kilowatt
<b>kWh</b>	Kilowatt hour
<b>Lower North Island RCMD</b>	Means Transpower's cost allocation area, the Lower North Island, and the 100 highest regional coincident maximum demand (RCMD) peaks in KW for the year September to August.
<b>N-1 supply</b>	Means an alternative routing for supplying electricity to give a backup in case of primary routing being damaged or failing.
<b>Network</b>	Means the lines, and associated equipment, owned or operated by a distributor in a contiguous geographic area or areas.
<b>Notionally embedded</b>	Means where a generator for all intents and purposes is connected within Unison's network but the connection is theoretical only.

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## Definitions/Abbreviations, Continued

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<b>Non TOU</b>	Non time of use (TOU) means a consumer's site where electricity is metered over a period (e.g. month).
<b>Original requirements</b>	Requirements 22 and 23 of the Electricity Information Disclosure Requirements issued 31 March 2004.
<b>Power factor</b>	kW divided by kVA.
<b>Price category</b>	Means a category of charges identified as a price category in Unison's Pricing Policy which define the line charges applicable to a particular ICP.
<b>Pricing period</b>	1 April to 31 March year.
<b>Region</b>	Means either the Hawke's Bay region or the Rotorua/Taupo (Central) region.
<b>Tariff option</b>	Means the price option within a price category where such a price category provides the customer with a choice amongst one or more options, subject to (by way of example) a particular configuration of metering and load control equipment.
<b>Transmission charge</b>	Has the meaning defined in Part 4 of the Commerce Act (Electricity Distribution Default Price Path) determination dates 30 November 2009, but excludes transmission rebates passed on transparently to end-consumers and/or retailers.
<b>TOU</b>	Time of use (TOU) means a consumer's site where half hour metering is installed and these values are used for calculation of charges.
<b>Unison</b>	Unison Networks Limited

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## 2. Background

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### 2.1 Introduction

This Pricing Methodology Disclosure sets out the methodology that Unison Networks Limited (Unison) has utilised in setting its tariff structure and tariff rates for the 2013-14 pricing year and is prepared pursuant to requirement 2.4 of the Electricity Distribution Information Disclosure Determination 2012.

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### 2.2 About Unison

Unison distributes electricity to businesses and homes across Hawke's Bay, Rotorua and Taupo on behalf of retailers. Unison is owned by the Hawke's Bay Power Consumers' Trust, which holds the shares on behalf of the consumers connected to Unison's network in Hawke's Bay.

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### 2.3 Pricing methodology disclosure

Unison's Pricing Methodology Disclosure (Disclosure) is focused on the structure and allocation of distribution and pass-through costs to consumers and consumer groups. This Disclosure explains how Unison has developed its tariffs, based on the allocation of its network costs across consumer groups for the period 1 April 2013 to 31 March 2014. The tariffs charged by Unison constitute only a portion of the consumer electricity prices as paid by a consumer to their retailer. Queries regarding consumer tariffs should be directed to the consumer's retailer.

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### 2.4 Pricing review

Unison reviews its pricing annually to meet company, industry, legislative and regulatory requirements.

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### 2.5 Information Disclosure Guidelines

Unison's disclosure has been prepared in accordance with the Distribution Pricing Principles and Information Disclosure Guidelines published by the Electricity Authority (Authority).

In 2010 the Authority commissioned Concept Consulting to review a sample of distributors against the Guidelines (including Unison) and subsequently consulted on Draft Criteria for reviewing compliance. The Authority has not subsequently finalised those criteria.

On 5 March 2013, the Authority published its *Decision-Making and Economic Framework for Distribution Pricing* ('Framework'). The Authority's Framework will be considered by Unison for future pricing and disclosures.

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### 2.6 Unison's website

Note that this document does not contain full details of eligibility for price categories, Tariff Options, etc. These details can be found within Unison's Pricing Policy available on Unison's website<sup>1</sup>.

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<sup>1</sup> <http://www.unison.co.nz>

## 3. Regulatory Context

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### 3.1 Introduction

Unison's pricing must be considered within the context of the regulation and guidelines within which Unison operates. This section provides an overview of the key regulatory requirements that impact Unison's pricing and disclosures.

The following are the key regulatory requirements within which Unison operates:

- Electricity Authority's Pricing Principles
- Information Disclosure Requirements
- Low user fixed tariff requirements
- Default Price Path, and
- Electricity Industry Participation Code.

Each of these is discussed below.

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### 3.2 Pricing principles

The Authority has a monitoring role in respect of distributors' price setting approaches and has ratified the Electricity Commission's Pricing Principles and Information Disclosure Guidelines.

The Authority's principles are as follows:

- 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 regulations
  - ii. having regard, to the extent practicable, to the level of available service capacity, and
  - iii. signalling, to the extent practicable, the impact of additional usage on future investment costs.
- 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.
- 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
  - 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, and

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## Regulatory Context, Continued

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### 3.2 Pricing principles (continued)

- iii. where network economics warrant, encourage investment in transmission and distribution alternatives (e.g. distributed generation or demand response) and technology innovation.
- d) Development of prices should be transparent, promote price stability and certainty for stakeholders, and changes to prices should have regard to the impact on stakeholders.
- e) Development of prices should have regard to the impact of transaction costs on retailers and should be economically equivalent across retailers.

In *Appendix A* is an explanation of how Unison considers its pricing approach complies with these principles.

Unison also considers that it must meet the policy intent of not discriminating between rural and urban consumers in setting line charges. As such, Unison has tariff options that apply equally to urban and rural consumers. If policy-makers signalled a strong interest in permitting rural/urban differentials Unison would incur the costs of investigating the tariff impacts of segmenting rural and urban consumers.

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### 3.3 Information Disclosure Requirements

The Information Disclosure Requirements require Unison to provide the following:

- 2.4.1 Every EDB must publically disclose, before the start of each disclosure year, a pricing methodology which –
    - 1. Describes the methodology, in accordance with 2.4.3 below, used to calculate the prices payable or to be payable.
    - 2. Describes any changes in prices and target revenues.
    - 3. Explains in accordance with 2.4.5 below, the approach taken with respect to pricing in non-standard contracts and distributed generation (if any).
    - 4. Explains whether, and if so how, the EDB has sought the views of consumers including their expectations in terms of price and quality, and reflected those views in calculating the prices payable or to be payable. If the EDB has not sought the views of consumers, the reasons for not doing so must be disclosed.
  - 2.4.2 Any change in the pricing methodology or adoption of a different pricing methodology, must be publically disclosed at least 20 working days before prices determined in accordance with the change or the different pricing methodology take effect.
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## Regulatory Context, Continued

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### 3.3 Information Disclosure Requirements (continued)

- 2.4.3 Every disclosure under clause 2.4.1 above must –
1. Include sufficient information and commentary to enable interested persons to understand how prices were set for each consumer group, including the assumptions and statistics used to determine prices for each consumer group.
  2. Demonstrate the extent to which the pricing methodology is consistent with the pricing principles and explain the reasons for any inconsistency between the pricing methodology and the pricing principles.
  3. State the target revenue expected to be collected for the disclosure year to which the pricing methodology applies.
  4. Where applicable, identify the key components of target revenue required to cover the costs and return on investment associated with the EDB's provision of electricity line services. Disclosure must include the numerical value of each of the components.
  5. State the consumers groups for whom prices have been set, and describe –
    - a. The rationale for grouping consumers in this way
    - b. The method and the criteria used by the EDB to allocate consumers to each of the consumer groups.
  6. If prices have changed from prices disclosed for the immediately preceding disclosure year, explain the reasons for changes, and quantify the difference in respect of each of those reasons.
  7. Where applicable, describe the method used by the EDB to allocate the target revenue among consumer groups, including the numerical values of the target revenue allocated to each consumer group, and the rationale for allocating it in this way.
  8. State the proportion of target revenue (if applicable) that is collected through each price component as publically disclosed under clause 2.4.18.
- 2.4.4 Every disclosure under clause 2.4.1 above must, if the EDB has a pricing strategy –
1. Explain the pricing strategy for the next 5 disclosure years (or as close to 5 years as the pricing strategy allows), including the current disclosure year for which prices are set.
  2. Explain how and why prices for each consumer group are expected to change as a result of the pricing strategy.

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## Regulatory Context, Continued

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### 3.3 Information Disclosure Requirements (continued)

3. If the pricing strategy has changed from the preceding disclosure year, identify the changes and explain the reasons for the changes.
- 2.4.5 Every disclosure under 2.4.1 above must –
  1. Describe the approach to setting prices for non-standard contracts, including –
    - a. The extent of non-standard contract use, including the number of ICPs represented by non-standard contracts and the value of target revenue expected to be collected from consumers subject to non-standard contracts.
    - b. How the EDB determines whether to use a non-standard contract, including any criteria used.
    - c. Any specific criteria or methodology used for determining prices for consumers subject to non-standard contracts and the extent to which these criteria or that methodology are consistent with the pricing principles.
  2. Describe the EDB's obligations and responsibilities (if any) to consumers subject to non-standard contracts in the event that the supply of electricity lines services to the consumer is interrupted. This description must explain –
    - a. The extent of the differences in the relevant terms between standard and non-standard contracts.
    - b. Any implications of this approach for determining prices for consumers subject to non-standard contracts.
  3. Describe the EDB's approach to developing prices for electricity distribution services provided to consumers that own distributed generation, including any payments made by the EDB to the owner of any distributed generation, and including the –
    - a. Prices, and
    - b. Value, structure, and rationale for any payments to the owner of the distributed generation.

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## Regulatory Context, Continued

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### 3.4 Low user fixed tariff

Unison is required to make available low user tariffs in line with the Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004 (SR 2004/272) (as at 01 April 2009) section 14 and 15. The key impact of this regulation is that Unison must offer a fixed daily charge to low user residential customers of no more than \$0.15 per day excluding GST and a consumer on the low user fixed daily rate should pay the same or less than a residential consumer on a comparable non-low-user tariff at an annual consumption of 8,000 kWh.

While these are apparently simple these requirements have a significant impact on Unison's tariff rates and tariff structure as outlined in *Sections 8 and 9*.

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### 3.5 Default Price Path (DPP)

Unison's Default Price Path (DPP), as determined under section 52P of the Commerce Act, determines the allowable notional revenue that Unison may recover across its network in a given pricing year. This regulation allows Unison to increase its allowable notional revenue by the CPI most years, less an X factor. The exception years are years such as 2013-14 where the Commission has performed a 'price reset' and recalculated Unison's allowable revenue. Unison may also adjust its revenues to allow for changes in 'pass through' and 'recoverable costs'. These are costs that may be directly passed to consumers as they change over time.

Unison's pass through and recoverable costs for the 2013-14 pricing year are:

- Transpower transmission and new investment contract charges for use of the national grid
  - rates payable to territorial local authorities
  - Electricity Authority levies
  - Commerce Act levies (both for the applicable pricing year and the April 2009 to March 2010 pricing year)
  - Electricity and Gas Complaints Commission general levies, and
  - avoided transmission payments, either made to embedded generators or recoverable due to the purchase of national grid assets.
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## Regulatory Context, Continued

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### **3.5 Default Price Path (DPP)** (continued)

As regulation is not cost-based (where costs include investors' required return on their investment) prices may differ from the costs actually incurred. So, although Unison's pricing is designed to reflect a cost allocation model, prices (or more accurately revenues) may differ from the allocation of costs (for example, distributors are entitled to retain efficiency improvements between five yearly price path resets). Unison is permitted to increase its allowable revenue by CPI + 8% from April 2014, which is indicative of the current position that Unison's allowable revenue is not sufficient to allow prices to fully reflect forecast costs.

The full Default Price Path Quality Path requirements can be found at <http://www.comcom.govt.nz/2010-2015-default-price-quality-path/>.

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### **3.6 Electricity Industry Participation Code**

The Electricity Industry participation Code, in particular section 12A, determines the methodology that Unison must employ going forward when altering existing tariff structures. Section 12A will also require Unison to alter its tariff codes from April 2014.

The Code (Part 6) also governs pricing in respect of connection of distributed generation.

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## 4. Principles and Objectives of Unison's Pricing Methodology

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### 4.1 Objective of Unison's pricing methodology

The objective of Unison's pricing methodology is to provide a stable, unambiguous and self-policing tariff structure that, to the degree possible:

- reflects the costs that different end-consumers place upon the network
- signals the value of consuming outside of peak periods, and
- accounts for the level of understanding and responsiveness that a given consumer group would be expected to have in relation to their energy costs.

As Unison's costs are largely fixed, but revenues are received through predominantly variable charges, managing revenue risk is also a key consideration that impacts on Unison's willingness to increase the strength of price signals. If Unison under-estimates consumer behaviour changes in setting its prices, resulting in revenue reductions, then Unison cannot lift prices subsequently to cover its costs due to the application of the Default Price Path, which limits Unison to CPI increases in most years.

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### 4.2 Key principles

The following key principles form the core focus from which Unison's tariffs are derived:

- revenue recovery
- practicality
- regulatory considerations, and
- customer considerations.

Each of these is discussed in full below.

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### 4.3 Revenue recovery

Unison aims to recover its allowable notional revenue each year, allowing for a small buffer. The buffer is to allow for differences between forecast pass through and recoverable costs and the actual costs.

- Unison's regions are independently priced to avoid any subsidies between regions. This is particularly important given that Unison's customers connected to the Hawke's Bay network are beneficiaries of the Hawke's Bay Power Consumers' Trust which owns Unison, while customers connected in the Central Region are not beneficiaries.
  - Tariffs reflect the costs that a consumer's connection and their behaviour patterns place on the network.
  - Tariffs reflect the level of service that a consumer receives.
  - Where possible costs are directly attributed to the consumer that they relate to, or to the consumer group that they relate to.
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# Principles and Objectives of Unison's Pricing Methodology, Continued

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## 4.3 Revenue recovery (continued)

- Equality between consumers who create similar costs for the network.
- Unison's tariffs must be derived in a manner consistent with all applicable regulation.
- Opportunities for arbitrage are minimised.
- Unison's tariffs and changes to tariffs must not create undue revenue risk

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## 4.4 Practicality

Unison aims to maintain a price category structure and Tariff Option structure that is as simple as possible while ensuring that customers' tariffs reflect the costs that they place on the network.

Unison applies the same pricing structure across its regions to support a simple and robust pricing approach.

Where possible tariffs and the Pricing Policy are designed to be self-policing, i.e. it is in the customers' financial interest to be in the correct price category and if applicable to have the required form of metering, rather than have Unison determine which category the customer should be in.

Tariffs logically relate to each other, i.e. progressions between load groups follow a consistent pattern to avoid customers 'gaming' the categories. Within a price category tariffs consistently reflect the costs and benefits of the customer (e.g. lower rates for controlled load).

Individual pricing of customers is the exception and occurs only under defined circumstances as outlined in Unison's Pricing Policy.

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## 4.5 Regulatory considerations

Unison must comply with its Default Price Path.

Low user tariffs must be available in line with the Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004 (SR 2004/272) (as at 01 April 2009) section 14 and 15.

Unison's tariffs are prepared in line with the Authority's Pricing Principles and Information Disclosure Guidelines.

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# Principles and Objectives of Unison's Pricing Methodology,

Continued

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## **4.6 Customer considerations**

Adjustments to tariff structures or tariff rates should avoid rate shock to individual customers except where the customer is not compliant with Unison's network or pricing requirements. In line with the industry norm Unison aims to limit price increases to 10% per annum for individual consumers although where significant overall increases in allowable revenue occur, such as in the 2013-14 year, this is not always possible.

Tariffs are as transparent as possible in order to aid customer understanding of the derivation of their tariffs, e.g. the clear identification of dedicated transformer charges.

Unison has not historically differentiated pricing between rural and urban customers and does not intend to unless there is a clear policy signal that this would be permitted.

Pricing should reflect changes to customer behaviour as quickly as possible without exposing Unison to undue revenue risk.

Prices should be stable over time. Unison does not mechanically apply its cost allocation model to determine revenue requirements for each customer group on an annual basis, as this would lead to undue instability in tariffs.

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## **4.7 Results of Consumer Satisfaction Survey 2011/12**

Unison is currently undertaking the fourth round of the consumer satisfaction surveys included in its new quarterly tracking survey regime and as such is still in the process of building a statistically significant data set for reporting of annual performance. The most recent Consumer Satisfaction Survey for which there is a full annual data set took place in December 2011/January 2012. 900 electricity consumers were surveyed from throughout Unison's geographic footprint and from all consumer segments. The overall level of satisfaction with Unison's performance was 82%.

A selection of results from the 2011/12 survey is provided in the charts below. The percentages represent the proportion of respondents giving the respective response.

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# Principles and Objectives of Unison’s Pricing Methodology, Continued

## 4.7 Results of Consumer Satisfaction Survey 2011/12 (continued)

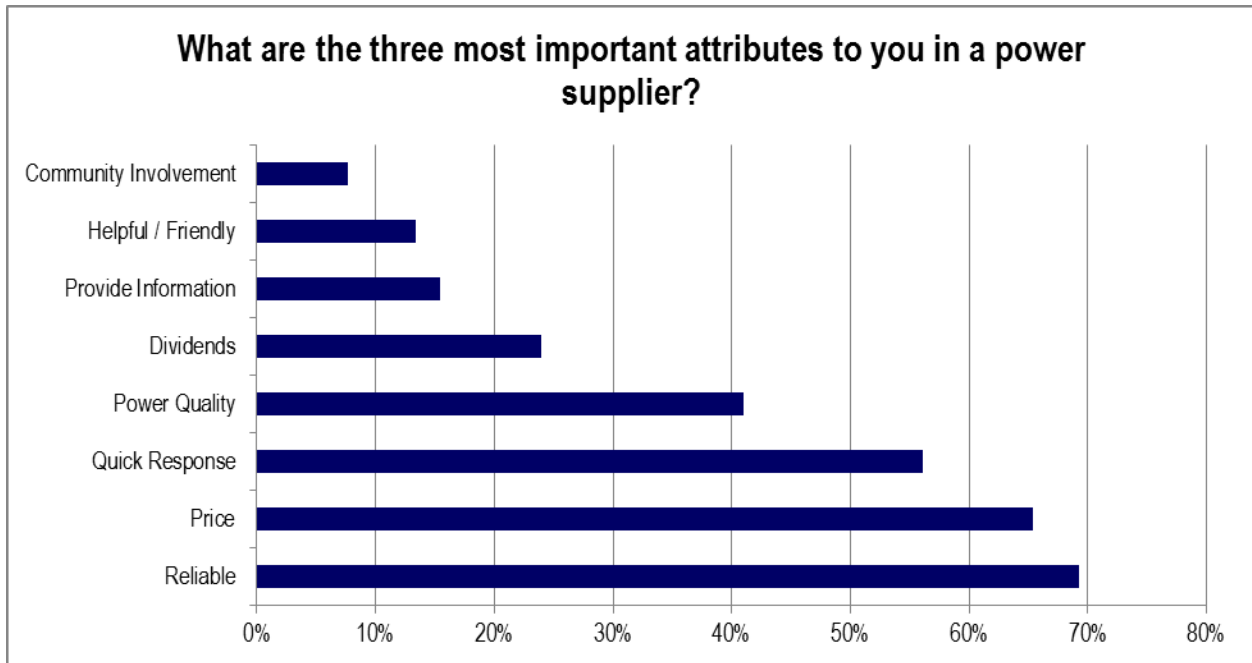


Figure 1 – Consumer views on most important attributes of power supplier

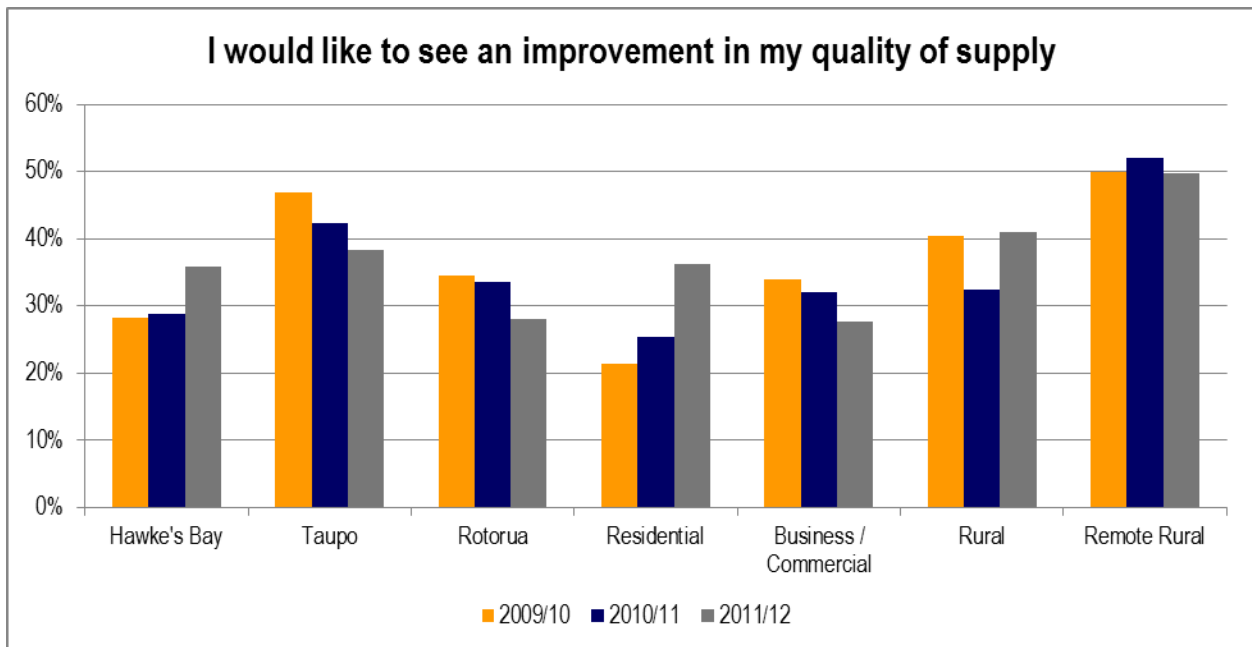
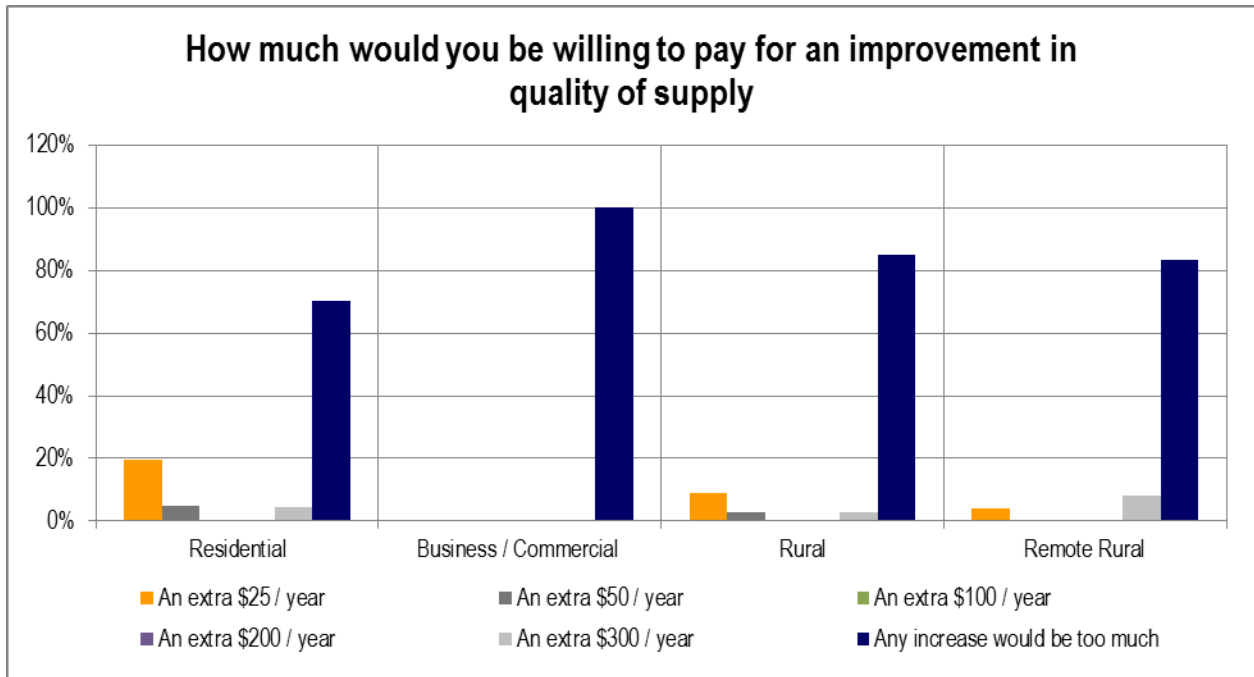


Figure 2 – Consumer satisfaction survey

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# Principles and Objectives of Unison’s Pricing Methodology, Continued

## 4.7 Results of Consumer Satisfaction Survey 2011/12 (continued)



**Figure 3 – Consumer satisfaction survey**

Overall, consumers strongly indicate that they are not willing to pay for any additional improvements in service quality.

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## 5. Changes to Unison's Prices

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### 5.1 Introduction

No changes have been made to Unison's Cost Allocation model for the 2013-14 year, it has only been updated with current information.

Some changes have been made to the structure of Unison's pricing effective 1 April 2013, namely:

- splitting of the MC4 Price Category into MC5 to MC9
- introduction of distributed generation tariffs at zero rates, and
- reduction of the non-residential low user/high user threshold from 8000kWh to 6000kWh.

These changes are discussed in the following sections.

Where these changes have resulted in a change to the price category that applies to a customer Unison has notified the retailer of the price category and tariffs which will apply to the customer. New price categories and tariffs will come into effect on April 1 2013.

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### 5.2 Splitting of the MC4 price category

The MC4 price category was a price category which contained all customers with capacity of  $\geq 278$  kVA and  $< 1037$  kVA. Customers in this price category incurred a fixed daily charge as well as demand and power factor based charges. This price category covered a significantly larger kVA band than any other. In order to more directly reflect to customers the costs that they place on the network it was determined that the fixed daily charges should increase more linearly with increased capacity.

Unison is moving toward a \$/kVA of connection fixed daily charge for its large commercial customers. However, analysis shows that to go from the existing structure, with the  $\geq 278$  kVA and  $< 1037$  kVA MC4 price category, to a \$/kVA charging structure would create significant price shocks for customers due to the wide kVA band covered by the MC4 price category.

As such from April 2013 the MC4 price category will be removed and all customers allocated to the new MC5 to MC9 price categories. The table below illustrates the kVA bands that apply to each of the MC5 to MC9 categories. By creating multiple price categories Unison will be able to progressively adjust the fixed daily charges that apply to each category such that when the \$/kVA charging basis is introduced price shocks to individual customers are mitigated. It is anticipated that three to five years of fixed daily charge price adjustments will be required before Unison can move to a \$/kVA charging regime.

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## Changes to Unison's Prices, Continued

### 5.2 Splitting of the MC4 price category (continued)

Unison has notified all retailers of affected ICPs as to the new price category that the ICP will move into.

Price Category	Connection Capacity Band
MC5	>276 kVA & <=435 kVA
MC6	>435 kVA & <=553 kVA
MC7	>553 kVA & <=691 kVA
MC8	>691 kVA & <=864 kVA
MC9	>864 kVA & <= 1037 kVA

### 5.3 Introduction of distributed generation tariffs

At retailer request, from April 2013 Unison has introduced tariffs against which kWh of distributed generation being exported onto Unison's network are to be submitted.

These tariffs are all charges at \$0/kWh, i.e. they are intended to ensure that Unison is receiving full data as to the energy entering its network, as opposed to gathering revenue.

Distributed generation tariffs are broken down by generation type, in line with the generation types that are to be populated in the Registry.

### 5.4 Reduction of NDL NDH breakpoint

At present the breakpoint between Unison's non-residential low user and non-residential high user price categories is consumption of 8,000kWh per annum. This breakpoint had been carried over from when Unison did not differentiate between residential and non-residential sites. With the creation of separate non-residential price categories, the low user definition as legislated in relation to residential sites was carried over.

Now that the NDL and NDH price categories are fully established it is appropriate to alter the breakpoint between them to better reflect the consumption patterns of these customers. In particular the NDL price category is intended to ensure that very low users on Unison's network, for example pumps, are contributing equitably to the cost of supply. Analysis has shown that the breakpoint between the NDL and NDH can be lowered to 6,000kWh in April 2013 without creating price shocks for customers. The level of the breakpoint will be further reviewed further in coming years.

## 6. Overview of Unison's Methodology and Cost Allocation Model

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### 6.1 Introduction

This section covers the following Unison methodology and cost allocation models:

- calculation of the total goal revenue in accordance with the default price path and comparison with required revenue
- determination of any changes to be made to the tariff structure
- calculation of goal revenue by price category
- comparison between goal revenue and expected revenue, and
- derivation of final tariff rates.

#### Note

That '*goal revenue*' in this discussion refers to the revenue that would be required from a price category for Unison to achieve the same rate of return on assets from all price categories under the default price path.

The '*expected revenue*' refers to the revenue calculated from the tariffs which will apply to the price category in 2013-14 multiplied by quantities billed in the 2011-12 year.

The '*required revenue*' refers to the revenue that would be required for Unison to achieve a WACC return on all assets allocated to a price category.

Note that the goal revenue, required revenue and expected revenue generally all differ for reasons outlined below.

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### 6.2 Calculation of total revenue required by region

Unison operates in both the Hawke's Bay and Central (Taupo/Rotorua) regions. For pricing purposes these two regions are treated independently in order to ensure that no cross subsidies exist between regions. Unison's Default Price Path sets the allowable notional revenue for Unison as a whole. Unison performs an internal split of this revenue, utilising the default price path model developed by the Commerce Commission, to determine the total revenue requirement for each region.

As Unison treats its regions separately for pricing purposes all pass through costs and recoverable costs are also split by region. Unison allocates these costs to regions on the same basis that the costs are calculated e.g. transmission connection costs are allocated to the region to which the Transpower connection assets belong.

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## Overview of Unison's Methodology and Cost Allocation Model, Continued

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### 6.3 2012-13 Regional revenue calculation

Since 2004, Unison's prices have effectively only escalated at the rate of CPI inflation. However, due to significant investment requirements in the network, on-going price inflation in the materials Unison uses to supply its network services the revenues Unison receives have been less than its costs, including a reasonable return on investment.

Unison has received a price reset for April 2013 to be followed by another significant adjustment in 2014. The effect of this is that because of the Commerce Commission's price path Unison is constrained from recovering its full return on investment in both regions in 2013.<sup>2</sup> The under recovery has been split equally between Unison's two regions based on the value of the assets in each region, effectively ensuring that both regions return the same return.

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### 6.4 Determination of tariff structure

The structure of Unison's tariffs, i.e. the price categories and tariff options offered, is reviewed annually. This review aims to maintain a consistent pricing structure between years unless a compelling case exists for a change in structure. In general, changes to the tariff structure are driven either by a need to improve alignment between a goal revenue and expected revenues i.e. improving the equity in Unison's pricing or by the opportunity to simplify the tariff structure without adverse impact. An explanation of the price structure applied in 2013-14 can be found in *Sections 7 and 8*.

For the sake of consistency and simplicity Unison uses the same price categories for both regions.

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<sup>2</sup> The Commerce Commission has indicated that as a result of the delay in resetting Unison's prices, it will make an adjustment to all distributors future prices to ensure they are not disadvantaged or advantaged by the delay. Accordingly, over the 2012 to 2015 timeframe Unison's tariffs in both regions will be set to achieve an expected WACC return on investment.

## Overview of Unison's Methodology and Cost Allocation Model, Continued

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### 6.5 Calculation of goal revenue by region and price category

To understand Unison's pricing approach it is important to understand the nature of Unison's costs and customer-base. Distribution networks are designed to enable the least cost delivery of electricity to consumers. Rather than have separate electricity lines running from each transmission GXP to each customer, consumers share network assets (cables, transformers etc.). Accordingly, it is impossible to identify the specific costs associated with any individual customer and some form of cost allocation model must be used to apportion shared asset-related, overhead and other costs to customers. There is no single 'right' way to undertake such allocations, but often distribution businesses use measures such as volumes consumed, any-time peak demands or co-incident peak demands to allocate costs.

Unison utilises a Cost Allocation model to determine the total revenues that should be gained from each price category. This Cost Allocation Model in essence allocates costs (including return on investment required) to each price category. As such in instances such 2013-14 where Unison will have to under recover in order to stay within the DPP the level of under recovery is consistent across all price categories.

The methodology used by Unison in calculating the goal revenue by price category by region is described in *Section 9*.

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### 6.6 Comparison between goal revenue and expected revenue

Once costs have been attributed and/or allocated to different regions, and customer groups within those regions, the goal revenue for the group is compared with the revenues that Unison expects to receive from those customers at existing price levels; a tariff schedule is developed which aims to deliver sufficient revenues to cover the allocated costs. By necessity the alignment of revenues and costs is imprecise, as distributors have to estimate customers' usage which may vary year-by-year due to environmental, economic and demographic variations.

From Unison's perspective, while it is important to have a cost allocation model to determine a 'fair' allocation of costs, it is more important to develop a tariff approach that incentivises desirable customer behaviours that are beneficial in reducing capital expenditure. In particular, it is essential that customers face relative price signals that reflect the benefits of consuming outside of network peaks, as it is peak demand (not total volumes consumed) that drives Unison's long-term cost structure.

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## Overview of Unison's Methodology and Cost Allocation Model, Continued

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### 6.7 Derivation of final tariff rates

In order to satisfy Unison's pricing objectives, in particular to maintain logical price relationship within and between price categories and to remain within regulatory requirements, the tariffs may not be set at the exact level required to achieve the goal revenue for a given price category. That is, the calculated goal revenue is a strong input into the pricing methodology but it is not the only factor in the setting of rates as the key issue is to ensure a coherent tariff structure.

- Price changes are made where expected revenues and costs do not align, taking into account:
    - the requirements of the default price-quality path, which may prevent realisation of the overall revenue requirement (Unison's returns may be lower than the Commission's estimated WACC, for example)
    - the potential for variation (e.g. revenues fluctuate annually for different customer groups due to weather, economic factors etc.). Where revenues align within  $\pm 10\%$  of Unison's allocated costs no relative price adjustments are made
    - the need to promote pricing stability, and
    - the need to ensure a coherent tariff structure where customers face a logical progression in tariffs as they increase their usage.
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## 7. Unison's Determination of Price Categories

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**7.1 Determination** All ICP's on Unison's networks are allocated to one of a set of price categories. The allocation to price categories is summarised in the diagrams of *point 7.2*.

There are a number of factors which determine the category to which an ICP is allocated:

- whether the ICP is a permanent place of residence, a non-permanent place of residence or not a place of residence
- the capacity of the connection, and
- applicable tariffs, i.e. half hourly or non-half hourly tariffs where the retailer has the choice.

The derivation of Unison's price category structure aims to achieve a number of goals:

- alignment with low-user tariff requirements
- reflection of the cost that the user places on the network in terms of infrastructure requirements
- minimising the likelihood of misallocation of ICPs to price categories, and
- encouragement of TOU pricing.

The diagrams below provide an overview of Unison's price categories and the rules used in allocating ICPs to price categories.

### **Note**

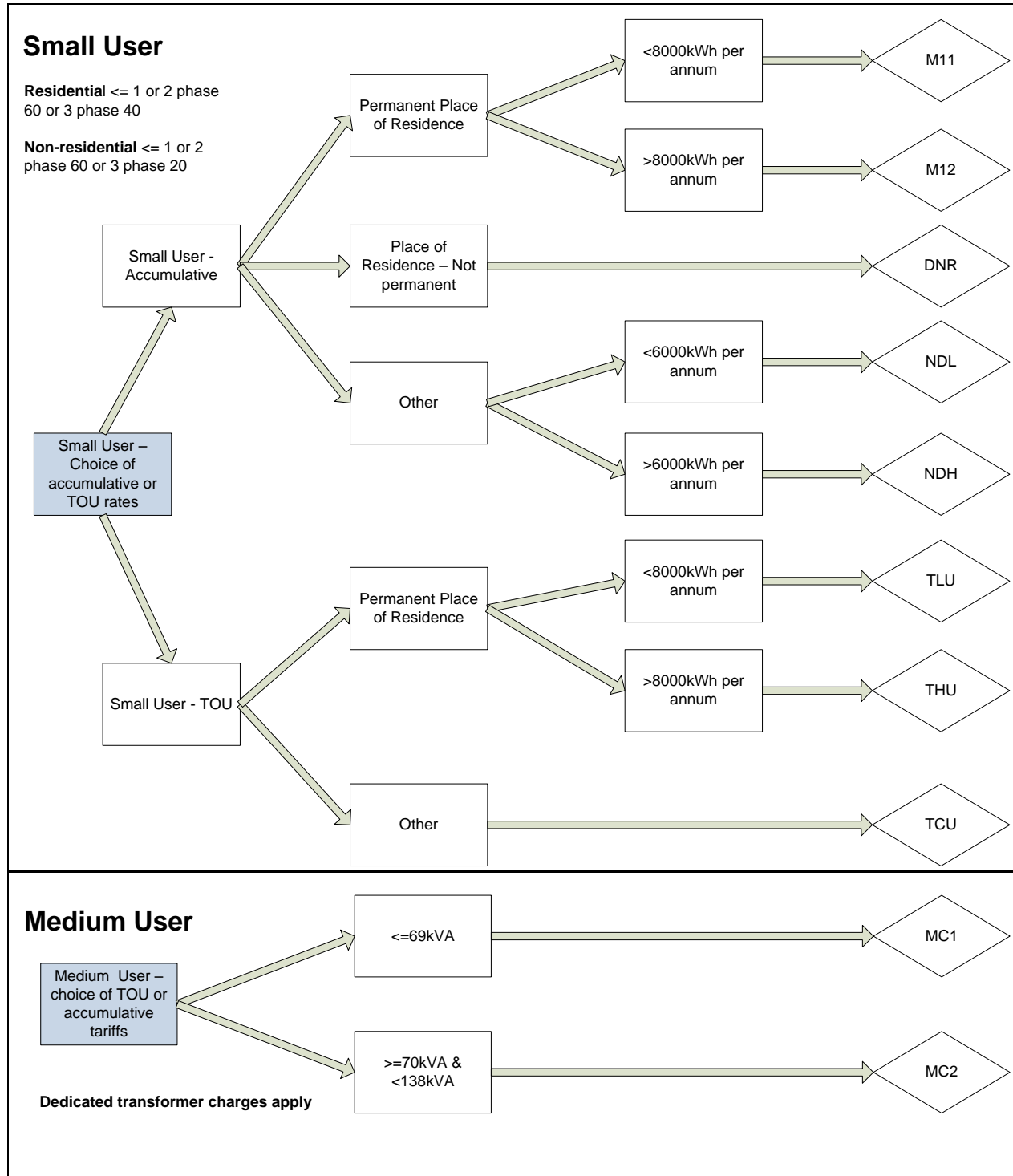
This disclosure is intended to outline the rationale behind Unison's Pricing Methodology. For full details regarding the application of Unison's tariffs the Pricing Policy on Unison's website should be consulted.

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# Unison's Determination of Price Categories, Continued

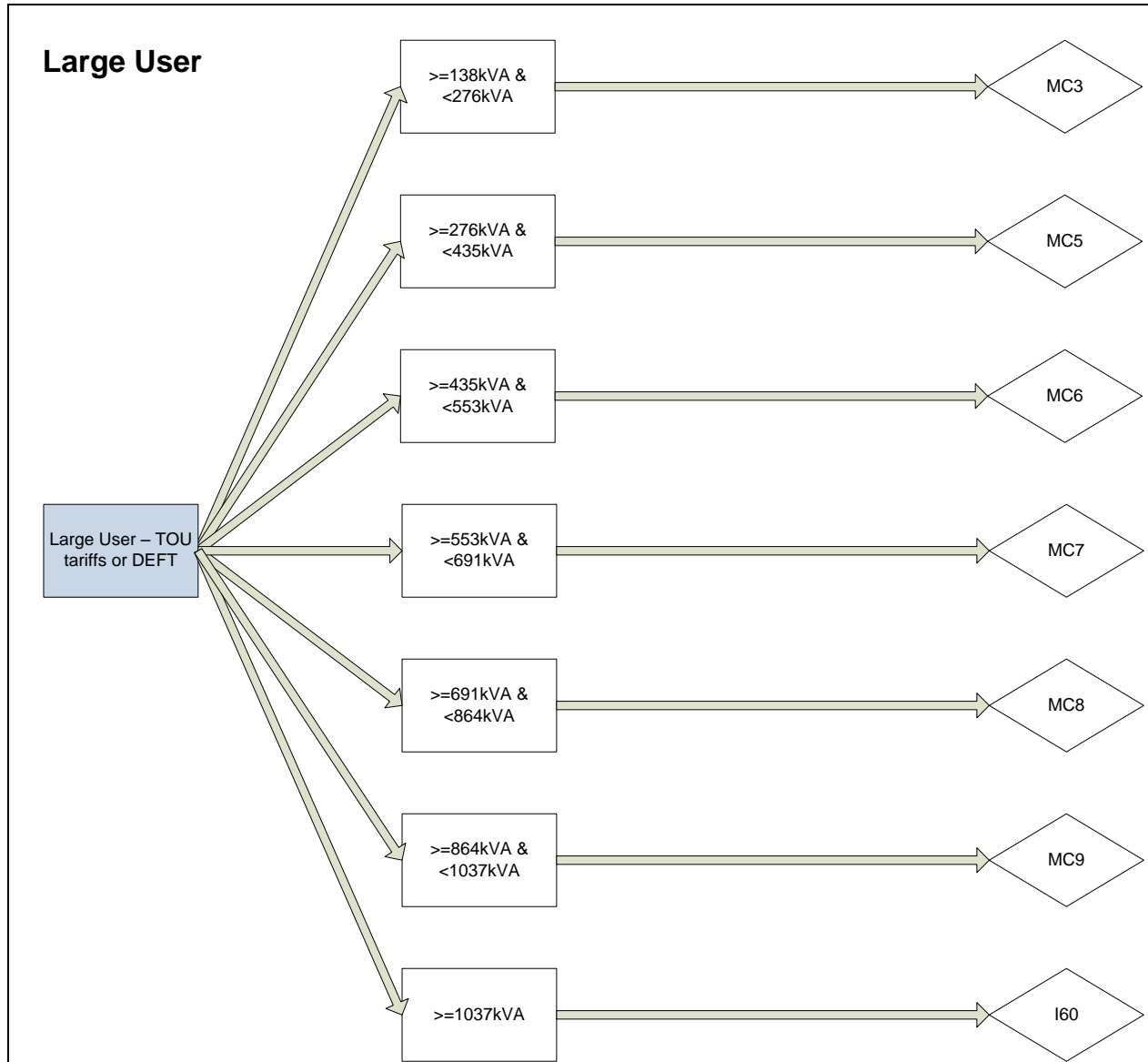
**7.2 Unison's price category structure** The diagrams below illustrate Unison's price category structure for 2013-14.



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# Unison's Determination of Price Categories, Continued

## 7.2 Unison's price category structure (continued)



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## Unison's Determination of Price Categories, Continued

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### 7.3 Places of residence

#### 7.3.1 Overview

Due to low user fixed price requirements Unison has price categories which ensure that all residential ICPs are segregated from non-residential ICPs, whether or not the residential ICP is permanently inhabited. Unison consistently finds that the presence of the low-user category, in particular the low daily rate offered, means ICPs are placed into this category which does not meet the eligibility criteria. As such Unison separates all residential ICPs from non-residential ICPs in order to improve Unison's ability to monitor the correct application of the low user, M11, price category. In particular Unison can easily highlight ICPs which move from non-residential to residential price categories and investigate the applicability of such changes in price category.

#### 7.3.2 Accumulative Tariffs

The following price categories apply to places of residence that are charged on accumulative tariff options (i.e. non-TOU):

- M11
- M12
- DNR

Under the low user regulations Unison is required to offer tariffs for permanent places of residence where a customer on these tariffs will pay at most the same as if they were on an equivalent standard tariff.

Unison meets this requirement by offering the M11 and M12 price categories where permanent places of residence using less than 8,000 kWh per annum are assigned to the M11 and those using greater than 8000 assigned to the M12. Unison also offers a DNR price category where the ICP is servicing a residence that is not permanently inhabited, e.g. a holiday home.

#### 7.3.3 TOU Tariffs

The following price categories may apply to Permanent Places of Residence with TOU meters:

- TLU
- THU

In a move to encourage the application of time of use tariffs to residential customers Unison has in place two price categories for Permanent Places of residence. The TLU price category applies to those customers using less than 8,000 kWh per annum with the THU applying to those consuming more than 8,000 kWh per annum. The use of two price categories is to allow for the requirement that a permanent place of residence on a low-user tariff pay less or the same at 8,000 kWh of consumption than one on an equivalent non- low-user price category.

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## Unison's Determination of Price Categories, Continued

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### 7.4 Non-places of residence

ICPs which do not serve places of residence are split into price categories based primarily on:

- the capacity of the connection, and
- the ICP's annual consumption.

Non-places of residence will belong to one of the following price categories in ascending fuse capacity:

- NDL/NDH
- MC1
- MC2
- MC3
- MC5
- MC6
- MC7
- MC8
- MC9, and
- I60 (individually priced).

Unison's primary cost driver is the value of assets utilised by a customer where the assets utilised is determined by the customers Anytime Maximum Demand (AMD). Where Unison does not have TOU data for an ICP, and hence AMD data is not available, the fusing capacity of an ICP is used as a proxy for the AMD. Given that the cost of assets required to serve a customer increases with the AMD of the customer; fixed tariff rates increase as capacity of the ICP increases.

The ICP's annual consumption is used in differentiating NDH from NDL customers. These price categories cover the same range of capacities, but the NDL customers represent those using under 6,000 kWh per annum, with the NDH being those using over 6,000 kWh per annum. This differentiation has been put in place as Unison has a large number of non-residential ICPs that have very low annual consumption, e.g. pumps. The cost of provision of capacity to these ICPs is the same independent of the consumption at the site; however, the level of consumption significantly impacts the variable revenues that Unison receives from these ICPs. This impact on variable revenues is reflected in a higher daily rate for the NDL customers.

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## 8. Tariff Options and their Relativities

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### 8.1 Tariff structures and basis for establishing relativities between options

Within a given price category multiple tariff options may apply. The sections below discuss the rationale behind Unison's tariff options.<sup>3</sup> The tariff options used are designed to be reflective of the costs that a given consumption behaviour places on Unison's network whilst maintaining a structure that is as simple to implement and maintain as possible. Pricing relativities are also established on the basis of managing revenue risks. For example, in theory Unison could set an off-peak rate near zero, reflecting that there is effectively no cost of transporting electricity during off-peak periods. Prices for peak periods could accordingly be set to recover all Unison's costs. But such an approach would expose Unison to undue revenue risks associated with customers shifting load from peak to off-peak periods.

The tariff options which Unison offers a given price category are determined by a number of factors:

- the customer 's metering arrangement
- the customer 's connection capacity, and
- the expected level of engagement (e.g. ability to react to price signals) from the customer.

Tariff options are priced such that customers within a price category who place similar costs on the network will pay similar total charges independent of their particular metering arrangement. These relativities between tariffs are discussed further below.

It is Unison's intent that consumption outside of peak periods should cost less than consumption during peak periods as it is the peak load placed on the network that determines the level of investment Unison is required to make in the network. As such, separate tariffs are offered for load that is either controlled or night consumption where Unison can be assured that consumption occurs outside of peak demand periods.

To date, Unison has focused on putting in place tariff structures and price categories to provide a structure for better reflecting costs placed on the network by different customer types. For example:

- the creation of Domestic Non-Resident price category
- the progressive introduction of TOU metering requirements on larger users, and
- the introduction of peak/off-peak rates for mass-market customers.

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<sup>3</sup> For full details on the application of tariff options please refer to Unison's Pricing Policy.

## Tariff Options and their Relativities, Continued

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### **8.1 Tariff structures and basis for establishing relativities between options** (continued)

Unison plans to make further changes to the structure of its tariffs by reducing reliance on fixed capacity charges in its MC customer groups and instead establishing 'per kVA' rates that lead to increasing charges as customers increase their capacity requirements. This would reduce the incidence of step changes in charges that customers currently experience at certain capacity thresholds. A transitional approach is required to avoid undue rate shocks for customers. To date, Unison has adopted a 'value' - based approach to establishing relativities between tariff options. For example, a Hawke's Bay residential customer that switches 3,000 kWh per year from an uncontrolled supply for water-heating to a controlled supply would receive a reduction of \$177 per annum. This relativity is not based on an assessment of the long-term average incremental costs that Unison would avoid by being able to ensure that the water-demand does not contribute to peak demands, rather it is based on historical relativities that have been escalated overtime, which have proven to be sufficient to ensure consumers will generally allow controlled hot water loads.

Unison recognises that it is preferable to establish relativities based on an assessment of 'cost drivers' so that customers can make trade-offs that improve overall economic efficiency. For example, if the long-run average incremental cost of increasing network capacity is \$100 per KVA per annum, then the relativity between controlled and uncontrolled charges per annum would reflect that cost. Unison understands that Orion has calculated that the long-run average incremental cost of additional network capacity is of the order \$100 per kVA, but Unison has yet to make an assessment of whether a similar value would apply on its networks<sup>4</sup>.

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<sup>4</sup> In a recent project, Unison assessed the incremental costs of capacity increments at \$57 per kVA, highlighting that there is potentially significant variations in incremental capacity costs relative to Orion's calculated value.

## Tariff Options and their Relativities, Continued

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### 8.2 Tariff options

Within each price category, there are different tariff options which seek to signal the benefits of desirable customer behaviour, including consuming outside of network peaks, while aiming to cover Unison's allowed revenues under the price path. Depending on whether customers have TOU or non-TOU metering and their price category the following tariff options are available:

Non-TOU metered customers:

- 24UC – for meter configuration with no ability to control load (e.g. water heating)
- AICO – for meters with the capability to partially control loads for a period
- CTRL – for meters with the capability for Unison to fully control loads for a period
- NITE - for meters controlled to be on from 11pm to 7am or for twin register meters with consumption during the period 11pm to 7am
- CTUD - for twin register meters with consumption during the period 7am to 11pm, and
- DEFT – for ICPs that are required under Unison's Pricing Policy to have TOU meters but do not.

TOU customers (except large industrial - I60):

- SOPD – highest peak load during a summer month
- WOPD – highest peak load during a winter month
- DMND – maximum load during the month, and
- KVAR – a charge for consumption having less than .95 power factor. The lower the power factor, the increased likelihood of causing voltage issues, which may have a negative impact on other customers.

Refer to Unison's Pricing Policy for full details of the applicability of each tariff option.

Although I60 customers, Unison's largest capacity price category, have TOU metering, they are charged a constant daily rate plus power factor charges. Their daily rate is reviewed each year based on their previous year's peak consumption behaviour, ensuring that their network demand and transmission impact is reflected in their daily rate albeit one year in arrears, thus encouraging such customers to manage their load profiles.

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## Tariff Options and their Relativities, Continued

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### 8.3 Relativities of tariff options

Unison's Pricing Methodology is designed to ensure appropriate relativities between tariff options (e.g. provide incentives for customers to opt for controlled load options by providing a differential between controlled and uncontrolled options). The required strength of such signals is a matter of judgment, but Unison is satisfied that historic levels of differentials are sufficient to motivate customers to opt for controlled tariff options as there are high levels of uptake of controlled rate tariffs. Unison is also satisfied that night tariffs are priced appropriately as again they have a high level uptake where they are relevant.

Unison intends that customers within a price category who place the same costs on, or provide the same services to, the network will pay the same costs, independent of their particular meter configuration. As such, tariff rates are calculated in relation to each other.

In line with the low user regulations rates for residential low users and high users are set such that at 8,000 kWh of consumption per annum the low user pays the same or marginally less than the high user.

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### 8.4 Residential low user (M11)

#### 8.4.1 Residential Low User – 24UC

The residential low user 24UC rate forms the basis from which all other small user variable rates are derived. In altering rates to achieve the desired total revenues for mass market customers the low user 24UC rate is the rate that is directly altered with flow on effects to other rates. As such, the low user 24UC rate, and by extension to low user fixed rate cap of \$0.15, are a significant point of constraint in Unison's setting of tariff rates.

#### 8.4.2 Residential Low User – NITE

The NITE rate is set at 24% of the 24UC rate. The proportion used is held consistent from year to year in reflection of the fact that Unison is satisfied that the historic level of differential has been sufficient in incentivising customer to utilise this tariff option.

#### 8.4.3 Residential Low User – CTUD

The CTUD (day only) rate is set such that a customer with a day/night meter who has the standard day/night consumption split of 75/25 will pay the same as an equivalent customer with a 24UC meter. Customers are able to benefit by having a day/night meter if they direct more than the average proportion of their load out of day periods. This benefit to the customer reflects the network benefit of moving load out of higher demand periods.

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## Tariff Options and their Relativities, Continued

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### 8.4 Residential low user (M11) (continued)

#### 8.4.4 Residential Low User – CTRL

The CTRL rate is set as a proportion of the 24UC rate. The proportion used is held essentially consistent from year to year in reflection of the fact that Unison is satisfied that the historic level of differential has been sufficient in incentivizing customer to utilise this tariff option. This rate is lower than the 24UC rate as a reflection of the network benefit that controlled load provides.

#### 8.4.5 Residential Low User – AICO

Unison currently offers an AICO tariff option, i.e. a single tariff which applies to both controlled and uncontrolled load where the controlled load is not separately metered. This tariff is priced such that a customer who has an uncontrolled/controlled load split of 60%/40% will pay the same on an AICO tariff as they would if they had separately metered 24UC/CTRL meters. The 60%/40% split is based on the split of controlled and uncontrolled load as specified in the low user regulations.

This tariff, while providing valuable incentive for the provision of controlled load, is complex from an administration perspective and creates a significant enforcement task as Unison has no visibility as to what, if any, controlled load a customer is actually providing. As such, retailers have been notified that it is Unison's intention to remove all AICO tariffs in future.

#### 8.4.6 Residential Low User – PROJ

The projected rate, PROJ, is utilised by Unison where a valid tariff code has not been provided. This tariff option is in place in order to ensure that there is no ambiguity as to what rate will apply to consumption that is supplied without a valid tariff option.

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### 8.5 Residential high user (M12)

#### 8.5.1 Introduction

The rate at which residential high user tariffs are set is governed largely by the requirement that a residential low user consuming 8,000 kWh per annum pay the same or less than a residential high user consuming 8,000 kWh per annum.

#### 8.5.2 Residential High User – Fixed rate

It is Unison's view that the 15c per day fixed charge required for residential low users does not accurately reflect the proportion of Unison's charges which are fixed. As such, for residential high users Unison's applies a higher fixed daily rate but lower variable rates.

Unison is satisfied with the current split between fixed and variable charges applying to residential high users and as such the fixed daily rate applying to these customers is escalated each year by the average price increase.

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## Tariff Options and their Relativities, Continued

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<b>8.5 Residential high user (M12)</b> (continued)	<b>8.5.3 Residential High User – Variable Tariffs</b> The rate at which variable tariffs for residential high users are charged is calculated such that the residential low user with the same metering configuration will pay less than or equal to what the high user pays at 8,000 kWh of consumption per annum.
<b>8.6 Domestic non-residential (DNR)</b>	Customers in the DNR price category are residential sites that do not qualify for the low user price category (M11) as they are not permanently inhabited. These customers have the same fixed daily rate as the non-domestic high user, reflecting the fact that variable charge revenue from these sites is generally low and therefore a higher fixed daily charge is required to achieve goal revenues. The 24UC is then calculated such that a DNR using 8,000 kWh per annum will pay the same as a permanently place of residence with the same consumption. Other variable tariffs are calculated relative to the 24UC rate.
<b>8.7 Non domestic high user (NDH)</b>	As described earlier Unison chooses to separate all domestic and non-domestic customers into different price categories. Tariffs for non-domestic consumers are calculated independent of domestic consumers. With regard to 2013-14 prices the average increase was sufficiently high that Unison did not consider that it was appropriate to move revenues for price categories relative to each other, as such, to the degree possible the NDH tariffs increased by the average level.
<b>8.8 Non-domestic low user (NDL)</b>	Unison has a significant number of non-domestic sites with very low annual consumption, e.g. pumps. As such, variable charges recover little revenue from these customers and a higher fixed rate is required. The fixed rate is set at a rate provides a reasonable contribution to Unison's fixed asset costs. For example, a water pump creates material demands on Unison's network, for short periods of time.  Whether a customer is allocated to the Non-Domestic Low User or Non-Domestic High User, price category is determined by whether their consumption is greater than or equal to 6,000 kWh. As such variable tariffs for this price category are set such that a Non-domestic customer using 6,000 kWh per annum will pay the same whether they are in the NDL or NDH price category.
<b>8.9 Dedicated transformers</b>	It is Unison's view that a customer should pay tariffs in line with the service that they receive especially when there are specific and identifiable costs attributable to that consumer. As such, those customers who have dedicated transformers of 200kVA or greater receive a fixed daily charge for the provision of this transformer. Unison's cost of providing the transformer is driven largely by the purchase cost of the transformer as opposed to customer demand characteristics. As such, the applicable rate is determined by the size of the transformer.

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## Tariff Options and their Relativities, Continued

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### **8.10 Power factor**

Unison requires that customers on the network maintain a power factor of not less than 0.95 lagging. A power factor charge is in place to act as a financial incentive for customers to meet this requirement. The power factor charge is not intended to act as a significant source of revenue, but as a means of ensuring power factor requirements are met. The same power factor rate is applied across all customers.

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### **8.11 TOU rate relativities**

With regard to small user TOU rates, Unison had initially constructed rates with a high differential between on peak and off peak in order to strongly incentivise the movement of load out of peak periods. However, Unison has to date had minimal uptake of these tariffs with one reason given by retailers as the fact that the peak price was 'too high'. As such from April 2012 Unison has reduced the strength of this on peak/off peak price signal, seeking to create a sufficient incentive for customers to adopt these tariffs and shift discretionary demands to off-peak periods. Introduction of such charges needs to be managed carefully, as they are subject to arbitrage potential, whereby customers with significant off-peak loads will be attracted to such tariffs, but customers remaining on flat-rate tariffs are high peak-time users.

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### **8.12 TOU peak and off peak periods**

Unison operates in three distinct regions, Hawke's Bay, Taupo and Rotorua. Each of these regions demonstrates significantly different peak behavior, in terms of the timing and duration of peak periods. Additionally, within each network peak loading on individual parts of the network is affected by the customer make-up in the area fed by that network. For the sake of simplicity Unison has opted to have one set of on peak/off peak time definitions that apply across the entire network. In order to ensure that that the peak periods experienced in different areas are captured within the definition of the peak period Unison has necessarily defined a relatively long period defined as 'on peak', 7-11am and 5-9pm on a weekday.

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## 9. Cost Allocation Model

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### 9.1 About the model

The Cost Allocation Model is the model from which Unison derives the goal revenue for each customer group by region. The total goal regional revenue is the sum of the pass through cost attributable to the region and the allowable revenue attributed to the region as calculated based on the Commerce Commission's allowable revenue model. This calculation resulted in the Hawke's Bay and Central regions having a weighted average price increase of 9.5% and 6.3% respectively for 2013-14.<sup>5</sup> With regard to the goal regional revenue, adjustments are then made to tariff rates such that the expected revenue from a given customer group will align as closely as possible with the goal revenue for that customer group within the constraint of other factors discussed below. Given the number of factors that must be balanced in setting tariffs a purely derivation of tariffs is not possible. Rather, the setting of the tariff rates is necessarily a manual and iterative process.

It should be noted that Unison's Cost Allocation Model can only ever act as a guide to required revenues. In reality a wide variety of reasons including regulatory constraints, the desire to mitigate price shocks and the need to produce 'logical' tariff relationships means the revenues achieved from customers will not align exactly with the required revenues calculated by the Cost Allocation Model. In particular, Unison is constrained in that each year's tariffs use the previous year's tariffs as their starting point. Given that Unison aims to keep total price increases to a maximum of 10% for an individual customer, including changes in pass through costs, this limits Unison's scope for year-on-year adjustments in expected revenue vs goal revenue. As such, where Unison identifies that the total revenue expected from a customer group should be increased or decreased this alteration is by necessity a gradual process. This consideration was particularly relevant for 2013-14 pricing as Unison's price reset and increases in pass through costs meant that the weighted average tariff increases were high in both regions relative to earlier years. As such, price increases were applied as evenly as possible across all tariffs in order to mitigate price shocks to individual customers. This left little room for realignment of revenues between customer groups for 2013-14.

In principle Unison could allocate costs at a price category level (e.g. MC1 customers). However this approach is problematic as it would lead to discontinuities in tariff structures, especially where there are customer groups with few customers. Discontinuities could cause customers to artificially nominate higher capacities than they require in order to obtain lower tariffs.

Accordingly, Unison has determined the following customer group categories for the purposes of cost allocations:

- Mass-market customers (using less than 29kVA capacity)
- Commercial customers (less than or equal to 1MVA), and
- Industrial customers (greater than 1 MVA).

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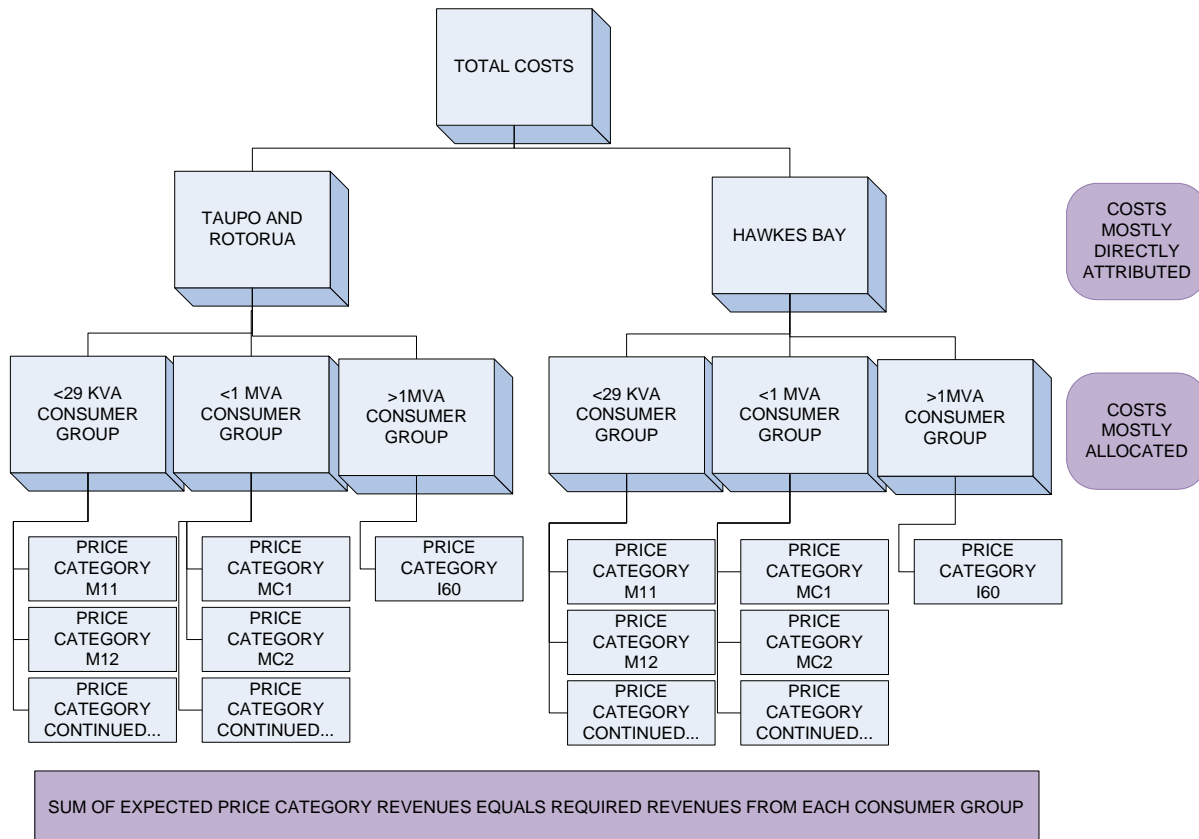
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<sup>5</sup> Individual movements in tariffs are quantified in Unison's publically disclosed tariffs available on our website [www.unison.co.nz](http://www.unison.co.nz) and have been published in regional newspapers.

## Cost Allocation Model, Continued

### 9.1 About the model (continued)

The following figure illustrates Unison's overall approach to attributing and allocating costs and developing prices to meet costs in each customer category.



Fundamental to Unison's cost allocation model is that costs should be allocated in a consistent manner across all customer groups.

The Cost Allocation Model and its use can be broken down into the following stages:

- derivation of costs to be allocated by region (either attributed or allocated where not directly attributable)
- calculation of utilised asset value by price category and other allocator metrics
- derivation of costs and revenue requirements to be allocated to price categories
- application of allocators to costs/revenues to derive revenues required by customer category, and
- tariff adjustments to match goal revenues with expected revenues, within the constraints imposed to ensure price stability/avoidance of rate shock.

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## Cost Allocation Model, Continued

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### 9.1 About the model (continued)

Unison's cost allocation model does not explicitly require the use of a WACC as it is based on an allocation of revenues that are permitted under the default price-quality path. In effect, the same return on investment is applied across all customer groups. This ensures that any under recovery of revenues relative to those required for a WACC return is allocated equally across all customer groups.

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### 9.2 Calculation of asset utilisation value

For every ICP Unison calculates the value of assets attributable to that ICP. This forms the basis for the allocation of Unison's capital-related costs.

The calculation of Asset Utilisation Value is achieved as follows:

- Anytime Maximum Demand identified for every ICP, either through TOU data or modelled values
  - asset trace performed on every ICP identifying every asset connecting the ICP to the GXP via the shortest cable route. Where an ICP explicitly has N-1 levels of supply, and hence a superior level of service, the N-1 trace is also included
  - for every asset the total AMD of all ICPs that trace through the asset is calculated
  - the value of each asset is divided between all ICPs utilising it based on their AMD as a proportion of the AMD of all ICPs utilising the asset. Where only one ICP utilises an asset, i.e. the asset is dedicated, this results in the entire value of the asset being allocated to the ICP that utilises it
  - for each ICP their allocation of the value of all assets they utilise is aggregated. This forms the 'Utilised Asset Value' for the ICP, and
  - for every customer group the Utilised Asset Value of all ICPs in the customer group is aggregated to produce an Utilised Asset Value for the customer group.
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## Cost Allocation Model, Continued

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### 9.2 Calculation of asset utilisation value (continued)

The value Unison uses for assets is determined as half replacement costs (using asset prices from its 2006 FRS3 valuation). This approach ensures that charges are steady over time, rather than being very high charges initially then declining over time as assets age. As Unison's network assets on average are about half way through their useful life, the half replacement cost value is very close to Unison's current RAB<sup>6</sup>. As all assets utilised by an ICP are proportionately allocated to the ICP this approach in effect also accounts for the distance of the customer from the GXP. This ensures that all customers pay for the capacity required to supply them regardless of the duration of their peak load. As a result, customers with a high peak demand are allocated a representative share of the supplied capacity regardless of their volume consumed. This approach reflects that Unison must build its assets to meet capacity requirements, not volumes consumed.

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### 9.3 Calculation of costs to be allocated by customer group

Unison's costs are assigned to customer groups based on the proportion of the costs that the customer group represents. This stage encompasses the derivation of costs to be allocated by each particular allocator, including:

- transmission charges
- operating expenditure
- depreciation
- return on investment (including tax), and
- levies and rates.

The basis used for allocation differs for different costs. Where possible Unison allocates on the same basis that the charge is derived from, e.g. interconnection costs are charged by Transpower on the basis of Coincident Maximum Demand and hence are allocated within Unison's cost allocation model on the same basis. Where a direct reflection of the cost allocation basis is not possible, e.g. the allocation of operating expenditure, Unison determines a reasonable basis for allocation.

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<sup>6</sup> Now that the Commerce Commission has established its asset valuation input methodology, Unison will in future seek to align the asset valuations used in the pricing methodology and under information disclosures.



## Cost Allocation Model, Continued

### 9.3 Calculation of costs to be allocated by customer group (continued)

The table below outlines the costs allocated and the basis on which they are allocated.

Cost Type	Allocation Basis
Transpower - Interconnection	Where TOU meters are in place and therefore CMD is known the allocated cost equals the CMD x loss factor x interconnection rate. Remaining interconnection costs are allocated to sites that do not have TOU meters on the basis of a modeled AMD.
Transpower – Excluding interconnection	Utilised Asset Value
Avoided Transmission	Modeled AMD. Avoided transmission charges are not applied against sites with TOU meters as they have already been allocated their full interconnection cost under the Transpower – interconnection allocation.
Electricity Authority Levies	MWh of consumption
Commerce Commission Levies	Utilised Asset Value
Electricity and Gas Complaints Commission General Levies	Per ICP
Rates	Per ICP
Operating Expenditure	Utilised Asset Value
Depreciation	Utilised Asset Value
Tax	Utilised Asset Value
Return on Investment	Utilised Asset Value

### 9.4 Comparison to expected revenues

The expected revenue based on applying as even as possible a percentage increase across all tariffs is calculated for each customer group and compared against the calculated goal revenue by customer group.

Where differences exist, the difference is reduced either by altering the tariff structure (where we identify a type of customer is not making a reasonable contribution to network costs) or changing tariffs. Through this process we seek to preserve tariff relativities, which create price signals, except where we consider that relativities need to be changed to affect the strength of the signals or to mitigate any identified revenue risks. The process of setting tariffs is not a mechanical exercise, but an iterative process within the constraints of Unison’s overall price cap.

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## Cost Allocation Model, Continued

### 9.4 Comparison to expected revenues (continued)

Due to the need to maintain relativities in tariffs between price categories expected revenues may not exactly match the goal revenue, especially where constraints such as Unison's 10% limit on annual price increases become binding. This was particularly a feature of pricing in 2013-14 where significant increases in both Unisons' allowable revenue under the DPP and pass through costs occurred.

### 9.5 Basis for selection of cost allocators

As recognised in the academic literature<sup>7</sup>, there is no right or wrong way to allocate costs, the more important task for network pricing is to create a tariff structure that creates incentives for efficient behaviour. Unison's approach to this is explained in *points 8.1 to 8.3*. Accordingly, in establishing an approach to allocation of costs, Unison focused on establishing an approach that is reasonable, defensible, and administratively simple, rather than undertaking an exhaustive and ultimately arbitrary approach to segmenting individual costs and determining an 'appropriate' allocator.<sup>8</sup>

Where a cost is directly driven by a particular variable, costs are allocated in proportion to that variable. For example, transmission interconnection costs are directly driven by peak demands during the regional coincident peak demands, so interconnection costs are allocated in proportion to each customer's share (directly calculated or estimated) of those demand peaks.

In respect of capital cost-related variables (depreciation, tax, and return on investment) Unison elected to use share of AMD as the basis for allocating asset values, which then determines the share of capital costs to each customer. Unison also allocates operating costs on the basis of utilised asset value. This is on the basis that, as a business, Unison incurs costs to build and maintain assets to deliver electricity, so it is reasonable to allocate operating expenditure on the basis of asset value.

In developing an approach to allocate shared assets, other candidate allocators were considered, including MWh consumed and CMD as well as ratios of each (e.g. 50:50 AMD:MWh). Each of these measures to varying degrees reflects some measure of use of assets to obtain services, with MWh consumed being the least reflective of the costs imposed on the network, but more indicative of the value of consumption. As these variables are highly correlated, the resulting cost allocations do not change markedly between different allocators. Accordingly, Unison elected to use AMD as the basis for allocation on the basis that it is better reflective of the capacity customers require to meet their individual demands than MWh, recognises the value of diversity, and is stable in comparison to CMD.

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<sup>7</sup> Baumol, W. J., Koehn, M. F. and Willig, R. D. (1987), How Arbitrary is Arbitrary? or, Towards the Deserved Demise of Full Cost Allocation, *Public Utilities Fortnightly*, (3 September), 16-21

<sup>8</sup> Take for example, CEO costs: one argument would be that a company must have a CEO and all consumers benefit from having a well-governed organisation. Accordingly, CEO costs could be allocated per ICP. An alternative argument is that a CEO might be more focused on higher value areas of the business, or that CEO salaries tend to be proportionate to the scale of an organisation, so CEO costs could be allocated in proportion to revenues from different consumer classes, the MWh used by different consumer classes or the value of the assets under management.

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## Cost Allocation Model, Continued

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**9.5 Basis for  
selection of  
cost  
allocators**  
(continued)

Combined with a tariff structure that seeks to create incentives to reduce consumption during peak periods (i.e. reduce CMD peaks), Unison considers that this provides a reasonable basis for equitably sharing costs between customers that is stable over time.

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## 10. Key Statistics

### 10.1 Costs allocated by region

The following table shows the costs allocated by region.

	Hawke's Bay	Central
Rates	\$61,352	\$532,101
EA Levy	\$153,068	\$108,409
Commerce Commission Levy	\$110,321	\$73,547
Electricity and Gas Complaints Commission General Levy	\$23,271	\$17,525
Interconnection - Transpower	\$17,451,223	\$5,959,936
Transmission excluding interconnection	\$2,370,345	\$3,304,112
Avoided Transmission	\$0	\$6,207,515
Operating Expenditure	\$14,559,754	\$11,542,543
Depreciation	\$9,989,561	\$6,659,707
Tax/ROI (excl revenue from individually priced customers)	\$29,039,242	\$19,617,837

### 10.2 Allocators used in Hawke's Bay

The following table shows the allocators used in Hawke's Bay.

	<29kVA	>29kVA <=1MVA	>1MVA
ICP Count	59674	2916	1915
kWh Consumption	449368757	327670062	129756593
AMD	226046	141343	137111654
Utilised Asset Value	\$412,647,941	\$19,624,070	\$19,127,421
Metered CMD (kW) – TOU only	0	3085316	1866668

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## Key Statistics, Continued

### 10.3 Allocators used in the Central Region

The following table shows the allocators used in the Central Region.

	<29kVA	>29kVA <=1MVA	>1MVA
ICP Count	46323	4242	4
kWh Consumption	451436000	386460000	139757000
Utilised Asset Value	\$220,657,465	\$119,609,995	\$8,342,290
Metered CMD (kW) – TOU only	0	25493	6009739

### 10.4 Goal revenue by consumer group

The following table shows the goal revenue by consumer group.

	Hawke's Bay	Central
<29KVA	\$50,744,451	\$32,524,123
>29 KVA <=1MVA	\$18,765,977	\$19,260,542
>1MVA	\$4,247,710	\$2,238,568

### 10.5 Expected revenue by consumer group

The following table shows the expected revenue by consumer group.

	Hawke's Bay	Central
<29KVA	\$50,533,513	\$34,088,767
>29 KVA <=1MVA	\$18,975,528	\$17,694,085
>1MVA	\$4,247,710	\$2,238,568

### 10.6 Required regional revenue vs actual revenue

The following table shows the required regional revenue vs actual revenue.

	Hawke's Bay	Central
Required Revenue incl pass through costs based on Price Reset Model	\$73,758,138	\$54,023,233
Actual Goal Revenue	\$73,756,750	\$54,021,420
Under Recovery	-\$1388	-\$1813

*Continued on next page*

## Key Statistics, Continued

### 10.7 Reasons for price changes from the previous year

The following table shows the reasons behind the changes in Unison's prices

	Hawke's Bay	Central
Change in Pass Through Costs	\$1,540,257	\$975,805
Change in Allowable Revenue under the Default Price Path	\$4,834,564	\$2,225,445
Weighted average change in tariff rates as a result of changes in pass through costs	2.3%	1.9%
Weighted average change in tariff rates as a result of changes in allowable revenue	7.2%	4.4%
Total weighted average change in tariff rates	9.5%	6.3%

*Continued on next page*

## Key Statistics, Continued

### 10.8 Proportion of revenue by price component

The following table shows the proportion of target revenue that is collected through each publically disclosed price component.

Tariff Code	Proportion of Revenue	Tariff Code	Proportion of Revenue
E-H-DNR-24UC	0.01%	E-R-DNR-24UC	0.01%
E-H-DNR-AICO	0.01%	E-R-DNR-AICO	0.02%
E-H-DNR-CTRL	0.00%	E-R-DNR-CTRL	0.00%
E-H-DNR-PROJ	0.00%	E-R-DNR-CTUD	0.00%
E-H-L40-24UC	0.00%	E-R-DNR-CTUN	0.00%
E-H-L40-DMND	0.68%	E-R-DNR-NITE	0.00%
E-H-L40-KVAR	0.17%	E-R-DNR-PROJ	0.00%
E-H-L40-SOPD	0.45%	E-R-L40-24UC	0.00%
E-H-L40-TAIC	0.00%	E-R-L40-DMND	0.47%
E-H-L40-WOPD	1.10%	E-R-L40-KVAR	0.19%
E-H-M11-24UC	1.43%	E-R-L40-SOPD	0.42%
E-H-M11-AICO	5.58%	E-R-L40-TAIC	0.00%
E-H-M11-CTRL	0.19%	E-R-L40-WOPD	1.12%
E-H-M11-CTUD	0.00%	E-R-M11-24UC	1.31%
E-H-M11-NITE	0.01%	E-R-M11-AICO	2.70%
E-H-M11-PROJ	0.00%	E-R-M11-CTRL	0.16%
E-H-M12-24UC	3.86%	E-R-M11-CTUD	0.08%
E-H-M12-AICO	12.81%	E-R-M11-CTUN	0.01%
E-H-M12-CTRL	0.27%	E-R-M11-NITE	0.01%
E-H-M12-CTUD	0.01%	E-R-M11-PROJ	0.00%
E-H-M12-CTUN	0.00%	E-R-M12-24UC	4.61%
E-H-M12-NITE	0.01%	E-R-M12-AICO	5.96%
E-H-M12-PROJ	0.00%	E-R-M12-CTRL	0.58%
E-H-MC-24UC	5.18%	E-R-M12-CTUD	0.37%
E-H-MC-CTRL	-0.01%	E-R-M12-CTUN	0.05%
E-H-MC-CTUD	0.18%	E-R-M12-NITE	0.07%
E-H-MC-CTUN	0.02%	E-R-M12-PROJ	0.00%
E-H-MC-DEFT	0.41%	E-R-MC-24UC	5.07%
E-H-MC-DMND	0.68%	E-R-MC-CTRL	0.07%
E-H-MC-KVAR	0.24%	E-R-MC-CTUD	0.68%
E-H-MC-NITE	0.00%	E-R-MC-CTUN	0.08%
E-H-MC-PROJ	0.03%	E-R-MC-DEFT	0.34%
E-H-MC-SOPD	0.43%	E-R-MC-DMND	0.15%
E-H-MC-TAIC	0.00%	E-R-MC-KVAR	0.07%
E-H-MC-WOPD	1.12%	E-R-MC-NITE	0.01%
E-H-NDH-24UC	1.49%	E-R-MC-PROJ	0.00%
E-H-NDH-AICO	1.50%	E-R-MC-SOPD	0.14%

*Continued on next page*

## Key Statistics, Continued

### 10.8 Proportion of revenue by price component (continued)

Tariff Code	Proportion of Revenue	Tariff Code	Proportion of Revenue
E-H-NDH-CTRL	0.01%	E-R-MC-TAIC	0.00%
E-H-NDH-CTUD	0.04%	E-R-MC-WOPD	0.37%
E-H-NDH-CTUN	0.00%	E-R-NDH-24UC	0.70%
E-H-NDH-NITE	0.00%	E-R-NDH-AICO	0.05%
E-H-NDH-PROJ	0.00%	E-R-NDH-CTRL	0.02%
E-H-NDL-24UC	0.16%	E-R-NDH-CTUD	0.05%
E-H-NDL-AICO	0.16%	E-R-NDH-CTUN	0.01%
E-H-NDL-CTRL	0.00%	E-R-NDH-NITE	0.00%
E-H-NDL-CTUD	0.00%	E-R-NDH-PROJ	0.00%
E-H-NDL-CTUN	0.00%	E-R-NDH-TAIC	0.00%
E-H-NDL-NITE	0.00%	E-R-NDL-24UC	0.11%
E-H-NDL-PROJ	0.00%	E-R-NDL-AICO	0.01%
E-H-S11-PROJ	0.00%	E-R-NDL-CTRL	0.00%
E-H-S20-24UC	0.00%	E-R-NDL-CTUD	0.00%
E-H-S20-DMND	0.00%	E-R-NDL-CTUN	0.00%
E-H-S20-PROJ	0.00%	E-R-NDL-NITE	0.00%
E-H-S22-24UC	-0.01%	E-R-NDL-PROJ	0.00%
E-H-S22-DMND	0.00%	E-R-S11-24UC	0.00%
E-H-S22-KVAR	0.00%	E-R-S11-CTUD	0.00%
E-H-S22-SOPD	0.00%	E-R-S11-NITE	0.00%
E-H-S22-WOPD	0.00%	E-R-S11-PROJ	0.00%
E-H-T1P-24UC	0.01%	E-R-S20-24UC	-0.01%
E-H-T1P-PROJ	0.00%	E-R-S20-CTRL	0.00%
E-H-T3P-24UC	0.00%	E-R-S20-CTUD	0.00%
E-H-T3P-PROJ	0.00%	E-R-S20-CTUN	0.00%
E-H-U01-1	0.00%	E-R-S20-DMND	0.00%
E-H-U01-12	0.00%	E-R-S20-PROJ	0.00%
E-H-U01-13	0.00%	E-R-S22-24UC	0.02%
E-H-U01-UNMT	0.05%	E-R-S22-CTRL	-0.01%
E-H-U02-1	0.29%	E-R-S22-DMND	0.00%
E-H-U02-10	0.00%	E-R-S22-KVAR	0.00%
E-H-U02-11	0.00%	E-R-S22-NITE	0.00%
E-H-U02-3	0.01%	E-R-S22-PROJ	0.00%
E-H-U02-UNMT	0.06%	E-R-S22-SOPD	0.00%
E-H-U03-TAIC	0.40%	E-R-S22-WOPD	0.00%
F-H-DNR	0.02%	E-R-S24-24UC	0.00%
F-H-L40	0.00%	E-R-S24-PROJ	0.01%
F-H-L40-T020	0.00%	E-R-T1P-24UC	0.01%

*Continued on next page*



## Key Statistics, Continued

### 10.8 Proportion of revenue by price component (continued)

Tariff Code	Proportion of Revenue	Tariff Code	Proportion of Revenue
F-H-L40-T030	0.01%	E-R-T1P-PROJ	0.00%
F-H-L40-T050	0.11%	E-R-T3P-24UC	0.01%
F-H-L40-T075	0.08%	E-R-U01-10	0.00%
F-H-L40-T100	0.04%	E-R-U01-11	0.00%
F-H-L40-T150	0.02%	E-R-U01-12	0.00%
F-H-M11	0.74%	E-R-U01-13	0.00%
F-H-M12	8.59%	E-R-U01-14	0.00%
F-H-MC1	1.43%	E-R-U01-15	0.00%
F-H-MC2	0.57%	E-R-U01-17	0.00%
F-H-MC3	1.02%	E-R-U01-18	0.00%
F-H-MC4	0.00%	E-R-U01-23	0.00%
F-H-MC5	0.27%	E-R-U01-24	0.01%
F-H-MC6	0.20%	E-R-U01-5	0.00%
F-H-MC7	0.06%	E-R-U01-6	0.00%
F-H-MC8	0.10%	E-R-U01-7	0.00%
F-H-MC9	0.09%	E-R-U01-8	0.00%
F-H-MC-COAD	0.00%	E-R-U01-9	0.00%
F-H-MC-T020	0.09%	E-R-U01-UNMT	0.00%
F-H-MC-T030	0.07%	E-R-U02-18	0.00%
F-H-MC-T050	0.01%	E-R-U02-19	0.00%
F-H-MC-T075	0.00%	E-R-U02-2	0.00%
F-H-MC-T100	0.00%	E-R-U02-21	0.12%
F-H-MC-T150	0.00%	E-R-U02-22	0.00%
F-H-NDH	0.69%	E-R-U02-25	0.00%
F-H-NDL	1.09%	E-R-U02-UNMT	0.01%
F-H-S20	0.00%	E-R-U03-TAIC	0.35%
F-H-S22	0.00%	F-R-DNR	0.05%
F-H-T1P	0.03%	F-R-L40	0.00%
F-H-T3P	0.01%	F-R-L40-T020	0.01%
		F-R-L40-T030	0.02%
		F-R-L40-T050	0.13%
		F-R-L40-T075	0.03%
		F-R-L40-T100	0.02%
		F-R-M11	0.43%
		F-R-M12	8.14%
		F-R-MC1	2.52%
		F-R-MC2	0.57%
		F-R-MC3	0.63%

*Continued on next page*

## Key Statistics, Continued

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### 10.8 Proportion of revenue by price component (continued)

<b>Tariff Code</b>	<b>Proportion of Revenue</b>
F-R-MC4	0.00%
F-R-MC5	0.42%
F-R-MC6	0.12%
F-R-MC7	0.00%
F-R-MC8	0.07%
F-R-MC9	0.06%
F-R-MC-COAD	0.00%
F-R-MC-T020	0.03%
F-R-MC-T030	0.03%
F-R-MC-T050	0.00%
F-R-MC-T075	0.00%
F-R-MC-T100	0.00%
F-R-NDH	0.23%
F-R-NDL	0.36%
F-R-S20	0.00%
F-R-S22	0.00%
F-R-S24	0.01%
F-R-T1P	0.02%
F-R-T3P	0.00%

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## 11. Fixed and Variable Charges

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### 11.1 Fixed and variable charges

Given the regulatory low user fixed charge requirements and Unison's intent that price categories face tariffs which relate logically across the price categories, Unison has in effect very little ability to alter the proportion of fixed and variable charges that customers face, in particular with regard to residential users. While only directly impacting the M11 and M12 price categories due to the need to ensure a logical progression in tariff rates between price categories the low user fixed charge requirements are in reality a major constraint in Unison's Pricing Methodology. As the low user fixed daily charge cap of \$0.15 does not increase annually this cap in effect increases the proportion of revenues which must be gained from variable tariffs year-on-year.

Unison determines the recovery of fixed and variable charges according to the following considerations:

- In respect of permanent domestic customers (M11 (low user) and M12 (high user)), Unison's fixed and variable charge approach is established so that we comply with the low user fixed charge regulations.
- Mass-market, non-residential high users (NDH) have historically faced the same charges as a domestic high user. From 2013 the pricing is no longer the same as the breakpoint between non-residential high and low user has been moved from 8,000kWh to 6,000kWh. However, given the extent of Unison's allowable revenue increase in 2013-14 and Unison's desire to mitigate price shocks to individual customers in 2013-14 there is little room for adjustment of relativities in tariffs. As such, the existing relativities between tariffs determine the fixed to variable charge approach.
- In respect of non-domestic non-permanent customers (DNR), fixed daily charges are set equal to those of a non-domestic low user and the variable rates set such that a customer using 8,000 kWh per annum will pay the same as a permanent place of residence using the same. The high fixed daily rate is reflective of the fact that non-permanent residences generally use less electricity than permanent residences but have the same peak capacity requirements.
- In Unison's commercial customer groups (MC1 to MC9), Unison signals the additional costs of higher capacity through a stepped increase in fixed charges as customers progress to higher levels of peak capacity requirements, and
- Unison's industrial customers face a fixed plus power factor correction charge.

However, prices are reviewed annually based on prior year peak demands, so are variable over time in response to changes in use of shared assets. Dedicated asset-related charges are time invariant.

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## 12. Non-Standard Contracts

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### 12.1 Non-standard contract use

Unison currently has 7 ICPs on non-standard contracts, representing annual target revenue of \$1,750,000.

A non-standard contract may be entered into where a site has greater than 1MVA of installed capacity and the site is either significantly different or separate from the remainder of the network or significant capital investment is undertaken by Unison for the purpose of supplying that customer. The primary purpose of the non-standard contracts is the formalisation of a direct relationship between Unison and the customer. Customers with non-standard contracts may be direct billed by Unison, as opposed to network charges being billed by the retailer.

The prices set under non-standard contracts are determined using the same methodology as for customers under standard contracts. Additional charges may be payable under non-standard contracts, for example where the contract is in place due to significant capital investments undertaken by Unison to supply the customer.

In the event of a supply interruption some customers with non-standard contracts will receive priority in the restoration of supply. This term is not provided in standard contracts. Priority in restoration of supply does not impact the methodology used in setting charges payable by the customer but rather is a reflection of the direct relationship between Unison and the customer.

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## 13. Load Management and Embedded Generators

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### 13.1 Embedded generators

Unison has a number of embedded generators on the network, both those who are solely generators and those who generate for their own consumption. These generators, when generating during periods of peak demand, reduce the demand on Unison's network and hence the investment required in the network. As such Unison sees it as appropriate to share these cost savings with the generator. Unison passes on the benefits of this generation in a number of ways.

For those who are solely generators, Unison makes monthly avoided transmission payments paid at the Transpower interconnection rate, \$99.44/kW for the 2013-14 pricing year. The methodology used in determining these payments is based on Transpower's interconnection pricing methodology. That is, generators are paid based on their generation during the 100 peak Lower North Island (LNI) demand periods. These payments to the generator are equal to the additional interconnection charges that Unison would otherwise have paid to Transpower if the generation had not occurred. The value of these payments varies year on year dependent on the individual generators level of generation during the 100 LNI demand periods. Payments totalling approximately \$6,600,000 will be made to these generators during 2013-14.

For those who generate for their own consumption, customers are financially rewarded for this in three ways:

- variable network charges reduce
- the interconnection charge component used in calculating their tariff is reduced as their Coincident Peak Demand is reduced, and
- the proportion of network asset values allocated to the customer is reduced as the Anytime Maximum Demand that they place on the network is reduced.

Unison also rewards larger users who build close to the GXP, hence minimising the network investment required to service them. This is achieved via the pricing derivation which calculates the value of assets assigned to the ICP.

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## 14. Future Planned Alterations

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### 14.1 Alterations

Retailers have been notified that Unison is investigating options for moving larger commercial customers, excluding I60s, on to a more liner fixed daily charge regime.

Unison is also investigating separating Transpower's interconnection charges from the general fixed daily tariff for large customers in order to strengthen the transparency of the peak price signal and accurately reflect to these customers the costs that their consumption patterns place on the network.

As 'smart' meters become more common on Unison's network the data from these will be incorporated into the cost allocation model, further strengthening the cost allocation process and reducing the assumptions required.

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## Appendix A – Pricing Principles

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### Principles guiding pricing approach

As noted in the Background section, Unison has prepared this disclosure in light of the Guidelines published by the Electricity Authority. The Guidelines set out a number of principles that distributors are expected to formally demonstrate they adhere to. Unison considers that many of the principles are either ‘commonsense’ and have under-pinned the development of its prices over time, or are impractical theoretical considerations, e.g. the Ramsey pricing approach implicit in principle (b).

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### Electricity Authority pricing principles comparison

In this section Unison sets out how it considers it meets the Authority’s pricing principles. Each principle is stated, followed by Unison’s commentary.

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### Signal economic costs

- 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.*

Unison operates in two distinct regions, Hawke’s Bay and Taupo/Rotorua. As such, Unison prices these regions independently in order to ensure that the revenue achieved in each region does not exceed a WACC return as calculated using the Commerce Commission draft Price Reset model.

Unison interprets the requirement for subsidy-free prices as requiring that for each particular customer group, the revenues obtained from that customer group should not be below the cost of connecting that customer group to the network (incremental costs), or exceed the costs of serving that customer group, as if they were the only consumer group (stand-alone costs). These bounds are extremely wide as there are extensive shared assets on Unison’s network. As a result, if Unison were to cease supplies to any particular customer group, there would be a limited reduction in costs and assets as different customer groups are inter-mingled on the network.

Unison considers that, by definition, its prices are subsidy-free as it applies a cost allocation model to allocate costs across the consumer base to determine the revenue requirement, which is then used as a basis for establishing prices for each consumer group. Because the cost allocation model allocates the total cost of supplying all Unison’s consumers in proportion to percentage use of particular assets, which (by definition) adds up to 100%, no consumer group pays more than their stand-alone costs.

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## Appendix A – Pricing Principles, Continued

### Signal economic costs (continued)

Unison conducted an experiment to estimate the stand-alone costs of serving its industrial consumers. Charges for 2009-10 to these consumers were \$4.5 million. Based on the assets they use, and a scaled estimate of the corporate and maintenance costs that would be incurred to meet their requirements, Unison conservatively estimates that it would charge at least \$9.9 million per annum on a standalone basis.

This illustrates the significant benefit consumers derive from shared use of network assets and demonstrates that the use of a cost allocation model to derive prices, leads to revenue allocations that fall well within the bounds of standalone costs.

Unison also ensures that new connections are not subsidised, by calculating a capital contribution where the expected revenues from tariffs does not cover costs. This ensures that total revenues from each consumer (including the capital contribution) are not expected to be less than incremental costs<sup>9</sup>

- b) *Prices are to signal the economic costs of service provision, by:*
- i. *having regard, to the extent practicable, to the level of available service capacity, and*
  - ii. *signalling, to the extent practicable, the impact of additional usage on future investment costs.*

Unison's tariff structure is based on capacity-usage. Unison relies on differentials between controlled and uncontrolled usage (residential), and its TOU charges to signal the value of consuming outside of peak periods (when capacity is less constrained). The impact of such price signals lessens the need to invest in additional network capacity.

As consumers increase their use of network capacity, where practicable they pay increased line charges.

- For small capacity consumers (e.g. with no TOU metering), it is assumed that as volumes increase their use of network capacity increases. Additionally, because Unison offers different tariff rates for controlled and uncontrolled use, there are incentives for consumers to have controllable loads (e.g. water heating, which makes up a material proportion of consumers' consumption, normally around 40% of their usage). In future, as smart meters become ubiquitous, Unison will enhance its tariff structures to further encourage consumers to shift discretionary loads outside of peak periods. Unison has published TOU tariffs for residential consumers and will be seeking to work with retailers over time to assess whether the relativities between these new TOU rates and legacy tariff options make it attractive for consumers to switch to such rates

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<sup>9</sup> Unison's capital contribution policy is available at [http://www.unison.co.nz/site\\_resources/library/OUR%20NETWORK/Get%20Connected/FC0021v2.0-Capital\\_Contributions\\_Policy.pdf](http://www.unison.co.nz/site_resources/library/OUR%20NETWORK/Get%20Connected/FC0021v2.0-Capital_Contributions_Policy.pdf)



## Appendix A – Pricing Principles, Continued

### Signal economic costs (continued)

- For consumers in the commercial group, Unison signals the costs of additional capacity usage through increasing fixed charges as consumers increase their nominated capacity. For those consumers that have TOU metering (now mandatory on Unison’s network down to 138 kVA), charges are based on on-peak demands, providing a direct price signal to reduce demands in peak periods
- For large industrial consumers, where they require increases in capacity to serve their needs or additional equipment to meet their security of supply objectives, Unison prices such requests individually. Therefore such consumers face the costs of their additional requirements directly.

As noted in *Section 8*, Unison has not adopted an approach where tariff relativities are based on an assessed value of the economic costs of providing incremental network capacity, but instead has evolved both its customer categorisation and tariff structures over time to create a structure by which consumers face charges that are reflective of the relative costs of consuming at different times. There are further refinements that Unison intends to introduce over coming years, most notably, a shift from stepped fixed charge increases between capacity bands to more linear ‘per kVA’ charges. By necessity there is a need to transition from the current arrangements to avoid ‘rate shock’.

Unison also intends to carry out analysis of the approach Orion has used to establish its long-run incremental costs of capacity investment in its network of \$108 per kW per annum to establish a long-term target for relativities between tariffs.

- c) *Where prices 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.*

Unison interprets this principle as the requirement to implement some form of ‘multi-part’ pricing<sup>10</sup>, with Ramsey<sup>11</sup>-based considerations applied to the mark-up of variable tariffs above incremental costs. However, it is not practicable to assess consumers’ demand responsiveness and set charges accordingly. Unison, like all distributors, is forced to use tariff structures which use high proportions of variable charges to recover predominantly fixed charges as the only practical means of differentiating different consumers’ elasticity or willingness to pay.

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<sup>10</sup> Multi-part pricing refers to a pricing approach where a consumer pays a combination of fixed and variable charges.

<sup>11</sup> Ramsey-based pricing is an approach where those consumers with inelastic demand face higher charges.

## Appendix A – Pricing Principles, Continued

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**Signal  
economic  
costs**  
(continued)

- d) *Provided that prices satisfy (a) above, prices should be responsive to the requirements and circumstances of stakeholders in order to:*
- i. *discourage uneconomic bypass*
  - ii. *allow for negotiation to better reflect the economic value of services and enable stakeholders to make price/quality trade-offs or non-standard arrangement for services, and*
  - iii. *where network economics warrant, and to the extent practicable, encourage investment in transmission and distribution alternatives (e.g. distributed generation or demand response) and technology innovation.*

Unison's compliance under these principles is achieved as follows:

1. Uneconomic bypass is avoided through Unison's cost allocation approach to setting tariffs, whereby (by the use of a proportional cost allocation approach) charges are set below stand-alone costs. In addition, Unison differentiates its charges to reflect savings for consumers who chose to own their own transformers, such that it is neutral between the consumer and Unison owning the transformer.
2. Unison also avoids uneconomic bypass/inefficient disconnection by lowering charges to consumers who, but for the level of line charges, would cease business. Unison does not currently have such consumers on the network.
3. It is generally not practical to negotiate with consumers (particularly small consumers) to provide different price-quality tradeoffs, given the shared nature of the network. Unison establishes performance metrics pertaining to different zones (e.g. fault restoration times for rural versus urban consumers) and periodically surveys consumers about their price-quality preferences. The results of Unison's surveys have shown that consumers, on average, are not willing to pay more for a higher quality of service. For larger consumers with specific requirements, Unison enters into specific discussions with such consumers to establish quality requirements.
4. Unison sets specific charges for large industrial consumers to ensure that charges reflect the economic costs of service provision (thereby discouraging uneconomic bypass and allowing such consumers to negotiate their specific needs).

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## Appendix A – Pricing Principles, Continued

### Signal economic costs (continued)

5. Unison pays out avoided transmission charge benefits to embedded generators to encourage such generators to reliably generate during transmission peak periods. Unison also allows smaller generators to connect to Unison's network and utilise the distribution network for delivering their generation to other connections without incurring network charges. Connection costs are applicable, as per Unison's distributed generation policy. For further details on connection of distributed generation and charges please refer to Unison's public website.
6. In future, as smart meters become ubiquitous on the network and Unison adopts TOU charges accordingly, there will be stronger incentives for consumers to invest in technology to avoid consumption in network peaks (e.g. appliances with timer functions or use of batteries and other distributed generation to reduce network demands). Retailers do not appear to actively promote tariff options using Unison's low night rates, despite the very low levels of these tariffs.
7. Because of Unison's peak/control-period prices, consumers have a clear value against which to assess network alternatives or behaviour changes. Many consumers, particularly major consumers, turn on generators; reduce demand, or both in response to our pricing. Some large industrial users have received significant tariff reductions as a direct result of them reducing their network demand during periods of peak consumption. The majority of Unison's residential consumers heat their water through controlled meters in response to Unison's controlled rate tariffs.

### Stability and transparency

- e) *Development of prices should be transparent, promote price stability and certainty for stakeholders, and changes to prices should have regard to the impact on stakeholders.*

Unison's development of prices:

1. Is transparent:
  - (i) Through this disclosure statement, Unison provides information on the costs it allocates to different consumer groups
  - (ii) In addition to this disclosure Unison publishes a pricing policy which details the different charges between tariffs and price categories. Consumers can review charges and weigh up costs for changing capacity requirements or load profile and the resulting benefits. Every year there is formal consultation between retailers and Unison on pricing strategy, price category and tariff development. There is a significant level of difference in the degree to which retailers engage in this consultation process, however, the opportunity to engage in the process is equal for all retailers operating on Unison's network.

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## Appendix A – Pricing Principles, Continued

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### Stability and transparency (continued)

2. Promotes price stability: Unison updates its cost of service model annually. The cost of service model is only altered where a strong case exists for such alteration, thereby encouraging consumers to alter their behaviour in line with the signals sent by Unison's tariff structure. Where Unison identifies a potentially significant change to the pricing structure, such as the proposed change from capacity to demand based charges for large commercial consumers, this is highlighted to retailers with as much lead time as practicable in order to encourage behavioral response to the change. For example, the potential for a demand to capacity based pricing change was indicated to retailers in September 2011 with an expected implementation date of 3-5 years.
3. To ensure price stability to consumers, Unison endeavors to ensure that any price changes made, limit price shocks to any particular consumer group to less than 10% in line with standard industry practice. As distribution charges, including transmission charges, make up around 50% of a typical consumer's bill, this ensures no consumer would face more than a 5% delivered price increase due to changes in distribution and/or transmission charges.
4. Promotes certainty: Unison endeavors to maintain its tariff structures and differentials between tariffs, so that consumers who make investments (for example in controllable loads) due to the savings between controlled and uncontrolled rates are able to realise the savings expected when the original investment was made. With the introduction of smart meters, Unison intends to take a circumspect approach to developing and implementing TOU tariffs. This is so that consumers are not unduly disadvantaged by the introduction of smart meters. Consumers will have time to consider behavioral changes and investments to avoid adverse bill impacts as Unison seeks to strengthen differentials between peak and off-peak charges over time.
5. Unison is intending to review the pricing methodology applied to individually priced customers during 2013 with the explicit intent of creating more stable and predictable tariffs over time as there is a risk under the current methodology that the cost allocation approach could result in undesirable variability in tariffs year on year.
6. Unison is intending to compile a pricing strategy during 2013 in order to more transparently convey its pricing intentions over a five (5) year timeline.

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## Appendix A – Pricing Principles, Continued

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- Complexity** f) *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.*

Unison recognises the need to minimise undue complexity for retailers, subject to its legitimate business needs to signal costs to consumers and ensure equity between consumers. All retailers are subject to the same tariff schedules from Unison. Therefore, Unison considers that its prices are economically equivalent across all retailers. Unison also aims to maintain a tariff structure which minimises the potential for error in tariff or price category allocation. Where there is choice as to how a customer is charged, e.g. an MC2 with a TOU meter that may be billed on either TOU or accumulative rates, the retailer is given the option as to which tariffs will apply with clear directions as to how to nominate their choice. In the case of the MC1 and MC2 consumer who may be on either accumulative or TOU rates the rate on which they are charged is determined simply by the format in which the retailer submits the consumption data to Unison, a low overhead and unambiguous methodology.

In 2010, Unison introduced a number of new tariffs to its schedules based on concerns that a number of consumer-types were not making a reasonable contribution to the costs of the network. In particular, Unison has a number of small commercial consumers who consume low volumes of energy and thus were benefitting (unlawfully) from the low-user fixed charge option by nominating low-user fixed charge tariffs. In addition there were holiday-home owners who were also nominating the low-user fixed charge tariff option, despite this being only applicable to permanent residences. In some of Unison's regions, with high number of holiday homes (e.g. Taupo) this resulted in an inequitable outcome. In such a situation permanent residents become liable for a high proportion of network costs, whereas holiday home-owners (who have the same capacity requirements) make relatively little contribution through their volumetric charges.

Unison sought to address these concerns by introducing the non-domestic high and low tariffs (NDH and NDL), and domestic non-(permanent) resident (NDR) tariff. These tariffs have higher fixed daily charges.

Retailers objected to these tariffs on the basis they were difficult to administer. However, Unison considers that equity considerations between consumers outweigh such administration costs. Unison has performed significant analysis to identify ICPs which should be in these categories and notified retailers accordingly, limiting the resource required from retailers in administering these tariffs. These tariffs have now been successfully embedded.

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## Appendix B – Certification for Year Beginning Disclosure



### CERTIFICATION FOR YEAR-BEGINNING DISCLOSURES

Pursuant to Schedule 17

We, Kevin Atkinson and John Palairet, being directors of Unison Networks Limited certify that, having made all reasonable enquiry, to the best of our knowledge -

- a) the attached Asset Management Plan of Unison Networks Limited prepared for the purposes of clause 2.4.1, clause 2.6.1 and subclauses 2.6.3(4) and 2.6.5(3) of the Commerce Commission's Electricity Distribution Information Disclosure Determination 2012 complies with those determination.
- b) The prospective financial or non-financial information included in the attached information has been measured on a basis consistent with regulatory requirements or recognised industry standards.

Director

Date: 22<sup>nd</sup> March 2013

Director

Date: 22<sup>nd</sup> March 2013

## Appendix C – Summary of Document Changes

Date	Version No.	Changes to Document	Creator	Authoriser	Approver
01/04/2008	1.0	Updated tables with new cost allocations.	Commercial Group	CFO	CEO
01/04/2009	2.0	Updated tables with new cost allocations.	Commercial Group	CFO	CEO
01/04/2010	3.0	Introduced new tariffs and updated cost allocations to incorporate new tariff price categories.	Commercial Group	CFO	CEO
01/04/2011	4.0	Significant update of document and descriptions of pricing methodology calculations in light of Electricity Authority Guidelines.	Regulatory & Pricing	GM Regulatory & Pricing	CEO
01/04/2012	5.0	Significant update of document and descriptions of pricing methodology calculations in light of review against Electricity Authority Guidelines.	Pricing Analyst	GM Business Assurance	CEO
19/04/2013	6.0	Significant update of document and descriptions of pricing methodology calculations in light of review against Electricity Authority Guidelines and information disclosure requirements.	Pricing Analyst	GM Business Assurance	Group Chief Executive