



DS1001

Electricity Pricing Methodology

Disclosure Statement

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DS1001 – Pricing Methodology Disclosure 2022

Overview

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Intended audience

This document is supplied to the Commerce Commission (Commission) and made publicly available at www.unison.co.nz.

Document contributors

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Related references

Legislation and Guidance

Unison’s pricing methodology and prices are guided by, and comply with key legislation, regulations and guidelines governing the electricity industry, including:

- Commerce Act 1986
- Electricity Distribution Information Disclosure Determination 2012 (consolidated April 2018)
- Electricity Industry Act 2010
- Electricity Industry Participation Code 2010
- Electricity Authority: Distribution Pricing: Practice Note – August 2019
- Electricity Authority Pricing Scorecard reports
- Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004
- Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Amendment Regulations 2021

Policy

- CM0001 Pricing Policy and Schedules for 2022 to 2023
- FC0021 Capital Contributions Policy

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1. Definitions/Abbreviations

AMD	<p>Anytime Maximum Demand – a measure of consumers’ peak use of Unison’s network at any time in a given month.</p> <p>AMD is measured in kilowatts (kW). Unison calculates AMD by multiplying by two the energy in kilowatt-hours (kWh) it delivers over the half hour period when the consumer’s peak use of its network occurred in that month.</p>
Avoided transmission	<p>The expenses incurred by Unison as a direct result of payments to:</p> <ul style="list-style-type: none"> • generators for generation, or • any other activity, which substitutes for the use by Unison of the national grid transmission system.
Authority	<p>The Electricity Authority – the electricity regulator who ensures distributors apply and comply with key regulations governing the electricity industry.</p>
CMD	<p>Coincident Maximum Demand – a measure of peak consumer use during the 100 key dates/times that Unison’s transmission charges from Transpower are based on. These represent the 100 periods of maximum peaks in kW over the lower North Island.</p>
Code	<p>The Electricity Industry Participation Code 2010 – sets out the rules made by the Electricity Authority under section 36 of the Electricity Industry Act 2010.</p>
Commission	<p>The Commerce Commission – sets the regulation for cost recovery and price setting known as the Default Price-Quality Path.</p>
Consumer	<p>An end-user who buys their electricity from a retailer and has that electricity delivered to them via Unison’s network.</p>
Consumer group	<p>A category of consumers for which Unison develops its pricing. These categories reflect groups of consumers with a common:</p> <ul style="list-style-type: none"> • site usage (e.g. place of residence versus place of business), and • capacity and metering.
Cost Allocation Model	<p>The methodology used by Unison to allocate costs to their consumer groups.</p>

CPI	Consumer Price Index
Customer	A direct customer of Unison's receiving line function services or a retailer whose customers use Unison's (the distributor) network.
Demand	The rate at which electricity is being used expressed in kilowatts (kW).
DG	Distributed or generation – electricity generation that is connected and distributed within the Unison network.
DPP	Default Price-Quality Path – set by the Commerce Commission to control the level of revenue and prices distributors can set.
EDB	Electricity or Distributor Business – Unison is a distributor. Unison owns and operates the distribution network that delivers the electricity covered by this methodology.
Generator	An organisation that owns or operates generating units that inject electricity into the network.
GXP	Grid Exit Point – a point of connection where Unison's network connects to, and receives electricity from, the national transmission system run by Transpower.
ICP	Installation Control Point – point of connection on Unison's network, where: <ul style="list-style-type: none">• Unison nominates as the point where a consumer receives the electricity Unison delivers, and• the connection point has the attributes set out in the Electricity Industry Participation Code 2010.
kVA	Kilovolt Amp – a unit of measure for how much power is being provided through a business or home's electrical circuits or technology.
kVA_r	Kilovolt-Amps reactive – a measure of how efficiently power flows or is used between the network and consumers technology. It measures the lag between the flow (current) of electricity and the pressure (voltage) of that flow along a consumer's electrical circuit.

kVArh	Kilovolt-Amps reactive hour – an hourly measure of the KVAr described below.
kW	Kilowatt – Kw (1000 x watts) – a unit of measure of power or electricity.
kWh	Kilowatt hour – the amount of electricity consumed in an hour.
LFC Regulations	Electricity (Low Fixed Charge Tariff Option for Domestic Electricity Consumers) Regulations 2004.
LNI-RCPD	Transpower's cost allocation area, the Lower North Island, and the 100 highest regional coincident peak demand (RCPD) periods in kW for the year September to August.
Loss code	Distributors determine loss factors applying on their networks against which traders should submit consumption to the reconciliation manager. Each loss factor has a specified loss code that is stated in Unison's Pricing Policy and Schedules (CM0001).
N-1 supply	An alternative routing for supplying electricity to give a backup in case of primary routing being damaged or failing.
Network	The lines and associated equipment owned or operated by a distributor in a continuous geographic area or areas.
Non-TOU	Non-Time of Use – a consumer's site where electricity is metered over a period (e.g. month).
Power factor	kW divided by kVA.
Price category	A category of charges identified as a price category in Unison's Pricing Policy and Schedules (CM0001). It defines the delivery charges applicable to a particular group of ICP's with a common capacity need or usage behaviour.
Price option	The price option within a price category that gives consumers a choice of how the energy they consume is collated and charged. The options available are usually determined by the configuration of metering and load control equipment used by the consumer.

Pricing period	1 April to 31 March year.
RAB	Regulatory Asset Base – the regulatory value of Unison’s network assets that Unison is allowed by regulation to generate a return on.
RC	Replacement Cost – the cost to replace the value of network assets.
RCPD	Regional Coincident Peak Demand
Region	Unison has two regions. It provides electricity to the Hawke’s Bay region and the Rotorua/Taupo region.
Retailer	The supplier of electricity to consumers with installations connected to the distributor’s network.
TOU	Time of Use – a consumer’s site where half hour metering is installed. These values are used for the calculation of charges.
Transmission charge	<p>Charge incurred by Unison for transmission of electricity from the national grid operated by Transpower to Unison’s network. This enables Unison to deliver power to its network users.</p> <p>In this document this term also has the meaning defined under Recoverable Costs in Part 3 of the Electricity Distribution Services Input Methodology Determination 2012 dated 31 January 2019. It excludes transmission rebates passed on to consumers and retailers.</p>
Unison	Unison Networks Limited – the distributor.
WACC	Weighted Average Cost of Capital – a measure of the return on shareholder capital that distributors can achieve under the Default Price-Quality Path regulations set by the Commerce Commission.

2. Introduction

2.1 Context

This document sets out Unison Networks Limited's (Unison) methodology for setting its price structure and prices for the 2022/23 pricing year. The disclosure document is prepared pursuant to requirement 2.4 of the Electricity Distribution Information Disclosure Determination 2012 (consolidated in 2018) (Disclosure Determination).

Unison's Pricing Methodology Disclosure provides information to assist interested parties to understand how Unison's delivery prices are set. This includes the methods used to determine revenues, consumer groups and allocation of costs of providing and maintaining the network.

In developing Unison's prices, we have been mindful of the importance of transitioning in a timely way to more cost-reflective pricing approaches.

In developing this Pricing Methodology Disclosure, Unison has considered the Electricity Authority's guidelines and industry scorecards. Where the Authority has identified specific areas of improvement and highlighted best practice, we have sought to incorporate this feedback into this Disclosure Statement.¹

2.2 Unison distribution network

Unison owns and operates the distribution network in Hawke's Bay, Taupo and Rotorua. Unison's distribution network connects approximately 116,000 homes and businesses to the national transmission network through seven Grid Exit Points (GXPs). The maps provided in Appendices A – C show each of the three geographical areas with the GXPs and substations marked.

Unison's network area has four large urban areas, where the connections are a combination of commercial, industrial and dense urban. It spans large tracts of rural land with very diverse agricultural and horticultural use. Unison has a peak loading of 348MW which typically occurs during the winter months and is driven primarily by residential use patterns. Each year Unison distributes approximately 1,700GWh to consumers through the network.

Unison is owned by the Hawke's Bay Power Consumers' Trust (HBPC Trust)². The elected HBPC Trust holds the shares and oversees the operation of Unison on behalf of the consumer-owners.

2.3 Pricing review

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

¹ The Authority provided an updated Practice Note in December 2021. Unison is considering this guidance for future price setting. Its implications are profound and we expect to engage further with the Authority on practical implementation issues.

² A shareholder is anyone with a power account for their property that is directly connected to Unison within the Hawke's Bay District.

2.4 Pricing Policy and Schedules

This methodology does not contain full details of eligibility for price categories, price options or capital contributions. These details can be found in Unison's **CM0001 Pricing Policy and Schedules** available on Unison's website (www.unison.co.nz).

3. Regulatory Context

3.1 Commerce Commission

The Commission regulates electricity distribution businesses (EDBs) because they are natural monopolies. Due to economies of scale a competitor could not profitably duplicate Unison's network. Part 4 of the Commerce Act requires the Commerce Commission to periodically set Default Price-Quality Paths (DPPs) for electricity distributors, which in turn requires Unison to:

- limit the amount of revenue collected from consumers, while maintaining quality of supply, and
 - disclose certain information about our business, including this Pricing Methodology Disclosure Statement.
-

3.2 Authority

While the Commission sets out how much revenue Unison can earn from prices, the Authority oversees the methodological requirements for how EDBs set their prices.

Further details of the regulatory context are set out in the following sections.

3.3 Commerce Act

The purpose of the Commerce Act is to promote competition in markets for the long-term benefit of New Zealand consumers. However, where competition is insufficient, Part 4 of the Commerce Act establishes the regulatory regime that applies to distributors. Unison is subject to the Default Price Quality Path Determination³ (DPP Determination). The DPP Determination determines:

- how much revenue Unison may recover across its network in each pricing year (Allowable Revenue) for its conveyance services, and
 - the quality and reliability standards that must be met.
-

³ Electricity Distribution Services Default Price-Quality Path Determination 2020 is the applicable Determination for the 2020-2025 regulatory period.

**3.4 DPP
Determination**

The DPP Determination allows Unison to increase its core revenues from the delivery of network services on average by the Consumer Price Index (CPI) most years. However, every five years prices and revenues are ‘reset’ to ensure revenues are fully aligned with forecast costs for the next five years. In the year beginning 1 April 2020, Unison’s revenues have been reset, with much lower average prices than previously, due to the fall in interest rates.

The full DPP requirements can be found at:

<https://comcom.govt.nz/regulated-industries/electricity-lines/electricity-lines-price-quality-paths/electricity-lines-default-price-quality-path/2020-2025-default-price-quality-path>

**3.5
Information
disclosure
requirements**

Unison must comply with the Electricity Distribution Information Disclosure Determination 2012 (Disclosure Determination) which includes the requirement for the annual disclosure of its pricing methodology.

The key requirements in complying with the disclosure of pricing methodologies are outlined in 2.4.1 – 2.4.5 of the Disclosure Determination.

The purpose of this regulation is to ensure that sufficient information is readily available to interested persons to assess whether the purpose of Part 4 of the Act is being met.

**3.6
Distribution
Pricing
Principles
(2019)**

The Authority has a monitoring role in respect of distributors’ price setting approaches. We have developed our prices with reference to the Authority’s 2019 Distribution Pricing Principles.

The Authority’s recent reform of the Pricing Principles was to make changes that:

- promote cost reflectivity
- focus on the essential elements of efficient pricing, and
- continue to recognise that distributors should have regard to transaction costs, consumer impacts and uptake incentives.

While compliance with the Pricing Principles is voluntary, the Disclosure Determination requires each distributor to either:

- demonstrate consistency with the Pricing Principles, or
- provide reasons for any inconsistencies.

The Authority has published an updated Practice Note (Distribution Pricing Practice Note 2nd edition) to assist with the practical interpretations of the Pricing Principles. As noted earlier, the Practice Note was issued in December 2021, too late to inform Unison’s price-setting for 2022/23.

3.7 Scorecard The Authority has also developed a scorecard approach to monitor and comment on distributors' pricing structures and pricing reform. The pricing scorecards evaluate distributors' pricing plans against the Authority's Pricing Principles. The Authority's intention is for the scorecards to form a basis for regular, constructive engagement with distributors on their price reform aspirations, efforts and roadblocks. Unison has considered the Authority's commentaries on previous distributor pricing methodology disclosures. Unison has sought to address the Authority's recommendations and observations on distributor best practices in redeveloping this disclosure.

Appendix D sets out how Unison has addressed the Pricing Principles.

3.8 LFC regulations

Unison is required to make available low user prices in line with the Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004 (LFC Regulations). In December of 2021 an amendment to the regulations was inserted which defined the process for the phase out of the LFC Regulations, which will see a progressive phase out of low fixed charges over the next five years.

The key requirements of this regulation that apply to the 2022/23 year are as follows:

- Unison must offer a fixed daily charge to residential consumers of no more than \$0.30 per day excluding GST, and
- a consumer on the low fixed charge daily rate should pay the same or less than a residential consumer on a comparable non-low fixed charge price plan at an annual consumption of 8,000 kWh.

These requirements have a significant impact on Unison's prices and price structure as outlined in *Section 4*.

3.9 Electricity Industry Act 2010

The Electricity Industry Act provides a framework for the regulation of the electricity industry, including:

- establishing the Authority, and
 - incorporating provisions from the now revoked Electricity Industry Reform Act.
-

3.10 Distributed generation

Unison's policies and procedures for installation and connection of distributed generation are in accordance with the requirements of Part 6 of the Electricity Industry Participation Code 2010.

4. Pricing Strategy

4.1 Introduction

This section describes the:

- context in which Unison has set its prices, and
- strategic considerations that will impact on future changes in the structures of Unison's prices.

New technologies, changes in regulatory requirements and changing consumer opportunities and preferences will have a significant impact on Unison's pricing over the next several years.

Unison's pricing methodology describes the process used to determine:

- the total dollar value of operating and capital costs that Unison can recover from network users, and
- a fair allocation of these costs to the different consumer groups that use the network through the delivery prices Unison charges.

The prices Unison charges should meet the following objectives:

- recover the costs Unison incurs in providing its network service to consumers
- fairly allocate the costs to consumers based on the use of those services
- signal the value of consumers adjusting their usage to reduce the load and costs on the network, and
- be as stable as possible to avoid financial disruption to consumers making long-term decisions on electrical equipment (including distributed generation and battery storage equipment).

4.2 Strategic consideration

Unison's publicly available Electricity Pricing Roadmap sets out our approach for increasing the level of cost reflectivity in price structures.

Unison recognises that consumers have increasing options to manage their demands and take advantage of self-generation and storage options. Unison's over-arching strategic intention is to set prices to effectively signal the costs and benefits of using the network at different times while recovering the costs of providing the network to its consumers. The bulk of Unison's costs are fixed. This means they do not vary according to how much the network is used. It is only at the point where consumers increase their overall demands that Unison may incur additional costs to provide more capacity.

4.2 Strategic consideration (cont)

Over the next decade, New Zealand’s electricity system is expected to become more dominated by intermittent renewable plant. Unison recognises that it has a critical role in allowing consumers to “value-stack” by realising the value of their flexibility in response to price signals throughout the electricity value chain. This is evident with reducing new technology costs and much greater potential on the demand-side for flexibility, especially with storage loads such as EVs.

Initially, Unison sees more time-based pricing as a key step in better signalling the value of using electricity at different times. However, in time as flexibility markets and products develop, more sophisticated approaches are likely to be feasible. Managed EV charging appears to be a significant opportunity for consumers to realise value from charging flexibility. Unison is monitoring trials and working with one of New Zealand’s leading smart charger providers to understand behavioural patterns of charging.

4.3 Residential strategy

Around 85% of connections to Unison’s network are residential connections. While historically, most residential use followed the same pattern of morning and evening peaks, this is changing. Consumers are increasingly installing solar panels, battery storage and taking up electric vehicles. These create risks and opportunities for the network at peak times. Cost reflective pricing signals from EDBs to retailers will play a vital role in ensuring efficient utilisation of the network.

4.3.1 LFC Regulations

The LFC Regulations provide limitations on the level of fixed charges that can be charged on a large portion of these residential connections. They have a universal impact on the structure of residential charges because of the linkage between:

- LFC price plans, and
- standard price plans.

The regulations have the effect of increasing the significance of variable charges on an individual consumer’s overall power bill. High variable charges inefficiently discourage electricity use. The transition away from the LFC Regulations is a critical enabler of future price structures that are far more cost-reflective, by enabling marginal variable price signals to be set at more cost-reflective levels. Unison intends to lift low fixed charges at the rate permitted in the LFC Regulations over the course of the legislated transition, with commensurate reductions in variable charges to achieve compliance with the DPP revenue cap. The eventual removal of the regulations will also allow significant simplification of Unison’s price structures.

4.3 Residential strategy (cont)

4.3.2 Unison Price Reforms

Unison has included price reforms in recent years, such as the introduction of residential Distributed Generation price plans and time of use plans. These were introduced to assist in recognising and alleviating price distortions created by high variable prices and low fixed charges.

The introduction of a third time period into our time of use residential plans has allowed us to signal where future discretionary load would more desirably be placed. While our network does not currently face capacity constraints or congestion, providing this signal now is aimed at reducing or delaying the requirement to manage constraints more actively in the future.

Starting from 1 April 2022, Unison is progressively making time of use charging mandatory for residential connections. This is to encourage more optimal use of the network, with a long-term view to encouraging time-insensitive loads to be shifted to off-peak periods. This is the key focus for Unison over the next two years.

Another major area where residential pricing shows a distinct variation from non-residential connections of a similar capacity relates to the availability of control mechanisms on hot water cylinders. This has been prevalent in New Zealand homes for many years and offers flexible load control to Unison for managing high demand periods. Unison's expectation is that EV loads will provide similar capability for flexible use in the future. Both types of flexible loads will have wider and rising value in the electricity market.

Further specific information on future changes to residential price categories is provided in *Section 7*.

4.4 Commercial pricing strategy

In general terms, the size of the connection to the network relates directly to the value of network assets required to provide the desired service. The larger the connection, the higher the charges. As connection size increases so do the fixed charges that Unison applies. There are a number of connections at a similar size to residential but with varying commercial use. These are grouped as 'General' connections and energy usage remains the most practical method for pricing. Over time, as metering and public acceptance changes there will be an increased portion of the annual charge relating to fixed charges.

Unison groups connections in steps of capacity with increasing daily charges related to the asset requirements they place on the network. The variable rates remain the same across the commercial categories. The key difference is that at a certain level of capacity a more comprehensive meter is required which allows Unison to price on the more reflective demand-based pricing.

With increasing focus of commercial users on process heat decarbonisation, Unison anticipates that such users will require increased network capacity. Commercial pricing options currently in place will be well positioned to deliver fair pricing especially in the larger capacity connections, where demand charges encourage commercial customers to consider opportunities to manage peak capacity requirements. Where capacity upgrades are required, prices and capital contributions will provide cost-reflective signals of the costs of upgrade.

4.4 Commercial pricing strategy (cont)

There is scope for an increased use of time of use pricing for lower capacity connections as metering upgrades to Smart meters occur.

Unison envisages no material changes to commercial pricing strategy, given the current availability within those categories of cost-reflective elements such as fixed and demand-based charges. The change in transmission pricing methodology will necessitate a review of relative levels of the different pricing elements, with less reliance placed on peak demand charges in alignment to the more fixed approach to transmission pricing.

4.5 Industrial pricing strategy

The largest and most complex of connections (around 100), are priced individually. These 'Industrial' connections, on non-standard pricing use the specific asset traces that apply solely to their sites and the activity that has been measured against the cost drivers applying to the network. A non-standard pricing arrangement may be entered into where:

- a site has greater than 1MVA of installed capacity, and
- the site is either significantly different
- separate from the remainder of the network, or
- significant capital investment is undertaken by Unison for supplying that consumer.

This delivers the ultimate in reflective pricing in the form of a fixed daily price that applies for the pricing year. Where commercial customers require capacity upgrades, Unison's **FC0021 Capital Contributions Policy** ensures that the combination of prices and capital contributions reflect the costs of capacity upgrades.

Unison has no plans to change the industrial pricing approach.

4.6 Embedded Generators

Unison has a number of embedded generators on the network who:

- generate power during periods of peak demand, and
- reduce the demand on Unison's network and hence the investment required in the network.

Some generators are paid avoided transmission payments at the Transpower interconnection rate. These payments are equal to the additional interconnection charges Unison would otherwise have to pay to Transpower if the generation had not occurred. A revised Transmission Pricing Methodology is due to be introduced for the next pricing year at which time these arrangements are expected to stop. Unison will assess whether capacity requirements on the network would warrant some continued reward for availability at peak times.

- 4.6 Embedded Generators** (cont) Those connections that generate for their own consumption are rewarded by:
- reduced variable network charges if based on kWh of consumption
 - reduced interconnection charges when directly charged for those in the case of Industrial customers
- potential to reduce their maximum demand and therefore their asset allocation in the case of industrial connections.
-

- 4.7 Consideration of Pricing Practice Note** In December 2021 the Authority released a revised Practice Note to assist EDBs in developing their pricing strategies. The guidance envisages a profound shift in the way in which EDBs would set prices including:
- recommendations for 100% fixed charges in areas of the network where there is no congestion, and
 - highly segmented costing models that have the potential for prices to be set at a highly granular level, such as network zones served by particular zone substations.

Unison intends to engage further with the Authority to understand the basis for the new guidance, as well as understanding retailers and consumers perspectives on such changes. Due to the timing of the release of the Practice Note, it did not directly factor into pricing decisions for 2022/23. However, a number of the changes Unison has made in 2022/23 are consistent with the Authority's intent.

- 4.8 Consumer considerations** In the annual price-setting process, Unison takes account of several consumer considerations. These considerations are listed below.
- Prices are as transparent as possible to aid consumer understanding of how their prices are determined.
 - Prices logically relate to each other:
 - progressions between load groups follow a consistent pattern
 - within a price category, prices consistently reflect the costs and benefits of the consumption at different times (e.g., lower rates for controlled load)
 - options are priced to reflect future benefits, i.e., off-peak rates and night rates are at a level that would encourage additional load to be concentrated at these times, and

4.8 Consumer considerations (cont)

- residential Time of Use prices reflect that while there is no broad congestion on Unison’s network, there is a future benefit in:
 - moving discretionary load, or
 - adding additional load to generally low-load periods.
- The same pricing structure applies across each of Unison’s regions, to support a simple and robust pricing approach.
- Avoiding price shocks to individual consumers or groups of consumers. Stability and consistency of prices is one of Unison’s objectives. In line with the industry norm, Unison aims to limit price increases to a maximum of 10% per annum for individual consumers. Unison in practice enacts much lower levels of change. The DPP regulation helps restrict allowable change to close to the CPI inflation index in most circumstances.

Unison has historically not differentiated pricing between rural and urban consumers. The Authority has indicated to Unison that there is no legal or regulatory impediment to such differentiation. We recognise that to introduce sub-regional differentiation would:

- add further complexity for retailers to manage
- likely be unpopular with consumers, and
- provide unclear efficiency effects, that are likely to be of lower order consequence than an efficient structure of charges.

Additionally, for network extensions in rural areas capital contributions are an effective signal of the high costs of providing capacity in low density rural areas. The Authority has indicated that efficient pricing may operate at more granular levels of the network such as at a zone-substation level. It expects distributors to develop cost models that operate at this level. This would be a profound change to network pricing and Unison believes it would require substantial industry engagement to make operational. It is also noted that Unison has not seen this level of granularity operate anywhere else in the world. We will engage further with the Authority on this element.

5. Pricing Methodology

5.1 Guiding industry principles

In order to deliver on the overall pricing strategy Unison uses the Authority's Pricing Principles as guidance. These principles are as follows:

- a) Prices are to signal the economic costs of service provision, including by:
 - (i) being subsidy free
 - (ii) reflecting the impacts of network use on economic costs
 - (iii) reflecting differences in network service provided to (or by) consumers
 - (iv) encouraging efficient network alternatives.
 - b) Where prices that signal economic costs would under-recover target revenues, the shortfall should be made up by prices that least distort network use.
 - c) Prices should be responsive to the requirements and circumstances of end users by allowing negotiation to:
 - (i) reflect the economic value of services; and
 - (ii) enable price/quality trade-offs.
 - d) Development of prices should be transparent and have regard to transaction costs, consumer impacts, and uptake incentives.
-

5.2 Identify pricing regions

Unison network is clearly divided geographically into two regions, Hawke's Bay and Taupo/Rotorua. These two regions are completely separated in terms of distribution assets.

5.2.1 Hawke's Bay

The Hawke's Bay distribution network is supplied by three Transpower GXP's Fernhill, Redclyffe and Whakatu. As shown in the network map in *Appendix A*, the network is strongly concentrated around the two main urban centres of Hastings and Napier with smaller substations covering the outlying rural areas.

The majority of connections in Hawke's Bay are well interconnected with opportunities for back-feed capability which allows Unison to offer good quality supply continuity.

There are retail sectors supplying the resident population in both main urban centres along with commercial office space located in both CBD. The main industries in Hawke's Bay with concentrated load demand are generally agriculture and horticulture-based. These industries have shown considerable growth in recent years, particularly large scale packhouses and coolstores. Much of this growth has centred around the Whakatu area, in close proximity to the Whakatu GXP, and Omaha Road area connecting primarily to the Fernhill GXP.

There is longstanding large industry based in Awatoto with some additional growth being seen and around the Tomoana area where Watties has been established for many years.

5.2 Identify pricing regions (cont)

5.2.2 Taupo and Rotorua

While the Taupo and Rotorua network regions are also geographically separated there are factors that encourage Unison to regard both areas as a single pricing region. The distribution assets were purchased in 2002 by Hawke's Bay Network from United Networks and Vector after Unison Networks, as it is now known, was established. Pricing for the Taupo/Rotorua region was separately calculated from this time under the Default Price-Quality Path. This ensured there was no cross-subsidisation between regions. In addition, Unison is owned by the Hawke's Bay Power Consumers' Trust (HBPCT) with the consumers connected to the Hawkes' Bay network receiving the benefits of ownership.

Taupo and Rotorua also share similarities in their demographics, which are not shared with Hawke's Bay. There is a very strong tourism focus to the two cities, with extensive retail and hospitality businesses along with accommodation. The nature of the residential make-up is also quite different with a large proportion of residential connections being holiday homes or holiday rentals. These homes are used on a much more occasional basis with resulting consumption patterns quite different to a typical residence. Weather patterns are also similar for Taupo and Rotorua compared with Hawke's Bay.

Both areas have commercial and heavy industry mainly focused around the timber and dairy sectors. In contrast to Hawke's Bay, where much of the large industrial load is located relatively close to a GXP, there are a number of large industrial loads in Rotorua and Taupo where the GXP is some distance away. This impacts on the levels of prices applying to these customers.

The table below shows that, on average, Hawke's Bay residences consume more energy per annum than those in Rotorua/Taupo and the commercial connections see quite a substantially higher consumption.

While averages do not paint a complete picture, the nature of distribution pricing means that grouping connections together is a requirement to be able to deliver a workable pricing structure.

Network Characteristic	Hawkes' Bay	Rotorua/Taupo
Residential		
Connections (ICPs)	54,950	42,150
Consumption (kWh)	394,842,000	293,200,000
kWh/ICP	7,185	6,955
Commercial		
Connections (ICPs)	3,855	4,375
Consumption (kWh)	350,972,000	257,653,000
kWh/ICP	91,045	58,890

Table 1 – Average Connection Consumption by Region

5.3 Establishing price signals

Price signals are used to recognise and influence behaviour. If there is a cost advantage in consumers moving consumption from one period to another a price signal may be used to assist with this. Likewise, if there is future load that a consumer is considering, having a price signal in place could influence either the uptake of the new load or at least allow a consumer to recognise the true cost of operating at certain times.

Recognising the activity of different customer groups can allow beneficial price signals to be aligned with this activity and be applied where the cost and benefit best align.

While across Unison as a whole, there are no immediate constraint issues that would require strong signalling to reduce demand on the network, there are consistent themes that would see potential for future issues where price signals may be of benefit. These are described in *points 5.4 – 5.8* below.

5.4 Hot water controlled load

Peak loads in a residential setting are predictable to the point where the maximum load on the network occurs in early evening on cold winter nights. Across most of the network, both Hawke's Bay and Rotorua/Taupo, this activity is the dominant factor that pushes assets close to maximum capacity. While this is well recognised, what cannot be predicted in advance is which days during winter this will reach maximum levels.

Having the flexibility available to reduce load during these periods by way of hot water control is a significant advantage that reduces the required build size of the network. It is in the best interest of all consumers to maintain the additional load-control infrastructure and administrative costs to actively manage hot water load control. As such, pricing for hot water supply is reduced compared to supply for non-specific household supply. This is a price signal that not only compensates for the potential risk of inconvenience but encourages the continued availability of hot water control.

5.5 On peak demand

One of the largest feed-in costs currently is the interconnection component of Transpower charges. These charges are allocated based on the level of demand occurring during the 100 peak periods throughout the lower North Island. By managing load in these periods Unison will reduce the level of pass-through costs imposed on our network. This in turn, reduces the revenue requirement from our consumers. While hot water control achieves part of this, it is desirable to signal to larger commercial and industrial users that there are times of the year when it is beneficial to reduce discretionary load if possible.

Unison includes an On Peak Demand charge for consumers at the higher end of capacity, this is higher during the winter months when the peak periods are most likely to occur. With the change in Transmission Pricing Methodology, Unison will review the strength of On Peak Demand charges when the change is implemented.

5.6 Future discretionary load

Sending a signal to consumers that shows where any future discretionary load could be placed to least impact the network is important with potentially large loads on the horizon. As technology changes and becomes socially attractive and more affordable there is potential for increased load requirements to occur with a short lead time. The most imminent and obvious new load is the use of electric vehicles. There are already a number of electric vehicles in use across the network and while there are a number of commercial chargers being used, the majority are being charged in residential premises. It would be expensive for the network and consequently for consumers if charging these vehicles resulted in an increased investment in network assets.

To inform consumers of the desired placement of this, and other, additional load Unison have instituted three-part residential time of use price plans. This type of plan has allowed a low off-peak price to be offered while not requiring the on-peak time periods to be too high. The current demand profile for the network relating to residential connections shows that a high peak price is not required to flatten existing load, but a clear financial advantage to direct new load is desirable.

5.7 Costs of increased capacity

In the commercial price categories, the increasing daily rate is the most obvious signal that increased network investment is required to align with the increase in capacity. The commercial price categories are set to minimise the number of connections on the borders of each category by using typical fuse sizes as the limits. This allows a finite number of prices and relates directly to the planning for network growth and asset requirements. A consumer that upgrades or downgrades their on-site activity and/or equipment will be able to measure the cost or savings to their business.

5.8 Power factor

Some large equipment can impose inefficiencies on their own connections and increase costs on the network as a whole. Unison have Power Factor prices in place for the larger commercial categories where the metering capable of recognising and measuring this occurrence are available. This is essentially a punitive price signal that informs the customer that they are imposing additional costs on other network users. In many instances there are remedial options available to the commercial entity concerned. If the costs of investing in the remedy rather than paying the power factor charge are economically viable there is every likelihood this process will occur.

5.9 Residual revenue

Aside from the use of price signals to reflect current and future network costs, revenue should be recovered in the least distortionary way. In an ideal world this would be most easily achieved through fixed daily prices. Constraints from the LFC Regulations and social acceptance, or lack of, means this is not currently available to Unison.

The reform of the LFC Regulations and its transition will allow reduced residential variable charges. This will support greater ability to move towards price stability and reduced price distortion. Unison sees it is unlikely, however, for the level of fixed prices to recover all residential revenue requirements in the near or medium term.

Industrial pricing currently delivers a wholly fixed price plan for the 100 most complex connections. In the commercial categories fixed prices deliver between 55% and 70% of total distribution revenue on average across the categories. In comparison, to recover 70% of the required revenue in residential connections the fixed daily price would need to be approximately \$1.40 in Hawke's Bay and \$1.35 in Rotorua/Taupo. This level could probably be achieved in time, but currently Unison is holding to the current level of \$1.15 per day that applies to standard residential plans. As the transition process proceeds, with increases available of 15c per day each year in low user plans, Unison will consider the social consequences and any other unforeseen issues that may arise of lifting fixed charges to higher levels.

It is important to recognise the constraints that apply in practice to distribution pricing through retailers. Residential and small business consumers currently see very little of Unison price signals through to their power bill. To have any influence at all on residential consumption patterns, the end user needs to understand the consequences of changing behaviour, and this needs to be relatively transparent. We have yet to see significant shifts in retail pricing to adopt more cost-reflective pricing plans aligned to time of use network pricing. However, we do see retailers innovating with price plans such as EV charging plans and plans that allow "free power" at off-peak times.

5.10 Rationale for grouping consumers

Once Unison has made the initial allocation of revenue requirements to its network regions, and considers the implications of setting price signals, it is then necessary to identify the consumer groups to then allocate costs to. Unison has made no change to the consumer groups used in its pricing methodology, so this section summarises the historical approach to determining appropriate consumer groups.

Unison groups consumers firstly by the size of their connection to the network. As connection size increases, the demands placed on the network and the level of investment required to support the connection increases. In addition, Unison recognises that residential connections generally have different load profiles from other small connections. Residences have characteristics that allow more specific price options to be applied, such as recognition of controlled hot water load as a material proportion of loads.

As connection size increases there are different requirements placed on the network and different metering possibilities, so that different pricing options become available and are more readily understood by commercial entities. At very large industrial sites, a specific measure of inputs and network impact results in individual prices.

The following chart illustrates the classification of consumers into different groups:

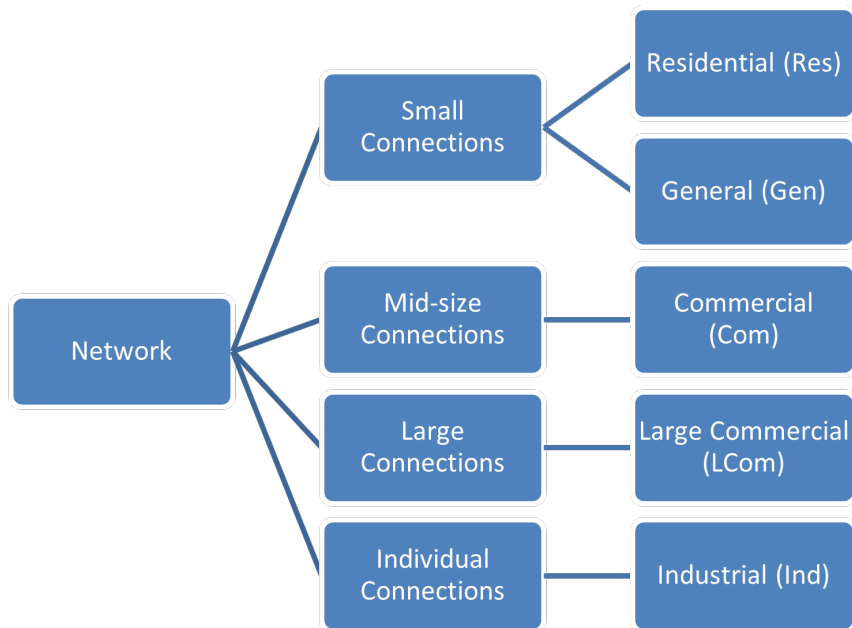


Figure 1 – Consumers by Group

6. 2022 Recovery of Costs Through Prices

6.1 2022/23 Revenue

Unison is subject to regulation under the Commerce Commission's Default Price-Quality Path which stipulates the amount of revenue Unison can earn through distribution pricing.

The principal determination set in 2020 has been amended for Unison as a result of an application to consider an unforeseeable major capex project.

The table below shows the total revenue allowance for Unison for the 2022/23 year.

Revenue 2022/23 (\$000)	Hawke's Bay	Rotorua/Taupo	Unison
Net Allowable Revenue	61,334	42,968	104,302
Pass-through and Recoverable Costs	23,907	16,721	40,628
Opening Wash-up Account Balance	(2,458)	(799)	(3,257)
Total Allowable Revenue	82,784	58,888	141,673
Forecast Revenue	82,661	58,987	141,649
2021/22 Forecast Revenue	80,826	57,615	138,341
% Change	2.3%	2.4%	2.4%

Table 2 – Revenue Allowance for 2022/23 Year

6.2 Installed asset value

The table below shows the net allowable revenue set at \$104,302,000 is distributed across the two regions based on the Installed Asset Value assessed using the Accounting Book Valuations.

Unison Installed Asset Value	\$ 000	%
Hawkes Bay	396,708	58.8
Rotorua/Taupo	277,912	41.2
Total Network	674,620	100.0

Table 3 – Installed Asset Value by Region

6.3 Pass-through and recoverable costs

The table below shows the pass-through and recoverable costs for the period. These are forecast and can be included in total allowable revenue.

Pass-through and Recoverable costs (\$000)	Hawke's Bay	Rotorua/ Taupo	Unison
Transmission	21,178	10,956	32,134
Distributed Generation Allowance	192	3,519	3,711
Quality Incentive	110	76	186
OPEX Incentive	(778)	(540)	(1,318)
CAPEX Incentive	2,540	1,765	4,304
CAPEX Wash-up adjustment	13	9	22
FENZ Levy	50	35	85
Recoverable Costs	23,306	15,819	39,125
Local Body Rates	134	580	714
Commerce Commission Levy	215	149	364
Electricity Authority Levy	211	144	355
Utilities Dispute Levy	42	28	70
Pass-through Costs	601	901	1,502
Total Pass-through and Recoverable	23,907	16,721	40,628

Table 4 – Pass-through and Recoverable Costs by Region

6.4 Opening wash-up account balance

The opening wash-up account balance accounts for revenue over or under achieved from the previous finalised pricing period. These variances arise, for example, because weather is colder or warmer than expected, which has impacts on the amount of electricity consumed.

In the 2020/21 period in the table below there was excess revenue earned, resulting in a negative balance, reducing the allowable revenue for the 2022/23 period.

6.4 Opening wash-up account balance (cont)

The allowance for unforeseen major capex amendment also adjusted the revenue Unison should have been allowed in this 2020/21 period which had the effect of increasing the wash-up from (4,059) to (3,257).

Opening Wash-up Account Balance	Hawke's Bay	Rotorua/ Taupo	Unison
Actual Revenue 20-21	79,957	57,246	137,271
Actual Allowable Revenue	77,695	56,579	134,273
Wash-up Amount	(2,262)	(736)	(2,998)
WACC	4.23%		
Opening Wash-up Account Balance	(2,458)	(799)	(3,257)

Table 5 – Opening Wash-up Account Balance

6.5 2022 Price changes

The price changes instituted in the 2022/23 pricing year are the detailed in *points 6.6 – 6.11* below.

6.6 Residential Low Fixed Charge

The fixed daily rate for LFC compliant price plans, M11 and TLU, was increased from 15c per day to 30c per day.

To maintain overall residential revenue the variable rates were reduced. Because of the balancing required at 8,000 kWh some variable rates of the standard plans also reduced slightly.

6.7 Residential Generation Category

The two residential generation price categories, G11 and G12, have been discontinued. Retailers with existing connections in these categories have been notified of the new category each will be moved to.

6.8 Inclusive pricing options for residential time of use

The residential time of use plans, TLU and THU, have had two price options introduced, PKIN and SHIN, relating to the Peak and Shoulder periods respectively. These are available for connections with Inclusive metering and apply the controlled load reduction at the same level the accumulative price plans apply.

6.9 General connection price increase

General connections in the NDH, NDL and Unmetered price categories saw an increase in variable rates equating to an average 4%. This approximates the level of inflation forecast at the time of price setting.

6.10 Commercial connection price increase

Commercial and large commercial connections saw fixed and variable rates change in order to deliver an across the board 4% increase.

6.11 On-peak and Demand rate change

The winter on-peak demand charge applying to commercial connections was reduced with the Anytime Maximum Demand (AMD) rate increasing. With an expected change in the Transmission Pricing Methodology expected by next year the margin between the summer and winter on-peak was narrowed with a compensating increase to the anytime demand price.

6.12 Cost Allocators

Unison uses a range of allocators to apportion costs to each consumer group. The cost component and allocator are shown in the table below.

Cost Component	Allocator	Reason for Allocator
Regulatory Allowances and Incentives	Regional Installed Asset Value	All connections are subject to these costs. The more assets that are required to deliver the required energy, the greater the allocation of costs.
Operating Expenditure		
Depreciation		
Return on Investment		
Fire and Emergency Levies		
Commerce Commission Levies	Regional Installed Asset Value	The levies are assessed on network asset value.
Transpower Interconnection	Coincident Maximum Demand	Charges are based on the coincident demand during the 100 half hour periods of maximum demand in the Lower North Island.
Distributed Generation Allowance		
Transpower Connection	Assessed / Actual Maximum Demand	The level of Transpower investment is based on the demand requirements of the network.
New Investment Contracts		
Inter-control Centre Communications Protocol (ICCP)		
Local Body Rates	Number of Connections	All connections are subject to these costs, which are location based.
Electricity Authority Levy	kWh of Consumption	The dominant method of basis for the levy.
Utilities Disputes Levy	Number of Connections	Levies are based on numbers of connections.

Table 6 – Cost Component Allocators

6.13 Allocation of costs approach

Unison's approach to the allocation of costs is to ensure allocators are:

- reasonable
- fair, and
- simple to measure and apply.

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

Asset driven allocators make up the biggest share of total costs allocated to each region and consumer group. Unison uses a combination of assets utilised by ICPs and an assessed demand to proportionately allocate a representative share of assets.

Unison traces all assets utilised in the connection of the network to each ICP. The replacement value of the assets, using the assessed demand, are firstly aggregated and allocated to each connection, and then a consumer group level.

This approach takes account of the distance of consumers from GXP's and therefore the length, number and value of assets needed to connect the identified consumers to the network.

The network is built to service the types of connection prevalent in that part of the network. In a residential area the assets employed to build the network to meet criteria, allowing for diversity, is not dependant on the consumption of individual connections. Likewise, as commercial connections require larger capacity, they are allocated a larger portion of the existing assets than smaller sized connections. While the demand and consumption at a particular site will vary from year-to-year, the assets employed do not. An assessed level of demand produces a more stable asset allocation. While pricing, particularly of smaller connections, is generally based on consumption this is not a good proxy for allocating assets. Distribution assets are installed to meet demand requirements, not volumes consumed.

The tables below show the relative value of each allocator across the five consumer groups:⁴

Hawke's Bay	Res	Gen	Com	LC	Ind
Connections	54,950	6,280	3,710	140	53
Consumption (,000 kWh)	394,840	46,620	208,500	142,480	198,270
Asset Value (\$,000)	218,610	43,650	91,630	20,220	20,570
Max Demand (kW)	183,850	21,560	204,210	66,590	60,100
Coincident Demand (kW)	7,780	520	5,220	2,020	2,730

Table 7 – Hawke's Bay Allocator by Consumer Group

⁴ Res: Residential, Gen: General, Com: Commercial, LC: Large Commercial Ind: Industrial

6.13 Allocation of costs approach (cont)

Rotorua / Taupo	Res	Gen	Com	LC	Ind
Connections	42,150	3,050	4,270	100	40
Consumption (,000 kWh)	293,200	24,570	181,720	75,930	84,830
Asset Value (\$,000)	150,630	22,370	82,470	12,740	8,710
Max Demand (kW)	140,880	11,000	208,030	34,160	20,840
Coincident Demand (kW)	4,510	190	3,430	730	2,080

Table 8 – Rotorua/Taupo Allocator by Consumer Group

6.14 Efficient price signals

The Authority Practice Note suggests the revenue recovered from cost-reflective price signals will be specifically defined with the residual revenue requirement recovered using non-distortionary methods. Because the LFC Regulations provide significant constraint on fixed charges, residual revenue recovery for residential customers leads to significant distortions to variable charges, such that marginal price signals are by necessity above efficient levels. This effect will improve significantly over time with the LFC transition to permit higher fixed daily charges, which will consequently lessen cost recovery through variable charges, as well as allowing for significant simplifications of price plans in future (e.g., removal of holiday home price categories).

6.15 Residential

Within residential pricing Unison offers both an LFC-compliant plan which has a fixed price of 30c, and a Standard plan, where the fixed price is \$1.15 per day. The remainder of the required revenue must be made up from variable rates based on energy usage. The pricing signals used in a residential setting are load control for hot water and off-peak price differential to encourage shifting of discretionary load.

In recent years, Unison has used a guideline of 15% reduction for those consumers providing load control. The rate for separately metered controlled consumption and for consumption against an inclusive meter is based on this level of price signal.

With Time of Use (TOU) price plans the Hot Water Load Control option is still available but there is an additional price signal where an off-peak rate is offered for consumption during the period of lowest network demand.

The off-peak rate is based on the equivalent uncontrolled rate in the accumulative price plan and set currently at 33%. This allows all residential plans to be able to be balanced at 8,000kWh annual consumption as required by the LFC Regulations.

As more connections are placed in the TOU plans there will be an opportunity for Unison to measure the level at which consumers use the off-peak rate for new load, assuming a level of pass-through from electricity retailers. This will allow modifications in relative prices over time as network demands warrant.

6.16 General

General connections are those of the same or less capacity as residential but where the type of use is not based around a residential home. There are still connections in this group with the ability to use hot water control to reduce load. However, this is significantly reduced, on average, and the price signal offered is reduced to reflect this. Instead of the 15% discount that is offered in the residential plans, 9% is offered.

A TOU plan is also offered in the general category with, currently, very low levels of uptake. The load shift potential with these connections appears to be much less but as advanced meters become more prevalent there may be greater uptake.

6.17 Commercial

Similar to general connections, hot water load control in small to medium-sized commercial connections is often available. However, the load able to be dropped is a smaller proportion of overall consumption, with a 9% rate reduction offered for the right for Unison to control load.

In medium to large sized commercial connections full time of use metering allows much more reflective pricing options to be used. The maximum monthly demand along with on peak demand is used as the basis for charging alongside the fixed charge relating to capacity. These reflect the maximum demand occurring each month and compliment the capacity basis for the fixed charge. As mentioned earlier the on peak demand charge relates to when the network is typically reaching its peak levels. The differential between the summer on-peak and winter on-peak charge has been reduced this year in preparation for the expected change in how transmission will be charged. With the interconnection charge being removed in favour of more fixed charges Unison wanted to transition away from a higher winter charge that related to when the peak Regional Coincident Peak Demand (RCPD) periods occurred.

6.18 Forecast vs Target Revenue

Unison endeavours to match forecast revenue to the targets for each customer group based on cost allocations. It is necessary to work within existing structures and limit as much as practical any possible rate shocks.

The tables below show the forecast revenue against modelled target revenues by region.

Hawke's Bay (\$,000)	Target Revenue	Forecast Revenue	Variance to Target
Residential	42,578	43,584	2.4%
General	7,348	7,934	8.0%
Commercial	19,998	18,452	-7.7%
Large Commercial	5,554	5,654	1.8%
Industrial	7,305	7,038	-3.7%
Region	82,784	82,661	-0.1%

Table 9 – Hawke's Bay Forecast vs Target Revenue

6.18 Forecast vs Target Revenue (cont)

Rotorua/ Taupo (\$,000)	Target Revenue	Forecast Revenue	Variance to Target
Residential	29,869	30,364	1.7%
General	3,821	3,872	1.3%
Commercial	18,518	17,759	-4.1%
Large Commercial	2,978	3,285	10.3%
Industrial	3,703	3,708	0.1%
Region	58,889	58,987	0.2%

Table 10 – Rotorua/Taupo Forecast vs Target Revenue

Note

Unison does not seek to exactly match forecast and target revenues within each designated customer category. This is because variances in allocators from year to year would cause undue price instability and discontinuities between price levels in different categories. Unison takes a long-term view in considering the implications of cost allocation models. A significant year-on-year source of variability is transmission charges which can vary significantly depending on the timing of transmission peaks.

6.19 Revenue by Price Category

Unison uses a number of price categories within each customer group in order to deliver more granular pricing and to recognise types and sizes of connection. This also allows price signals to align with consumer activity and network requirements.

As price categories become more segmented and consumers can seek to change their category during the year the forecasting of precise revenues and volumes pertaining to each category becomes more difficult.

This occurs more often in residential connections where consumers can make active choices about whether they choose a standard or LFC compliant category and also depends on the metering options where an upgrade of the meter could allow time of use pricing.

**6.19 Revenue
by Price
Category**
(cont)

The following table sets out the expected sources of revenues across Unison's consumer base for the coming year by Price Category.

Forecast Revenue by Price Category		Hawke's Bay		Rotorua/Taupo	
		(000's)	%	(000's)	%
Residential	DNR	488	0.6	2,234	3.8
	M11	9,247	11.2	7,656	13.0
	M12	12,031	14.6	9,854	16.7
	TLU	9,161	11.1	4,848	8.2
	THU	12,657	15.3	5,771	9.8
General	NDL	2,450	3.0	1,098	1.9
	NDH	3,898	4.7	1,827	3.1
	TCU	49	0.1	27	0.0
	Unmetered	1,393	1.7	825	1.4
	Temporary	144	0.2	96	0.2
Commercial	MC1	10,948	13.2	12,914	21.9
	MC2	3,249	3.9	2,722	4.6
	MC3	4,256	5.1	2,122	3.6
Large Commercial	MC5	1,546	1.9	1,657	2.8
	MC6	1,334	1.6	569	1.0
	MC7	1,085	1.3	255	0.4
	MC8	698	0.8	424	0.7
	MC9	990	1.2	379	0.6
Industrial	I60	7,038	8.5	3,708	6.3

Table 11 – Expected Sources of Revenue by Price Category

7. 2022 Future Pricing Direction for Price Categories

7.1 Residential

Unison has commenced a transition to mandatory Time of Use (TOU) pricing in 2022/23. It is expected that up to 50% of residential connections will be placed onto the TOU plans, with this progressively increasing as smart meter penetrations increase on Unison's network.

One of the key reasons in increasing the emphasis on consumption being submitted according to when it is actually consumed is to be able to offer a genuine incentive for placing new discretionary load into periods of typically low demand.

New technology is already available at ever more affordable prices. That offers potential for increases in consumption, or the movement of existing consumption, based on relative price differences during the course of the day. The most obvious technology that will affect future residential consumption levels are EVs. These vehicles are now being subsidised by government and promoted more heavily by dealers. Recent increases in petrol prices, decarbonisation imperatives and increasing vehicle choice are likely to drive EVs more towards the mainstream. A motivation for Unison's TOU pricing category is to create an incentive for charging to take place at off-peak times, and we are hopeful that retailers will develop incentive plans around our network pricing incentives.

In this pricing period the criteria for retailers to submit consumption in time periods as set out in our THU and TLU categories is that the retailer has submitted half hour data to the reconciliation manager. This should allow retailers to submit the required information to Unison in the format we require. This enforced change will move up to 50% of existing connections to our time of use categories.

The next stage will be to move all residential connections with suitable, communicating meters to the time of use categories. This should see upwards of 80% of all residential connections able to take advantage of time-based pricing.

With LFC Regulation transition now able to take place there will be future options around the level of fixed daily price that have not been available. Unison has moved to the maximum 30c per day for LFC compliant price categories, M11 and TLU. The intention at this stage is to move the fixed charge in line with the legislated transition by increasing it by 15c per year through the transition period.

7.1 Residential (cont)

All else being equal, as the fixed charge increases the variable rates will drop to maintain an overall balanced revenue, so an emphasis on the variable rate in distribution pricing will keep reducing. This will provide consumers with a clearer understanding of the fixed costs of connection and allow variable prices to be set at more cost-reflective levels. Unison will continue to engage with consumers and retailers around the consequences and any concerns that arise relating to the level of fixed charge. Unison will remain open to options in the future around the eventual level of fixed charge and any specific price categories that may be required:

- to recognise residences with genuine low-capacity requirements, or
- where high fixed charges may lead to perverse outcomes, such as inefficient disconnection from the network.

With the increase in fixed charges allowed under the LFC transition, Unison has removed the residential distributed generation categories G11 and G12. All connections that were on these plans will move to standard residential plans. While the extra 15c per day does not reflect the fixed costs of serving consumers with distributed generation Unison wanted to incorporate this change along with the others occurring this year to aid with simplicity for both consumers and retailers.

The table below provides an indicative view of how Unison expects its residential price categories to simplify over time as the daily fixed rate increases.

Year Starting	Apr 22	Apr 23	Apr 24	Apr 25	Apr 26	Apr 27
DNR	Fixed rate \$1.50			Closed		
M11	30c	45c	60c	75c	90c	Closed
M12	Fixed rate: \$1.15					
TLU	30c	45c	60c	75c	90c	Closed
THU	Fixed rate: \$1.15					

Table 12 – Anticipated Residential Daily Fixed Rates

The DNR category applies to homes that are not permanently occupied which is an important category in the Rotorua/Taupo region, particularly with the additional fixed charge compensating for reduced energy volumes. This could most likely be closed once the fixed rate in low user categories rises to an adequately cost-reflective level.

7.2 General

The general category holds a wide variety of connections, with a large variation in the types and timing of consumption. The connection size is similar to residential connections, but consumption patterns vary significantly within this customer category.

Unison currently maintain a high-user, NDH, and low-user, NDL, split with a higher fixed rate on the low-user group. This partially compensates for the fact that the cost of connection is essentially the same, but energy consumption is lower and therefore revenue is lower. There is a desire to remove the usage differentiation as it is administratively expensive for both Unison and for retailers to place connections in the correct group.

There is also a category with time of use pricing that these connections can be placed in if they have suitable metering. This category has increased slightly in popularity, and it is an area that Unison would like to emphasize. Within the next two years it is anticipated that the two groups will be merged.

The general category also includes the temporary connection categories and Unison have, from this year closed this category for new connections. From 1 April new temporary connections, typically builder's connections, will be allocated to the category that their size of connection defines. Existing temporary connections should move to permanent connections over the coming year and these categories can then be removed.

7.3 Commercial

The commercial categories have been priced on relatively reflective options for some time and there has been little change that has occurred apart from small realignments to the fixed prices.

There is a major change pending to a major recoverable cost that will require consideration in commercial charges. The Transpower charges will change with the new Transmission Pricing Methodology being implemented and this will allow Unison to consider some of the commercial rates. There is currently an on-peak demand charge with a differential between summer and winter rates that reflects the timing of the RCPD interconnection periods. It is likely these charges will become essentially a fixed charge based on maximum demand. Unison will need to consider whether a peak demand mechanism is retained for protection of areas of the network that are prone to constraint.

The smaller commercial connections are predominantly charged on their consumption and there will need to be consideration taken on whether a time of use pricing method would be suitable for these connections. There are current limitations with metering that prevents a wholesale change to time of use, but more investigation will be conducted in the hope of introducing some level of time of use recognition in the short to medium term.

8. Customer Feedback

8.1 Consumer survey overview Unison engages an independent research organisation to survey a sample of consumers who have made direct contact with Unison to discuss some part of their network services.

The most recent results are from June 2021 and data was collected using telephone interviews and online surveys. The survey covers a wide range of topics some relating directly to Unison's service and other more general topics.

A total of 400 surveys were used in the final analysis across both regions, 226 in Hawke's Bay and 174 in the Rotorua/Taupo region. While the majority of consumers were from the Residential group, 300, with the remaining 100 from the commercial groups.

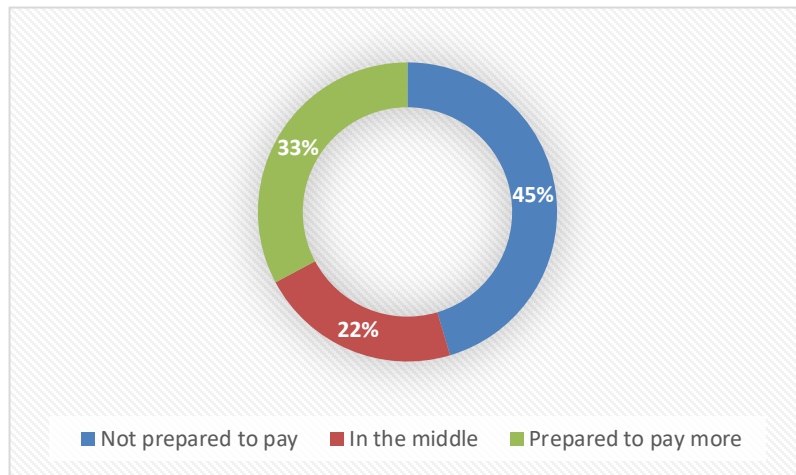
8.2 Survey results Across all customers both continuity and quality of power supply continued to be the most highly rated deliverables on average. The portion of customers reporting no power cuts (59%) in the previous six months has increased gradually over the last six years.

A summary of network performance results follow:

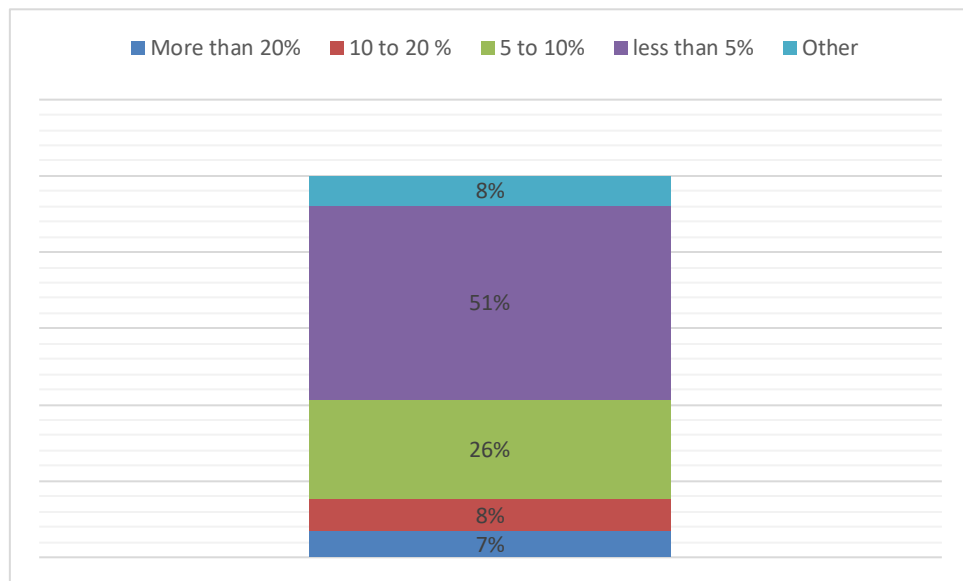
- Perception of Unison's service performance remained positive and generally consistent with 2020 results.
 - Across all customers both **Continuity** (8.7 out of 10) and **Quality** (8.6 out of 10) continue to be the most highly rated deliverable.
 - Satisfaction with **Restoration** (8.2 out of 10) was third highest across all customers.
 - Despite being rated lower overall, satisfaction with **Communication** increased significantly from 7.2 in 2020 to 7.8 in this survey, and
 - Performance on **Price**, while consistently lower than other measures, also increased slightly to 6.7 out of 10.
-

8.1 Prepared to pay more

There were questions relating to the willingness to pay more in electricity charges and fees if it meant increasing efforts to maintain and protect the environment. The chart below shows the number of consumers that stated they were either willing to pay more or were not.



Of those willing to pay more, 51% considered the increase should be no more than 5% of their total bill.



In light of these survey results, Unison considers that it should remain focussed on delivering consistent levels of reliability and limiting as much as possible increases in prices to meet consumers general satisfaction with current price-quality trade-off.

Appendix A – Distribution Network – Hawke’s Bay

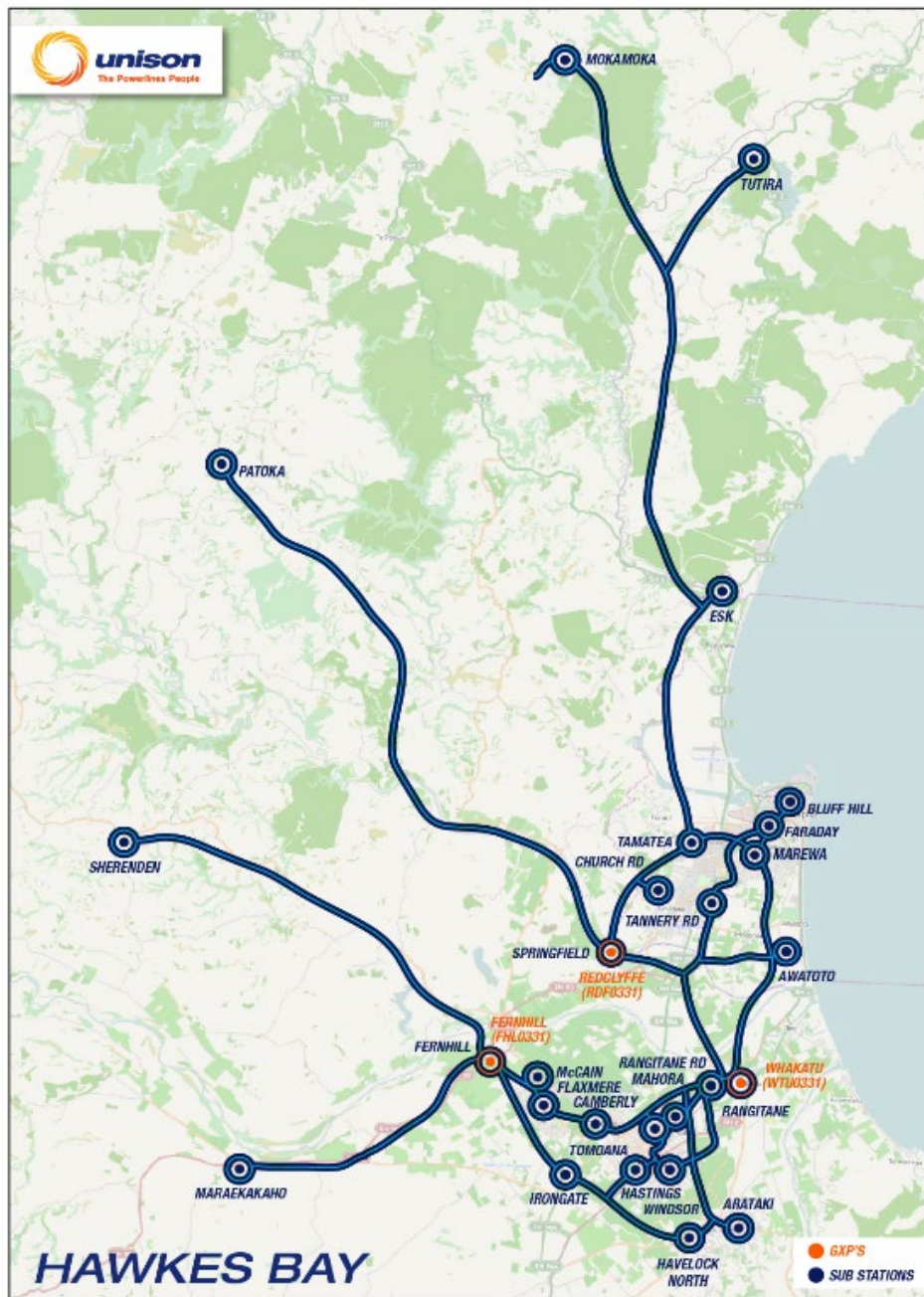


Figure 2 – Hawke’s Bay GXPs and Substations

Appendix B – Distribution Network – Taupo



Figure 3 – Taupo GXP and Substations

Appendix C – Distribution Network – Rotorua

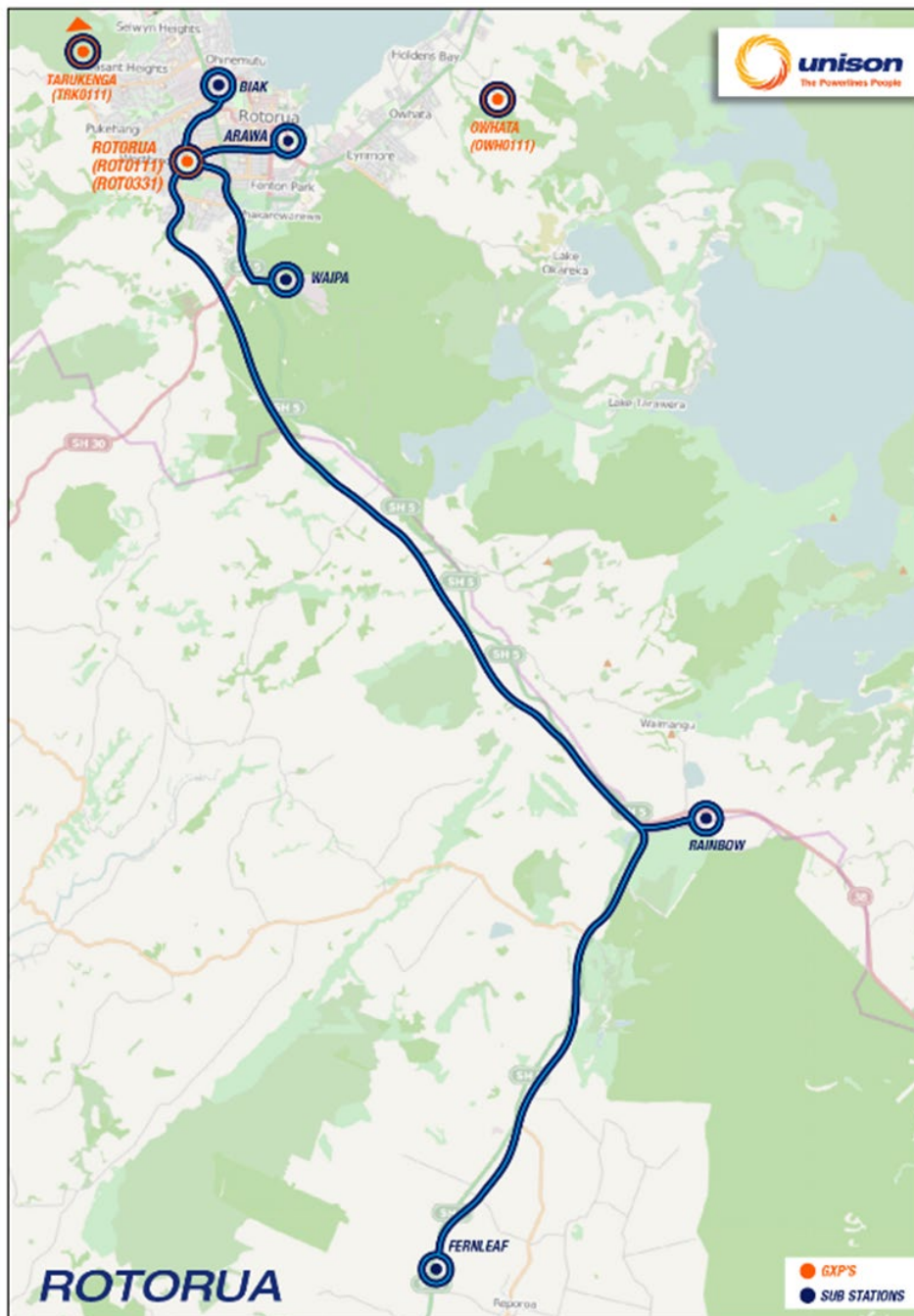


Figure 4 – Rotorua GXPs and Substations

Appendix D – Pricing Principles

Principles guiding pricing approach

As noted earlier in this document (refer *Section 5.1*) Unison has prepared this disclosure considering the Distribution Pricing: Practice Note – August 2019 (Practice Note) published by the Authority. The Practice Note sets out a number of principles that distributors are expected to formally demonstrate they adhere to. Unison considers that many of the principles are ‘common sense’ and have under-pinned the development of its prices over time.

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.

Signal economic costs

- a) Prices are to signal the economic costs of service provision, including by:
- (i) being subsidy free
 - (ii) reflecting the impacts of network use on economic costs
 - (iii) reflecting differences in network service provided to (or by) consumers
 - (iv) encouraging efficient network alternatives.

Unison operates in two regions, Hawke’s Bay and Taupo/Rotorua. As such, Unison prices these regions independently to ensure the revenue achieved in each region does not exceed a WACC return as calculated using the Commission’s Financial Model for the DPP.

Unison interprets the requirement for subsidy-free prices, as requiring that for each consumer group, the revenues obtained from that consumer group should not:

- be below the cost of connecting that consumer group to the network (incremental costs), or
- exceed the costs of serving that consumer 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 consumer group there would be a limited reduction in costs and assets as different consumer groups are inter-mingled on the network.

Signal economic costs (cont)

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. Unison uses this allocation as a basis for establishing prices for each consumer group. As the Cost Allocation Model allocates the total cost of supplying all Unison's consumers in proportion to percentage use of assets, which (by definition) adds up to 100%, no consumer group pays more than their stand-alone costs.

Unison's pricing 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 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). As smart meters become ubiquitous, Unison will enhance its price structures to further encourage consumers to shift discretionary loads outside of peak periods. Unison has adjusted the relativity between peak and off peak residential TOU prices and introduced a shoulder period to allow a reduced off-peak rate without requiring too strong a signal to reduce demand at peak times. As Unison mandate an increased number of residential connections onto these rates there will be an increased understanding of potential load shift in this price category.

- 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 with 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.

Unison has not adopted an approach where price relativities are based on an assessed value of the economic costs of providing incremental network capacity. Unison has instead evolved both its consumer categorisation and price structures over time to create a structure where consumers face charges reflective of the relative costs of consuming at different times. Changes in LFC Regulations that start to take effect this pricing period will enhance Unison's ability to set cost-reflective fixed charges and reduce reliance on volumetric charges.

**Signal
economic
costs (cont)**

Unison forecasts to spend less than 15% of total forecast expenditure on 'System Growth' as, in general, there is available capacity on the network to support load growth over a 10-year planning horizon. It is currently not considered necessary to strengthen the generalised pricing signals, where consumers benefit from providing controllable loads or to move to more specific pricing zones which would cause unwarranted complexity for retailers.

- b) Where prices that signal economic costs would under-recover target revenues, the shortfall should be made up by prices that least distort network use.

Unison interprets this principle as the requirement to implement some form of 'multi-part' pricing⁵, with Ramsey⁶-based considerations applied to the mark-up of variable prices above incremental costs. As recognised above, Unison takes account of consumer demand responsiveness in setting prices by recognising that there is not a strong need to influence behaviour patterns beyond what already exists through the existing relativities between prices (e.g., between controlled and uncontrolled loads) because there are high levels of capacity headroom on the network. This factor dictates that Unison should adopt broad-based approaches in setting prices that does not rely unduly on revenues being recovered over narrow time periods. Unison strongly recognises the desirability of increasing revenue recovery through fixed charges and will progressively increase fixed charges at the level dictated by the transition process of the Government reforms the Low Fixed Charge Regulations.

**Prices
responsive to
end users**

- c) Prices should be responsive to the requirements and circumstances of end users by allowing negotiation to:
- (i) reflect the economic value of services, and
 - (ii) enable price/quality trade-offs.

It is generally not practical to negotiate with consumers (particularly small consumers) to provide different price-quality trade-offs, 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 specific discussions with such consumers to establish quality requirements.

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).

⁵ Multi-part pricing refers to a pricing approach where a consumer pays a combination of fixed and variable charges.

⁶ Ramsey-based pricing is an approach where those consumers with inelastic demand face higher charges.

Prices responsive to end users
(cont)

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 residential generators to:

- connect to Unison’s network, and
- utilise the distribution network for delivering their generation to other connections, i.e. to ‘import’ electricity to Unison’s network.

Unison does not charge additional network charges for the imported component of their network usage.

Connection costs are applicable, as per Unison’s distributed generation policy. For further details on connection of distributed generation and charges refer to Unison’s public website www.unison.co.nz.

As smart meters become ubiquitous on the network, and with lower off-peak signals in place, there are increased 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) and move discretionary load to low demand periods. Some retailers are prepared to look more closely at actively promoting price options using Unison’s TOU rates.

Transparent development of prices

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 Unison’s pricing. Some large industrial users have received significant price 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 prices.

d) Development of prices should be transparent and have regard to transaction costs, consumer impacts, and uptake incentives.

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 price categories and options. 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 price development.

Transparent development of prices
(cont)

2. Has regard to transactions costs, consumer impacts, and uptake incentives:
- (i) 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 price 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 to encourage behavioural response to the change.
 - (ii) Unison endeavours to ensure that any price changes made, limit price shocks to any consumer group to less than 10% in line with standard industry practice. As delivery charges, including transmission charges, make up around 35-40% 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.
 - (iii) Unison endeavours to maintain its pricing structure and differentials between prices, so consumers who make investments (for example, in controllable loads) due to the savings between controlled and uncontrolled rates can realise the savings expected when the original investment was made.

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 price schedules from Unison. Therefore, Unison considers its prices are economically equivalent across all retailers. Unison also aims to maintain a price structure that minimises the potential for error in the price category or price option allocation.

In 2010 and 2016, Unison introduced several new prices to its schedules based on concerns that a number of consumer-types were not making a reasonable contribution to the costs of the network.

Unison has a number of small commercial consumers who consume low volumes of energy and thus were benefiting (unlawfully) from the low-user fixed charge option by nominating the low-user fixed charge price category.

In addition, there were holiday-home owners who were also nominating the low-user fixed charge option, despite this being only applicable to permanent residences. In some of Unison's regions, with a high number of holiday homes (e.g. Taupo) this resulted in an inequitable outcome. In such 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.

**Transparent
development
of prices**
(cont)

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

Retailers objected to these plans 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 administration. These categories have now been successfully embedded.

Appendix E – Certification for Year Beginning Disclosure



CERTIFICATION FOR YEAR-BEGINNING DISCLOSURES

Pursuant to Schedule 17

We, Phil Hocquard and Robert Wheater, being directors of Unison Networks Limited certify that, having made all reasonable enquiry, to the best of our knowledge -

- a) The following attached information of Unison Networks Limited prepared for the purposes of clauses 2.4.1, 2.6.1, 2.6.6 and 2.7.2 of the Electricity Distribution Information Disclosure Determination 2012 in all material respects complies with that 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.
- c) The forecasts in Schedules 11a, 11b, 12a, 12b, 12c and 12d are based on objective and reasonable assumptions which both align with Unison Networks Limited's corporate vision and strategy and are documented in retained records.

Director

Date: 29 March 2022

Director

Date: 29 March 2022

Appendix F – Summary of Document Changes

Date	Version No.	Changes to Document	Creator	Authoriser	Approver
10/03/2020	13	Full review and update to document. Update of key statistics.	Pricing Manager Senior Regulatory Affairs Advisor	GM Business Assurance	GM Business Assurance
31/03/2021	14	Full review and update to document. Update of key statistics.	Pricing Manager	GM Commercial	GM Commercial
31/03/2022	15	Full review and update to document.	Pricing Manager	GM Commercial	GM Commercial