



# DS1001

## Electricity Pricing Methodology Disclosure Statement 2021

Electricity Distribution Information Disclosure Determination 2012 (consolidated April 2018)

**For prices applying from 1 April 2021**

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# DS1001

## Electricity Pricing Methodology Disclosure Statement 2021

### Overview

**Document status**      Draft       **In Service**       Under Review       Archived

**Document purpose**      Pricing Methodology Disclosure for the 2021-22 pricing year, provided pursuant to the Electricity Distribution Information Disclosure Determination 2012.

**Intended audience**      This disclosure document is supplied to the Commerce Commission (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 Disclosures*.

**Key dates**      **Published Date**      31/03/2021

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## Overview, Continued

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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

#### Policy

- CM0001 Pricing Policy and Schedules for 2020 to 2021
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### Clarification

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# 1. Definitions/Abbreviations

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<b>Anytime Maximum Demand (AMD)</b>	<p>Anytime Maximum Demand (AMD) – is 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>
<b>Avoided transmission</b>	<p>The expenses incurred by Unison as a direct result of payments to:</p> <ul style="list-style-type: none"><li>• generators for generation, or</li><li>• any other activity, which substitutes for the use by Unison of the national grid transmission system.</li></ul>
<b>Coincident Maximum Demand (CMD)</b>	<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 times of maximum peaks in kW over the lower North Island.</p>
<b>Commerce Commission (Commission)</b>	<p>The Commission sets the regulation for cost recovery and price setting known as the Default Price-Quality Path.</p>
<b>Consumer</b>	<p>An end-user who buys their electricity from a retailer and has that electricity delivered to them via Unison’s network.</p>
<b>Consumer group</b>	<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"><li>• site usage (e.g. place of residence versus place of business), and</li><li>• capacity and metering.</li></ul>
<b>Cost Allocation Model</b>	<p>The methodology used by Unison to allocate costs to their consumer groups.</p>
<b>CPI</b>	<p>Consumer Price Index</p>
<b>Customer</b>	<p>A direct customer of Unison’s receiving line function services or a retailer whose customers use Unison’s (the distributor) network.</p>

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## Definitions/Abbreviations, Continued

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<b>Default Price-Quality Path (DPP)</b>	The DPP is set by the Commerce Commission to control the level of revenue and prices distributors can set.
<b>Demand</b>	The rate at which electricity is being used expressed in kilowatts (kW).
<b>Distributor or Electricity Distribution Business (EDB)</b>	Unison is a distributor. Unison owns and operates the distribution network that delivers the electricity covered by this methodology.
<b>Electricity Authority (Authority)</b>	The electricity regulator who ensures distributors apply and comply with key regulations governing the electricity industry.
<b>Electricity Industry Participation Code 2010 (the Code)</b>	The Code sets out the rules made by the Electricity Authority under section 36 of the Electricity Industry Act 2010.
<b>Embedded generation or Distributed generation (DG)</b>	Electricity generation that is connected and distributed within the Unison's network.
<b>Generator</b>	An organisation that owns or operates generating units that inject electricity into the network.
<b>Grid Exit Point (GXP)</b>	A point of connection where Unison's network connects to, and receives electricity from the national transmission system run by Transpower.
<b>Installation Control Point (ICP)</b>	Point of connection on Unison's network, where: <ul style="list-style-type: none"><li>• Unison nominates as the point where a consumer receives the electricity Unison delivers, and</li><li>• the connection point has the attributes set out in the Electricity Industry Participation Code 2010.</li></ul>

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## Definitions/Abbreviations, Continued

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<b>Kilovolt Amp (kVA)</b>	A unit of measure for how much power is being provided through a business or home's electrical circuits or technology.
<b>Kilovolt-Amps hour (kVArh)</b>	An hourly measure of the KVAr described above.
<b>Kilovolt-Amps reactive (kVAr)</b>	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.
<b>Kilowatt (kW)</b>	Kw (1000 x watts) – a unit of measure of power or electricity.
<b>Kilowatt hour (kWh)</b>	The amount of electricity consumed in an hour.
<b>LFC Regulations</b>	Electricity (Low Fixed Charge Tariff Option for Domestic Electricity Consumers) Regulations 2004
<b>LNI-RCPD</b>	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.
<b>Loss code</b>	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).
<b>N-1 supply</b>	An alternative routing for supplying electricity to give a backup in case of primary routing being damaged or failing.
<b>Network</b>	The lines and associated equipment owned or operated by a distributor in a continuous geographic area or areas.
<b>Non-Time of Use (Non-TOU)</b>	Non-TOU means a consumer's site where electricity is metered over a period (e.g. month).

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## Definitions/Abbreviations, Continued

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<b>Power factor</b>	kW divided by kVA.
<b>Price category</b>	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.
<b>Price option</b>	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.
<b>Pricing period</b>	1 April to 31 March year
<b>Regulatory Asset Base (RAB)</b>	The Regulatory Asset Base (RAB) is the regulatory value of Unison's network assets that Unison is allowed by regulation to generate a return on.
<b>Replacement Cost (RC)</b>	The cost to replace the value of network assets.
<b>RCPD</b>	Regional Coincident Peak Demand
<b>Region</b>	Unison has two regions. It provides electricity to the Hawke's Bay region and the Rotorua/Taupo region.
<b>Retailer</b>	The supplier of electricity to consumers with installations connected to the distributor's network.
<b>Time of Use (TOU)</b>	A consumer's site where half hour metering is installed. These values are used for the calculation of charges.
<b>Transmission charge</b>	<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>

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## Definitions/Abbreviations, Continued

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**Unison**

Unison Networks Limited – the distributor.

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**Weighted  
Average Cost  
of Capital  
(WACC)**

A measure of the return on shareholder capital that distributors can achieve under the Default Price-Quality Path regulations set by the Commerce Commission.

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## 2. Introduction

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### 2.1 Context

This document sets out Unison Networks Limited's (Unison) methodology for setting its price structure and prices for the 2021/22 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.

Residential pricing approaches have not been as effective in signalling network cost structures due to:

- legacy pricing approaches (especially under the constraint of the LFC Regulations) and
- limits on the measurement capabilities of residential consumers' meters (i.e. non-smart meters).

Unison is actively engaged with its industry peers to develop new approaches and to seek residential pricing reform. We expect in the next few years to progressively introduce pricing reforms that are more effective at signalling network costs, especially once the Government confirms the reform path for the LFC Regulations.

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.

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## Introduction, Continued

### 2.2 Unison

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 below show each of the three geographical areas with the GXPs and substations marked.

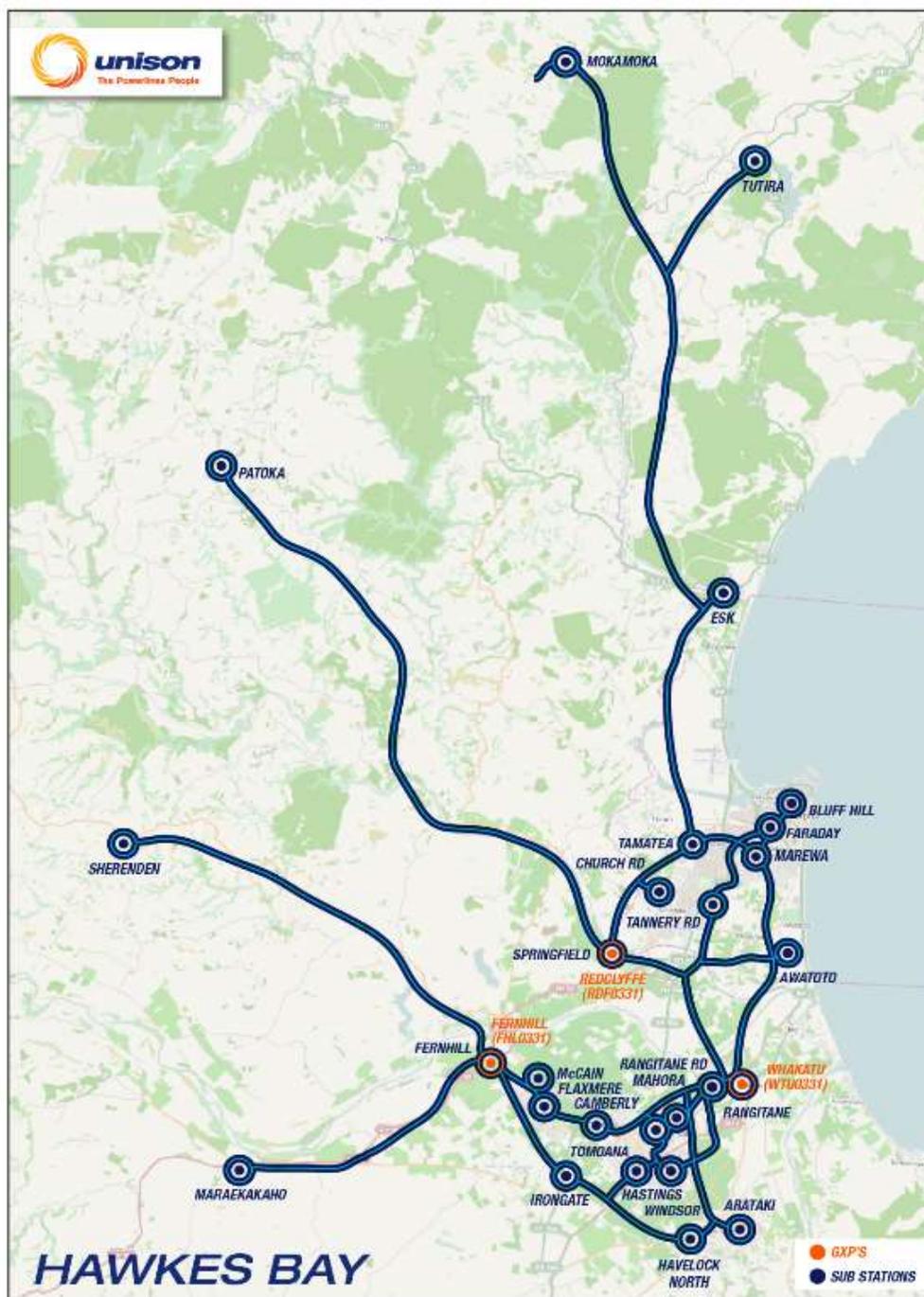


Figure 1 – Hawke's Bay GXPs and Substations

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## Introduction, Continued

### 2.2 Unison (cont)



Figure 2 – Taupo GXP's and Substations

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## Introduction, Continued

### 2.2 Unison (cont)

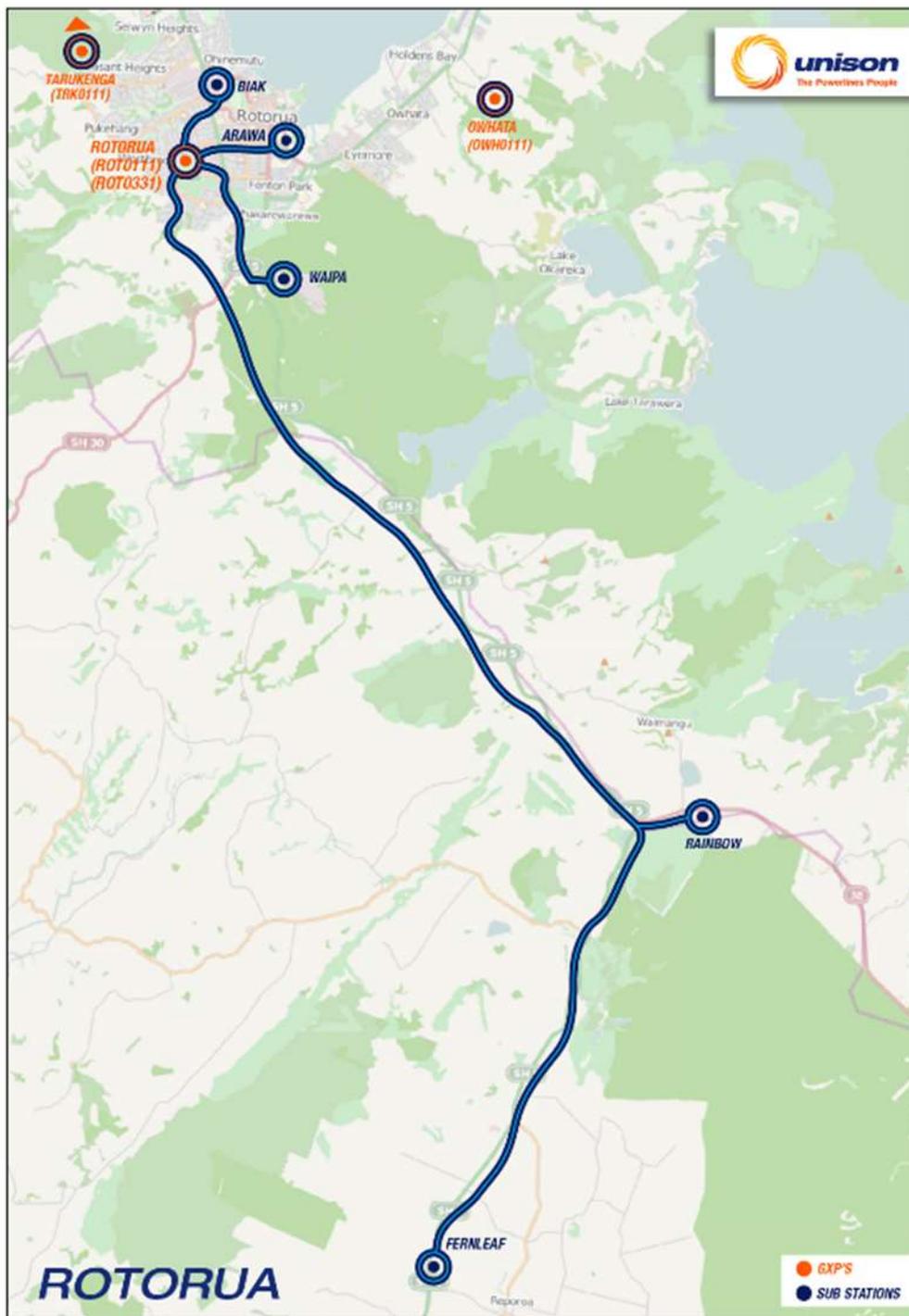


Figure 3 – Rotorua GXPs and Substations

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## Introduction, Continued

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### 2.2 Unison (cont)

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)<sup>1</sup>. The elected HBPC Trust holds the shares and oversees the operation of Unison on behalf of the consumer-owners.

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### 2.3 Pricing review

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

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### 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 Pricing Policy and Schedules (CM0001) available on Unison's website ([www.unison.co.nz](http://www.unison.co.nz)).

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<sup>1</sup> A shareholder is anyone with a power account for their property that is directly connected to Unison within the Hawke's Bay District.

## 3. Regulatory Context

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### 3.1 Introduction

The Commission regulates distribution businesses 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 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.

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

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

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### 3.2 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 Determination<sup>2</sup> (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.

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>

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<sup>2</sup> Electricity Distribution Services Default Price-Quality Path Determination 2020 is the applicable Determination for the 2020-2025 regulatory period.

## Regulatory Context, Continued

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### 3.3 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.

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### 3.4 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 introduced a Practice Note to assist with the practical interpretations of the Pricing Principles. The Authority will update the Practice Note when needed to ensure it:

- reflects evolving leading practice, and
- addresses matters raised by the sector and Unison's monitoring activities.

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 A sets out how Unison has addressed the Pricing Principles.

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## Regulatory Context, Continued

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### 3.5 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).

The key requirements of this regulation are as follows:

- Unison must offer a fixed daily charge to residential consumers of no more than \$0.15 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*.

The Electricity Price Review<sup>3</sup> recommended the removal of these regulations. The Government's response also included a desire for a phasing out, but there are other aspects to be addressed and a plan for a staged phase-out needs to be confirmed. Unison considers that this is a critical determinant of the path of residential pricing reform and keenly awaits the Government's decisions.

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### 3.6 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.

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### 3.7 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.

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<sup>3</sup> Electricity Price Review – Final Report – 21 May 2019

## 4. Strategic Intent

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### 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.

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### 4.2 Strategic considerations

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 increasingly have options to manage their demands and to 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, which means that 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 incurs additional costs to provide more capacity.

Unison's pricing methodology is 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 those costs to the consumers that use Unison's services, 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.
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## Strategic Intent, Continued

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### 4.2 Strategic considerations (cont)

As noted in *point 2.1*, Unison is seeking to progressively introduce new residential pricing approaches. Changes to residential pricing approaches are being enabled by:

- higher rates of adoption of smart meters in our consumers' homes, and
- the Government's indication that constraints imposed by the LFC Regulations will be relaxed to enable more cost-reflective, equitable pricing.

Due to flat or modest growth rates on Unison's network and the inherent capacity provided by standardised network equipment, Unison's network is not facing generalised capacity constraints. In certain pockets of the network where large new connections are occurring, Unison is increasingly considering how to work with, and reward specific customers to manage demands to avoid capacity upgrades.

In this context, Unison's strategic intention is principally to ensure that prices are set in a way that:

- does not create undue signals for consumers to change their use of the network, and
- ensures equity between consumers. For example, Unison does not need to set strong price signals for consumers to reduce their demand during peak periods. During these times, Unison can rely on existing use of hot-water load control to manage periods of high demand.

Accordingly, the introduction of a third rate to our residential Time of Use plans allows consumers to consider shifting discretionary loads to low-priced times where there is limited or no cost to consumers from doing so (e.g. setting a dishwasher to wash dishes outside of the peak 5-9pm winter period). This provides a clear message for consumers around placement of any future discretionary load. Apart from this weak price signal the key role of our prices is to recover the fixed costs of providing the network service in a manner that is equitable across users.

Where Unison anticipates future concerns regarding additional load on the network, prices will be used to incentivise optimal placement of this additional load. A current area where future load is anticipated is the increased use of electric vehicles. To start a process of consumer education and discretionary usage Unison has introduced an extra rate type to the current residential Time of Use plans. Assuming that retailers develop price packages based on this plan, this would allow consumers to reduce their line charges by placing existing and new discretionary load into off-peak periods.

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## Strategic Intent, Continued

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### 4.2 Strategic considerations (cont)

The LFC Regulations currently hamper Unison's achievement of this strategic plan because they limit our ability to set residential fixed charges in a manner that reflects the fixed cost nature of the network. For any eligible residential consumer using less than 8,000 kWh per annum, they are entitled to a fixed charge of only 15c/day, but consequently pay a very high variable charge to provide Unison with enough revenue to cover the costs of the distribution service. This imbalance in fixed and variable charges unnecessarily discourages people from using electricity and results in unsustainable subsidies from larger residential users to small users.

We are currently awaiting policy decisions on changes in the LFC Regulations which may enable Unison to transition to more efficient levels of fixed charges. If there is a delay to LFC Regulation reforms or no change, Unison is considering alternative pricing approaches, such as demand or capacity charges. These approaches would aim to effectively recover Unison's costs, but do not rely on high variable per kWh charges. These type of charges would also present significant additional complexity for billing and measurement purposes.

While Unison's network is currently uncongested, the most significant risk to the level of network congestion is the uptake of electric vehicles (EVs). If there is a rapid level of uptake and EV charging occurs during peak hours in winter, Unison may face pressure on the network. As mentioned above, the changes to the Time of Use plans from April 2021 will assist in giving consumers direction for when charging is most advantageous. While distribution charges will give direction this will need to be backed up with retail plans that compliment these signals.

Unison conducted a significant programme of consumer consultation through a third-party specialist in early 2020. A key emphasis was centred around different pricing options for residential distribution. The overriding message was that there is little appetite for change in the manner that distribution pricing is constructed. When specific pricing options were discussed 30% of respondents desired a 'keep it simple' approach where everyone paid the same fixed price. Peak/Off Peak pricing was the favoured option for managing variable charges at 24%, ahead of demand or capacity based options.

This review has helped Unison confirm that if the LFC Regulations are reformed, an increased daily fixed charge backed up by Time of Use variable charges would deliver a workable network solution that could be understood and used by consumers to the level they are prepared to interact.

At present we are satisfied that Unison's residential pricing is sufficiently cost-reflective in the context of uncertainty about the timing and extent of LFC reform. Residential consumers have options and incentives relating to:

- rewards for making available their hot-water heating for load control
- options to take up Time of Use pricing, which rewards consumers for shifting their consumption from peak to off-peak periods

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## Strategic Intent, Continued

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### 4.2 Strategic considerations (cont)

- signals to consumers choosing to install solar PV that they will need to contribute a fair share to the costs of providing the network so their electricity needs are continuously met.<sup>4</sup>

These prices are bundled with electricity retailers' charges. It is the discretion of each retailer how Unison's charges are recovered from consumers. Retailers may not make every price option available to consumers but if moderate and transparent signals are available there is likely to be an increase in options from retailers to take advantage of these.

At the commercial and industrial levels we are satisfied that the pricing approaches are cost reflective. These levels they adopt cost-reflective pricing elements based on capacity and price differentials between winter and summer peak demands. Industrial consumers are priced individually based on their capacity requirements for specific assets used to provide their distribution service.

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### 4.3 Network characteristics

Unison's network has three distinct geographical network areas, Hawke's Bay, Taupo and Rotorua. Hawke's Bay has three grid connection points which have a high level of interconnectivity. Taupo has a single grid connection, and Rotorua has three grid connections. Unison is currently evaluating options to increase supply security to the Taupo region.

In looking at overall cost allocations and network value there are significant enough differences between Hawke's Bay and Rotorua/Taupo to see small, but noticeable variation in revenue requirements between consumer groups. In contrast the differences between Rotorua and Taupo regions are not significant. The additional costs and administrative burden of a separate pricing model for these two sub-regions is seen as undesirable, and runs counter to retailers' desires to see more consolidation of pricing regions to reduce transaction costs. In addition, the DNR price category that applies to holiday homes, which are prevalent in Taupo, ensures that this sub-region makes an equivalent contribution to the costs of the Central Region network.

The Industrial pricing model that Unison uses for the largest of connections is personalised. This model delivers a very cost-reflective and individual pricing method, whether a connection is located in Rotorua, Taupo or Hawkes Bay. This method also recognises the different cost drivers within network regions as well.

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<sup>4</sup> Consumers with solar panels require the network to balance their solar production every second of the day. When solar output is more than is being used by the homes appliances the network takes the surplus electricity. When solar output is not enough to serve the households appliances the network provides the top-up.

## Strategic Intent, Continued

### 4.3 Network characteristics (cont)

The main transmission connection for Hawke's Bay is from Wairakei, near Taupo into the Whakatu and Redclyffe grid exit points (GXP). There is also a connection from Waipawa in the south to the Fernhill GXP. The demand profile that Transpower has for the Hawke's Bay region shows peak demand of 222MW in 2020 over the three GXP's increasing to 270MW in 2030, an increase of 21%. While there are recognised risks with the main transmission line from Wairakei being susceptible to winter storms, Transpower has no plans to invest in transmission security at this stage.

Transpower's load predictions for the Wairakei GXP, which feeds Taupo, shows a 13MW growth from 47MW peak demand in 2020 to 60MW in 2030 (27% increase). Additional generation is forecast to be connected in the near future as there is significant geothermal potential in this area. Transpower have scenarios planned to allow this to occur without increased costs to Taupo consumers.

Transpower's load scenarios suggest a 24MW increase (22%) in peak demand on the three Rotorua GXPs through to 2030. Transpower has noted that Unison's distribution network has a high level of interconnectivity between the GXPs. This allows for the transfer of loads quickly after a fault has occurred. There are proposed investment options in the next 10 year window to manage the forecast demand increase. While this would result in an expected increase in pass-through costs for Rotorua/Taupo consumers the impact is not certain or immediately imminent. The introduction of more comprehensive residential TOU plans will assist in directing new load towards periods of lower existing demand.

Unison's three network areas have quite specific differences in the nature of their connections.

- Hawke's Bay has the most significant urban population with approximately 121,000 people. Therefore, this network area is most affected by the residential dominant demand peaks that occur during cold winter days.

Hawke's Bay also has large areas of rural land with low density and generally moderate to low demand. Although there are some higher demand rural connections, irrigation, horticulture and large-scale dairy this is the exception.

The commercial and industrial connections relate largely to horticulture-based industry with pack-houses, cool-stores, and fruit and vegetable processing. Some residential growth continues in the region, but the main areas of demand are expected to occur in the industrial sector with continued growth in the Whakatu sub-region.

- Although Taupo has a smaller resident population of 24,000 there is a large holiday and tourist population. There is also a significant large-scale dairy component to the Taupo network area demand profile, and wood processing industrial connections.

Due to the geography of the area there is significant generation which is mainly geothermal. While this is not a distribution activity it does influence the network, especially relating to transmission and avoided cost of transmission costs.

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## Strategic Intent, Continued

### 4.3 Network characteristics (cont)

- Rotorua has a 59,000 resident population which is greater than Taupo. Accordingly, there is a stronger residential-based demand profile, but like Taupo there is a significant number of tourist-related and holiday home connections. The commercial and industrial profile is strongly focused on wood-processing industries and tourism.

The resilience of the network in all three regions is strong. Unison has met its quality standards in most years, with the performance in 2016/17 and 2017/18 being heavily influenced by external factors, such as storms and third-party damage to the network.

Network-wide constraints are not expected to become a risk in the near to medium future. There are localised constraints that are recognised periodically as connection growth occurs, but upgrade costs are generally addressed as part of connecting new customers.

Overall, consumption has stabilised over the last 10 years across the network. Residential growth is occurring slowly in terms of the number of connections, 3% over 10 years in the Rotorua/Taupo area, and 1% over the same period in Hawke's Bay. Countering the growth in connections, consumption per connection is reducing slightly. Over the same period, we have seen a 3% decline in the Rotorua/Taupo area and 4% in Hawke's Bay.

There is a significant level of variation in consumption per connection from year-to-year through volatile weather patterns. There is anecdotal evidence that as housing is updated, insulation is installed, and appliances are renewed there will be continued increases in efficiency and reductions in overall consumption. However, the counter to this is that there is likely to be an increase in the number of appliances that an average household installs. As noted in *point 4.2*, Unison's principle concern is to ensure that customers purchasing EV's face appropriate signals to reward off-peak charging.

Commercial connection numbers and consumption has, as with residential, been static over the last 10 years. While the Commercial category includes a very wide range of connection types the overall category has shown very little change. While there has been a reduction in consumption for the Commercial category in Rotorua/Taupo this change in consumption is contrasted with an increase to the Industrial category. Hawke's Bay commercial consumption has increased by only 3% over the last 10 years. The consequences of Covid-19 have not necessarily been seen as yet. There have been few businesses closing down and retail vacancies are consistent with historical levels. Hawke's Bay appears to be trading close to normal while there has been a greater effect in Rotorua especially related to tourism.

The Industrial sector has seen some level of change in all areas. There has been some re-categorising of commercial connections in Rotorua and Taupo, but the overall category has not changed. Hawke's Bay has had some growth with consumption increasing by approximately 38% over the last 10 years. Much of the growth has been in horticulture-related industries with an increase in the number of large cool-stores and pack-houses.

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## Strategic Intent, Continued

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### 4.3 Network characteristics (cont)

Typically growth in the number of industrial connections does not increase network congestion as the new connections involve increasing the connection-specific network assets instead of using existing assets.

Due to the summarised network characteristics there is currently little need for strong pricing signals network-wide to influence behaviour. Unison however believes it is prudent to have pricing in place that at least gives visibility to desirable and undesirable behaviour, so that signals can be strengthened over time if there becomes a need for some influence. Industrial, and to a lesser extent large commercial connections are impacted directly by transmission interconnection costs. The interconnection component of industrial pricing is specified so businesses can act to mitigate their future costs by managing behaviour during the periods when the interconnection calculation is based. The new Transmission Pricing Methodology is essentially a fixed price methodology. Unison will need to determine an appropriate method for recovering transmission charges in future pricing years.

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### 4.4 Existing pricing regime

Unison has a multi-layered pricing structure depending on the type of consumer and the level of metering that is available.

To set prices for the largest of connections, 'Industrial', we use information on a connection-by-connection basis to determine a customised price based on use of specific assets.

Commercial connections are often clustered together in commercial or industrial areas and in some rural areas. They have a requirement for a larger size of connection than residential connections, and therefore require a different level of network investment. The larger commercial connections that have Time of Use metering are priced according to the:

- size of their connection to the network
- level of monthly maximum demand, and
- impact they have on network demand during peak times.

The medium sized commercial connections are priced on the basis of the size of their connection to the network and the amount of consumption. These connections do not have a Time of Use meter, so consumption is the only option available to measure their impact on the network, pending metering upgrades.

Commercial consumption pricing has options for:

- Day/Night pricing
  - recognition of separately metered controlled load, and
  - uncontrolled consumption which is measured as the total usage during a month.
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## Strategic Intent, Continued

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### 4.4 Existing pricing regime (cont)

Controlled load is much less significant in the commercial environment as the hot water component of total consumption is much less than in a residential connection. Night and Day measured consumption is still advantageous in some commercial connections depending on the industry involved. Some irrigation sites and dairy farms connections have retained this option.

The two remaining broad categories of connection are Residential and General. These sites:

- have similar connection requirements but different patterns of consumption and demand, and
- are typically priced according to their consumption whenever it occurs during the day or throughout the year.

Unison included Time of Use (TOU) pricing for general and residential connections in 2010. This pricing approach recognises that there are different levels of demand at different times of the day and prices consumption accordingly.

Unison has advocated the introduction of this pricing methodology to introduce concepts of demand and congestion to the marketplace and safeguard against future congestion issues. While there are no specific network constraint problems that are currently addressed by TOU pricing, having a mechanism in place where signals can be strengthened, if necessary is seen as desirable.

In the 2021/22 year, an additional pricing period has been introduced with the resulting in three, eight-hour periods with different price levels: Peak, Shoulder and Off Peak. In order to offer an off-peak price that offers a significant incentive for night-time consumption a Shoulder period was included that offers an intermediate price between peak and off-peak prices. To deliver the overall level of revenue from residential connections that the allocation model signalled, the third rate provided a more progressive, less dramatic step between prices. There are concerns among distributors that strong price differentiation provides the possibility of peak surges at the time that prices change.

Three band Time of Use pricing should help mitigate this type of behaviour. At this point the TOU price plan is optional to residential consumers, but as part of Unison's strategy development we have notified retailers that the intention is to make this option mandatory from April 2022 for connections with suitable metering.

Consumers wishing to make changes to their consumption behaviour can reduce their distribution costs by moving their load to periods where the price is less, be this:

- Off-peak in TOU pricing, or
- Night-time consumption where this metering is available.

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## Strategic Intent, Continued

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### 4.4 Existing pricing regime (cont)

Unison has a large number of residential connections that are used occasionally. These are often holiday homes or properties that are rented infrequently throughout the year. The nature of the connection is residential but with the low, occasional consumption these connections pay significantly less than a fully occupied residence. Taupo and Rotorua have very high numbers of these type of connection. If they were placed on a typical low-user plan the shortfall in their line charges would need to be picked up by the remainder of the residential connections. Under the LFC Regulations, these consumers are not entitled to a low-user plan. A price plan (DNR) has been in place since 2010 where connections of this type are charged a higher fixed daily rate to compensate for their reduced consumption.

As installation of distributed generation (DG) has become more affordable and efficient there has been an increase in residential settings, particularly of rooftop solar photovoltaic (PV). These installations result in a reduction in the quantity of electricity that needs to be purchased from a retailer and transmitted through the distributors' lines. For Unison, the major peak demand through the year occurs outside of the prime solar-generation times and therefore does not reduce the network costs of supplying a residential connection. In particular, even when generating, the network must always be available to balance supply and demand within the household. With current pricing based strongly on consumption these connections pay less than an equivalent connection without DG, but require the same level of network service. Such an outcome is inequitable to consumers who are unable to afford the installation of solar or live in a rental where there is no solar installed. To address this inequality Unison introduced a new price category which ensures that monthly charges for consumers with solar and without solar are similar.

Within the General category, where connection size is similar to a residential connection, the amount of consumption is used for pricing. There are a number of connections that use very little energy during the year yet have a similar impact on the network. These low users (less than 6,000kWh p.a.) are subject to a higher fixed daily rate than higher users to assist in equitably recovering Unison's costs. Having a General category assists in removing non-residential connections from the LFC compliant residential groups allowing a more reflective overall price structure.

There is an Unmetered category for connections who meet the criteria of not needing individual metering. Typically, these sites will have small loads that can be reasonably estimated and are charged on this forecast level of consumption. For streetlights, Unison charges predominantly on a charge per fixture basis and only a small level of consumption-based charges. The level of consumption relating to these connections is not correlated to network costs, and therefore a fixture-based price is more reflective and stable.

Although complex, Unison considers that this pricing structure creates both an equitable and reasonably cost-reflective pricing structure. However, Unison recognise that it would be desirable and feasible to reduce complexity, which would be enabled with LFC reform and ubiquitous smart meters.

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## Strategic Intent, Continued

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### 4.5 Changes to prices from 1 April 2021

We understand the Government intends to announce decisions regarding the future of LFC Regulations in early 2021. Unison therefore decided to make minimal change to the overall pricing approach for the 2021/22 year. The LFC Regulations impose significant limitations on the implementation of more cost-reflective pricing. Therefore, making changes close to an anticipated removal would increase the potential for ongoing price shocks and the inconvenience to consumers of changing pricing approaches. There is likely to be a transition period for removal and this could be staged over five years or more to ensure the impacts on consumers is managed.

The introduction of a revenue cap with the 2020-25 DPP has introduced another level of change. This allows Unison to institute changes to pricing without subjecting the business, and ultimately consumers to excessive revenue risk. Unison believes a three part Time of Use pricing plan can deliver opportunities for consumers to manage their demand and derive some level of financial benefit. While there is little retail transparency currently, the first step in encouraging this is to put plans in place. The introduction of a third time period allows the off-peak price to be substantially reduced so that when a consumer adds load or moves current discretionary load to this period they can derive a more noticeable reduction in line charges.

Overall revenue for the 2021-22 year will be similar to the previous year. Net Allowable Revenue increases by 2%, (\$1.95m) compared to 2020/21 while pass-through and recoverable costs have increased by 7.5% (\$2.57m) with a resulting total forecast Allowable Revenue of \$137.866m. While this represents a 2.8% increase on the Allowable Revenue for 2020-21 the increase is essentially absorbed by increased volumes.

As discussed in *point 4.4*, Unison has introduced a third price level for the Residential and General Time of Use price categories. Including a Shoulder rate between the Peak and Off-peak rates allows a more progressive step between rates, and the off-peak rate can be set at a level where there could be meaningful reductions for placing existing or new load. This is a forward-looking option for those consumers looking to purchase an electric vehicle, or introduce an increased level of 'smart' home management.

- The revised Off-peak rate is now balanced to coincide with Night rate in both pricing and the period of measurement. This ensures those consumers with legacy night meters will pay the same rate as other consumers for using energy over the same time periods.
- The balance of Peak, Off-peak and Shoulder rates are set to equate to the same total cost as an Uncontrolled residential connection at 8,000kWh p.a. This should allow consumers to decide to reduce their distribution costs by moving discretionary load if they are subject to TOU pricing, but are at no disadvantage if do not wish to actively move any load.

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*Continued on next page*

## Strategic Intent, Continued

### 4.5 Changes to prices from 1 April 2021 (cont)

- Controlled rates have been aligned to deliver equivalent advantages across residential plans. For instance, the LFC compliant plans have the same controlled rate whether on accumulative or TOU plans.

The table below shows the regional and overall changes in Unison's revenue requirement. There is a greater reduction in overall revenue in the Hawke's Bay region than in the Rotorua/Taupo region. The major contributing factor in this is the greater reduction in Interconnection and Distributed Generation allowance charges in Hawke's Bay, -17%, compared to Rotorua/Taupo, -3%.

Revenue 2021-22 (\$000)	Unison	Hawke's Bay	Rotorua/ Taupo
<b>Net Allowable Revenue</b>	101,970	60,167	41,803
<b>Recoverable &amp; Pass-through Costs</b>	36,707	21,640	15,067
<b>Pass-through Balance Allowance</b>	-811	-478	-332
<b>Total Allowable Revenue</b>	137,866	81,328	56,537
<b>2021-22 Forecast Revenue</b>	137,827	80,505	57,323
<b>2020-21 Forecast Revenue</b>	136,100	79,100	57,000
<b>Change</b>	1.3%	1.8%	0.6%

**Table 1 – Revenue 2020/21**

## 5. Unison's Pricing Methodology

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**5.1 Purpose** In this section we explain the specific basis for setting Unison's prices.

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**5.2 Guiding industry principles** As well as meeting the objectives described in *Section 4*, Unison endeavours to ensure its pricing methodology is consistent with the Authority's Pricing Principles and guidance provided by the Authority's Practice Note for all electricity distributors. 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*

*Appendix A* details how Unison applies these principles to its pricing methodology.

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**5.3 Core methodology** Unison, to achieve the objectives and principles listed above, uses the following core process to drive its pricing methodology and annual review of prices.

1. Determine the net Allowable Revenue as detailed in the current DPP determination.
2. Determine the value of recoverable and pass-through costs to be recovered through prices.
3. Establish allocators for each component of Unison's costs/revenue requirement to allocate to consumer groups where costs cannot be directly attributed.

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## Unison's Pricing Methodology, Continued

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### 5.3 Core methodology (cont)

Each cost component should be allocated as accurately as is practical to ensure connections are priced as closely to their ideal level of total revenue. A detailed table of the allocator used for each cost component is found in *Section 8*. For example, the connection component of the Transpower transmission charge can be allocated to each connection based on the portion of demand they impose on the GXP they are connected to. This is independent of their consumer group.

4. Set or adjust prices to ensure forecast revenues from each consumer group equate to the allocated costs.

The Authority has provided in the practice notes an idealised 'Cost-reflective price-setting methodology' whereby marginal prices are set first to reflect marginal costs. Once these prices and likely revenues from those prices have been established, the balance of the revenue requirement should be recovered in as non-distortionary manner as possible. This sequence differs from Unison's historical approach. Unison believes this makes no practical difference to the end result because marginal costs are effectively close to zero on a distribution network that is not capacity constrained. Unison's approach is to:

- use direct attribution and cost allocators to allocate costs and revenue requirements to each customer category, then
- determine cost-reflective pricing elements within each price category as far as possible, and finally
- make adjustments to ensure the overall revenue requirement is met.

In addition, information is not available to accurately deploy the method suggested by the Authority, because price-elasticity information is not available to determine efficient mark-ups.

Where there is currently a relatively cost-reflective pricing option in place this pricing option has been set at returning the approximate revenue for the cost it reflects. For example, the On Peak Demand price options for commercial connections are set to recover the Interconnection charge that relates to the connections in question.

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## Unison's Pricing Methodology, Continued

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### 5.3 Core methodology (cont)

A considerable portion of network costs are essentially fixed. The assets that are currently available for use are long-life assets that are used by many individual connections of varying size and with a diversified pattern of use. The value of the existing asset base is distributed using a Cost Allocation Model that allocates each asset on the network based on a nominal demand value. This is a stable measure that is not a reflection of use, but of anticipated use profiles. The network is built to manage expected future loads and therefore the allocation through the Cost Allocation Model reflects this. Residential and non-residential connections of a similar connected size are allocated a similar level of demand with consumer group separation occurring later. A truly cost reflective price option would be a fixed charge for all these connections at the same rate to recover fixed costs. The current limitations of the LFC Regulations prevent this from occurring.

The final step in the core process is to set or adjust the range of prices and options available to consumers so that they:

- fairly reflect the above allocation
- establish relativities that can assist in reflecting future costs, and
- will generate income as close as reasonably possible to Unison's Allowable Revenues.

Sections 7, 8 and 9 the key price categories and how prices for each category are determined are covered.

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### 5.4 Consumer considerations

When applying the above process to the annual setting of prices, 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
    - 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.
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## Unison's Pricing Methodology, Continued

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### 5.4 Consumer considerations (cont)

- 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..

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## 6. Cost/Revenue Recovery

**6.1 Overview** This section sets out the amount of costs (and therefore revenues) that Unison is expected to recover through prices in the 2021/22 financial year. It breaks this down by key cost components.

Under the Commerce Commission’s Default Price-Quality Path, Distributors are now subject to a revenue cap whereby there is a maximum revenue that Unison can receive through prices in each financial year. In addition to the core cost of providing and operating the distribution network there are certain costs that can be included in the Allowable Revenue, these are Recoverable and Pass-through costs, which are explained below.

The total Allowable Revenue to cover Unison’s costs for the 2021/22 year is shown in Table 2.

Components of Allowable Revenue	\$000
Forecast Net Allowable Revenue	101,970
Transmission	30,965
Distributed Generation Allowance	4,486
Quality Incentive	630
OPEX Incentive	-14
CAPEX Incentive	-859
CAPEX Wash-up Adjustment	22
FENZ Levy	85
Local Body Rates	683
Commerce Commission Levy	270
Electricity Authority Levy	374
Utilities Disputes Levy	64
Pass-through Balance Allowance	-811
<b>Total Allowable Revenue</b>	<b>137,866</b>

**Table 2 – Components of Allowable Revenue**

The following sections explain how these costs are fairly allocated to consumers through Unison’s prices.

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## Cost/Revenue Recovery, Continued

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**6.2 Regulated revenue** The Forecast 'Net Allowable Revenue' provided by the Commission is calculated incorporating a number of factors involved in operating an electricity distribution business. The key components are:

- depreciation
- operating expenditure
- return on investment on the regulated asset base (RAB), and
- regulatory tax.

Each of these cost component are discussed in more detail below.

### **Depreciation**

Depreciation is calculated on a straight-line basis in accordance with ID Determination using a standard life for the asset<sup>5</sup>. Depreciation costs for the year ending 31 March 2022 are forecast using historical depreciation on our regulatory asset base.

### **Operating Expenditure**

Operating expenditure (OPEX) are costs incurred through our business as usual operations related to the provision of electricity distribution services. The two main costs components are:

- network OPEX including maintenance and inspections, and
- non-network OPEX including the overhead costs of running the network.

### **Return on Investment**

Unison's permitted return on investment has been calculated using the regulated weighted average cost of capital (WACC) on a forecast value for network regulatory asset base (RAB) as of 31 March 2020. The Commerce Commission applies a vanilla WACC of 4.57% to determine allowable return on investment, from which revaluation gains are deducted of 1.9%.

Unison's RAB value, which determines the asset value that Unison can make returns on, was forecast to be \$671.9 million as of 31 March 2021.

### **Regulatory Tax**

The assessed value of tax payable in the Commerce Commission's model, which is based on a deemed efficient capital structure.

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<sup>5</sup> Standard lives for each asset group is determined by the Commerce Commission, *Handbook of Optimised Deprival Valuation of System Fixed Assets of Electricity Lines Businesses*, 30 August 2004.

## Cost/Revenue Recovery, Continued

**6.2 Regulated revenue (cont)** The network costs that Unison can recover for 2021/22 are set out in the Table 3.

Network Cost Element	\$000
Depreciation	33,693
ROI	17,256
OPEX	43,871
Tax	6,993
Other (including an adjustment to smooth revenues over the five year period)	86
<b>Total</b>	<b>101,899</b>

**Table 3 – Costs of Providing Unison’s Networks**

The Commerce Commission only regulates revenue recovery at the aggregate network level. To allocate Unison’s revenue requirement between the Hawke’s Bay and Rotorua/Taupo regions, Unison performs an internal split of the regulated revenue based on the share of installed assets between the two regions based on an estimate of the depreciated replacement costs of the networks. The share of assets is deemed an appropriate allocator for the revenue requirement between regions, given the capital intensive nature of the business.

Table 4 sets out the relevant metrics.

Unison Installed Asset Value	\$000	%
Hawke’s Bay Installed Asset Value	386,366	59.00
Rotorua/Taupo Installed Asset Value	268,441	41.00
<b>Total Installed Asset Value</b>	<b>654,807</b>	<b>100.00</b>

**Table 4 – Installed Asset Value  
(based on Asset Accounting Book Valuations)**

**6.3 Recoverable and Pass-through costs**

In addition to the core costs of operating the network, the Commission also makes allowance for Recoverable and Pass-through costs.

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## Cost/Revenue Recovery, Continued

### 6.3 Recoverable and pass- through costs (cont)

'Recoverable costs' are the costs allowed under the DPP Determination for third parties who provide essential services in the electricity value chain to generate and transmit electricity to Unison's network. Recoverable costs include:

- **Transmission**

The primary recoverable cost is for the operation of the national grid that moves electricity around the country, and to and from Unison's network. In November each year, Unison receives a notice of the coming year's transmission pricing from Transpower for each GXP on our network. The transmission charges through Transpower comprise in excess of 22% of the total revenue Unison will receive through prices.

- **Distributed Generation Allowance**

Certain generators that operate within the Unison network charge Unison for providing electricity during peak periods that would otherwise be provided by Transpower. This reduces the level of interconnection charged by Transpower and equates to this charge if the generators did not supply at this time.

- **Quality Incentive**

There are incentive mechanisms in place where Unison is rewarded for delivering a higher level of service than the regulated target. Likewise, if the level of service drops below the regulated target the incentive operates as a cost to the network.

- **OPEX and CAPEX Incentive**

Built into the Commission's DPP calculations are incentives for decreasing the level of capital expenditure (CAPEX) and operating expenditure (OPEX) that the Commission forecast would be required.

- **Fire and Emergency Levies**

A new payment inclusion as a recoverable cost for the 2020-25 regulatory period.

'Pass-through costs' are approved regulatory costs for the Government and local body agencies that provide services enabling Unison to operate within its local area. These costs can be recovered through prices. Pass-through costs include:

- **Local Body Rates**

Unison operates within a number of local body jurisdictions. Where rates are charged on the site of network equipment required to deliver distribution services, these can be recovered through prices.

- **Commerce Commission Levy/Electricity Authority Levy/Utilities Disputes Levy**

These government agencies charge levies to industry bodies, including distributors, to cover the costs of operating. These levies can be recovered through prices.

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## Cost/Revenue Recovery, Continued

### 6.3 Recoverable and pass-through costs (cont)

The table below show expected costs Unison is seeking to recover in the 2021-22 year for each region.

Pass-through and Recoverable Costs (FPRC)	Unison (\$)	Hawke's Bay (\$)	Rotorua/Taupo (\$)
Transmission	30,964,786	20,976,420	9,988,366
Distributed Generation Allowance	4,485,640	209,900	4,275,740
Extended Reserves Allowance	0	0	0
Innovation Project Allowance	0	0	0
Quality Incentive	629,937	371,691	258,246
OPEX Incentive	-14,099	-8,319	-5,780
CAPEX Incentive	-858,627	-506,629	-351,998
CAPEX Wash-up Adjustment	21,538	12,708	8,830
ACoT for Purchased Assets	0	0	0
FENZ Levy	85,200	50,272	34,928
<b>Recoverable Costs</b>	<b>35,314,375</b>	<b>21,106,043</b>	<b>14,208,332</b>
Local Body Rates	683,343	118,433	564,910
Commerce Commission Levy	270,352	156,203	114,149
Electricity Authority Levy	374,327	222,770	151,557
Utilities Disputes Levy	64,244	36,444	27,800
<b>Pass-through Costs</b>	<b>1,392,266</b>	<b>533,850</b>	<b>858,416</b>
<b>Pass-through Balance Allowance</b>	<b>-810,676</b>	<b>-478,335</b>	<b>-332,340</b>

Table 5 – Pass-through and Recoverable Costs

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## Cost/Revenue Recovery, Continued

### 6.4 Pass-through balance allowance

To ensure Unison only collects sufficient revenues to cover actual pass-through and recoverable costs, a running balance is maintained which corrects for variances between:

- the actual recovery of pass-through and recoverable costs, and
- forecasts made at the start of the year.

Unison has forecasted that it has slightly under-recovered its actual Pass-through and Recoverable costs in 2019/20.

The calculations for the Pass-through balance allowance are:

<b>Pass-through Balance Allowance</b>	<b>\$</b>
Estimated Pass-through Balance 2020	-230,222
Actual Pass-through Balance 2020	515,989
Difference	-746,211
67% WACC	4.23%
Cost of Debt	-64,465
<b>Pass-through Balance Allowance</b>	<b>-810,676</b>
Hawke's Bay Allocation (59.00%)	-478,335
Rotorua/Taupo Allocation (41.00%)	-332,340

**Table 6 – Pass-through Balance Allowance**

## 7. Consumer Groups

### 7.1 Rationale for grouping consumers

Once Unison has made the initial allocation of revenue requirements to its network regions, 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:

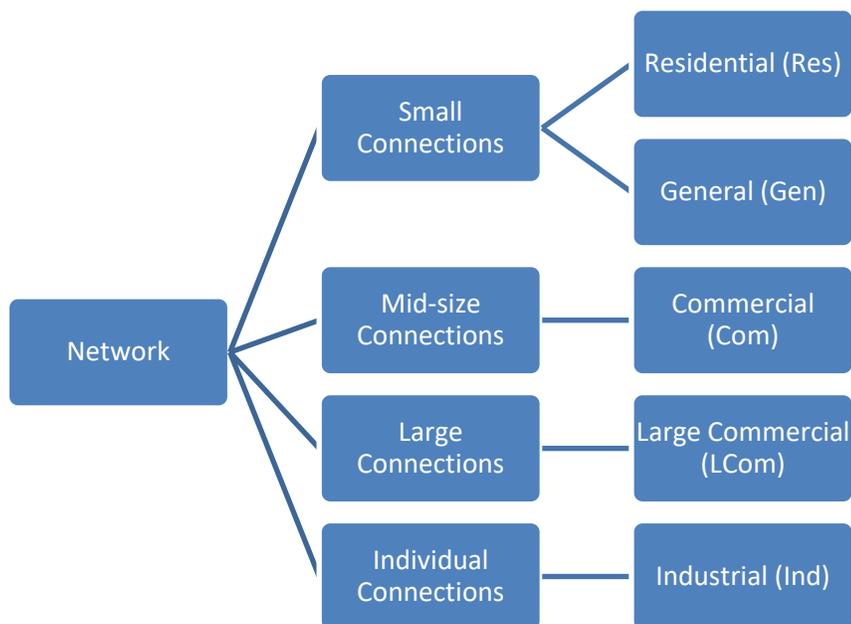


Figure 4 – Customer Groupings

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## Consumer Groups, Continued

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### **7.2 Method and criteria of allocating consumers**

Consumers are assigned to a load group based on:

- location in the high-cost are or low-cost area
- fuse size at the individual connection point (ICP)
- maximum business day peak demand, and
- meter type – for example, half hour metering is mandatory for consumers within the Time of Use (TOU) load group.

Unison allocates costs per region to three groups of installations based on the:

- nature of their site usage (e.g. residential vs business), and
  - size of capacity:
    - Small user – sites connected to the Low Voltage (LV) network, connected below 69kVA and priced on a kWh consumption basis
    - Medium user – sites connected at or above 69kVA, priced on a consumption or demand basis. These sites are commercial in nature, and
    - Large user – sites charged on an individual basis. These are very large industrial operations that require specific network investment or configurations to allow them to function effectively.
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## 8. Cost Allocation Model

**8.1 Overview** Once Unison has calculated the value of costs it can:

- recover from each region and assigned consumers to load groups, and
- determine how to allocate those costs across the different consumer groups.

Unison uses allocators to achieve equitable and efficient outcome. Allocators are units of measure that are deemed to be the most reflective cause of that cost. The more a consumer group contributes to the allocator, the greater the share of the cost Unison would seek to recover from that group through its prices. In this section we explain the basis for cost allocation.

**8.2 Cost allocators**

Unison uses a range of allocators to apportion costs to each consumer group. The allocators are chosen to reflect the key underlying drivers of each cost component in order that they can be allocated fairly to the groups that most contributed to that driver.

The table below shows the allocator used for each major component of cost Unison is seeking to recover. It explains how that allocator matches the underlying drivers of each cost component.

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

**Table 7 – Cost Components**

*Continued on next page*

## Cost Allocation Model, Continued

### 8.3 Value of allocators in Hawke's Bay

The table below shows the relative value of each allocator made up by the three major consumer groups in the Hawke's Bay region.

Hawke's Bay	Residential	General	Commercial	Large Commercial	Industrial
Connections	54,850	6,210	3,630	140	48
Consumption (,000 kWh)	400,130	48,300	216,340	143,350	187,400
Asset Value (\$,000)	203,220	51,360	91,300	20,720	19,770
Max Demand (kW)	277,480	59,600	184,900	76,000	61,990
Coincident Demand (kW)	10,530	360	3,280	1,890	2,340

**Table 8 – Relative Value of Allocators for Consumer Groups – Hawke's Bay**

### 8.4 Value of allocators used Rotorua/Taupo region

The table below shows the relative value of each allocator made up by the three consumer groups in the Taupo/Rotorua region.

Rotorua/Taupo	Residential	General	Commercial	Large Commercial	Industrial
Connections	41,760	3,120	4,460	95	40
Consumption (,000 kWh)	294,700	25,700	184,700	69,000	83,300
Asset Value (\$,000)	133,800	23,350	87,970	12,550	10,770
Max Demand (kW)	208,940	29,960	191,640	41,200	20,630
Coincident Demand (kW)	6,430	170	2,330	1,020	920

**Table 9 – Relative Value of Allocators for Consumer Groups – Rotorua/Taupo**

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## Cost Allocation Model, Continued

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### 8.5 Basis for selection of allocators

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 ICP's 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, therefore 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.

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## Cost Allocation Model, Continued

### 8.6 Target revenue allocations

Unison endeavours to match as closely as possible the forecast revenues for each group with the target revenues based on the allocated costs, while maintaining a sensible price structure. It is impossible to match forecasts with targets exactly, because otherwise there can be discontinuities in price structures between consumer groups. Unison seek to ensure that prices are not unduly variable from one-year to the next. Our target is that variances of forecast revenues from target should be less than  $\pm 10\%$ .

The table below shows the target revenue and forecast revenue by consumer group for the 2021-22 year.

Hawke's Bay	Target Revenue (\$,000)	Forecast Revenue (\$,000)	Variance from Target
Residential	42,920	42,960	0.1%
General	8,505	7,790	-8.4%
Commercial	18,100	17,900	-1.1%
Large Commercial	5,410	5,340	-1.3%
Industrial	6,400	6,520	1.9%
<b>Region</b>	<b>81,330</b>	<b>80,500</b>	<b>-1.0%</b>

Rotorua/ Taupo	Target Revenue (\$,000)	Forecast Revenue (\$,000)	Variance from Target
Residential	28,810	30,250	5.0%
General	3,990	3,810	-4.5%
Commercial	17,200	16,680	-3.0%
Large Commercial	3,230	3,130	-3.3%
Industrial	3,320	3,450	3.9%
<b>Region</b>	<b>56,510</b>	<b>57,320</b>	<b>1.4%</b>

**Table 10 – Target Revenue and Forecast Revenue by Consumer Group**

## 9. Price Categories

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### 9.1 Converting cost allocations in to prices

Once costs have been attributed and/or allocated to Unison regions and consumer groups, Unison forecasts whether existing prices and activity levels will generate the revenue needed for Unison to fully collect those allocated costs.

If there is a difference, Unison adjusts its prices to better align forecast revenue to allocated costs.

This alignment of revenue and prices is not an exact match. Unison must estimate variables like:

- environmental factors
- changes in consumer usage, and
- responses to price incentives to reduce demand on the network.

Unison reconciles the final price structure to the DPP regulations to ensure that the amount of revenue Unison forecasts to collect does not exceed Allowable Revenues.

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### 9.2 Price categories and price options

Unison sets prices at a category level for groups with common needs or usage. Unison then offers consumers within each category, price options so that they have some choice and control over the end cost of their electricity.

**Price categories** reflect groups of consumers with a:

- common site usage (e.g. place of residence versus place of business), and
- common capacity and metering. Unison's price categories are detailed in below.

**Price options** represent the choices consumers in each category have on how they will be charged for use of Unison's network. These prices are structured in such a way as to:

- maintain equality between consumers who create similar costs for the network
- signal to consumers the benefits and costs of different patterns of consumption
- maintain relativities between options to incentivise desirable behaviours, e.g. consuming outside of peak hours, and
- minimise opportunities for arbitrage – i.e. seek to gain a cost advantage by using a price option for a purpose for which it was not intended.

Details of price options available to Unison consumers are detailed in the *Section 10*.

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## Price Categories, Continued

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### 9.3 Fixed and variable component to prices

Unison recovers costs for most price options through:

- a mix of a fixed daily charge to the consumer, and
- a variable charge based on their accumulated, or Time of Use consumption over a given billing period.

The fixed component is designed to give some certainty of cost to consumers and cost recovery to Unison.

Fixed charges also better reflect the fixed nature of the underlying costs Unison incurs in operating a network to distribute electricity.

Unison offers consumers multiple price options and combinations for the variable component of prices. This includes options for both uncontrolled and controlled load services.

This range of options allows individual consumers to control their total electricity costs through their patterns of consumption. It provides incentives to reduce Unison's recoverable costs by reducing demand and loads on network assets.

Some commercial customers pay additional fixed charges for use of dedicated transformers connecting them to the high voltage network.

Large industrial customers may also pay a daily fixed charge to recover specific network investments made to meet the needs of customers on individual contracts with Unison.

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## Price Categories, Continued

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### 9.4 Small connections

The following sections explain the price components that apply to small connections.

#### 9.4.1 Residential

Residential connections comprise the majority of connections (85%) on Unison's network. The majority of residential consumers have similar profiles, reflecting morning and evening peak household activities. This allows Unison to use similar pricing options to:

- reflect most residential behaviour, and
- deliver fair and appropriate line charges across the consumer group.

Demand responsiveness mechanisms, such as control of hot water heating, are applied for ICP's in this category, as are prices compliant with the low user regulations.

Unison offers both accumulative and Time of Use (TOU) pricing to consumers in the Residential category:

- Accumulative pricing is where a meter records consumption accumulated over the billing period, and
- TOU is where consumption is recorded at half hourly intervals.

#### 9.4.2 Accumulative Pricing

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

- Permanent Residence (M11 and M12)
- Permanent Residence with generation (G11 and G12), and
- Non-Permanent Residence (DNR).

Under the Low User regulations, Unison is required to offer a price option with a maximum fixed daily charge of 15c, this is catered for with the M11 and G11 price categories. These low fixed charge categories, when compared to other comparable permanent residential plans (i.e. M11 compared to M12 and G11 to G12) should have total charges that are the same or less based on 8,000kWh annual consumption.

Unison has implemented a specific category for permanent residences that have distributed generation (DG) installed. The rationale behind this is that generation does not decrease the cost for Unison to serve these connections and yet the consumption and subsequent charges decrease. The G11 and G12 price categories are intended to ensure equity with consumers on the equivalent M11 and M12 plans.

Unison also sets a Non-Permanent Residential (DNR) price category where the connected dwelling is not permanently inhabited, e.g. holiday homes. The low fixed charge price categories are not available to these consumers. Unison sets the fixed daily charge for this category higher with the variable components the same as the M12 Standard Fixed Charge category. This ensures equity between permanent and non-permanent residents.

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## Price Categories, Continued

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### 9.4 Small connections (cont)

#### 9.4.3 TOU Prices

The following price categories may apply to 'Permanent Places of Residence' with meters able to measure consumption in half hourly intervals:

- Permanent Residence (TLU and THU) incl with generation, and
- Non-Permanent Residence (TCU)

Unison has TOU pricing in place to reflect that there are times of the day when consumption is consistently higher than others. The peak time periods have a rate that is charged at a higher rate than the times, shoulder and off-peak, when consumption is typically less. This allows consumers to make choices about their use of electricity and make savings from reducing peak demands on the network. From April 2021 an additional Shoulder rate was included in these plans. By including this intermediate pricing period, a lower off-peak rate was able to be applied to consumption between 11pm and 7am when consumption is at its lowest. This further incentivises consumers to move any discretionary load or any additional load to the under-utilised period. These categories are also available for connections with Distributed Generation (DG) installed, where the retailer offers a corresponding time-based price plan to the consumer. The TLU option offers a low fixed rate equivalent to the M11 category whereas the THU has a fixed rate equivalent to the standard residential rate, M12. Connections for non-permanent residences can use the General price category (TCU).

#### 9.4.4 General Connections

Small connections that are not residential are grouped into the General category. There are three price categories in the General group.

- **Non-domestic (NDL, NDH)**

Most General connections are priced on accumulative pricing and are split between low users and high users. They are classified as NDL for connections that use less than 6,000 kWh per annum and NDH for those using above that. There is a wide variety of use that these connections fall into, many of which use very little consumption on an annual basis. In an effort to return a fair amount of revenue from these connections the NDL category has a higher fixed daily rate than the NDH group.

While virtually all Non-Domestic connections are priced on accumulative pricing Unison has a TOU category available for non-residential connections as well, TCU. As mentioned above any non-permanent residential connections may also use this plan.

- **Unmetered (U01, U02, U03)**

Some connections that fit within a tight framework are connected to the network but are not metered individually. They will have predictable load and a reasonable estimate of consumption can be made. Streetlights and parking meter units along with communication cabinets are the most typical connections. These sites are charged on a consumption basis unless they conform to an authority streetlight database where a charge per fixture per day is the main revenue item.

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## Price Categories, Continued

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### 9.4 Small connections (cont)

- **Temporary (T1P, T3P)**  
Connections that are installed on a temporary basis while sites are being built are assigned one of two temporary categories depending on their level of connection. Once the building is complete the connection will then be changed to the appropriate category of the final use of the site.
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### 9.5 Mid-size connections

ICPs which do not serve as places of residence are split into price categories based primarily on the capacity of the connection. Connection size of between 14kVA and 277kVA are grouped into three commercial categories, MC1, MC2 and MC3. The variable charges for these groups are the same, with a larger fixed daily price corresponding to the increased size and therefore potential network costs.

The MC1 and MC2 groups offer either accumulative price options or demand-based price options depending on the type of metering available on site. The MC3 group requires full TOU metering and therefore demand-based pricing. While demand-based pricing is more reflective and is the preference for Unison the additional cost of TOU metering means many smaller connections in the MC1 category particularly find this is not financially justified.

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### 9.6 Large connections

Commercial sites, MC5 through to MC9, that connected at greater than 277 kVA will have either a dedicated transformer or be the dominant user of a transformer. These sites have a different cost of connection as a result and place different requirements on the network. Asset utilisation is assessed more accurately for these sites as specific demand information is available for all these sites.

These sites face significant fixed charges, with the balance of revenues recovered through peak demand and demand charges.

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### 9.7 Individual connections

Where connections are particularly large or complex Unison elects to price on an individual basis. An assessment is completed for each connection using individual behaviour at the site including an estimation of the installed asset allocation that pertains to their specific location. In addition, the pass-through and recoverable costs that are directly attributable to these consumers are applied specifically to these connections.

The total revenue required is calibrated into a daily rate that applies for the pricing year.

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## Price Categories, Continued

**9.8 Forecast revenue by price category** The following table shows the forecast revenue, by price category and consumer group, in Unison's two regions.

Forecast Revenue by Price category		Hawke's Bay		Rotorua/Taupo	
		(000's)	%	(000's)	%
Residential	TLU	\$ 945	1.2%	\$ 770	1.3%
	THU	\$ 1,250	1.6%	\$ 1,035	1.8%
	M11	\$ 16,440	20.4%	\$ 11,175	19.5%
	M12	\$ 23,265	28.9%	\$ 14,750	25.7%
	G11	\$ 195	0.2%	\$ 115	0.2%
	G12	\$ 380	0.5%	\$ 140	0.2%
	DNR	\$ 490	0.6%	\$ 2,270	4.0%
General	NDL	\$ 2,405	3.0%	\$ 1,055	1.8%
	NDH	\$ 3,850	4.8%	\$ 1,815	3.2%
	Unmetered	\$ 1,375	1.7%	\$ 825	1.4%
	Temporary	\$ 155	0.2%	\$ 110	0.2%
<b>Small Connections</b>		<b>\$ 50,750</b>	<b>63.0%</b>	<b>\$ 34,060</b>	<b>59.4%</b>
Commercial	MC1	\$ 10,880	13.5%	\$ 12,055	21.0%
	MC2	\$ 2,845	3.5%	\$ 2,620	4.6%
	MC3	\$ 4,165	5.2%	\$ 2,005	3.5%
<b>Mid-Size Connections</b>		<b>\$ 17,890</b>	<b>22.2%</b>	<b>\$ 16,680</b>	<b>29.1%</b>
Large Commercial	MC5	\$ 1,365	1.7%	\$ 1,590	2.8%
	MC6	\$ 1,260	1.6%	\$ 515	0.9%
	MC7	\$ 1,015	1.3%	\$ 205	0.4%
	MC8	\$ 665	0.8%	\$ 420	0.7%
	MC9	\$ 1,035	1.3%	\$ 400	0.7%
<b>Large Connections</b>		<b>\$ 5,340</b>	<b>6.6%</b>	<b>\$ 3,130</b>	<b>5.5%</b>
<b>Individual Connections</b>		<b>\$ 6,520</b>	<b>8.1%</b>	<b>\$ 3,450</b>	<b>6.0%</b>
<b>Total</b>		<b>\$ 80,500</b>		<b>\$ 57,320</b>	

**Table 11 – Forecast Revenue, by Price Category and Consumer Group by Region**

## 10. Price Options

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### 10.1 Price options

Within each price category there are different price options. These options seek to signal the value of consuming outside of network peaks, while aiming to cover Unison's allowed revenues under the price path. Over the longer term this may provide improved capacity utilisation on Unison's network and therefore lower overall revenue requirements (relative to higher demands at peak times). Depending on whether consumers have TOU or non-TOU metering and their price category, the following price options are available.

#### **Non-TOU metered consumers:**

- 24UC – no ability to control load (e.g. water heating)
- AICO – controllable load, but no separate data stream (cannot identify exactly how much load is reduced)
- CTRL – separately controlled and recorded load
- NITE – controlled to be available from 11pm to 7am
- CTUD – controlled to be available from 7am to 11pm, and
- DEFT – for ICPs required to have TOU meters but have accumulative.

#### **TOU consumers (except large industrial – I60):**

- ONPK – consumption occurring during the periods 7am to 11am and 5pm to 9pm each day
- SHDR – consumption occurring during the periods 11am to 5pm and 9pm to 11pm each day
- OFPK – consumption occurring during the period 11pm to 7am each day
- SOPD – highest peak load occurring within on peak periods during a summer month
- WOPD – highest peak load occurring within on peak periods during a winter month
- DMND – maximum load during the month, and
- KVAR – a charge for consumption having less than .95 power factor.

Refer to Unison's Pricing Policy and Schedules (CM0001) for full details of the applicability of each price option.

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## Price Options, Continued

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### 10.2 Relativities between Residential price options

#### 10.2.1 Residential Uncontrolled – 24UC

The residential low user 24UC rate forms the basis where all other small user variable rates are derived. The 24UC option is a single charge for a continuous supply where there is no load that is controllable by Unison on that meter register or equipment.

#### 10.2.2 Residential Night – NITE

The NITE option is a separate charge for electricity consumed between the hours of 11pm and 7am. The NITE rate is set at 30% of the 24UC rate. Retailers can use this price option to encourage/reward overnight EV charging on connections that do not have TOU capability.

#### 10.2.3 Residential Day – CTUD

CTUD is a separate day time charge for electricity consumed between 7am and 11pm. It can only be used in conjunction with the NITE option above.

The CTUD (day only) rate is set so a consumer with a day/night meter who has the standard day/night consumption split of 70/30 will pay the same as an equivalent consumer with a 24UC meter. Consumers can 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 consumer reflects the network benefit of moving load out of higher demand periods.

#### 10.2.4 Residential Controlled – CTRL

This option allows Unison to offer a different price for consumption or load that Unison can control for the end-consumer under Unison's Load Management Service.

#### 10.2.5 Residential All Inclusive – AICO

Unison currently offers an AICO price option, i.e. a single price which applies to both controlled and uncontrolled load where the controlled load is not separately metered. This option is offered in residential price categories. A residential consumer on an AICO price would pay approximately 15% less than if they were on an uncontrolled option.

This option, while providing valuable incentive for the provision of controlled load is complex from an administration perspective, and creates a significant enforcement task. Unison has no visibility as to what, if any, controlled load a consumer is providing. As such, this price option is no longer available for new connections.

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### 10.3 Incentive of load control

The Controlled (CTRL) price option is set so a typical mix of uncontrolled and controlled consumption would result in a 15% discount on a solely uncontrolled rate.

Offering a price incentive to consumers, to allow load control and therefore move demand from peak to non-peak times, benefits the network in managing future network investment.

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## Price Options, Continued

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**10.4 Domestic Non-residential (DNR)** Consumers in the DNR price category are residential sites that do not qualify for the standard (M12) or low fixed charge (M11) residential category as they are not permanently inhabited. These consumers have an increased fixed daily rate. This ensures that similar levels of revenue are derived compared to M12 consumers, where the same capacity requirements are provided. The relativities between price options are the same with the DNR category as with other residential.

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**10.5 General (NDH and NDL)** Prices for consumers in the General price categories are calculated independent of residential consumers. The threshold for defining whether an ICP should be in the high or low category is an annual consumption of 6,000kWh. The price option balance between the two categories is set as close as possible at 6,000kWh to minimise any opportunity for arbitrage.

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**10.6 Distributed Generation (DG)** Unison has created the DG pricing category to cater for residential consumers whose property has distributed generation at their connection, and the connection was **after** 31 March 2016.

Pricing of DG customers is based on the general residential categories. Unison builds in a margin to allow for the lower expected consumption of DG customers, and the resultant lower contribution to the fixed costs of providing service to their connection. These fixed costs are similar or identical to other residential customers.

Higher volume, commercial embedded generators are subject to separate pricing arrangements. See pricing principle (d) in *Appendix A*.

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**10.7 Temporary (T1P and T3P)** The temporary prices apply where the end-consumer's premises or connection are temporary. The usual application is during construction of a new dwelling. Prices are usually set relative to M12 for T1P, and MC1 for T3P, as these prices often correspond with the future price that will be applied after the site is made permanent.

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**10.8 Commercial fixed rates** Unison's fixed rates for Commercial customer groups follow a stepped approach, with rates increasing in line with increased capacity requirements of the different consumer groups.

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**10.9 Dedicated transformers** Unison's view is a consumer should be charged in line with the service they receive, especially when there are specific and identifiable costs attributable to that consumer. As such, those consumers 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 consumer demand characteristics.

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## Price Options, Continued

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### **10.10 Power factor**

Unison requires that consumers 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 consumers to meet this requirement. The power factor charge is not intended to act as a significant source of revenue. The charge is a means of ensuring power factor requirements are met to maintain the quality of electricity supply across the network. The same power factor rate is applied across all price categories.

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### **10.11 Small User Time of Use (TOU) categories**

Unison introduced the additional Shoulder (SHDR) rate to the Residential (TLU,THU) and General (TCU) plans effective from 1 April 2021. This has allowed Unison to reduce the off-peak price to match the Night rate and therefore offer the same benefit for moving existing load or locating additional load as those connections with non-TOU metering.

Unison does not have widespread network constraints at present and do not anticipate any in the short to medium term. Offering a moderate price signal provides indicative benefit for load placement without encouraging excessive consumer incentive that would not be representative of medium term network savings.

Unison also believes it is important to retain options that can be strengthened if required given the unknown speed of uptake of technology such as electric vehicles or home management systems.

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### **10.12 Commercial Time of Use (TOU) options**

The pricing plans for Large Commercial connections are reflective of the size of connection and the relevant network costs imposed. Increased monthly demand is recognised and charged monthly while the fixed charges are based on the size of each connection. On Peak Demand pricing is set to recover the interconnection component of transmission costs as these:

- are a significant cost, and
- can be approximated across seasonal periods and the time of day they are likely to occur.

More specific and individualised pricing occurs for our Industrial connections and expanding this to cover more large commercial connections would be administratively expensive and would deliver little benefit to network consumers.

As metering is updated for commercial connections that are below the compulsory TOU metering requirements there may be opportunities to develop TOU price options. This is a future option that Unison will be considering once metering roll-out in more ubiquitous.

The On Peak demand pricing currently in place may need to be revised with impending changes to the Transmission Pricing Methodology and anticipated removal of peak pricing signals. Unison are investigating whether some type of peak demand signal should be retained to protect the network against future changes in load profiles.

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## 11. Other Price Options

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### 11.1 Non-standard pricing use

Unison currently has 88 ICPs on non-standard pricing, representing annual target revenue of \$9,973,000.

A non-standard pricing arrangement may be entered 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 supplying that consumer.

The primary purpose of the non-standard contracts is the formalisation of a direct relationship between Unison and the consumer. Consumers with non-standard contracts may be directly billed by Unison, as opposed to network charges being billed by the retailer.

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

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### 11.2 Embedded generators

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

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

This includes those who are generators only, and those who generate for their own consumption. For those who are only generators, Unison makes monthly avoided transmission payments paid at the Transpower interconnection rate, \$98.07/kW for the 2020/21 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 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 \$4,486,900 will be made to these generators during the 2021/22 year.

Regulatory arrangements have changed for new embedded generators. New generators must now apply to Transpower directly for payments for assisting to defer or avoid transmission upgrades.

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## Other Price Options, Continued

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### 11.2 Embedded generators (cont)

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

- variable network charges based on kWh consumption reduce
- the interconnection charge component used in calculating their price is reduced as their contribution to Transpower's peak demand calculations is reduced, and
- the proportion of network asset values allocated to the consumer is reduced as the AMD that they place on the network is reduced.

Unison also recognises the reduced costs associated with serving 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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### 11.3 Distribution generation

Unison introduced price categories that apply to connections on our network with distribution generation (DG) installed from 1 April 2016.

The installation of DG, especially solar PV, does not reduce the use of the network by these sites. While the total amount of electricity consumed from the network reduces, typically the maximum demand does not. This means that the cost to service this installation is essentially unchanged, yet revenue received based on consumption can reduce markedly.

Distribution generation price categories are therefore priced slightly higher than the equivalent residential price category for non-DG connections. This ensures Unison fairly recovers the cost of servicing the connection. Unison does offer a choice of low and higher fixed charge options to enable DG connections to optimise their electricity costs.

In the 2017-18-year Unison also provided access to the TLU and THU price categories to residential connections with DG installed. These Time of Use options give DG customers the same opportunity as other residential consumers to reduce their costs of electricity by shifting more of their consumption to the off-peak times of day when the load and network costs are lower.

To ensure consumers who had already installed DG prior to 1 April 2016 are not unreasonably disadvantaged by changing price structures, a 'grand parenting' period has been set. These customers will not be required to change to the new price categories above until a future date is decided.

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## 12. Customer Feedback

### 12.1 Survey of consumer satisfaction

Each year Unison engages in consumer research to gauge consumer satisfaction with the network services provided, including the impact of its prices.

SIL Research survey a sample of consumers who have made direct contact with Unison to discuss some aspect of their network services. A representation of the most recent results is shown below. The overall level of performance satisfaction is compared to the importance attributed to each service factor. Pricing performance is at the bottom of the six different factors and is second only to Continuity of Supply in Importance. Unison has different levels of overall control over these factors with pricing probably at the lower end. Consumers are only subject to distribution charges through their retailer and this can reduce the immediate effect of price changes. Unison seek to deliver an increasing level of consumer satisfaction through fair pricing and a good level of communication.

When comparing change from year-to-year price performance in the most current survey response is above 6.5 where it was 6 the previous year, this is a small change but continues to move in the right direction. The importance placed on pricing has also increased to a small degree and is an important measure for Unison to monitor as more discussion through government and media channels has occurred regarding energy poverty and affordability.

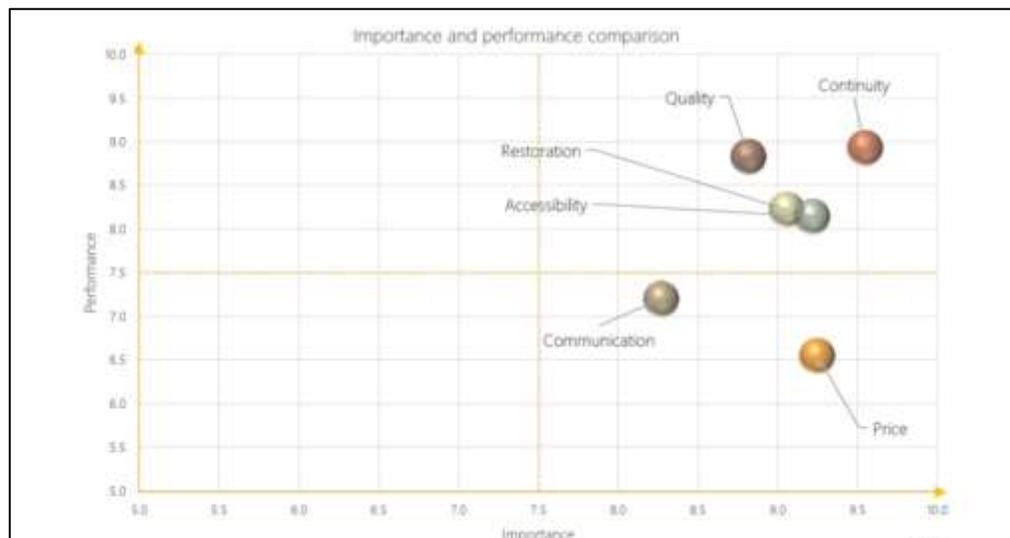


Figure 5 – Price Performance

Key Code:

- Continuity – keeping the power on
- Restoration – includes length of time power is off
- Quality – keeping flickering or dimming of lights to a minimum
- Price – keeping costs down
- Accessibility – easy to contact if the need arises, and
- Communication – keeping consumers informed of Unison works and business.

## Appendix A – Pricing Principles

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### Principles guiding pricing approach

As noted earlier in this document, 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.

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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, including by:*
- i. being subsidy free (equal to or greater than avoidable costs, and less than or equal to standalone costs);*
  - ii. reflecting the impacts of network use on economic costs;*
  - iii. reflecting differences in network service provided to (or by) consumers; and*
  - 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.

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## Appendix A – Pricing Principles, Continued

### 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 to weaken the signal to ensure there is not too strong a signal to reduce demand at peak times. Unison will monitor the uptake and performance of residential customers moving onto these rates to increase the understanding of 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.

As noted in *Section 10*, 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 will enhance Unison's ability to set cost-reflective fixed charges and reduce reliance on volumetric charges.

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## Appendix A – Pricing Principles, Continued

### 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' pricing<sup>6</sup>, with Ramsey<sup>7</sup>-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 once the Government reforms the Low Fixed Charge Regulations.

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<sup>6</sup> Multi-part pricing refers to a pricing approach where a consumer pays a combination of fixed and variable charges.

<sup>7</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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### 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).

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](http://www.unison.co.nz).

As smart meters become ubiquitous on the network, and with stronger 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). Some retailers are prepared to look more closely at actively promoting price options using Unison's TOU rates.

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## Appendix A – Pricing Principles, Continued

### 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.

- e) *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.
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.

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## Appendix A – Pricing Principles, Continued

### Transparent development of prices (cont)

- (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.

Unison sought to address these concerns by introducing the non-domestic high and low categories (NDH and NDL), and the domestic non-resident category. 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.

As noted earlier in this document, Unison introduced a specific residential DG price category in 2016 to ensure a fair contribution from customers with DG. While this increases complexity, Unison considered it necessary to better signal the costs of supplying such customers.

## Appendix B – 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: 31 March 2021

Director

Date: 31 March 2021

## 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
27/03/2014	7.0	Update of document and descriptions of pricing methodology calculations in light of review against Electricity Authority guidelines and Castalia report.	Pricing Analyst	GM Business Assurance	Group Chief Executive
17/03/2015	8.0	Update of document and descriptions of pricing methodology calculations.	Pricing Analyst	GM Business Assurance	GM Business Assurance
29/03/2016	9.0	Full review and update of document.  Updates to terminology to align with guidelines from ENA for distribution businesses.	Pricing Analyst	GM Business Assurance	GM Business Assurance
27/03/2017	10	Full review and update to document.  Update of key statistics.	Pricing Manager	GM Business Assurance	GM Business Assurance
12/03/2018	11	Full review including, restructure of topics. Update of key statistics.	Pricing Manager	GM Business Assurance	GM Business Assurance

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## Appendix C – Summary of Document Changes, Continued

<b>Date</b>	<b>Version No.</b>	<b>Changes to Document</b>	<b>Creator</b>	<b>Authoriser</b>	<b>Approver</b>
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