PRICING METHODOLOGY

Pursuant to the Electricity Distribution Information Disclosure Determination 2012, clause 2.4.1

and

Electricity Authority Distribution Pricing Principles and Information Disclosure Guidelines

For the Period: 1 April 2022 – 31 March 2023

Network Waitaki Limited
10 Chelmer Street
PO Box 147,
Oamaru 9444

Telephone 03 433 0065
Facsimile 03 434 8845
service@networkwaitaki.co.nz
www.networkwaitaki.co.nz

Certification for Year-Beginning Disclosures

Pursuant to Schedule 17

Clause 2.9.1 of section 2.9

Electricity Distribution Information Disclosure Determination 2012

We, Christopher J. Dennison and Anthony J. Wood, being directors of Network Waitaki Limited certify that, having made all reasonable enquiry, to the best of our knowledge:

a) The following attached information of Network Waitaki Limited prepared for the purposes of clause 2.4.1, disclosure of pricing methodologies, 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.

Christopher J. Dennison
Date: 28 March 2022

Anthony J. Wood
Date: 28 March 2022

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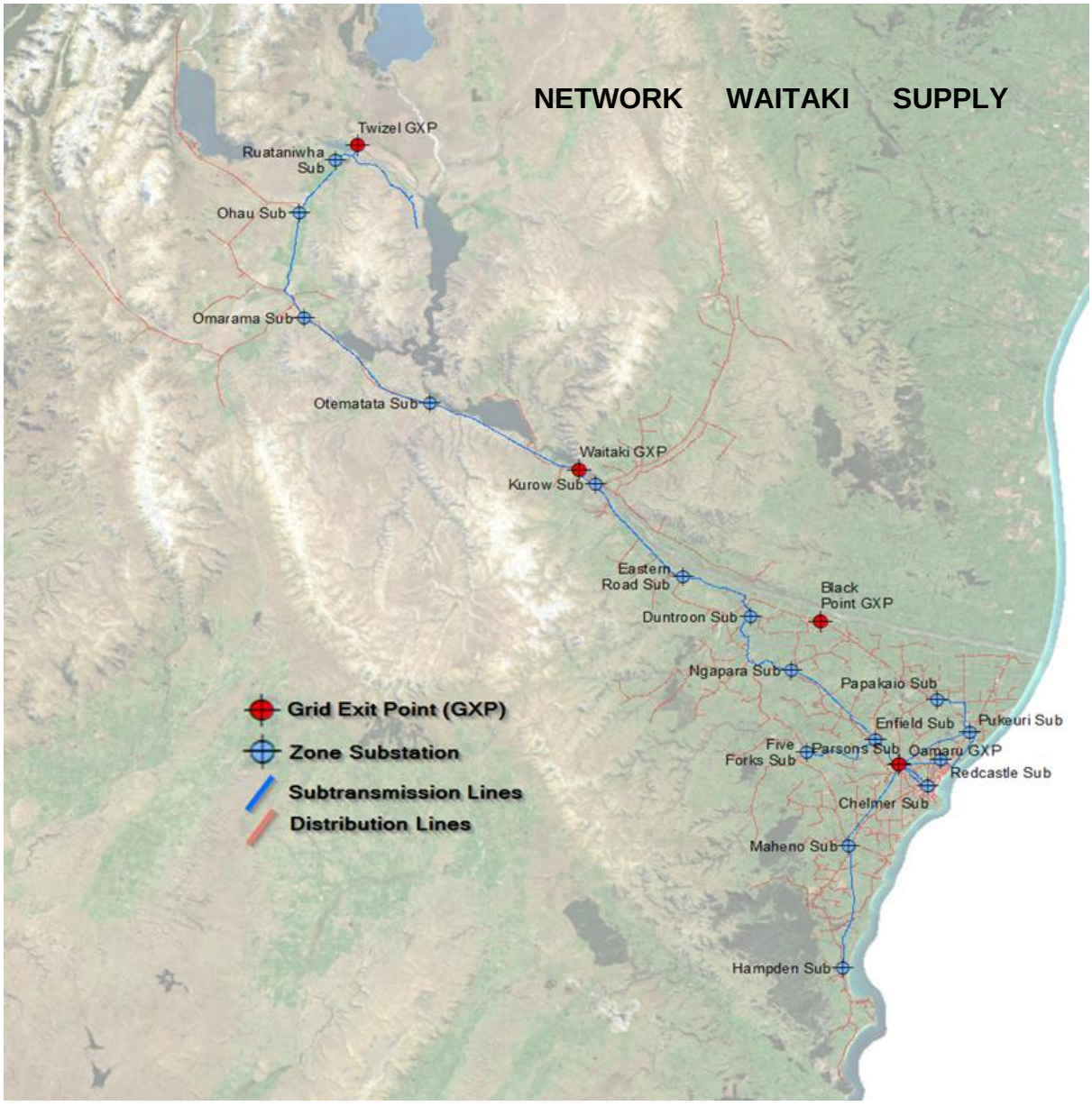
1 INTRODUCTION

This document outlines Network Waitaki's pricing methodology for the period 1 April 2022 to 31 March 2023.

1.1 Overview of Network Waitaki

Network Waitaki owns, manages, and operates the electricity distribution network in the supply area covering North Otago and parts of South Canterbury, and is 100% owned by the Waitaki Power Trust. Due to its ownership structure the company is an exempt Electricity Distribution Business (EDB) under Part 4 of the Commerce Act and therefore is not subject to price-quality regulation, but however is subject to Information Disclosure requirements.



1.1.1 Network features

The network has a footprint of approximately 8,400 square kilometres. The number of Installation Connection Points (ICPs) connected to the network is approximately 13,243, the maximum coincident system demand is approximately 66 MW and the annual delivered energy after losses is about 291 GWh.

Within our network area, the distribution network includes 18 zone substations, approximately 1,880 km of lines and cables, and 2,918 distribution transformers of which 400 have a capacity in excess of 100 kVA. Network Waitaki's distribution assets are dispersed over a large area and the company services a mix of towns, rural land and remote farmland.

The network has a strong rural character, with low load density measured in kVA per km of line: Network Waitaki records 121 kVA of network capacity per km of line, against a New Zealand average of 149 kVA/km. Although 80% of ICPs on our network are residential connections and only close to 10% of ICPs are agricultural connections, irrigation (as the major driver for agricultural use of electricity) consumes on average more than a third of annual energy, slightly more than residential consumption. Retail, hospitality, industrial, commercial and social services combined make up the balance of the ICP numbers.

1.1.2 Network demand

The size and capacity of the network is driven by the peak demand for electricity by our customers[1]. Unlike most other electricity networks, peak demand on our network is not experienced in the winter when residential heating demands are at their highest. Rather, our network peaks in the summer when demand for irrigation is at its highest.

Irrigation customers are less sensitive to price signals based on volume usage compared to residential customers and, as a consequence, traditional price signalling mechanisms such as night rates for water heating are not effective for irrigation customers.

Over the last decade irrigation schemes have been the biggest driver of demand growth with Network Waitaki's maximum demand growing from 44MW to a high of 66MW in FY21. Irrigation contributes about 69% to the total network maximum demand. Some additional irrigation growth is still expected over the next decade including projects relating to conversion from border dyke to spray irrigation, but no further growth is expected after this as most viable land will then be irrigated. In terms of commercial and industrial load growth, we expect the main driver to be decarbonisation of process heat. These large industrial customers have not finalised their plans although the preference is for electricity as the energy source. The Asset Management Plan contains detailed analysis around other demand drivers including

[1] In this methodology we use the term "customer" to refer to electricity end consumers. We consider the terms to be interchangeable and recognise that "consumer" (rather than "customer") is the defined term as per clause 2.4.1(4) in the Commerce Commission, Decision NZCC 22: Electricity Distribution Informatin Dislosure Determination 2012.

Electric Vehicles and Distributed Generation[2] the impact of which is expected to be small in the next year or so. At the time of writing, Electric Vehicles have a 0.3% penetration rate in the Network Waitaki supply area, which is approximately half the national penetration rate of Electric Vehicles.

The table below illustrates the characteristics for each of the Network Waitaki Grid Exit Points (GXP)

GXP	Load type and forecast capacity adequacy	Pricing implications
Oamaru: 11,000 customers 10 Zone substations Capacity: 45 MVA Peak demand: 40.7 MW Energy: 214 GWh	Main supply area. Predominantly residential, commercial and farming connections. Variations occur between winter and summer demand mainly because of irrigation. Allowance has been made for conversion of process heat from coal to electricity (approximately 3 MW) in the short term. Forecasts for the medium term suggest irrigation, along with process heat decarbonisation loads will lead to capacity and security constraints on the Oamaru GXP, and lower Waitaki subtransmission network requiring major investment.	Consideration for significant investments in the transmission grid (including GXP) as well as subtransmission assets (for both capacity and security of supply) to enable regional decarbonisation initiatives, including electrification of industry and domestic process heat, along with transportation electrification Capacity pricing strategy to continue as a proxy for demand pricing that best signals the cost of supply.
Waitaki: 1,609 customers 4 Zone substations Capacity: 24 MVA Peak demand: 11.8 MW Energy: 43 GWh	Mostly residential customers with demand peaking in Otematata over the December holiday period. Back up supply to Otematata is provided by a diesel generator and an additional backup diesel generator is scheduled for installation in FY23.	No material growth with adequate capacity – capacity pricing strategy to continue. Investment is backup security of supply required in FY23.

[2] Updates in Network Waitaki Asset Management Plan. 2021. (https://www.networkwaitaki.co.nz/company/regulatory-disclosures/asset-management-plan/)

GXP	Load type and forecast capacity adequacy	Pricing implications
	Demand also varies between summer and winter due to irrigation.	
Twizel: 627 customers 3 Zone substations Capacity: 27 MVA Peak demand: 4 MW Energy: 13 GWh	Mostly residential and irrigation customers as well as the Ohau lodge and snowfield. Demand varies between winter and summer due to irrigation load.	No material growth forecast, with adequate capacity. Capacity pricing strategy to continue.
Black Point 1 customer 0 Zone substations Capacity: 25 MVA Peak demand: 15.7 MW Energy: 37 GWh	Dedicated supply for the North Otago Irrigation Company (NOIC).	Separate pricing arrangement.

Table 1: Grid Exit Points characteristics

Figure 1 below shows the long-term trends in energy consumption growth. The figure shows the volatility in summer volumes (due to irrigation) which supports the move to capacity-based pricing. This move away from volume-based pricing will reduce the impact of volatile annual volumes and the associated revenue risk. It will further remove a pricing signal that does not serve a purpose but is a remnant of historic pricing practices.

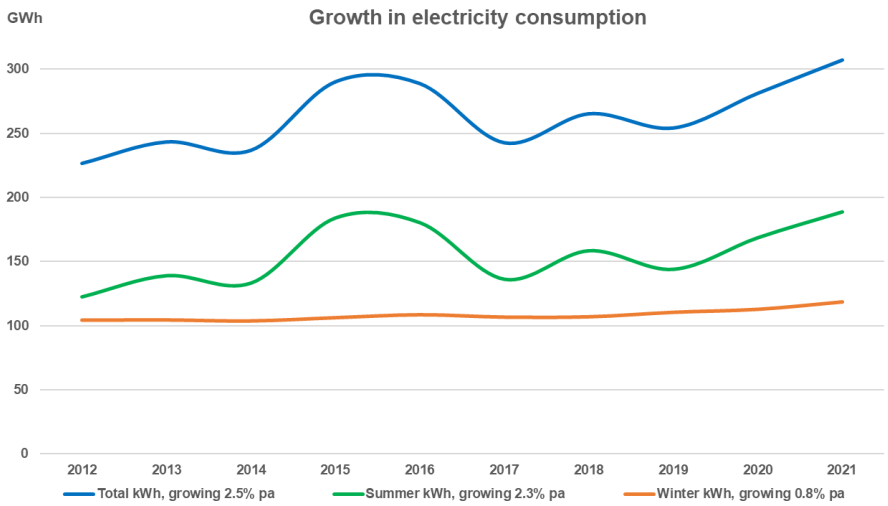


Figure 1: Electricity volume trend over the last 10 years

1.1.3 Customers on the network

Network Waitaki has about 13,240 connected customers, and its supply area is dominated by residential customers making up 80% of the customer base that contributes about 40% of revenue and 30% of energy used on the network.

Agriculture, commercial and industrial customers make up the balance of 20% of the customer base, with agriculture generating 30% of revenue and industry and commercial customers the other 30%. Agriculture varies substantially from year to year due to irrigation's volatility associated with rainfall levels.

1.2 Legal requirements and compliance

Under section 2.4 (pricing and related information) of the *Electricity Distribution Information Disclosure Determination 2012 (consolidated in 2021)*, Network Waitaki must publicly disclose, before the start of each disclosure year, a pricing methodology which:

- Describes the methodology used to calculate prices payable or to be payable;
- Describes any changes in prices and target revenues;
- Explains the approach taken with respect to pricing in non-standard contracts and distributed generation; and
- Explains whether, and if so how, we have sought the views of customers, including their expectations in terms of price and quality, and reflected those views in calculating the prices payable or to be payable.

Network Waitaki's pricing methodology is consistent with the Electricity Authority's March 2010 Pricing Principles (EA Principles and Guidelines) as amended[3] outlined in Appendix 2.

Network Waitaki complies with the *Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004* (LFC Regulations). Residential Low User (RL) customers at the 9,000 unit average domestic household consumption threshold level for the Lower South Island will pay no more than standard price plan customers.

A detailed summary of how Network Waitaki complies with the Information Disclosure Determination 2012 and which sections of this pricing methodology comply with each requirement can be found in Appendix 3.

[3] Electricity Authority (4 June 2019). More efficient distribution network pricing – principles and practice.

2 PRICING RESTRUCTURE

2.1 Overview

Network Waitaki, following direction set from the Electricity Authority, is committed to cost-reflective, service-based pricing to improve the use of its electricity network and to support efficient use of the network.

The aim of Network Waitaki's pricing strategy is to:

- Reflect the cost of service of the company more accurately through achieving an approximately 80% capacity-based fixed and 20% volume-based pricing structure by 2024-2025 (subject to impact of constraints such as LFC regulations) with the intention of then considering whether there is a need to move further towards cost-reflective pricing;
- Ensure revenue adequacy and reliability through implementation of this cost-reflective price structure;
- Maintain pricing signals through discounts on controllable load to manage congestion where necessary;
- Limit negative impacts of price rebalancing on customers as far as is practicable;
- Minimise the impact of price rebalancing by communicating with and advising affected customers of mitigating actions; and
- Continuously monitor wider regulatory developments to ensure the direction of price structure development is aligned with industry and regulatory developments.

2.2 Economic signals of current pricing

Network Waitaki's current pricing effectively bills consumers on a combination of volume and fixed capacity prices.

This pricing is set by load group (without differentiation on what energy is used for) with only individually assessed customers being charged for distribution and transmission on a relatively fixed basis, with 66% of charges being fixed based on contractual capacity and 34% based on demand.

Network Waitaki electricity consumers are billed for electricity from retailers which includes charges for electricity consumed as well as charges for conveying electricity through transmission and distribution networks. Given that the charges for electricity consumed are 100% volume-based and distribution and transmission are currently 60% volume-based, the overwhelming price signal to consumers is based on consumption and the fixed pricing element related to capacity is significantly diluted to the extent the price signal for capacity (Network Waitaki's main cost driver) is ineffectual.

Except for individually assessed customers, whose pricing has the closest relationship to the cost to supply, the current pricing is fundamentally flawed as it is ineffectual as a pricing signal to customers.

Essentially, the current pricing setup is a legacy from the time when local networks were integrated energy companies, performing the function of energy retailer.

2.3 Why fixed capacity based pricing?

The cost to operate our network is predominantly driven by the size (capacity) of the network required to meet peak demand. The impact of the volume of electricity conveyed across our network has no material impact on the cost of operating the network.

Capacity-based pricing effectively charges customers for the size of their connection rather than the volume of electricity conveyed. This aligns the pricing for connecting to the network with the cost of providing the connection which provides an effective price signal to customers. This price signal incentivises customers to optimise their contracted capacity which in turn enables Network Waitaki to optimise the size of the network.

Optimising the size of the network ultimately results in an optimised cost to customers of connecting to the network. Consequently, capacity-based pricing is the most appropriate pricing mechanism because:

- It represents the long-term cost driver related to capital spending that is based on the customer's connected capacity.
- It provides for customer choice with a direct influence on cost and is a known quantity for each customer.
- Capacity is a known variable that we can use in pricing without any need for estimation or approximation.
- It is the only customer driven factor that the customer has direct control over due to customer's choice of capacity.
- A contractual capacity limit will be a stronger incentive to control maximum demand than an ex post measurement of maximum demand, for all cases where the maximum demand is close to the contracted capacity plan limit.

In time, as smart meter functionality and data become more readily available, a capacity-based pricing approach could become more granular allowing a larger range of installed capacity options to customers. This will be important once the LFC regulations are removed to provide very low user customers the option of selecting a smaller than 15kVA connection.

Capacity-based pricing is favoured for reasons of simplicity, data availability and most importantly cost reflectiveness. The contracted capacity provides the bulk of the information that determines the cost of supply for each customer.

2.3.1 The long term objective – delivery of peak demand

Network Waitaki has to provide infrastructure that meets the need of customers' peak demand individually at their point of consumption, and also diversified across the network. Success is measured by being able to supply peak loads at the required security and reliability levels demanded by customers.

To be able to deliver peak demand Network Waitaki requires sufficient capacity from the Transmission Grid, sufficient capacity on the Sub-Transmission network and sufficient capacity on the distribution component of the network.

The Transmission Grid capacity used by Network Waitaki is the fully diversified demand requirements of our customers and this value is metered by Transpower and the bulk half-hour (HHR) values at GXP level are known, thus Network Waitaki plans for GXP capacity accordingly. As is shown in Table 1 and in the Asset Management Plan there is a Transmission constraint into Oamaru and options to address this constraint are currently being worked through.

Demand on the sub-transmission network is based on locational After Diversity Maximum Demand (ADMD) values and these values are known on a zone substation level for planning purposes.

Measuring demand on parts of the distribution network (especially on low voltage networks) is challenging as real-time metering data at ICP level is owned by retailers and not readily available[4]. Demand on parts of the high voltage distribution network can be obtained from substation SCADA systems, however this is an aggregation of all downstream customer demand. As a result, catering for peak demand of customers is based on incomplete information. In order to provide a network capable of delivering the peak demand a proxy of customer demand has to be used.

Our cost basis once infrastructure is in place is fixed and does not respond to volume – our cost is fundamentally driven by our estimate of peak demand. This is calculated from contracted capacity with utilisation and diversity factors taken into account.

2.3.2 Peak demand features of our network

The main peak demand features of our network are as follows:

- A moderate winter peak based on residential consumption
- A high summer peak based on irrigation consumption which also determines Network Waitaki's annual maximum demand
- Load control measures available through ripple controlled hot water to manage peaks by time shifting residential hot water load. This is also available for emergency load reduction.

2.3.3 Price signal for peak demand

While the peak demand and volume usage is mostly weather dependent each year, Network Waitaki up to now had to build infrastructure to cater for a dry year when demand and volume are at its highest. Going into the future, new technologies such as Electric Vehicles, decarbonisation initiatives and Distributed Generation are coming into the planning mix – the forecasted impact on the network has been shown in Table 1 and is also discussed in detail in Network Waitaki's Asset Management Plan.

In terms of pricing, variable weather and the resultant annual volumes is irrelevant for cost and thus for pricing.

[4] Our largest retailer has been helpful in providing past ICP level data in accordance with Appendix C requirements of the Default Distributor Agreement, however this is not real time and unable to be used for operations purposes.

To produce a long-term pricing signal related to the peak demand capacity and cost of the network requires a pricing variable that captures the long-term impact of each customer on the network peak demand. The pricing variable that best captures this long-term impact relates to the size of connection as chosen by the customer, within the available connection size options made available by Network Waitaki. This variable does not change from year to year through short term considerations that impacts on annual consumption of a customer.

The most appropriate pricing signal for Network Waitaki, within current constraints are related to capacity which defines the long-term stable maximum demand of a customer, reflects the impact of utilisation and diversification and is predominantly capacity-based (volume agnostic).

2.3.4 What is the optimal capacity / volume pricing ratio?

When providing price signals to customers, it is essential that the customer is able to respond to such signals. Electricity distribution charges represent around a quarter of the cost of electricity and a small portion of a household's expenditure. Splitting the signal between more than one pricing component, risks the signal being ignored by customers.

A pricing structure based on the core functionality of Network Waitaki's service is more effective. The biggest driver of cost is capital invested in the network, and this is based on the maximum demand of a customer (which is limited by the contracted capacity of the customer) at the time when the system is constrained. With maximum demand data not always available to Network Waitaki, the contracted capacity is the best indicator of cost which is accurate and available for use in pricing.

To use a dynamic pricing signal which will convince customers to switch off load when a constraint occurs is challenging as experience has shown that customers easily ignore dynamic real time pricing signals from the distribution network. This is further exacerbated because retailers do not necessarily pass these price signals on to their customers.

Effective management of constraints is thus better managed through the ability of Network Waitaki to dynamically switch off controllable loads during high load periods and emergencies. Through differentiation of price plans, similar to the current Network Waitaki pricing regime, a customer can choose to allow the control of their load during pre-defined periods and conditions and the arrangement can be enhanced to include an agreed schedule and specific rules.

As indicated earlier, Network Waitaki currently does not have real-time access to smart meter data to allow information on individual ICPs, nor does it have access to the switching function of smart meters. These limitations reduce the ability of Network Waitaki to implement optimal control measures on the network. The current set-up with day and night rates and switching of certain loads with a single relay on-site at the ICP is the only measure available for use by Network Waitaki at this point in time.

A predominantly fixed pricing structure is, at this time, the best cost-reflective structure for the following reasons:

- A high-level cost of supply review has shown that Network Waitaki's cost to supply electricity is largely fixed, even though actual operational expenses may vary

somewhat from year to year, e.g. vegetation, maintenance or even administration costs such as labour and IT, it is still a fixed component not affected by volume of electricity used.

- As network prices form a small part of the total electricity bill, even an 80/20 capacity-based/volume charge, though a big improvement from the historic state, dilute the pricing signal required to encourage customers to contract to the most appropriate price plan for their usage patterns.
- Provides mitigation of revenue risk due to volume and future technology innovations that is predicted to become more affordable sooner rather than later.
- It complements the Transmission Pricing Methodology guidelines of prices that are largely designed to be unavoidable.
- It reduces the likelihood of windfall profits during high electricity consumption years ensuring the company remain within regulatory limits, earning adequate but not excessive revenue.

A 20% volume-based component will contribute towards signalling and recovery of cost related to the 20% slightly less fixed cost components of operational expenditure, namely asset relocations, system growth, vegetation management and service interruptions and emergencies.

In addition, achieving an 80/20 (fixed capacity / volume) ratio will be a major step forward towards cost reflectivity considering the 10/90 (fixed capacity / volume) ratio of a few years back.

2.4 Implementation progress

Network Waitaki has been re-balancing fixed capacity-based and volume prices since 2017 to achieve a predominantly cost reflective pricing structure by 2024-2025 to:

- mitigate revenue uncertainty due to volume risk (weather and emerging technologies) as well as
- providing customers with the right information through pricing signals to invest in the appropriate connection that will satisfy their electricity demand requirements.

Except for Individually Assessed customers, whose pricing has the closest relationship to the cost to supply already, our current pricing structure has been flawed with customers receiving a signal that encourages them to use less electricity and have larger connections than what they need, enabling a larger maximum demand and more peaky usage.

The approval by government in 2021 to phase out the Low Fixed Charge (LFC) regulations is a positive development in achieving cost-reflective prices. The regulations require Network Waitaki to offer residential consumers a price option at their primary place of residence, with a fixed price of no more than 30c per day (excluding GST), and where the sum of the annual fixed and volume charges on that price option equals any other price option available to those consumers when they use 9,000kWh per annum. Network Waitaki will adjust low-user prices from 1 April 2022 in accordance with this decision.

The price adjustment applicable to the pricing year 2022-2023 will result in a change in the capacity-based (41%) / volume (59%) make-up of prices to a 55/45 ratio putting Network Waitaki well on the way to achieving an 80/20 capacity-based/volume ratio in 2024-2025.

2.5 Impact on customers

Network Waitaki customers will individually be affected differently. Some customers will be favourably affected (typically those that have relatively high utilisation of their contracted capacity) and some negatively. We are actively working with the worst affected customers to ensure they are on the most appropriate pricing plan.

Figure 2 below provides an illustration of different impacts our customers may experience. It shows that the majority of 15C customers (mostly residential) will face an increase of less than 20% and $200 per year.

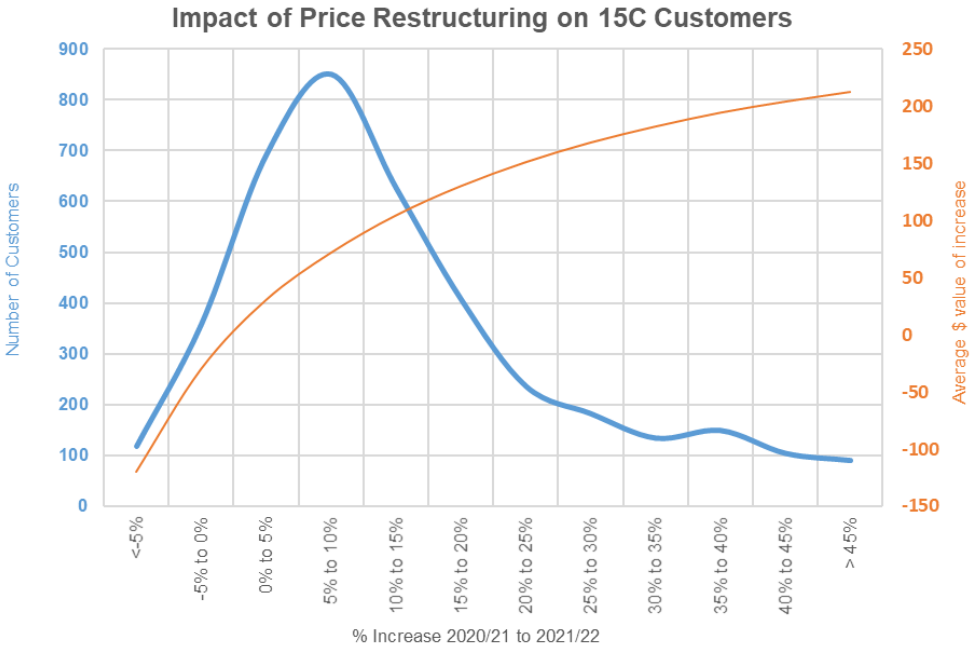


Figure 2: Impact of price restructuring on small customers

2.6 Going forward

Our strategy is to achieve an 80% capacity-based / 20% volume-based price structure by 2024-2025. To achieve this outcome the focus will be on the following actions:

a) Reduction in volume-based charges by 2024/25 to an approximately 80-20 ratio between capacity-based (fixed) / volume-based charges with the intent of then considering amongst others further movement in the ratio towards a fully fledged capacity-based signal only.
b) Maintain load control pricing plans (lower fixed charge relative to uncontrolled for the same capacity).

c) Consider making available a greater range of capacity options to customers when LFC regulations are removed, and the necessary technology is in place to better address 'low user' pricing.
d) Consideration for significant investments in the transmission grid (including GXP) as well as subtransmission assets (for both capacity and security of supply) to enable regional decarbonisation initiatives, including electrification of industry and domestic process heat, along with transportation electrification.

This migration strategy will not impact total revenue being generated, except for volume variations, but rather reprice individual customers, irrespective of consumption.

We are actively working with worst affected customers to ensure they are on the most appropriate pricing plans.

The largest benefits of this strategy are:

a) Cost reflective and service-based pricing structure containing improved price signalling to better align customer behaviour with key cost to supply drivers;
b) Discounts on controllable load to manage congestion where necessary;
c) Reduction in revenue volatility;
d) Adoption of a pricing strategy consistent with EA guidance; and
e) Preparation for the anticipated removal of LFC regulations.

2.7 Consumer survey

In February 2021, Network Waitaki conducted a comprehensive survey to understand consumers' experiences on a range of issues, including overall satisfaction with Network Waitaki's service on outages, price and reliability balance, awareness of company ownership, familiarity with smart meters and emerging technologies and interest in price structure consultation. The survey was completed in two parts, as follows:

- Face-to-face interviews with sixteen of our large consumers; and
- Telephone interviews with a sample of 410 residential and commercial users.

In terms of consumer satisfaction regarding price and quality, consumers were asked whether they would prefer to either?

1) Pay more, and keep outages to a minimum?
2) Pay the same, with outages kept about the same?
3) Pay less, with slightly more outages?

There was an increase in the number of consumers who would be willing to pay more to have a more reliable power supply and fewer unplanned outages (particularly in the commercial customer group). However, the majority of consumers would prefer to "maintain current levels of service" i.e. pay the same, with outages kept about the same.".

2.8 Changes to Network Waitaki's pricing methodology

There have been no material changes to Network Waitaki's pricing methodology, approach and rationale since the last methodology was published in March 2021.

3 PRICING METHODOLOGY

The pricing methodology is aimed at setting prices that, as far as practicable, achieve Network Waitaki's identified pricing objectives, recover the full cost to operate the network efficiently and over time reflect the cost of serving different customer load groups better to encourage efficient use of the network.

3.1 Pricing objectives

This section outlines Network Waitaki's pricing objectives of revenue reliability, efficiency, fairness, simplicity, transparency, innovation, and support of regional economic growth on future price direction and the ability to provide an annual discount to customers.

3.1.1 Revenue reliability

Network Waitaki must generate sufficient revenue to:

- meet the costs associated with the use of the Transpower national grid, the cost of transmission alternatives, and other pass through costs;
- meet the costs associated with providing a safe, reliable and efficient network to meet customer service levels, and fulfil its contractual obligations for the delivery of energy over its distribution network;
- comply with statutory requirements on health and safety, environmental protection, and quality of supply;
- provide for new network investment; and
- provide a rate of return on assets that is acceptable to its owners.

To meet the revenue requirement, Network Waitaki uses the following principles in setting prices:

- Prices should be simple to understand and administer and must comply with regulations;
- Maintain the stability of historic pricing structures in order to lessen price shocks to customers;
- Prices should not differentiate between urban and rural customers;

3.1.2 Discount to consumers

Network Waitaki has a policy of paying discounts to qualifying consumers towards the end of each year. Except when noted otherwise, all revenues stated in this pricing methodology are before the payment of any discount. Network Waitaki's discount to consumers consists of a fixed component and sometimes a variable component. The discount is announced in November of every year and the discount allocation methodology is available on Network Waitaki's website.

3.1.3 Efficiency

For Standard Contracts this applies as follows:

From an economic efficiency perspective:
- A rebalancing of capacity-based fixed prices and volume prices to reflect the cost structure of the business;
- Off-peak usage is encouraged through differentiated day and night volume pricing by retailers.

From a technical and operational efficiency perspective:
- Monitoring of power factors;
- Maintaining loss factors;
- Load control to manage peak system demand within Transpower's supply constraints; and
- Emergency load shedding schemes to cope with transmission and generation constraints.

From an administrative efficiency perspective:
- Network Waitaki applies a 'GXP billing' approach where volume charges are based on electricity volumes measured at the three injection points (Transpower grid exit points) into the Network Waitaki network for each retailer in aggregate rather than per ICP. Chargeable quantities attributed to each retailer are determined by the wholesale electricity market reconciliation process.

For Individually assessed non-standard contract (IND) efficiency is promoted as follows:

- Efficient investment in the network by large customers through passing through the cost of different size connections using capacity and demand prices.
- Ongoing efficient operation of the network by signalling the capacity and demand costs of the delivery of electricity to each customer of this type.

3.1.4 Fairness

As a supplier of essential services Network Waitaki is continuously striving to set fair and reasonable prices for each customer load group. Fairness is a contentious subject and customers might disagree about what is fair and what is not.

Having prices with a dominant volume base makes achievement of fair prices complex as the resultant charge is in most cases not reflective of the cost to supply the customer. Network prices will continuously become fairer as the cost of supply is increasingly reflected in it over time as per our pricing strategy.

Individually assessed prices are more reflective of customers' use of network assets together with the associated transmission costs.

3.1.5 Simplicity

Network Waitaki has a simplistic, “easy to understand” two-part pricing structure with a fixed component and a day/night volume component applicable to each customer load group.

Except for the RL customers, all customer load groups have the same day/night volume prices. Appendix 1 contains the delivery price schedule for Network Waitaki.

3.1.6 Transparency

Network Waitaki follows a philosophy of setting prices such that they increasingly reflect costs and allow customers to have choices and the ability to respond to price signals. This philosophy will be continued and is part of Network Waitaki’s future pricing directions, i.e. to reflect the fixed cost nature of the company accurately through continuous re-balancing of the capacity-based fixed and volume components of electricity distribution prices (subject to constraints such as LFC regulations).

3.1.7 Innovation

Network Waitaki’s prices support innovation through retailers making decisions as part of a competitive market on how they present Network Waitaki’s pricing structures to customers. Non-standard customers similarly can decide how to respond to price structures especially going forward as prices become more capacity-based with less variation, promoting better price stability for customers.

3.1.8 Supporting regional growth

Network Waitaki supports regional growth by investing in infrastructure to meet expected load growth requirements. Network Waitaki’s capital contributions policy outlines how this investment is funded with growth investments partially funded upfront through capital contributions and connection levies and partially funded over time through distribution pricing.

3.2 Cost structure

Network Waitaki’s main cost components are outlined below and consist of operation and maintenance cost, depreciation, return on investment, administration cost and pass-through cost.

3.2.1 Operation and Maintenance

- Maintenance costs are based on the programmes and expenditure levels outlined in the 10-year Asset Management Plan (AMP).
- Operational costs include all other direct and indirect network expenses excluding administration costs.

3.2.2 Depreciation

Depreciation on network assets is based on the standard life for each asset category.

3.2.3 Return on Investment

Return on Investment provides for a return to the business and the shareholder, which is used to fund growth and development, fund renewals in excess of depreciation and provide a return to the shareholder or allow for a discount to customers.

3.2.4 Administration

A provision for a share of costs associated with the administration of the business, and the full cost of support services related to the management and operation of the network.

3.2.5 Recoverable and Pass-Through Cost

Recoverable and Pass-through cost consists of transmission prices charged by Transpower, avoided transmission cost and new investment contracts as well as local authority rates, Electricity Authority levy, Commerce Commission levy and Utilities Disputes levy.

Transmission prices charged by Transpower consists of the following price components:

- Interconnection Charge

This charge is based on the average of the 100 highest half-hour regional coincident peak demands. The prices for the 2022-2023 financial year are based on the demands recorded between 1 May 2020 and 31 October 2021. All Network Waitaki GXPs are located in the Lower South Island region.

- Connection Charge

This charge represents the fixed costs associated with the dedicated assets at each GXP. Shared assets are allocated based on each off-take customer's share of the 12 highest half-hour demand peaks measured at the GXP.

Avoided transmission costs are associated with transmission assets that have been provided by Network Waitaki rather than by Transpower. In many instances, distributors can provide certain classes of transmission assets at a lower cost to customers than assets provided by Transpower.

New Investment Contracts relate to improvements to the Grid undertaken by Transpower to meet Network Waitaki's supply requirements.

3.3 Target Revenue

For the period 1 April 2022 to 31 March 2023 the overall impact of the price adjustment is a weighted average increase of 5.7% in network prices.

The price adjustment is allocated as follows:

Price adjustment	% Adjustment
Distribution fixed (Standard and Non-Standard)	40%
Distribution volume	-17%
Recoverable and pass-through fixed (Standard and Non-Standard)	19%
Recoverable and pass-through volume	-26%
Weighted average increase	**5.7%**

Table 2: Price adjustment 2021-2022

The reduction in volume prices include an increase of 5% in distribution volume prices and a decrease of 1% in recoverable and pass-through volume prices of LFC customers.

This price adjustment is in line with the aim of rebalancing fixed/volume-based prices to move to cost-reflective prices and becoming less exposed to revenue variations due to changing weather conditions.

The target revenue required to cover the costs and return on investment of Network Waitaki's business activities for 2022-2023 amounts to $22.635 million and is shown in Table 3 below.

Target revenue	2022-2023
Operation and Maintenance	$7,330,488
Depreciation	$5,071,829
Administration	$3,824,661
Return on Regulatory Assets	$832,931
Transmission	$5,413,339
Pass-through	$161,516
Revenue Requirement	**$22,634,764**
Fixed Discount	(1,000,000)
Net Revenue Requirement	**$21,634,764**

Table 3: Target Revenue

3.4 Cost Allocation Methodology

Network Waitaki's cost allocation model is based on the connection size (measured in kVA) and distance to GXP as a proxy for the geographical load density for the lines

portion of cost, and demand and load factor as the proxy for the substation related cost. The load factor is used to estimate the likelihood of load diversity of customer groups.

The cost allocator used to allocate all costs in Table 3 is described in the Table 4 below:

Allocator	Description	Cost categories and rationale
Assets	Optimised replacement cost[5] (ORC) of all assets are allocated on an aggregate basis to customer load groups based on each group's respective usage of the assets.	The ORC of assets is indicative of capital employed and drives most of Network Waitaki's cost. If depreciated asset values are used maintenance cost will be under represented, especially for older assets partly depreciated but more in need of maintenance than newer assets. Furthermore, the rationale of using assets as the main cost allocator is to ensure a simple and easy to understand approach, while ensuring it is based on engineering and costing principles.

Table 4: Cost allocator used in cost allocation methodology

3.4.1 Asset cost allocation

The allocation of expenditure relating to network assets is assumed to occur in proportion to the ORC of assets employed in the network. For example, sub-transmission lines are more expensive to build per km of line than distribution lines due to higher voltage insulation and heavier poles and conductors. Maintenance of these assets will thus require more expensive replacement spares and also more time to plan and execute than for distribution lines, driving the maintenance cost to be aligned with the replacement value of the assets.

Network component	Load groups included in allocation	Allocator
Sub-transmission lines and cables	All load groups	Sub-transmission line sections in the supply path of each ICP, allocated and aggregated into the applicable customer load groups, valued at ORC, provide a measure of the relative cost to supply each kVA of customer demand per load group from this specific network component.

[5] ODV handbook issued by the Commerce Commission in 2004

Network component	Load groups included in allocation	Allocator
Distribution lines and cables	All load groups	Distribution line sections in the supply path of each ICP, allocated and aggregated into the applicable customer load groups, valued at ORC, provide a measure of the relative cost to supply each kVA of customer demand per load group from this specific network component.
Zone substation equipment (including all assets not classified as lines and cables)	All load groups	The contracted capacity in kVA of each ICP is used to allocate the ORC of these network components to the cost of supply of each ICP and load groups.
All non-line Distribution assets	All load groups	The contracted capacity in kVA of each ICP is used to allocate the ORC of these network components to the cost of supply of each ICP and load groups. The likely potential for diversity of load groups is then calculated using the respective group's capacity-based load factors to moderate the cost to supply of these load groups.

Table 5: Asset cost allocation

3.4.2 Allocation to customer load groups

The annual cost of supply of each load group is obtained through scaling the target revenue in proportion to the aggregated asset cost allocation values per load group and is presented in Table 6.

Table 6 illustrates the current share of each consumer load group in terms of the % of ICPs to total ICPs, % kWh of energy delivered to total energy delivered, % kVA contracted capacity to total capacity, % current revenue recovered in relation to network revenue. Column 7 illustrates the cost to supply of each load group based on the cost of supply review results.

1	2	3	4	5	6	7
Load Group	**Capacity bands (kVA)**	**Number of connections (ICP)**	**Energy delivered (kWh)**	**Contracted Capacity (kVA)**	**Revenue Targeted 2022/23**	**Cost to Supply (asset allocation)**
RLC/RLU	15	41.8%	11.9%	23.6%	16.5%	20.5%
15C/15U	15	42.3%	16.2%	23.9%	24.2%	31.0%
30C/30U	30	5.0%	2.8%	5.7%	4.7%	6.2%
50C/50U	50	5.9%	8.7%	11.0%	10.1%	11.4%
100	100	2.7%	12.5%	10.3%	11.3%	9.5%
200	200	1.0%	7.9%	7.4%	7.8%	6.4%
300	300	0.4%	4.1%	4.5%	4.3%	4.0%
500	500	0.2%	4.9%	3.6%	4.1%	3.0%
750	750	0.1%	2.5%	2.6%	2.5%	1.9%
IND	IND	0.2%	28.6%	7.6%	14.5%	6.0%

Table 6: Customer load groups share of ICPs, kWh, kVA and targeted revenue

Column 7 in table 6 provides an estimate of the cost to supply each load group with column 6 illustrating the target revenue from each consumer load group for 2022-2023.

As long as volume-based revenue is a substantial portion of total revenue, the revenue from consumer load groups would continue to differ from the cost of supply of each load group.

3.5 Allocation of Target Revenue Components to customer load groups

Table 7 illustrates the reconciliation of Network Waitaki's target revenue to small, medium, large and IND customers.

Target revenue for 2022-2023 is apportioned over the standard customer load groups based on the revenue shares for these groups using average three-year volumes and expected number of connections for each load group.

Allocation of target revenue for 2022-2023		
	Distribution	Pass-through
Small customers: RLU, RLC, 15U, 15C	$7,114,768	$2,074,765
Medium customers: 30U, 30C, 50U, 50C	$2,588,775	$754,923
Large customers: 100, 200, 300, 500, 750	$5,223,168	$1,523,148
IND: Individually assessed non-standard	$2,089,253	$1,265,965
Total Revenue Requirement	$17,015,963	$5,618,801

Table 7: Allocation of target revenue to customer load groups

Network Waitaki does not apply distance-based (locational) prices to customer load groups, i.e. different prices for urban and rural customers. Any cost variations as a result of the location of ICPs are taken into account in the cost of supply calculations through the aggregation of the distance signal for all ICPs in each load group.

Approximately 90% of Network Waitaki customers are supplied through the Oamaru GXP showing that the market is relatively concentrated. As illustrated in figure 3, 9% of connections are more than 11km way from their point of supply.

At this point the complexity and possible ambiguity of applying distance-based prices to 9% of remote rural customers do not justify distance-based pricing, and the inherent security-of-supply/cost trade-off between urban and rural customers tend to equalise the situation: The lack of real customer reaction to such pricing signals would most probably result in very little impact on economic efficiency in the supply area.

Urban customers supplied from Chelmer Street and Redcastle substations enjoy a higher level of security due to the N-1 status of these substations. Also, the higher level of interconnectivity in the urban areas provides alternative supply routes in the event of a fault or planned outage.

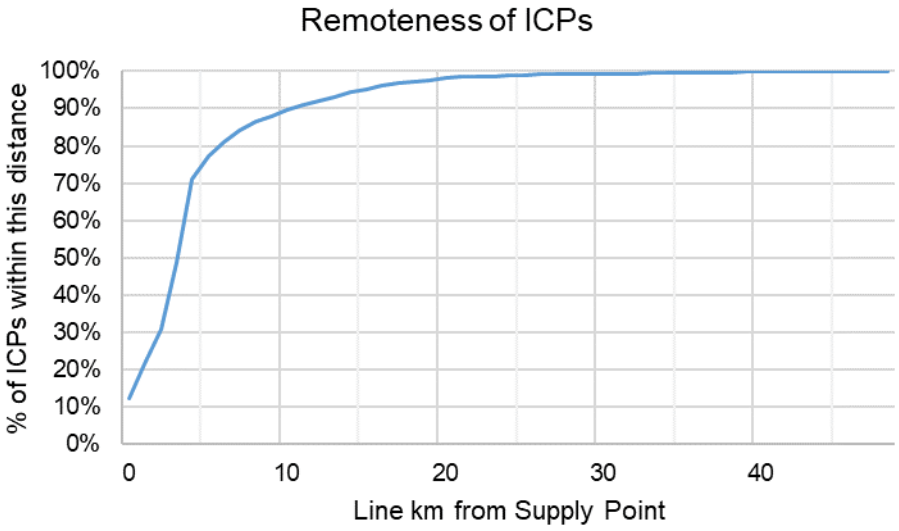


Figure 3: Illustration of remoteness of ICPs

4 CUSTOMER LOAD GROUPS AND PRICING STRUCTURES

Customer load groups fall into two main categories, namely:

- Standard customer load groups where network costs are recovered by means of a fixed annual price (based on connection capacity) applicable to the particular customer load group, and a day/night volume (kWh) price as shown in the schedule of delivery prices in Appendix 1. Most Network Waitaki customers are on standard contracts which mean that they have a supply contract with a retailer and not with Network Waitaki.

- IND customers where network costs are recovered by means of a fixed annual price based on the individual customer's asset usage, capacity requirements, and contribution towards the system peak demand.

4.1 Standard customer load groups

Customer load groups are based on the standard distribution transformer capacities used on the network, with no distinction being made between a single-phase and three-phase connection.

The minimum connection capacity for a single-phase supply is 15kVA, while the minimum connection capacity for a three-phase supply is 30kVA.

Customers are allocated into the various load groups based on their contracted connection capacity, with no distinction being made between residential and non-residential connections except for the RL categories which is available only to low use primary domestic supplies.

Load groups are differentiated based on kVA as it is a measure of service capacity and load density, and is reflective of the costs incurred to serve each group.

The current Network Waitaki customer load groups are:

Load Group	Description	Maximum Fuse Rating
RLC	Residential Low User 15C	1x 63A fuse
RLU	Residential Low User 15U	1x 63A fuse
15C	0 - 15kVA controlled	1 x 63A fuse
15U	0 - 15kVA Uncontrolled	1 x 63A fuse
30C	16 - 30kVA Controlled	1 x 100A fuse or 3 x 40A fuses
30U	16 - 30kVA Uncontrolled	1 x 100A fuse or 3 x 40A fuses
50C	31 - 50kVA Controlled	3 x 80A fuses
50U	31 - 50kVA Uncontrolled	3 x 80A fuses
100	51 - 100kVA	3 x 160A fuses
200	101 – 200kVA	3 x 315A fuses

Load Group	Description	Maximum Fuse Rating
300	201 – 300kVA	3 x 400A fuses
500	301 – 500kVA	NA
750	501 – 750kVA	NA
LC	750kVA +	NA
IND	Individually Assessed	NA

Table 8: Customer load groups

Street lighting is a specialist load group which utilises dedicated LV assets and is covered by an IND contract.

4.2 Distribution fixed prices: Standard customer Load Groups

4.2.1 0 – 50kVA Load Groups

Customers in the 15, 30, and 50kVA groupings are typically domestic or small commercial installations which may have water-heating or other loads that can be controlled. Even though we are moving towards fixed prices with very little or no volume pricing in future, for 2022-2023 a significant portion of revenue will still be generated by volume prices.

Network Waitaki will continue to use the control options for those customers that foster economic use of the network assets and enable load to be moved to off-peak periods. In recognition of this, the fixed prices for installations that provide year-round access to controllable load are lower than for installations with no controlled load.

In addition, controlled installations can utilise two-rate, day/night metering, which enables customers to benefit from the cheaper night rate prices that apply between 11:00pm and 7:00am.

An RL option is also available in accordance with the *Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulation 2004*. This option is cost-neutral for a customer using 9,000 kWh per annum before and after a discount has been applied.

4.2.2 51 – 750kVA Load Groups

Installations in the 100 – 750kVA load groups are predominantly commercial, light industrial, or farming, and as generally high consumption customers they will most likely benefit from the future move to fixed capacity-based prices. These customers do not usually have loads that can be controlled externally and load control is therefore not generally available for these load groups. These installations are normally supplied from a dedicated transformer and therefore do not utilise the same range of network assets as small low-voltage connections.

Energy use within these load groups is typically much higher than the groups on connections below 51kVA resulting in the costs currently being predominantly

governed by energy use rather than fixed prices but this inefficient cost recovery mechanism will be resolved with the move to fixed capacity-based pricing in the next four years.

We recognise that currently the dominant volume-based pricing incorrectly provides customers within these load groups with pricing signals that relate directly to consumption. Fixed capacity-based prices will in future adequately reflect the fixed cost nature of Network Waitaki's business.

4.2.3 Large Commercial Load Group

This load group requires connections larger than 750kVA. Pricing for this group is similar to the pricing method applied for IND price plans. The costs associated with the network assets are recovered as a fixed price based on contribution to network system demand and on contracted capacity. Similar to other load groups, the fixed capacity price component portion will progressively form a bigger component of the price structure to reflect costs appropriately.

4.3 Distribution prices for Individually Assessed non-standard contracts

IND customers are assessed on their contribution to network system demand and the contracted capacity they require. The assets required to supply each customer installation are assessed and valued at ORC, and the contribution that the installation makes towards network system demand is determined from half hour metering data.

The costs associated with the network assets are then recovered as a fixed price on demand and on contracted capacity. Customers in this group can reduce their costs by improving their utilisation of assets and controlling their peak demands. The contracted capacity price component makes out 64% and the demand price component 36% for 2022-2023. Similar to standard prices, the contractual capacity component will continue to form a bigger component of the overall pricing structure to reflect cost.

Network Waitaki currently has 21 customers on Individually Assessed connections contributing 14.5% of the total target revenue.

4.4 Volume prices: Standard customer Load Groups

Volume prices for standard customer load groups are based on GXP volumes and individual customer usage. At this stage of the phased introduction of fixed capacity-based pricing, volume prices are still significant. Day volume prices apply to all units transported over the network between 7:00am and 11:00pm and night volume prices to all units transported over the network between 11:00pm and 7:00am.

Night volume prices are lower than day prices to encourage retailers to develop prices that reward customers for off-peak usage. Volume prices will reduce in the 2022-2023 pricing period in line with our move to fixed capacity-based pricing in order to change the ratio from 59/41 (volume-based/fixed capacity) to 45/55 (volumes-based/fixed capacity).

4.5 Transmission prices: Standard customer Load Groups

The following methodology has been used as the basis for the recovery of transmission prices in a way that is equitable to all groups and reflects Transpower's pricing structure.

Transpower's Connection Charges and Network Waitaki Avoided Transmission Costs are fixed asset-based costs and are allocated between load groups based on the group capacity requirements. These costs are recovered through mostly fixed prices.

Transpower's Interconnection Charges are currently recovered from Standard customer load groups as a volume (kWh) price plus a fixed price.

A rebalancing of the fixed and volume-based components will continue from 1 April 2022 to recover costs in proportion to the capacity being made available to load groups. This is aligned with the new Transmission Pricing Methodology (TPM) that is planned to be introduced on 1 April 2023 by the Electricity Authority. The current interconnection charge will be replaced with fixed charges in the form of benefit-based and residual charges in the new TPM. None of these charges contain volume-based price components.

4.6 Transmission prices for Individually Assessed non-standard contracts

Transpower's Connection Charges and Network Waitaki's Avoided Transmission Costs are recovered by means of a fixed price based on the capacity (kVA) requirements of each customer at the time of the investment and adjusted annually in accordance with the approved price adjustment.

Transpower's Interconnection Charges are recovered by means of a fixed price based on the average of the 100 highest half-hour demands (kW) recorded by each customer in the previous 12 months.

The contracted capacity price component makes out 70% and the demand price component 30% for 2022-2023. Similar to standard prices, the contractual capacity component will continue to form a bigger component of the overall pricing structure to reflect cost.

4.7 Transmission prices relating to Loss and Constraint Rebates

Loss and Constraint Rebates are credits rebated by Transpower, resulting from over-recovery of costs and are included in transmission prices.

5 LOSSES

5.1 General

Losses represent the percentage of electricity entering the network that is either consumed or lost in the delivery process between the Grid Exit Points and the customer installation metering points, and can be categorised as either technical losses or non-technical losses.

Technical losses comprise:

- standing losses arising from zone and distribution transformers; and
- variable losses arising from resistive losses in conductors. Resistive losses are proportional to the square of the current passing through the conductor.

Non-technical losses comprise:

- losses arising from metering faults or errors; and
- losses arising from electricity theft etc.

The energy measured at customers' installations is therefore after losses and must be multiplied by the overall "loss factor" to determine each energy retailer's purchase quantities at each GXP.

5.2 Low Voltage and High Voltage connection

Most customers take supply and are metered at low voltage (400/230V) and the loss factor applied to these sites must account for distribution transformer and low voltage reticulation losses. A small group of customers take supply and are metered at 11,000V and the loss factor applied to these customers does not include distribution transformer and LV reticulation losses.

5.3 Loss factor allocation

The average loss factor for the network is calculated from data supplied by the National Reconciliation Manager. This information is compared with the GXP data to determine the long run overall loss factor.

6 DISTRIBUTED GENERATION

Network Waitaki is always keen to work with customers and to advise them of distribution alternatives such as Distributed Generation (DG) from wind or solar. Any customer interested in DG is encouraged to get in touch to discuss the opportunity further.

Network Waitaki has 142 solar roof top generation plants, 5 hydro plants and 1 wind generator connected to and injecting into the network. This total of 69 connections equates to less than 1.0% of all connections to the network. Generation from these DG connections make up about 0.1% of total energy consumption on the network.

Network Waitaki offers connection to DG by the standard terms defined by the Electricity Authority. The standard terms are easy to understand and are consistent with most distributors across the country. These terms can be found on the “Green Energy” page on Network Waitaki’s website: www.networkwaitaki.co.nz.

DG customers are not charged for injecting into the grid at this time. In future, there may be a need to charge for this, but it will be set at a level that does not discourage DG and relevant stakeholders will be consulted at the time.

For sufficiently large distributed generation customers located in an area of strategic importance where a contribution to peak demand reduction could be deemed useful, Network Waitaki has up to now considered making payments to a DG customer for the amount it reduces Network Waitaki’s Regional Co-Incident Peak Demand (RCPD).

However, any connections and payments must be done in accordance with Part 6 of the Electricity Industry Participation Code 2010 administered by the Electricity Authority which stipulates that only approved DG connections will be eligible to receive Avoided Cost of Transmission (ACOT) payments.

7 GLOSSARY

ADMD	After Diversity Maximum Demand
AMP	Asset Management Plan
EA	Electricity Authority
EDB	Electricity Distribution Business
GXP	Grid Exit Point
ICP	Interconnected Control Point
IND	Individually Assessed non-standard contracts
kVA	kilo Volt Ampere
kW	kilo Watt
kWh	kilo Watt hour
LV	Low Voltage
ODV	Optimised Deprival Value
ORC	Optimised Replacement Cost
RCPD	Regional Coincident Peak Demand
RL	Residential Low User
LFC Regulations	Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004
RLC	Residential Low User Controlled
RLU	Residential Low User Uncontrolled
WPT	Waitaki Power Trust

8 APPENDIX 1 – DELIVERY PRICE SCHEDULE

DELIVERY PRICE SCHEDULE FOR NETWORK WAITAKI

EFFECTIVE FROM 1 APRIL 2022

The prices in this schedule are used to charge electricity retailers for the delivery of electricity in the Waitaki region serviced by Network Waitaki. Electricity retailers determine how to allocate this cost together with energy, metering and other retail costs when setting the retail prices that appear in an end consumer's power account.

			Effective 1 April 2021			Effective 1 April 2022			
Code	Description	Units	Distribution	Pass-through	Delivery Price	Distribution	Pass-through	Delivery Price	No. of Consumers
RESIDENTIAL LOW FIXED CHARGE / Price category code: RL (0 - 15 kVA)									
RLU	Daily Price - Uncontrolled	$/connection/day	0.0952	0.0548	**0.1500**	0.2174	0.0826	**0.3000**	831
RLC	Daily Price - Controlled	$/connection/day	0.0952	0.0548	**0.1500**	0.2174	0.0826	**0.3000**	4,452
RLUD	Day Volume - Uncontrolled	$/kWh	0.09333	0.0391	**0.13240**	0.09800	0.03913	**0.13713**	
RLCD	Day Volume - Controlled	$/kWh	0.09333	0.0257	**0.11901**	0.09753	0.02524	**0.12277**	
RLUN	Night Volume - Uncontrolled	$/kWh	0.00942	0.0140	**0.02345**	0.00989	0.01405	**0.02394**	
RLCN	Night Volume - Controlled	$/kWh	0.00942	0.0027	**0.01207**	0.00984	0.00260	**0.01244**	
GENERAL CONNECTIONS / Price category code: GC									
15U	0 - 15kVA - Uncontrolled	$/connection/day	1.1743	0.3263	**1.5006**	1.6380	0.4830	**2.1210**	1,757
15C	0 - 15kVA - Controlled	$/connection/day	1.0132	0.1515	**1.1647**	1.4704	0.2944	**1.7648**	4,101
30U	16 - 30kVA - Uncontrolled	$/connection/day	1.5932	0.6243	**2.2175**	2.5142	0.8429	**3.3571**	460
30C	16 - 30kVA - Controlled	$/connection/day	1.3660	0.4498	**1.8157**	2.2327	0.5876	**2.8203**	196
50U	31 - 50kVA - Uncontrolled	$/connection/day	2.6840	0.8117	**3.4957**	3.9707	1.0071	**4.9778**	627
50C	31 - 50kVA - Controlled	$/connection/day	2.4770	0.5420	**3.0190**	3.6644	0.7081	**4.3725**	157
100	51 - 100kVA	$/connection/day	5.0266	1.0743	**6.1009**	7.7907	1.3799	**9.1706**	363
200	101 - 200kVA	$/connection/day	10.0224	2.1346	**12.1570**	15.5761	2.7418	**18.3179**	129
300	201 - 300kVA	$/connection/day	15.0167	3.2520	**18.2687**	23.3273	4.1772	**27.5045**	53
500	301 - 500kVA	$/connection/day	27.0678	6.1756	**33.2433**	39.0899	7.5271	**46.6170**	25
750	501 - 750kVA	$/connection/day	41.7388	9.2116	**50.9504**	59.6297	11.2275	**70.8572**	12
WATAD	Day volume	$/kWh	0.04762	0.02118	**0.06880**	0.03572	0.01461	**0.05033**	
WATAN	Night volume	$/kWh	0.00530	0.00230	**0.00760**	0.00398	0.00159	**0.00557**	
LARGE COMMERCIAL / Price category code: LC (750 kVA +)									
LC	Daily fixed price	$/connection/day	1.8417	0.0000	**1.8417**	2.6310	0.0000	**2.6310**	0
LCCAP	Daily capacity price	$/kVA/day	0.0755	0.0641	**0.1396**	0.0861	0.0641	**0.1502**	
LCDEM	Daily demand price	$/kW/day	0.1242	0.2219	**0.3461**	0.1347	0.2219	**0.3566**	
INDIVIDUALLY ASSESSED / Price category code: IND									
IND									31

Note: All prices are exclusive of GST.

NOTES:

All Charges are GST exclusive. GST is payable in addition to the charges.

The price movement amounts to an average overall 5.7% increase mainly as a result of increased operational costs. This increase is necessary to allow Network Waitaki to operate safely and reliably and ensure a secure and reliable supply of electricity through appropriate levels of investment. Consumers will be impacted differently based on their usage patterns as the increase has been predominantly applied to the fixed ($/connection) distribution component of price plans with a decrease in the volume components of the General Connection category. More information on how prices are determined is published in our pricing methodology which is available on the Network Waitaki website (www.networkwaitaki.co.nz).

Eligibility for the "Residential Low Fixed Charge" price category requires that the premises must be the consumer's principal place of residence as defined in the Electricity Industry Act 2010.

Volume (kWh) prices are based on volumes metered at the Grid Exit Points supplying the network. All metered loads should be grossed up using the appropriate loss factor to arrive at the chargeable GXP volume.

Different rates are applied for "day volume" (07:00 a.m. until 11:00 p.m.) and for "night volume" (11:00 p.m. until 07:00 a.m. the next morning).

Large Commercial (LC) load group with connections higher than 750kVA: **Daily capacity prices** are based on contracted capacity and **daily demand prices** are applied to an assessed demand level.

Distribution and Pass-through prices are charged in respect of each site and electricity retailers are invoiced monthly in arrears. Fixed prices accrue on a daily basis at the rate of 1/365th of the annual amount due, or 1/366th during a financial year that includes a leap day.

Pass-through prices consist of transmission prices, rates and regulatory levies.

Where an ICP is **disconnected for seasonality** reasons and reconnected in the same 12 month period, Network Waitaki reserves the right to charge the fixed charges that would have been due over the period of disconnection had the consumer not seasonally disconnected.

Network Waitaki pays an **annual discount** to consumers. Discounts will be payable based on the **number of days the installation has been connected** within a specific load group. The discount methodology is available on the Network Waitaki website.

Network Waitaki

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9 APPENDIX 2 – COMPLIANCE TO EA PRINCIPLES

This section demonstrates the extent to which Network Waitaki's pricing methodology is consistent with the Electricity Authority's pricing principles[6].

Pricing Principles	Network Waitaki alignment to EA principles
(a) Prices are to signal the economic costs of service provision, by:	
(i) being subsidy free (equal to or greater than avoidable costs, and less than or equal to standalone costs);	Customers are allocated to load groups in line with their capacity requirements. The current pricing structure and specifically the volume/capacity price balance has resulted in an inefficient allocation of cost and recovery of revenue from load groups which does not appropriately signal the economic cost of service provision and network use. Customers that use the network efficiently with high load factors are generally subsidising those customers using very little electricity for the capacity they are connected to. This is mainly due to the dominant volume component in the current network price. As per the pricing strategy we will transition towards a mostly capacity-based charging regime over the next few years, with substantially less revenue generated by volume prices. Achieving a subsidy free pricing situation is compromised given LFC regulation which effectively requires the low use residential customer group to be subsidised by others. Phasing out of the LFC regulations commencing on 1 April 2022 over a period of 5 years will contribute significantly to removing inefficient subsidisation.
(ii) reflecting the impacts of network use on economic costs;	In moving away from the current volume dominated pricing regime and correcting the imbalance between capacity-based fixed and volume pricing, customers are presented with a 'price signal' that more accurately conveys the cost of electricity transportation. A fixed price based on contracted capacity allows the customer to contract for a properly sized connection, and similarly allows Network Waitaki to provide suitable assets to honour the contract. Capacity-based prices signal the impact of network use on economic cost. Our current controlled load price plans encourage customers to make load available for control and to move

[6] Electricity Authority (4 June 2019). More efficient distribution network pricing – principles and practice.

Pricing Principles	Network Waitaki alignment to EA principles
	load to night-time where possible. This benefits the network as it provides an ability to move load whenever the need arise to ensure supply stability and reliability, and to manage maximum demand.
(iii) reflecting differences in network service provided to (or by) customers; and	Price reflect differences in network services. Network Waitaki offers discounted prices for customer load groups (up to 50kVA price plans) who opt for controlled prices. Both distribution and transmission fixed prices are lower for controlled prices compared to the equivalent uncontrolled prices to signal the benefits of load control. In the case of transmission it signals the clear and direct impact that load control has on reducing transmission prices. Load control systems are effective in reducing demand at peak times by deferring non-critical electricity usage. The benefits of controlled load include greater predictability of the magnitude of peak demands and potential to defer transmission and distribution capacity upgrades.
(iv) encouraging efficient network alternatives	Our current price structure with a high volume-based component does not encourage efficient network alternative investment. It provides customers with an incentive to invest in alternative sources without being aware of the full cost of the network service. In moving to a cost-reflective pricing structure, that reflects the underlying cost structure through a mainly capacity-based fixed price component, customers will be encouraged to consider efficient network alternatives where it makes economic sense. For example, the current high impact of volume prices could encourage customers to invest in solar panels and battery banks before the prices of such equipment is optimally competitive with actual savings for the suppliers of grid electricity. Capacity pricing for delivery would assist with the decision making process through price signals that indicate the true economic cost of the remaining grid connection. Electricity distribution is a small component of the electricity bill of a customer and diluting signals with other components (e.g. Time of Use) will result in customers not being incentivised to optimise their contractual capacity size and so limit the cost of connection. For

Pricing Principles	Network Waitaki alignment to EA principles
	example, customers connected to capacity sizes in excess of their demand requirements as well as investment in distributed generation.
(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.	
Current price structures only partly signal economic cost through the capacity-based fixed price component. The high volume-based component applicable to standard customers does not provide an efficient signal and subjects Network Waitaki to revenue risk and potential under-recovery of target revenue, mainly due to weather volatility. Network Waitaki has not experienced any shortfalls on target revenue but any potential shortfall will be recovered through price increases to the capacity component that least distort network use. Mitigating this risk of the inefficiency of current price structures form the basis for moving to a mostly capacity-based pricing structure by FY25, which will reflect the impact of network use on economic cost and will be least distortionary as those customers requiring larger capacities with less elasticity will be allocated higher cost. Marginal pricing signals on the short term is not part of our long-term pricing approach, as the main impact on our business is providing for long-term capacity to ensure we supply customers' peak demand when required. This will be achieved through a mostly single pricing signal, aligned with the major cost driver of the business, to influence customer behaviour. Marginal pricing signals will in most cases not have an impact as distribution prices make up about 30% of the total electricity bill and the impact of marginal pricing signals on customer behaviour is negligible. Capacity-based pricing will enhance the ability to obtain customer reaction and to reduce network cost, while reducing the customer's price. Pricing for IND customers, are already mostly fixed (and thus least distortionary), although a small part is variable due to slight changes in demand required. Prices are calculated as an annually recalculated fixed price with the contracted capacity component forming 66% and the contribution the customer's installation makes to system demand making out 34%. In time, through reflecting the business cost structure and timeframes in pricing and by not being subject to uncontrollable variables, such as rainfall, under-recovery of target revenues should not be a major issue.	
(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	Network Waitaki does have IND customers, that were considered and negotiated on a case-by-case basis according to the specific needs of the customer. Pricing was tailored to reflect the cost to supply the unique needs of the customer. However, no fixed discount policy is

Pricing Principles	Network Waitaki alignment to EA principles
	applied and care is taken to ensure prices are above avoidable cost and below stand-alone cost. Network Waitaki has 21 customers on IND price plans. This is high compared to most networks. For historic reasons, some customers are on these contracts when other very similar customers are on standard contracts. Network Waitaki will be reviewing IND contracts as part of its overall price structure realignment process. For Standard Contract customers Network Waitaki's current pricing structure (with a high-volume component) is inefficient. Our pricing strategy as described in section 2 explains the process of achieving a pricing structure that will result in prices faced by customers reflecting the true economic cost of their service provision. Each load group utilises some or all Network Waitaki's network assets to a greater or lesser degree, and the cost recovery from each load group is based on its utilisation of these assets. Allocation of the assets utilised by each group is based on the load density, using the capacity (kVA) requirements of each load group as the indicator of load density. The future pricing structure with a dominant capacity-component will provide customers with options and an appropriate signal to ensure they are on appropriate connection sizes for the electricity usage they have.
(ii) enable price/quality trade-offs	Network Waitaki is 100% owned by the Waitaki Power Trust (WPT). Trustees of the WPT represent the interests of customers and engage with Network Waitaki to ensure the company makes appropriate price/quality trade-offs. In addition, for IND customers, through a process of one-to-one consultation, Network Waitaki has in the past negotiated a service tailored to the requirements of the individual customer, making a price-quality trade-off appropriate for that customer. As part of its price structure realignment Network Waitaki will converge IND customers with standard load group categories as far as possible to ensure equitable treatment of similar customers. IND assessed price plans with quality aspects will continue to be available in future but only for those

Pricing Principles	Network Waitaki alignment to EA principles
	customers that do not fit into any of the standard load groups, and have special and unique requirements.
(d) Development of prices should be transparent and have regard to transaction costs, customer impacts, and uptake incentives.	
The pricing methodology of Network Waitaki is transparent, with a focus on limiting negative impact on customers and incentivising efficient usage through development of cost reflective pricing. Price structure realignment has occurred at a very slow pace over the past few years with no change to current price structures itself, i.e. capacity-based fixed prices and day/night volume-based prices are still in place. Only the magnitude of the components has changed over time and will continue as described in section 2. The intent is to keep prices structures simplistic and understandable while offering choices to customers to encourage the most efficient use of the network. Price structure rebalancing has been such that customers have not experienced major impacts and for those that have faced increases above a certain threshold Network Waitaki has engaged with and invited customers to discuss their options with a view of limiting transaction cost. Furthermore, through its ownership by WPT, and the regular engagement with Trustees of the WPT (who represent the interests of customers), Network Waitaki ensures that network prices are transparent to WPT and have full regard to the impact network prices have on customers. Any rebalancing of current and future price design is and will be accompanied by careful analysis of bill impacts on all customers. Network Waitaki's prices do not favour one retailer over another. The pricing methodology and applicable prices are identical across all retailers, with no discrimination in regard to available price plan options, applicable prices, calculation methodology, or discounts. As Network Waitaki is not considering structural changes to its current price structures assignment policies such as opt-in, opt-out and event-based will not be that relevant but will be considered throughout the price structure realignment process. Currently, the view is to transition to more cost-reflective prices through Network Waitaki's current price structures by following a phased approach to FY25.	

10 APPENDIX 3 – INFORMATION DISCLOSURE COMPLIANCE CHECKLIST

The table below contains a check list that summarises compliance to all the pricing and related information requirements as per section 2.4. of the Information Disclosure Guidelines.

Clause in Determination	Reference in Pricing Methodology
2.4.1 Every EDB must publicly disclose, before the start of each disclosure year, a pricing methodology which-	
(1) Describes the methodology, in accordance with clause 2.4.3 below, used to calculate the prices payable or to be payable;	
(2) Describes any changes in prices and target revenues;	Appendix 1 for changes to prices. Paragraph 3.3 for changes to target revenues.
(3) Explains, in accordance with clause 2.4.5 below, the approach taken with respect to pricing in non-standard contracts and distributed generation (if any);	Paragraphs 4.3 and 4.6 Paragraph 6 for a discussion on Distributed Generation.
(4) Explains whether, and if so how, the EDB has sought the views of customers, including their expectations in terms of price and quality, and reflected those views in calculating the prices payable or to be payable. If the EDB has not sought the views of customers, the reasons for not doing so must be disclosed.	Paragraph 2.7 for an explanation of Network Waitaki's customer Engagement.
2.4.2 Any change in the pricing methodology or adoption of a different pricing methodology, must be publicly disclosed at least 20 working days before prices determined in accordance with the change or the different pricing methodology take effect.	Paragraph 2.8. There have been no material changes to the pricing methodology since publication of the last methodology in 2021.
2.4.3 Every disclosure under clause 2.4.1 above must-	
(1) Include sufficient information and commentary to enable interested persons to understand how prices were set for each customer group, including the assumptions and statistics used to determine prices for each customer group;	Paragraph 4 explain how prices were set for each customer group, for both standard and non-standard contracts.

Clause in Determination	Reference in Pricing Methodology
	Paragraphs 3.3 and 3.4 provide more detail on allocation of revenue requirement.
(2) Demonstrate the extent to which the pricing methodology is consistent with the pricing principles and explain the reasons for any inconsistency between the pricing methodology and the pricing principles;	Appendix 2 details the consistency of Network Waitaki's pricing methodology with the Electricity Authority Pricing Principles and Information Disclosure Guidelines.
(3) State the target revenue expected to be collected for the disclosure year to which the pricing methodology applies;	Paragraph 3.3 shows the target revenue to be collected in the disclosure year 2022-2023.
(4) Where applicable, identify the key components of target revenue required to cover the costs and return on investment associated with the EDB's provision of electricity lines services. Disclosure must include the numerical value of each of the components;	Paragraph 3.3 shows the target revenue to be collected in the disclosure year 2022-2023.
(5) State the customer groups for whom prices have been set, and describe (a) the rationale for grouping customers in this way; (b) the method and the criteria used by the EDB to allocate customers to each of the customer groups;	Paragraph 4 details customer groups and the rationale for grouping customers this way and the method and criteria that Network Waitaki has used to allocate customers to each group.
(6) If prices have changed from prices disclosed for the immediately preceding disclosure year, explain the reasons for changes, and quantify the difference in respect of each of those reasons;	Note 2 in Appendix 1 provides the details.
(7) Where applicable, describe the method used by the EDB to allocate the target revenue among customer groups, including the numerical values of the target revenue allocated to each customer group, and the rationale for allocating it in this way;	Paragraph 3.3, 3.4 and 3.5.
(8) State the proportion of target revenue (if applicable) that is collected through each price component as publicly disclosed under clause 2.4.18.	Network Waitaki's revenue is targeted across customer groups as

Clause in Determination	Reference in Pricing Methodology
	stipulated in paragraph 3.5.
2.4.4 Every disclosure under clause 2.4.1 above must, if the EDB has a pricing strategy-	Paragraph 2 outlines Network Waitaki's thinking on price reform.
(1) Explain the pricing strategy for the next 5 disclosure years (or as close to 5 years as the pricing strategy allows), including the current disclosure year for which prices are set;	Briefly outlined as per above.
(2) Explain how and why prices for each customer group are expected to change as a result of the pricing strategy;	Briefly outlined as per above
(3) If the pricing strategy has changed from the preceding disclosure year, identify the changes and explain the reasons for the changes.	Not applicable.
2.4.5 Every disclosure under clause 2.4.1 above must-	
(1) Describe the approach to setting prices for non-standard contracts, including-	
(a) the extent of non-standard contract use, including the number of ICPs represented by non-standard contracts and the value of target revenue expected to be collected from customers subject to non-standard contracts;	There are 21 customers on non-standard contracts. The value of target revenue from non-standard contracts is depicted in Table 7, paragraphs 3.5, 4.3 and 4.6.
(b) how the EDB determines whether to use a non-standard contract, including any criteria used;	Network Waitaki has several historic non-standard contracts. However, it will only consider non-standard contracts to new customers when there are particular and compelling reasons for doing so.
(c) any specific criteria or methodology used for determining prices for customers subject to non-standard contracts and the extent to which these criteria or that methodology are consistent with the pricing principles;	The methodology for determining prices for non-standard contracts is detailed in paragraphs 4.3 and 4.6.

Clause in Determination	Reference in Pricing Methodology
(2) Describe the EDB's obligations and responsibilities (if any) to customers subject to non-standard contracts in the event that the supply of electricity lines services to the customer is interrupted. This description must explain-	This is not applicable as Network Waitaki does not treat interruptions to non-standard contract customers any differently to those on standard contracts.
(a) the extent of the differences in the relevant terms between standard contracts and non-standard contracts;	Not applicable as above.
(b) any implications of this approach for determining prices for customers subject to non-standard contracts;	Not applicable as above.
(3) Describe the EDB's approach to developing prices for electricity distribution services provided to customers that own distributed generation, including any payments made by the EDB to the owner of any distributed generation, and including the-	Paragraph 6.
(a) prices; and	Paragraph 6.
(b) value, structure and rationale for any payments to the owner of the distributed generation	Paragraph 6.