networktasman

Your consumer-owned electricity distributor

PRICING METHODOLOGY DISCLOSURE

For the 12 months commencing 1 April 2019

Pursuant to Electricity Distribution Information Disclosure Determination (Issued 1 October 2012). For compliance with Part 2.4: Disclosure of Pricing and Related Information.

Network Tasman Limited

P O Box 3005

RICHMOND 7050

Contents

1 Directors Certificate

Commerce Act (Electricity Distribution Service Information Disclosure) Determination 2012 Schedule 17

Certification for Year-beginning Disclosures

We, Sarah-Jane Weir and James Williamson, being directors of Network Tasman Limited certify that, having made all reasonable enquiry, to the best of our knowledge:

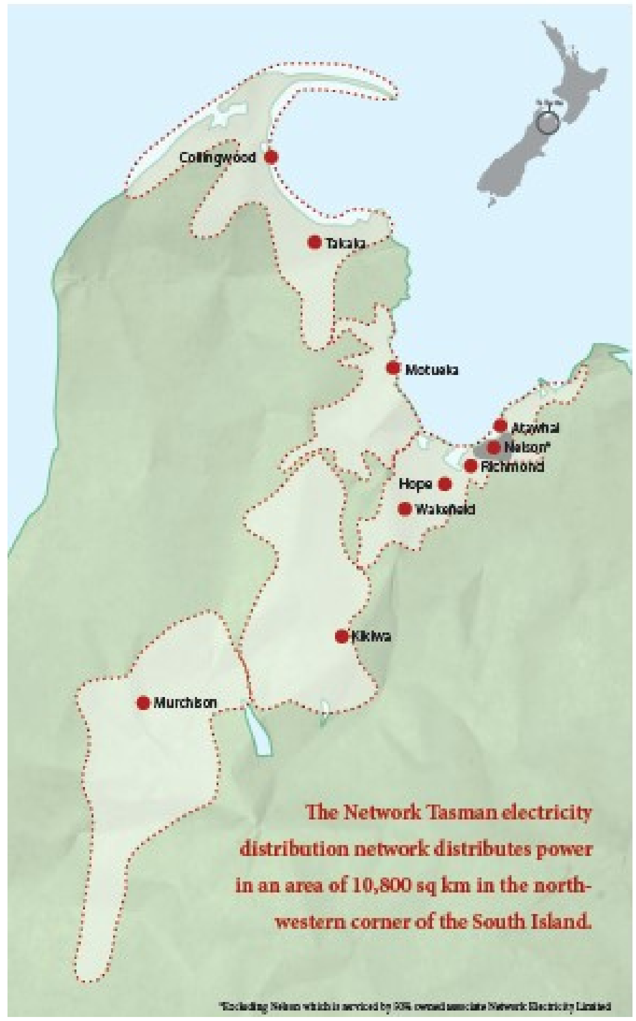
a) the following attached information of Network Tasman Limited prepared for the purposes of clause 2.4.1 of the Electricity Distribution Information Disclosure Determination 2012 in all material respects complies with that determination;
b) The prospective financial or non-financial information included in the attached information has been measured on a basis consistent with regulatory requirements or recognised industry standards.

.... Date: 1.3.19

J R Williamson .... Date: 1-3-19.

2 Introduction

2.1 About Network Tasman



Network Tasman Limited ("Network Tasman") owns and operates the electricity distribution network in the wider Nelson and Tasman areas, excluding Nelson Electricity's supply area in Nelson city. The Network Tasman electricity distribution network distributes power to approximately 40,000 connections.

Total electricity distributed through the network is 653 GWh, with a peak load of 138 MW.[1] The area covered by the network is diverse, ranging from high consumer density urban areas to remote rural areas with low consumer density.

Network Tasman distributes electricity to residential and commercial consumers within its area from Transpower grid exit points at Stoke, Kikiwa and Murchison.

Network Tasman is wholly owned by a consumer trust - the Network Tasman Trust.

The company's mission is to own and operate efficient, reliable and safe electricity networks and other complementary business while increasing consumer value. Network Tasman issues, after consultation with its shareholders, an annual statement of corporate intent, which outlines the overall intentions and objectives that the company will follow.

2.2 The purpose of this document

This document sets out Network Tasman's pricing methodology and contains the information required for compliance with Part 2.4 of the Electricity Distribution Information Disclosure Determination 2012. It also assesses Network Tasman's pricing methodology against the Distribution Pricing Principles and Information Disclosure Guidelines published by the Electricity Authority ("EA").

[1] Excluding bulk supply to Nelson Electricity.

2.3 Overview of this report

This document is structured as follows:

- A description of our pricing for the year commencing 1 April 2019 is set out in Section 3;
- The regulatory requirements that Network Tasman must comply with are set out in Section 4;
- Network Tasman's pricing principles are discussed in Section 5;
- The methodology used to determine Network Tasman's total revenue requirement and its allocation by load group is discussed in Section 6;
- The methodology used to derive Network Tasman's distribution and transmission prices is set out in Section 7;
- Distributed generation pricing is discussed in Section 8;
- Assessment of Network Tasman's pricing methodology against the Electricity Authority's Pricing Principles is set out in Section 9; and
- Network Tasman's forward pricing strategy is discussed in Section 10.

3 Our pricing from 1 April 2019

Network Tasman's prices are used to charge electricity retailers[2] in the wider Nelson and Tasman regions, excluding Nelson Electricity's supply area in Nelson City. Electricity retailers determine how to package these charges together with the energy, metering and other retail costs when setting the retail prices that appear in consumer's power accounts.

Network Tasman's prices cover the cost of its local electricity distribution network, pass-through costs (such as industry levies) and the costs associated with national grid transmission.

The methodology that Network Tasman has used to determine prices for the 12 months commencing 1 April 2019 has changed for our Group 1 connections (metered connections up to 15kVa).[3] For all other connections the methodology is largely the same as what was used for the previous year.

The total delivered Network Tasman price (including distribution and transmission) will decrease by approximately $3.50 (including GST) per month for the average residential consumer's line charges.

In what follows, we discuss these price changes in more detail by firstly describing each consumer load group and the price structures that apply and secondly, explaining how each price component will change by load group.

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[2] There are also a small number of large customers that are direct billed by Network Tasman.

[3] For ease of reading, we refer to 15kVA connections as Group 1 connections, rather than specifying each individual price category for mass-market connections (1GL, 1RL, 1RS), where it avoids unnecessary complication. We take a similar approach to the other grouped connection capacities – Group 0: unmetered connections, Group 2: 20-150kVA connections, Group 3: 150+kVA connections and Group 6: individually priced connections.

3.1 Consumer load groups and price structures

Network Tasman classifies its consumers' connections into load groups primarily according to capacity requirements. Network Tasman groups connections in this way because network costs are largely driven by peak demand and capacity requirements represent the theoretical maximum load of each connection during network peak. Although few connections use the full capacity of their connection, capacity represents a good proxy for grouping connections that have similar peak demand and therefore impose similar costs on Network Tasman.

Network Tasman has changed the price structure of its Group 1 price categories, connections up to 15kVA in capacity. For the 2018/19 pricing year, Network Tasman had a single price category '1', with a 15c/day fixed charge and a suite of kWh charges. This single price category applied to all connections with a capacity of up to 15kVA.

For the 2019/20 pricing year, Network Tasman has withdrawn price category '1' and replaced it with three new price categories: 1GL – General, 1RL – Residential low use and 1RS – Residential standard.

Network Tasman's prices don't differentiate between regional areas on its network.

3.1.1 Group 0: Unmetered connections

This load group category is for unmetered supplies such as electric fences, phone booths, street lights and other very low loads. There are two types of Group 0 connections. They are:

- Low Capacity supplies (0UNM) These are low capacity connections that are fitted with a small fuse where the consumption is very low. They are intended for connections such as phone boxes, roadside communication cabinets, electric fences etc. The price is a fixed charge per day.
- Streetlights (0STL) This price is used for general street-lighting and is also used for unmetered streetlights that are associated with a standard metered connection. The charge is based on the wattage (W) used by the streetlight(s) installed, and is charged on a $/W/day basis.

3.1.2 Group 1: Metered connections up to 15kVA

Most residential consumers and some small businesses (ie, those who have supplies with a maximum delivery capacity of 15kVA) are Group 1 connections. Network Tasman has replaced the single Group 1 price category that was available for the 2018/19 pricing year with three new price categories:

- 1GL (General) is for non-residential connections such as businesses, shops, sports clubs, etc.
- 1RL (Residential – low use) is for connections that are primary residences and use less than 8,000kWh per year. This price category is a low user tariff as regulated by the *Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004* (LFC regulations).
- 1RS (Residential – standard use) is for connections that are either primary residences that use more than 8,000kWh per year or a residential connection that isn't a primary residence, such as a bach.

Previously, Group 1 fixed charges were set at 15 cents per day (for all connections) to meet government regulatory requirements and to minimise administrative/transactions costs. As a consequence of these requirements, Group 1 pricing did not reasonably reflect the fixed costs of supply to poor load factor[4] or remotely located consumers in this group. Just 10% of the revenue collected from Group 1 in the 2018/19 pricing year was derived from fixed daily charges, with the remaining 90% from consumption (kWh) charges.

Although Network Tasman is limited in its ability to offer cost-reflective prices to Group 1 connections due to the LFC regulations, it has chosen to introduce more cost-reflective prices where the LFC regulations allow. Network Tasman has decided that the risks of continuing to offer poorly cost-reflective prices to Group 1 connections outweigh the benefits of continuing to offer all Group 1 connections a fixed charge of 15 cents per day.

3.1.2.1 Uncontrolled Prices

The following uncontrolled prices provide uninterrupted supply for standard lighting, heating and general supply requirements. A connection would have either the Uncontrolled price or the Day/Night combination.

1. Uncontrolled - provides uninterrupted availability to users at a flat per kWh price.
2. Day/Night – provides uninterrupted availability to users at two different per kWh prices. Day prices apply from 7am to 11pm and are higher than the Uncontrolled price. Night prices apply from 11pm to 7am and are significantly lower than the Uncontrolled price.

3.1.2.2 Controlled Prices

Network Tasman also offers controlled options that can be added to the base uncontrolled plans discussed above. These are:

- Controlled water – where Network Tasman may control the consumer's hot water supply (within specified service levels).
- Night only – where use of specified appliances is limited to the Night period (11pm to 7am). Typically use for night store heaters, underfloor heating and night only water supply.

Approximately 75% of mass market connections benefit from the controlled hot water price, which is less than half of the standard Uncontrolled price. A further 10% of connections use the Night only option.

3.1.3 Group 2: Metered connections 20-150kVA

Group 2 consumers have a delivery capacity of between 20kVA and 150kVA. This group tends to consist of business and residential consumers with above average load factors and so greater reliance is placed on a capacity based price applied to installed ICP fuse sizes.

The Group 2 capacity price is expressed as "dollars per kVA" and is based on the installed fuse capacities (between 20 and 150 kVA) limiting the maximum demands each consumer in this group can place on the network.

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[5] http://www.networktasman.co.nz/documents/services/Connection%20of%20New%20Loads%20Policy.pdf

Variable prices are thus lower than in Group 1. Around 35% of revenue in Group 2 is derived from capacity prices. Group 2 connections have the same price structures as Group 1 connections (the option of two uncontrolled supply options – Uncontrolled and day/night - and the opportunity to add controlled hot water and night only options.

3.1.4 Group 3: Metered connections of 150kVA or more

Group 3 consumers have capacity requirements that are greater than 150kVA. Group 3 contains larger business consumers and so primary reliance is placed on demand prices. Two different types of demand prices are used:

- Customer Demand: which is measured in kVA based on the highest half hour of Anytime Maximum Demand (AMD) during the previous 12 month calendar period;
- Regional Coincident Peak Demand (RCPD) Demand: which is measured in kW using Transpower's interconnection pricing methodology. That is, the demand of the connection at the top 100 peaks of the Upper South Island (USI) transmission region.

Around 68% of revenue is derived from these demand based charges. The remaining 32% is collected through consumption (kWh) prices which vary according to season (Summer/Winter) and time-of-day (Day/Night).

3.1.5 Group 6: Individually priced customers with capacity > 3MVA

Group 6 consumers have capacity requirements in excess of 3MVA. Group 6 consumers have fully fixed charges reflecting high levels of asset dedication. These consumers essentially pay an annual fixed rental for their share of assets dedicated for their supply irrespective of their load profiles.

Transmission charges are passed through to Group 6 consumers.

3.1.6 Summary of prices by group

The following table summarises the price categories applied for each of the key metered consumer load groups.

Table 1: Summary of Network Tasman price categories

Price Category	Maximum capacity requirement	Number of connections	Price structure
Group 0 Price categories - 0UNM - 0S	Low capacity	 84 23 connections	0UNM is for electric fences, communications cabinets etc. This price category is charged a fixed daily price. 0S is for street lights. This price category is charged a cents per watt capacity charge. These connections include groups of local body street lights.
Group 1 Price categories - 1GL - 1RS - 1RL	Fused at less than or equal to 15 kVA	 3,179 12,303 21,389	Fixed daily price + kWh consumption. Unrestricted supply on a uncontrolled or day/night rates, plus the option of discounted water heating and night-only metered supplies.

Group 2 Price categories - 2 - 2LLFC - 2HLFC - HLF	Fused between 20 kVA and 150 kVA	2,790 in total 2692 41 2 55	Capacity price (applied to fused capacity size) + kWh consumption. Discounted hot water heating rate plus the option of discounted water heating and night-only metered supplies.
Group 3 Price categories - 3.1 - 3.3 - 3.4 - 3.5	Capacity requirements greater than 150kVA (half-hour metering is required)	168 in total	Anytime Maximum Demand + RCPD + kWh. kWh rates vary according to Summer/Winter and Day/Night.
Group 6	>= 3,000 kVA + 11kV half hour metering	2	Fixed charge for distribution + pass-through of transmission charges
Embedded generation	Subject to specific requirements	2	Fixed charge

3.2 Network Tasman prices from 1 April 2019

Network Tasman reviews its line prices annually, with new pricing taking effect from 1 April each year. Our price schedule is set out in Appendix C. Charges for new loads can be found in our new load policy, available on our website.[5]

3.2.1 Price changes by component

Distribution price component

From 1 April 2019, Network Tasman expects to maintain its revenue from the distribution price component.

The process of determining price levels for the distribution price components is driven by the overall revenue requirement, and a key factor that influences the revenue recovered from an ICP is what price plan it is on. Network Tasman's revenue model for Group 1 connections allocated each ICP to its new 2019-20 price category based on its annual consumption to October 2018 and whether it is residential or non-residential using the ANZSIC code as advised by retailers.

This allocation is important because the Residential – low use plan is the lowest cost plan for connections consuming 8,000kWh or less per year and the Residential – standard and General connections are the lowest cost plans for connections consuming more than 8,000kWh per year.

However various retailers have advised Network Tasman that between 20% and 50% of residential consumers using under 8,000 kWh per year are not on the low-user plan and pay

[5] http://www.networktasman.co.nz/documents/services/Connection%20of%20New%20Loads%20Policy.pdf

more for their electricity service than necessary.[6] This is broadly consistent with the analysis published by the Government's Electricity Price.[7] Similarly, households that consume over 8,000 kWh pa that are on the low use plan also pay too much.

Network Tasman has assessed its own data and considers that approximately 28% of consumers are likely be on the wrong plan. Network Tasman has assessed the likely effect of this is that it will recover $400,000 more than it would if all connections are on the correct plan.

As Network Tasman is unable to unilaterally move consumers between price plans (responsibility for this sits with retailers)[8] Network Tasman has taken the conservative approach of reducing its budgeted revenue by approximately $400,000 to account for this expected over-recovery.

Pass-through price component

The portion of prices associated with pass-through is forecast to be largely unchanged.

Transmission price component

Transmission prices primarily cover the cost of the national grid, which is owned and operated by Transpower. Transpower's prices have decreased. Most notable is that the Interconnection Charge reduced from $113.77 per kW in 2018/19 to $109.38 per kW in 2019/20. This reduction is coupled with a reduction in Network Tasman's RCPD chargeable demand levels recorded in 2018 results in Network Tasman's transmission charges for 2019/20 decreasing by 16%.

Network Tasman has reduced the transmission price component per kWh for all consumer connections as a result of this. For large connections (Groups 3 and 6), Transpower's interconnection price is passed through as a demand charge.

The RCPD allocation method allocates Transpower's interconnection charge according to each distribution network's contribution to the regional coincident peak demand in the Upper South Island. These RCPD periods have historically occurred in winter, when Network Tasman experiences its highest demand. In 2018, 75 per cent of the RCPD periods occurred in summer, when Network Tasman has lower network demand. Accordingly, Network Tasman's RCPD chargeable demand was lower in 2018 than usual.

It appears that the switch to a summer RCPD peak was the result of a relatively uncommon set of circumstances. Although there is always uncertainty about when the chargeable RCPD periods will occur, Network Tasman considers it more likely that they will primarily revert to a winter peaking in 2019 and transmission charges will shift back closer to Network Tasman's historical levels than continue as a summer peak.

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[6] The LFC regulations specify that low-user plans should be structured so that they are cheaper than the equivalent standard plan for consumers using less than 8,000kWh per year. For users consuming 8,000kWh+ per year the standard plan will be cheaper.

[7] Electricity Price Review – Hikohiko te uira, *Initial analysis of retail billing data*, 15 October 2018, pp.22-24.

[8] Although Network Tasman will work with retailers to identify connections on the wrong plan and switch them to the correct, lower-cost plan.

3.2.2 Price level changes for individual load groups

Appendix C contains a complete list of Network Tasman's prices for the 12 months commencing 1 April 2019, as compared with prices for the prior year. The following discussion summarises the impact of Network Tasman's price changes on connections in each load group.

Group 0, 1 and 2

From 1 April 2019, prices for groups 0, 1, 2 and HLF will experience the following changes:

- Group 0 - the average connection will experience an overall price reduction of 6.5%
- Group 1 - the average connection will experience an overall reduction in their prices of 9%. The average effect of the changes to Group 1 prices for each price category is:
    - +1% for 1GL connections
    - -5% for 1RL connections
    - -14% for 1RS connections
- Group 2 - the average connection will experience an overall reduction in their prices of 5%.

Group 3

The distribution component of Group 3 prices is unchanged from the prices applied from 1 April 2018.

With regard to transmission prices, the reduction in Transpower's interconnection rate has been passed through via a reduction in the RCPD Demand price.

The impact of transmission price changes on individual Group 3 consumers will vary depending on how their particular metered coincident and anytime demands have changed compared to last year. On average total Group 3 charges are expected to fall by 1%.

Group 6

The distribution component of Group 6 prices has increased 1.5%.

Transpower's transmission charges are passed directly through to Group 6 connections.

4 Regulatory requirements

This section briefly describes a number of key regulations relating to the Network Tasman's prices. Namely Information Disclosure requirements, Commerce Act price-quality controls and the Low Fixed Charge (LFC) Regulations.

4.1 Information Disclosure Determination

The Electricity Distribution Information Disclosure Determination 2012 (Part 2.4) gazetted by the NZ Commerce Commission requires electricity line businesses (EDBs) to annually disclose:

- the EDB's pricing strategy, if any, including identification of any changes in strategy
- the pricing methodology used to calculate line prices
- key components of target revenue required to cover the costs and profits, (including cost of capital and transmission), of the line owner's business activities

- consumer groups and consumer statistics used in the calculation of line prices and charges
- the method of allocating costs and target revenues amongst consumer groups
- the proportion of target revenue collected through each price component.
- any changes to prices or target revenues
- the approach to setting prices for non-standard contracts and distributed generators
- whether, and if so how, the EDB has sought the views of consumers including their expectation in terms of price and quality, and reflected those views in calculating the prices payable or to be payable
- the extent to which the pricing methodology is consistent with the Electricity Authority's pricing principles

The Electricity Authority (EA) has published Distribution Pricing Principles and Information Disclosure Guidelines (February 2010) that promote a principles-based approach to pricing and associated information disclosures. The EA's guidelines are generally consistent with the Information Disclosure Determination 2012.

4.2 Commerce Act price control

Network Tasman is a controlled entity under Part 4 of the Commerce Act and as such operates under the Commerce Commission's Default Price and Quality control.

Being a controlled entity Network Tasman is subject to starting price adjustments (Po) at the commencement of each regulatory period and must annually demonstrate compliance with its Default Price Path (DPP) that allows certain costs (transmission, rates, EA and Commerce Commission levies) to be passed through to consumers and generally restricts annual movements for the distribution component of line prices after each 5-yearly reset to the annual rate of inflation (CPI).

The Commerce Commission price control primarily operates to constrain EDB's overall target revenue requirement rather than the structure of the company's line prices.

Network Tasman's prices shown in this document are set to be compliant with Network Tasman's DPP price pathway requirements.

4.3 Low Fixed Charge (LFC) Regulations

Under the Low Fixed Charge (LFC) regulations, a distributor's fixed charge to eligible ICPs must be no more than 15 cents per day (ex GST) for the LFC tariff option and a retailer's fixed charge must be no more than 30 cents per day (ex GST). The LFC option must be available to all domestic connections that are a principal place of residence, where annual consumption is less than 8,000 kWh.

A fixed charge is defined in the regulations to be "a charge levied for each customer connection in currency per time period (for example, cents per day)". A variable charge is defined as "a charge that varies according to the amount of electricity consumed (for example, cents per kilowatt hour)." The EA has provided further clarification regarding interpretation of what types of charges would be considered variable in August 2016 publication "Variable charges under the low fixed charge Regulations - Guidelines."

The LFC regulations require that the regulated distributor tariff option must be specified such that a consumer using 8,000kWh per year would pay no more than they would if they were on its equivalent 'standard' tariff. This design creates a cross-over where consumers using less than 8,000kWh per year would be best off on the low user tariff and consumers using more than 8,000kWh per year would be best of on the 'standard' tariff.

The LFC regulations state that a regulated LFC tariff must comply with this requirement before and after any discounts have been applied. The regulations also specify that if an LFC tariff contains more than one variable charge (such as controlled and uncontrolled charges) the distributor must use ratios specified in the regulations to allocate consumption across the different variable charges, unless the distributor's average user consumes at ratios that are different to those specified.

The average Group 1 and the average Group 2 connection on Network Tasman's network do not consume at the ratios specified in the LFC regulations – accordingly, compliance with the regulations have been assessed using the actual ratios observed on the Network Tasman network.

For Group 1 connections we have assessed compliance for two tariff structures:

- Daily fixed charge + uncontrolled + controlled hot water + night only
- Daily fixed charge + day + night + controlled hot water + night only[9]

For Group 2 connections Network Tasman has two residential low fixed charge price categories: low capacity connections (20 – 30 kVA) and high capacity connections (40 – 150 kVA). LFC compliance for these two price category codes is assessed using the same tariff structures as used for Group 1 connections.

5 Pricing principles

The following discussion sets out the pricing principles that Network Tasman currently uses to guide its pricing decisions.

Network Tasman's pricing methodology reflects, to the extent possible: (1) the pricing principles stated in Network Tasman's Statement of Corporate Intent ("SCI"), as agreed between Network Tasman and its shareholder Network Tasman Trust; and (2) the Distribution Pricing Principles and Information Disclosure Guidelines (February 2010) administered by the NZ Electricity Authority.

[9] Note, *night* and *night only* are different price category codes – although they have the same price. *Night only* is controlled and load (generally night store heaters and underfloor heating) on this price tariff code is unable to operate outside the specified night hours. *Night* is uncontrolled and applies to all uncontrolled load (eg fridge, washing machine, lighting) that occurs during the specified hours. Outside these specified hours this load is charged at the *day* rate.

The following pricing objectives are stated in Network Tasman's SCI (available on Network Tasman's website) and are incorporated in Use of Systems Agreements ("UoSA") with retailers. They provide a high level overview of Network Tasman's existing pricing approach which is that:

- A fair and reasonable rate of return for shareholders (equal to the cost of capital measured on a pre-tax, pre-discount basis and based on the regulatory WACC) will be recovered
- The cost of capital will be reasonably allocated to, and recovered from, each consumer group based on their use of particular network assets
- Direct and indirect distribution costs and depreciation will be reasonably allocated to, and recovered from, each consumer group
- Transmission costs will be allocated and recovered in a manner that reasonably reflects how these costs are incurred by each consumer group
- Appropriate economic signals will be given to consumers concerning their use of the distribution and transmission systems
- Regulatory and public policy requirements imposed by Government, the Commerce Commission and the Electricity Authority will be accommodated within network pricing as required
- Pricing will retain a reasonable uniformity amongst like consumers and across all Network Tasman's regional areas
- Pricing will be simple to understand, implement and administer
- Pricing will provide certainty and medium term stability for consumers and retailers. The distribution component of pricing will be changed, at most, once in any 12 month period while the transmission component may change whenever Transpower alters its transmission charges.

While these objectives have been in place for the last 5 years, they remain subject to annual review by Network Tasman Directors and Network Tasman Trust as part of the SCI process. Where pricing objectives or principles are in conflict, Network Tasman management and Directors exercise their discretion and judgement to set acceptable trade-offs between conflicting items.

The specific pricing principles published in EA Guidelines are discussed in Section 9.

6 Determining the total revenue requirement

Determining prices for distribution services involves three stages:

1. Determine total distribution revenue requirement
2. Allocate distribution revenue requirement to load groups
3. Derive distribution prices for each load group

This section focusses on the first two of these.

The Total Revenue Requirement for Network Tasman is the sum of the following key components:

- Operating and maintenance costs (direct opex)
- Overhead costs (indirect opex)
- Return of capital employed (depreciation)
- Return on capital employed (calculated using the Weighted Average Cost of Capital)
- Regulatory tax
- Transmission costs
- Regulatory adjustments

In total these components provide a total revenue requirement for 2019/20 of $45.86m, before discount. This compares with a total revenue requirement in 2018/19 of $48.1m. After deduction of posted discounts, the revenue requirement for 2019/20 is $35m.

Table 2: Network Tasman's Revenue Requirement, 2019/20

	Revenue Requirement ($m)
Indirect Opex	$2.55
Direct Opex	$8.56
Depreciation	$6.90
Return on Capital	$11.83
Regulatory Tax	$1.41
Transmission	$12.13
Regulatory adjustment	$2.49
Total Revenue Requirement Before Discount	$45.86
Discount	$10.81
Total Revenue Requirement	$35.05

Each of these components is described in more detail below in section 6.1. The way in which these are allocated by load group is discussed in section 6.2.

6.1 Determining each component of the revenue requirement

The financial information used to determine the revenue requirement is drawn from Network Tasman's line business budget and financial forecasts for the year ending 31 March 2020. Line business costs are separated from Network Tasman's other non-line business activities in a manner consistent with the Electricity Information Disclosure Determination 2012 .

6.1.1 Operating expenditure

Operating expenditure consists of:

- Direct network costs (directly attributable to specific assets) which include operations and maintenance costs and any direct overheads
- Indirect network costs (not directly attributable to specific assets) which include indirect overheads and administration costs

The operating expenditure estimates used are from Network Tasman's budget for 2019/20.

6.1.2 Depreciation and return on capital

Depreciation (return of capital) is calculated based on standard regulatory asset lives for systems assets and financial reporting lives for non-system assets

Capital costs (return on capital/assets employed) are calculated by applying the Weighted Average Cost of Capital (WACC) to Network Tasman's Regulatory Asset Base (RAB). The WACC for the distribution business covers the cost of debt (interest costs) and the cost of equity finance and is derived using the Capital Asset Pricing Model. As a price controlled EDB, Network Tasman has used the Commerce Commission's WACC for the 5 year DPP price control period ending 31 March 2020. The parameters used by the Commission in setting WACC were:

- 4.09% for estimate of the risk free rate
- Target capital structure of 44% debt to total assets
- Cost of debt 6.09%
- Asset beta of 0.34 as the measure of EDB's systematic risk
- Post tax market risk premium for equity of 7.0%
- Corporate tax rate of 28.0%

Based on these inputs the Commission's 67th percentile estimate of WACC was 7.19% (vanilla WACC).

The RAB is based on the 2004 certified ODV of systems fixed assets and has been rolled forward to 31 March 2019 using the methodology inherent in the Information Disclosure Determination. The roll-forward includes actual capital expenditure at cost, depreciation based on standard regulatory asset lives and CPI based system fixed asset revaluations for the intervening period to 31 March 2019.

6.1.3 Regulatory tax

Regulatory tax was estimated using the methodology applied in Schedule 5a of Network Tasman's Information Disclosures.

6.1.4 Transmission costs

Transmission costs include amounts payable to Transpower for the use of the national grid and its local connection assets, as well as amount payable to qualifying generators in relation to ACOT (Avoided Cost of Transmission).

Transmission charges are billed by GXP and include the following components:

- Connection charges: these relate to grid assets that connect Network Tasman to the interconnected transmission network
- Interconnection charges: these recover the remainder of Transpower's AC grid revenue and are based on a customer's contribution to Regional Coincident Peak Demand (RCPD)
- New investment charges: which are charges agreed to in a bilateral contract between Transpower and Network Tasman, under which Transpower agrees to provide new or upgraded grid assets

6.1.5 Regulatory adjustments

As a result of acquiring transmission assets, Network Tasman's regulatory revenue cap includes an allowance such that Network Tasman can retain the benefits of the acquisition (ie, avoided Transpower charges) for a period of 5 years. Network Tasman has chosen to share these benefits with consumers by only taking up part of the allowance.

6.2 Allocation by load group

A large portion of the costs associated with the electrical distribution network are shared across many consumers. This means that there is a need to determine an appropriate and justifiable means of allocating shared costs.

6.2.1 Direct network costs, systems depreciation and capital costs

Direct network costs, systems depreciation and capital costs are directly assignable to the following network asset categories:

- General 400V lines;
- Distribution transformers;
- General 11 kV lines;
- Dedicated 11 kV lines;
- Sub-transmission lines and zone substations; and
- Dedicated networks.

The following table identifies which network segments are used by each load group.

Table 3: Network segments used by load group

Consumer Group	Network Segment Used	Maximum capacity requirement
Groups 0 & 1	General 230/400V / 11 /33kV	Fused <= 15 kVA
Group 2	General 400V / 11 /33kV	Fused > 15 & < 150 kVA
Group 3	Limited 400V and 11 / 33kV	AMD>150kVA+hhr metering
Group 6	Dedicated & Semi dedicated network, 33 kV &limited 11kV	>= 3,000 kVA + 11kV hhr metering
Group CB	66 kV lines	Approx 32MW

Notes: (1) 400V/11/33kV indicates the voltage level at which the consumers in this Group take supply and the components of the network they use; (2) The kVA indicates the consumer's potential anytime maximum demand (AMD) as measured by the size of the ICP fuse installed or the AMD obtained from half hourly (hhr) data available from consumer TOU meters; (3) Dedicated consumers are those using dedicated or semi dedicated feeders, substations and network assets at voltages of at least 11kV or 33kV and have 11kV metering.

Network costs are then apportioned to each load group on the basis of coincident maximum demand (CMD) for the assets used by each load group. CMD is used because network direct investment and costs are largely a function of peak period demand levels thus critical asset costs are allocated on each groups contribution to peak demand levels.

No lower network costs are attributable to load Group 6, as this group relies solely on upper network assets for its supply. Allocations for the 400V cost components are modified to reflect Group 3’s minimal reliance on these assets.

With regard to the two large embedded generators, one is connected to the 66kV network, the other direct to a GXP. For the generator connected to the 66kV, network charges are set with reference to cost allocation proportions previously used by Transpower. The other generator only incurs Transmission costs due to its direct connection to the grid, plus an administration charge.

6.2.2 Allocation of Indirect Network Costs

Indirect network costs include general administration and overhead costs and depreciation on non-systems fixed assets. Management estimates are used to allocate indirect network costs to Group 6, bulk supply and large generator connections. The remaining indirect network costs are allocated to load Groups 1, 2 & 3 in proportion to their relative shares of installed capacity (measured by fuse size or dedicated transformer capacity). Allocation of indirect costs is somewhat more arbitrary than for direct costs. However, an allocator based on installed fuse capacity provides a reasonable balance between allocating by customer numbers and allocating by some measure of demand. Details of the capacity allocators used are contained in Appendix B.

6.2.3 Allocation of Regulatory Tax to load groups

Regulatory Tax is allocated to load groups in the same proportion as return on capital.

6.2.4 Allocation of transmission costs to load groups

Connection costs and new investment charges are levied at each Transpower grid exit point (GXP) for highly dedicated assets used to connect Network Tasman to the grid. Connection costs are allocated to load groups on the basis of each group's (CMD) demand contribution coincident with the Anytime Maximum Demand (AMD) of that GXP.

Interconnection charges are allocated to Groups based on each Group's demand level measured coincident with Transpower's Upper South Island 100 peak chargeable RCPD half hours recorded over the previous year.

The connection, new investment and interconnection costs allocated to each group are summed to obtain the gross transmission costs (revenue) to be recovered from that group.

With regard to the large embedded generator, connection costs are allocated using the same allocations previously used by Transpower.

6.2.5 Resulting revenue requirement by load group

After applying the cost allocation methodology described above the revenue requirements determined for each load group are the following:

Table 4: Revenue requirement by load group ($m)

	Distribution	Pass-through & Recoverable	Transmission	Total before discount	Total after discount
Group 0	0.14	0.00	0.05	0.19	0.19
Group 1	15.01	0.10	5.60	20.71	14.16
Group 2	8.03	0.05	2.33	10.41	7.61
Group 3	5.37	0.02	2.92	8.31	6.91
Group 6	0.46	0.00	2.00	2.47	2.40
CB	1.37	0.00	0.34	1.72	1.72
MAT	0.00	0.00	0.0023	0.00	0.00
NEL	0.00	0.01	1.64	1.65	1.65
Sundry	0.406		0	0.406	0.41
Total	30.78	0.18	14.89	45.86	35.05

7 Determining prices

This section explains the approach taken by Network Tasman to determining the prices for each load group, for each of the following price components: distribution; pass-through & recoverables; and transmission.

7.1 Proportion of revenue recovered from each price component

Revenue is recovered using a range of price components. These include:

- fixed daily prices (expressed as $/connection/day);
- capacity or demand based prices (e.g. expressed as $/kVA/day); and
- consumption prices (expressed as $/kWh).

Consumption prices are expressed as "dollars per kWh" and apply to all consumer groups, except Group 6. The $/kWh charges vary across differing price types, depending on the time of use profile where known or the level and type of load interruptability/restrictions the consumer commits to in advance.

In determining the proportions of revenue to be raised by each price component Network Tasman attempts to balance the conflicting demands of:

- economic rationale
- government policy and regulatory requirements
- electricity retailers' broad desire for simplicity, predictability and low transaction costs
- the expectations of different electricity consumers

Economic rationale encourages the application of cost-reflective prices. This could imply regionally differentiated prices with strong peak demand based elements (kVA) and limited reliance of variable tariffs (kWh). This would support economic efficiency by reflecting in prices:

- the fixed and sunk nature of line business cost structures and assets
- that network investment costs are caused by demands for incremental capacity at peak times
- a "beneficiaries / exacerbator pays" approach to cost recovery consistent with the EA's pricing principles.

However, in practice, Network Tasman's price structures must also take into account regulatory constraints and practical implementation issues, as well as feedback from retailers and end consumers.

Regulations require distributors to offer residential consumers a 15 cents/day fixed charge tariff option that is beneficial to those with consumption less than 8,000 kWh pa. In addition, government policy effectively compels distributors to ensure rural and urban price structures remain closely aligned.

Previous engagement with electricity retailers shows they have been focused on line prices that minimises pass through risk; minimises transaction costs; and is simple to understand and bill (minimises the number of tariff codes and options). Consequently retailers have to date generally preferred broad based kWh based charges, simple fixed daily charges and low numbers of tariff codes. However it is noted that looking to future, retailers acknowledge difficulties with a reliance on kWh charges and are supportive of a transition to prices that better reflect costs.

Network Tasman's engagement with consumers in the past has revealed differing preferences concerning line price structures:

- Many residential and small business consumers groups oppose high fixed charge structures and expect a significant portion of their charges to vary with consumption so a greater level of influence can be exerted over their electricity bills.
- Higher-use business consumers, however, prefer capacity-based charging that properly and fairly reflects the fixed costs of supply and rewards high load factor consumers for efficient use of network assets.

As a compromise to the conflicting expectations above, Network Tasman's longer term goal has been to recover around half its revenue from each Group using fixed and/or capacity charges and the other half from variable or kWh based charges. Where achievable, over time Network Tasman has gradually raised Group 2 fixed charges in preference to higher variable charges as a better means of reflecting underlying supply costs.

Existing metering technology limitations mean that for approximately 31% of Network Tasman's connection billing metrics are currently restricted to

- kWh consumption in monthly intervals;
- installed fuse size; or
- fixed daily charges.

For mass market ICPs without advanced meters, no metrics are available for consumption by time of use or for the level and timing of actual peak or coincident demands. These limited billing metrics compromise cost-reflectiveness within price structures and make mass market network prices a relatively blunt instrument.

Consequently Network Tasman has structured its distribution prices as follows:

- Group 1 has three price categories: one for non-residential connections (1GL – General) and two for residential connections (1RL – Residential low use and 1RS – Residential standard use). Fixed charges are set at 15 cents per day price category for *1RL – Residential low use* to meet government regulatory requirements. The two remaining price categories have a fixed charge of 75 cents per day. In a recent consultation paper on distribution pricing, the Electricity Authority used 80 per cent as a reference point for an efficient and cost-reflective proportion of revenues that should be recovered from fixed charges.[10] Network Tasman's Group 1 does not currently reflect the fixed costs of supply as suggested by the Electricity Authority, although the changes introduced for the 2019/20 price period have improved this. Just 10% of the total revenue collected from

[10] Electricity Authority, *More efficient distribution prices – What do they look like? Consultation Paper*, 11 December 2018, p.21.

Group 1 connections was derived from fixed daily charges for the 2018/19 pricing year. For the 2019/20 pricing year this is forecast to increase to 26%.

- Group 2 tends to have business and residential consumers with above average load factors and so greater reliance is placed on capacity based prices applied to installed ICP fuse sizes. Variable tariffs are thus lower than for Group 1 connections. Around 38% of distribution revenue in Group 2 is derived from capacity charges.
- Group 3 contains larger, higher load factor business consumers so primary reliance is placed on capacity based prices using AMDs and RCPDs obtained from TOU metering. Around 50% of the distribution revenue is derived from capacity/ demand based charges.
- Group 6 consumers have fully fixed charges reflecting high levels of asset dedication; they essentially pay an annual fixed rental for the assets dedicated for their supply irrespective of their load profiles.
- There is no tariff differentiation between regional areas and consequently the revenue recovered in rural areas tends not to fully reflect the higher cost of supply to those areas.
- Network Tasman has 2 connections (embedded network and generator) and 3 ICPs that do not have a standard contract. Non-standard contracts and prices are typically applied to and based on large connections with high levels of asset dedication. These connections are subject to the same level of service and obligations as a standard contract.

Network Tasman continues to review pricing options, in coordination with other distributors, which includes consideration of price structures enabled by advanced meters. This is discussed further in section 10.

7.2 Setting distribution price levels

Total distribution revenue is limited by Commerce Commission regulation. The capped revenue is allocated to load groups with reference to the approach discussed in the previous section.

7.2.1 Group 1 distribution prices

The Group 1 distribution revenue requirement is split between that part to be recovered by a fixed charge, and that part to be recovered by a consumption charge.

For connections on our Residential – low user price code (1RL) the total annual fixed charge (distribution + transmission) is set at $55pa. or 15 cents/day (the Government mandated low fixed charge). The distribution component of this fixed charge is $43.25pa. and is recovered from all 1RL connections irrespective of geographical area. For the remaining Group 1 price categories (1GL and 1RS), the total annual fixed charge (distribution + transmission) is set at $274pa. or 75 cents per day. The distribution component of this fixed charge is $216pa. As with price category 1RL, these charges are applied uniformly across our network, irrespective of geographical area.

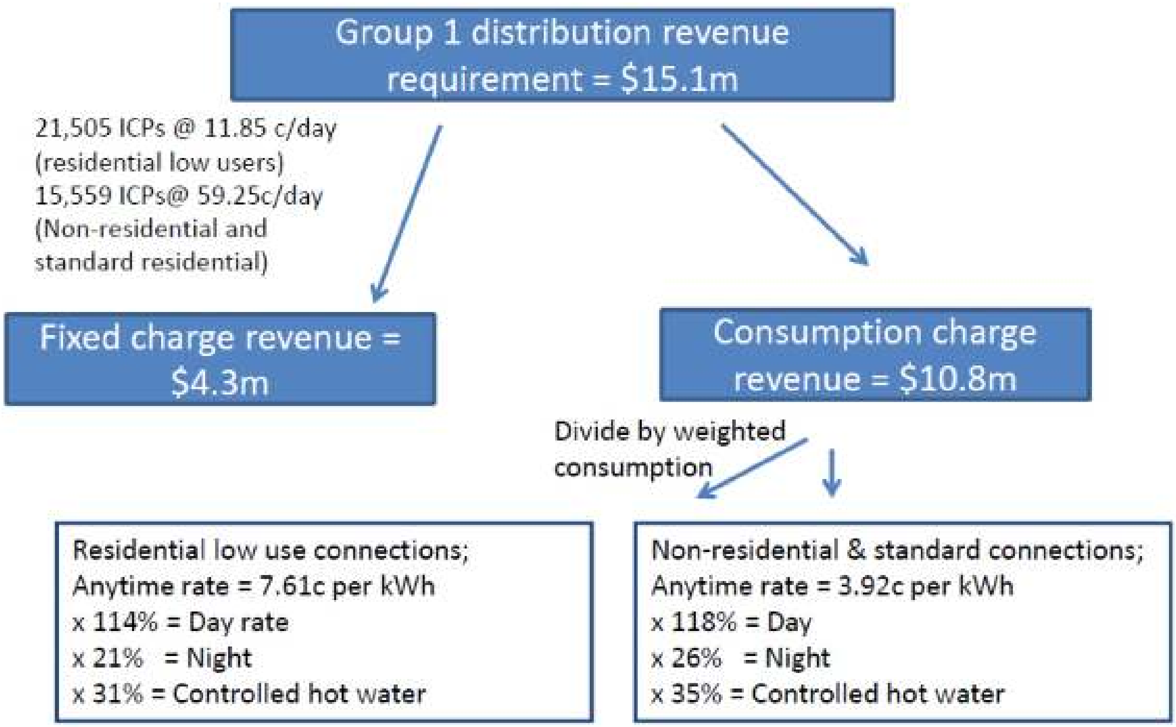
The fixed charges recover 29% of the distribution revenue to be raised from Group 1. The total consumption charge recovers the residual 71% of distribution revenue from Group 1.

Consumption prices are determined by dividing the forecast total variable charge by number of units consumed by Group 1 for the pricing year and applying a set of relative weightings between the pricing types on offer. The relative weights are in part driven by legacy issues but also reflect the relative costs of providing network services at "peak" versus "off peak" times and the benefits to the network of having interruptible loads. The weightings provide a signal for consumers to:

- shift consumption from "peak" to night periods and
- permit components of their supply to be interrupted by Network Tasman load control devices.

To provide a material difference between kWh prices, controlled and night rates are generally set to be less than half the standard uncontrolled rate.

Figure 1: Determining Group 1 prices



7.2.2 Group 2 distribution prices

The Group 2 distribution revenue requirement is split between that to be recovered by fixed capacity charges, and that part to be recovered variable charges.

Each ICP in Group 2 has an installed capacity (between 20 and 150 kVA) based on installed supply fuse sizes.

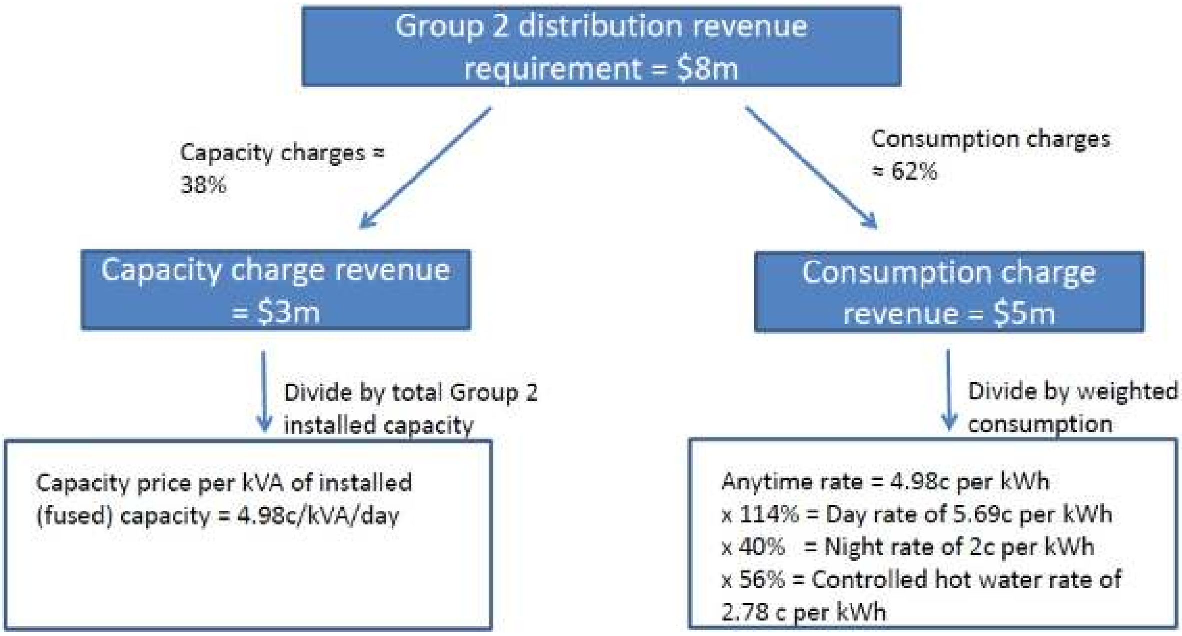
Consumers are provided with a reasonable signal to minimise their peak capacity demands and to use scarce network capacity efficiently.

The total fixed charge revenue is divided by the sum of Group 2 capacity to give a tariff expressed in dollars per kVA per annum. This rate is the same for all consumers within the group with no account being taken of geographical location.

The dollar per kVA tariff is multiplied by the individual ICP's capacity (derived from installed fuse size), to give a capacity per year. This is divided by the number of days in the year and is billed on a dollars per kVA per day basis.

The total kWh charge recovers the residual revenue of the Group 2 revenue requirement.

Figure 2: Determining Group 2 prices



Group 2 Low User Prices (2LLFC and 2HLFC)

Because there are a number of residential customers in Group 2, regulation has been interpreted to require Network Tasman to offer a compliant low fixed charge tariff options referenced against the standard price option outlined above. Network Tasman provides two Group 2 low fixed charge tariff options with a 15 cent / day fixed charge and variable kWh rates adjusted upwards so that at 8,000kWh consumption per annum the line charges are equal to those payable on the standard tariff. The low user options are cheaper than the standard tariff for the very small number of Group 2 domestic consumers who use less than 8,000 kWh per annum, but are poorly reflective of network supply costs.

High Load Factor Prices (HLF)

This tariff was introduced to offset one of the consequences of the variable (kWh) component of Network Tasman standard mass market tariffs being higher than desirable. As a result, high load factor consumers were paying disproportionately high line charges per kVA of fuse capacity supplied.

The HLF tariff option, with higher capacity charges and considerably lower variable kWh rates, moderates the effect load factor has on line charges and constrains the cost per kVA supply charge. The HLF prices are beneficial to mass market customers with load factors in excess of about 25%. The HLF tariff also provides a smoother transition for these consumers where they move up to Group 3 prices.

7.2.3 Group 3 distribution prices

The Group 3 distribution revenue requirement is split between that part recoverable by a peak demand charge and TOU consumption charges. Group 3 customers are primarily larger, high load factor business consumers and so the demand charge for this group is set to recover approximately 50% of required revenue. This provides strong signals to minimise anytime and winter peak demand levels (when combined with transmission component) and rewards good load factor much more than is the case in Groups 1 & 2.

Each Group 3 consumer's AMD and RCPD demands are obtained from TOU data supplied by retailers:

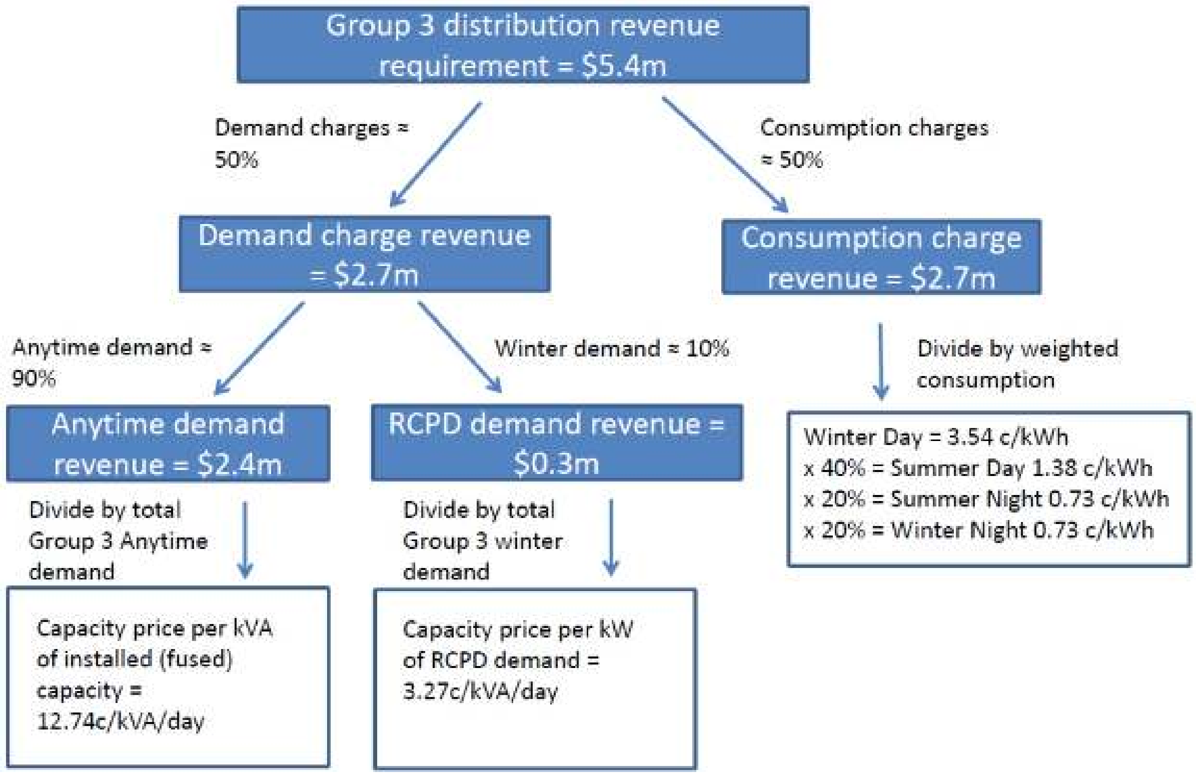
- A Group 3 customer's RCPD quantity is the average of the consumers kW load coincident with Transpower's 100 peak loads on USI grid for the year ending 31st August in the previous year.
- A Group 3 customer's AMD is that consumers highest half hourly kVA at any time, in any month, during the previous calendar year.

The total fixed charge revenue is divided by the sum of the AMDs and the RCPDs after establishing the relative weighting between the anytime and winter demand charges. The weighting is heavily biased towards the AMD charge because the RCPD is primarily used as a mechanism for directly passing through Transpower's Interconnection charges. This gives a dollar per AMD kVA and a dollar per RCPD kW as distribution tariffs.

The dollar per AMD (RCPD) price is multiplied by the ICP's AMD (RCPD), to give the ICP's anytime (RCPD) demand charge per year. Each annual demand charge is then divided by the number of days in the year and billed on a daily basis.

The total kWh charge recovers the residual required distribution revenue not met by demand charges. The prices are determined by dividing the kWh revenue required by the number of units forecast to be consumed by Group 3 load, and a relative weighting is established between the prices for summer day, summer night, winter day and winter night. This weighting process uses a similar rationale outlined for Groups 1 & 2. Night rates and Summer Day rates are heavily discounted in comparison to Winter Day rates reflecting the off-peak use of the network during these time periods.

Figure 3: Determining Group 3 prices



7.2.4 Group 6 distribution prices

There are only two consumers in Group 6 and both have sought direct service and billing arrangements with Network Tasman rather than choosing to operate through normal interposed arrangements with electricity retailers. While their distribution prices are individually assessed and direct billed by Network Tasman, their distribution revenue requirements are determined in a manner consistent with the other consumer Groups. Both Group 6 consumers have chosen to operate with Network Tasman without formal written distribution supply contracts however Network Tasman applies its standard terms of service and distribution code requirements to these consumers.

These consumers are large enough, and few enough, to warrant individual calculation of line charges based on the RAB values and direct costs associated with the dedicated or semi-dedicated assets used in their supply. General overheads are allocated using management estimates.

The methodology for allocating distribution costs, RAB values and determining the distribution revenue requirement for these consumers was described above. It is essentially the same and is consistent with the approach used for other customer groups but the resulting Group 6 revenue requirement is billed differently.

The Group 6 annual distribution revenue requirement is simply billed in fixed monthly amounts. It is essentially a fixed distribution asset rental regardless of changes in annual consumption or demand. The relative amounts billed to each Group 6 consumer are determined by the RAB asset values for the dedicated and semi dedicated assets used by each consumer.

7.2.5 Distribution Prices – Large embedded generators

Network Tasman has two large embedded generators. One generator is new, the other was acquired as an embedded generator when Network Tasman purchased Transpower's 66kV assets between Stoke and Golden Bay. The distribution charges applicable to the acquired large embedded generator were set contractually based on the 66kV line asset values, maintenance and operational costs as per Transpower's 2014/2015 charge sheets. This was because Transpower was the prior owner of the 66kV assets used to supply the generator prior to the acquisition of those assets in December 2014 by Network Tasman. The proportion of the 66kV costs allocated to the large embedded generator was set with reference to the cost allocations previously used by Transpower.

There are no distribution charges for the new embedded generator. It is directly connected to the Murchison GXP.

7.3 Determining prices for the pass-through component

Pass-through costs

The portion of prices relating to "Pass-through and other recoverables" includes the following components of price: Local body rates; Electricity Authority Levies; Commerce Commission Levies; Utilities Disputes Levies; the Capex wash-up adjustment determined by the Commerce Commission; and the quality incentive adjustment. These are primarily allocated in proportion to distribution charges.

7.4 Determining prices for the transmission component

Network Tasman recovers transmission costs from load Groups via a separate transmission pricing schedule incorporated within overall line prices as follows:

- Consumers are classified into the same load groups as used for distribution pricing.
- Transmission costs for Group 6, Bulk Supply and Large Generator connections are recovered on a direct pass through basis.
- The remaining transmission costs, after Group 6, Bulk Supply and Large Generation pass through, are recovered from Group's 1-3 via Network Tasman's transmission price schedule.
- Metering technology and other practicalities do not enable transmission costs to be passed directly through to mass market consumers in a manner that fully reflects the Transmission Pricing Methodology. Network Tasman therefore must rebundle transmission costs and recover them using the available billing metrics of kWh consumption, demand (kW), fuse capacity and fixed daily charges.
- Transmission charges for Groups 1-3 are recovered across different price components using similar rationale to that used in distribution pricing.
- The Group 1 fixed daily price is expressed as a "dollars per connection per day" price.
- Group 2 capacity pricing is expressed as "dollars per anytime maximum capacity" (AMD), measured in kVA and based on customer fuse size.

- Group 3 fixed capacity prices are based on TOU meter data and are expressed as:
  - "dollars per kW of RCPD" This RCPD component directly passes through Transpower's Interconnection charges attributable to Group 3 consumers
  - "dollars per kVA" of AMD, the AMD component recovers grid connection costs attributable to Group 3.

  No variable (kWh) transmission tariffs are used to recover any transmission costs attributable to Group 3 consumers.
- Transmission price components for Groups 1 & 2 consumption are expressed as "dollars per unit (kWh)" and they vary depending on the time of use profile or the level and type of load interruptability / restrictions the consumer commits to in advance.

7.4.1 Transmission Prices – Groups 1 – 3 fixed and capacity

Group 1

The total transmission cost attributable to Group 1 is split between that part to be recovered by a fixed daily charge and that part to be recovered by consumption prices.

Network Tasman is forecast to recover approximately $415,000 of transmission costs via fixed charges for the 2018/19 pricing year, this accounts for 6% of the total transmission costs recovered from Group 1 connections. For the 2019/20 pricing year, Network Tasman is forecast to recover $1,134,000 of transmission costs via fixed charges. This accounts for 20% of the total transmission costs recovered from Group 1 connections.

Network Tasman's longer term goal has been to recover around half its revenue from each Group using fixed and/or capacity base charges and the other half from variable or kWh based charges. The changes above assist in reaching that objective.

Group 2

The total transmission cost attributable to Group 2 is split between that part relating to connection and new investment charges to be recovered by a capacity charge, and that part to be recovered by kWh charges for the Interconnection charges attributable to Group 2.

Each ICP within Group 2 has a capacity based on connection fuse size. The total capacity charge is divided by the sum of all individual capacity requirements within Group 2. This gives a dollar price per kVA of capacity per annum.

The dollar per kVA tariff is multiplied by the ICP's capacity, to give a "capacity charge" per year. This is divided by the number of days in the year and billed on a daily basis.

Group 3

The total transmission cost allocated to Group 3 is recovered by demand charges.

The connection and new investment component attributable to Group 3 is divided by Group 3's total AMD to yield a $/kVA rate. This rate is then applied to each individual consumers' AMD to determine their annual charge which is divided by 365 and billed on a daily basis.

The Interconnection charges attributable to Group 3 are recovered based on individual customer kW demands (grossed up for losses) measured coincident with the USI RCPD demand periods recorded over the 12 months to August the previous year.

The total amount recoverable by the RCPD charge, is divided by the total RCPD kWs for the Group. This gives a dollar price per kW of RCPD which is converted to a daily price.

7.4.2 Transmission Prices - Groups 1-3 consumption (kWh)

Group 1 & 2 kWh transmission costs are recovered in a manner similar to Group 1 & 2 distribution prices.

Each kWh distribution price option for Groups 1 & 2 is classified as either a "peak" or an "off peak" price. Off peak time is for night only consumption (occurring between 2300 and 0700) or ripple controlled consumption which is less likely to contribute to Network Tasman's overall RCPD demand levels. Those in the peak time classification, are, by default, the remainder of the tariffs (Uncontrolled or Day tariffs) and where consumption is not interruptible by Network Tasman load control equipment and is consequently likely to contribute to Network Tasman's chargeable RCPD quantities.

A relative weighting is applied to differentiate peak and non-peak kWh transmission prices in Groups 1 & 2. The weightings reflects the much higher likelihood of consumption / load in "peak" tariff categories contributing to USI RCPD demand levels and thus Network Tasman chargeable interconnection quantities.

The total amount to recover through kWh transmission prices is then divided by total forecast kWh consumption of Groups 1 or Group 2 respectively, and the relative weighting between the peak and off peak price is applied to determine the peak and off peak rates.

No kWh prices are used in Group 3 prices to recover transmission costs.

7.4.3 Transmission Prices - Group 6, Bulk Supply and Large Generators

These consumers are large enough and few enough to have their Transpower charges individually calculated. The charges are by agreement determined on a cost reflective or "look through" basis so as to mirror the underlying Transpower charging methodology

Connection and new investment charges are allocated to the two Group 6 and the single Bulk supply customer in proportion to their average demands measured co-incident with the Stoke GXP's top 12 annual half hour AMDs for the prior year and are billed as a monthly fixed amount.

Interconnection charges are passed through directly on Group consumer demands measured coincident (after grossed up for distribution network losses between the customer TOU meter and the GXP TOU meter) with the relevant Upper South Island RCPD top 100 half hourly chargeable demands.

Any Common Quality Service Charges or Loss Rental Rebates are passed directly through to Group 6 and bulk supply consumers each month on the same basis as they are credited or charged to Network Tasman by Transpower.

The large generators are allocated their share of the connection assets located at the substation to which they are connected.

The transmission charges described above are passed through to the two Group 6, one Bulk Supply and one large generator customer under letters of agreement or contracts in a transparent, cost reflective manner. All demand data and Transpower cost data for Stoke GXP used to determine annual transmission charges is supplied to these consumers each year.

8 Distributed generation

Network Tasman has 2 large and 4 small hydro generators connected to and embedded within its network. It also has more than 800 ICPs with roof top solar generation plants connected and injecting into the network, which equates to approximately 2% of all connections.

Network Tasman uses regulated terms as a default contract with the small roof top solar plants but has more formal connection agreements with the 6 hydro plants. Pricing for the large generators has been discussed in previous sections. The regulated terms for small hydro plants are taken from Schedule 6.2 "Regulated Terms for Connection of Distributed Generation" in Part 6 of the Electricity Industry Participation Code 2010 administered by the Electricity Authority.

Network Tasman requires new generators to pay for their costs of connection to the existing network in the same manner any new off take connections must pay for their own dedicated costs of connection. To date for the generation plant connected to the network, all connection costs have been borne by the connecting parties and no upper network reinforcement has been necessary.

Where import and export can occur at the ICP, Network Tasman requires separate metering for both imported and exported kWh volumes.

To maintain competitive neutrality with other larger remote generators Network Tasman:

- does not currently charge small scale local generators for injections exported onto and across the network.
- charges consumers who both import and export electricity from the same ICP the normal scheduled fixed / capacity charges applicable to the ICP plus standard variable prices on their separately metered import consumption
- as small scale roof top solar generation plants proliferate across the network, Network Tasman is experiencing:
    - additional time and costs in managing the safety aspects of both planned and unplanned outages.
    - unavoidable increments to SAIDI and SAIFI times for planned and unplanned outages
    - no reduction in the critical winter evening peak loads that ultimately drive most of Network Tasman's network investment
    - some loss of variable tariff revenue as behind the meter consumption is offset by own generation
    - risks around voltage stability in the lower network where the proliferation of solar DG plants is concentrated within neighbourhoods

Currently the "import only" ICPs are disproportionately bearing virtually all consequences associated with these incremental costs. Ultimately as these costs become more material Network Tasman will have to adopt a stronger "beneficiaries/ exacerbates pays" element within its prices. This may involve:

- adoption of higher levels of mass market fixed, capacity or demand based prices combined with a reduction in kWh prices, where this possible
- time of use based prices when metering technology permits
- introduction of a kWh price applied against export energy injected into the network

8.1.1.1 Avoided Cost of Transmission (ACOT) payments

The Electricity Authority states that some distributed generation (DG) may have the ability to support Transpower in meeting its grid reliably standards, as defined in the Code. Transpower will periodically report the details of generation that it considers assists it to meet its grid reliability standard to the Electricity Authority. The Electricity Authority will, in turn, publish a list of DG that may be considered for ACOT payments under Schedule 6.4 of the Code (qualifying DG).

The Electricity Authority is clear that to receive ACOT payments, DG must be listed by the Authority as being "eligible to qualify" for ACOT payments and also meet its distributor's specified eligibility criteria. To be eligible for ACOT payments on Network Tasman's network, DG must be greater than 300kW in capacity.

Network Tasman has existing agreements to make ACOT payments to a small number of DG. The agreements pre-date the Electricity Authority's recent ACOT changes. Network Tasman will retain the terms of these existing agreements. This recoverable charge is forecast to be $2.1M for 2019/20, based on Transpower interconnection charge.

Network Tasman has a relatively strong network in most areas and there have been no avoided distribution costs identified with respect of any new embedded generator connection to the network.

9 Distribution pricing principles

The Electricity Authority published a document "Guidelines for Distribution Pricing Principles and Information Disclosure" dated February 2010.

In what follows each Pricing Principle in the Guidelines is identified and Network Tasman's general compliance with the principle is discussed.

Pricing Principles (a) Prices are to signal the economic costs of service provision, by:
(i) being subsidy free (equal to or greater than incremental costs, and less than or equal to standalone costs), except where subsidies arise from compliance with legislation and/or other regulation;
The subsidy free test is a theoretical notion which at its limit requires a separate test for each of Network Tasman's ICPs. To accurately estimate both incremental costs and standalone costs for particular customers or groups of customers is difficult and resource intensive and so the matter is addressed in general terms below.

As a general principle, if line prices are cost reflective and costs are below bypass levels the subsidy free test will be met.

Allocation of consumers and costs to load groups and the development of prices for those load groups necessarily involves averaging and deployment of a number of assumptions. The resulting price is at best reasonably cost-reflective for broad groups of consumers.

However the subsidy free range for line services for mass market consumers is also likely to be broad because incremental costs for the additional consumer/kVA/kWh are low while their standalone costs of supply are very high. This broad range means the cost reflective pricing methodology described in this document will generally lead to prices within the subsidy free range.

Network Tasman does not make up under-recovery of distribution revenue from one particular customer group by over recovery from any of the other groups. All Groups recover their cash operating costs, depreciation and capital costs. As a result there are no significant cross subsidies between customer load groups.

Standalone Test

Distribution networks are natural monopolies and by definition deliver significant and long-term economies of scale to an extent that tests for standalone costs of alternative lines supply (overbuild) against existing cost reflective prices for mass market consumers should be largely redundant.

It is likely that Network Tasman's line prices for Group 1 & 2 consumers are materially lower than the standalone economic costs associated with alternative lines supply. This contention is supported by the fact that:

- Network Tasman's pricing methodology is cost reflective by Load Group
- TPNZ directly charges EDBs for their connection assets at GXPs. There are very strong economies of scale with respect to grid connection.
- New overbuild costs combined with Network Tasman's line business economies of scale means any replication of Network Tasman distribution assets would be uneconomic when assessed against Network Tasman's current mass market line charges derived from ODV based costs and highly shared TPNZ connection costs, either for individual consumers or for larger groups of consumers.

An alternative standalone test for small and medium sized consumers is to compare the cost of line supply against the costs of alternative standalone energy supply using on site micro generation plant. At the present time the cost of standalone reliance on micro generation remains higher than industry average and incremental supply costs, although this test is more about cost of delivered energy than a disaggregated test focused just on the transport component of electricity costs. With consumers primarily interested only in the overall delivered cost of energy, the standalone subsidy free test for line charges is problematic given the need to split out line and energy costs.

Standalone cost tests have more relevance for the small number of larger consumers at specific locations on Network Tasman's network. Network Tasman's pricing methodology for

Group 3 & 6 consumers is cost reflective and uses RAB based economic costs attributable to these customers. Additionally these consumers share in the economies of scale arising from high levels of sharing of:

- grid exit point costs
- upper network distribution assets
- indirect distribution costs.

Alternative supply via overbuild to these consumers would require economic costs to reflect full asset replacement costs plus the loss of key scale economies. These standalone costs will therefore be well in excess of Network Tasman's current line charges which is not supportive of an overbuild business case.

Network Tasman has previously commissioned bypass costings for major customer sites to identify standalone costs and to assess the reasonableness of existing line charge levels. No adjustment to line prices for major customers resulted.

<u>Incremental Cost Test</u>

Incremental cost is the additional cost associated with supplying an additional unit of service.

For distribution businesses the additional unit of service could be the:

- connection of an additional consumer
- supply of an additional kVA of capacity or
- transportation of an additional unit (kWh) of electricity.
- Delivering an increment in security or reliability

Generally incremental costs for extra kVA, kWh or connections are very low where the network has spare capacity but at some point new investment will be required causing a step change in costs to occur. It is difficult to assign or attribute the step changes in core network investment costs to specific additional units of service unless the additional load (service) is highly customer specific and is large relative to the network segment supporting it.

Most of the company's revenue is derived either from kVA charges (either from TOU metering or connection fuse size) or peak time kWh prices. Incremental network costs mostly arise from increases of load (kVA) at peak times. Therefore Network Tasman prices focus on capacity and peak prices tends to align incremental revenue with incremental cost.

At a connection level, Network Tasman's new load policy requires developers and consumers to fund the incremental costs of any network extension necessary to support new connections and Network Tasman is primarily left with funding new transformer capacity and any augmentation of core network capacity. Annual line charges are normally sufficient to service Network Tasman's incremental costs for new connections plus provide a contribution to service and reinforce the core network.

Network Tasman's new load policy also seeks network development levies based on distance and kVA for new loads in uneconomic areas of the network. This helps shore up the shortfall

in incremental revenue in areas where incremental costs tend to be highest. The policy also enables Network Tasman to reserve the right to seek capital contributions from any new load that is large relative to the capacity of the network segment it will rely on. This gives Network Tasman the opportunity to undertake an economic assessment to ensure incremental costs are properly supported by expected future line charge revenues from the large new load. Where there is a shortfall Network Tasman may seek a capital contribution to support the incremental costs. Regulatory requirements to offer a low user tariff option to qualifying consumers and to maintain urban and rural line tariffs at similar levels tend to compromise incremental cost recovery and create subsidisation of some loads. Network costs for domestic customers do not vary materially with consumption (kWh) levels but the low fixed charge tariff requirements comprises revenue earning ability from low users relative to their incremental costs of supply. This is a material issue as around 65% of Network Tasman's domestic customers use less than < 8000 kWh pa. Similarly incremental costs in rural segments of the network tend to be considerably higher than in more dense urban areas but restrictions on the level of differentiation between rural and urban tariffs leads to under recovery of incremental costs in these higher cost geographical segments. These regulatory requirements tend to restrict line revenue available from one geographic subgroup of consumers down to or below their incremental costs of supply while at the same time raising the revenue drawn from another geographic subgroup of consumers up towards their standalone costs of supply; consequently economic efficiency is compromised.
(ii) having regard, to the extent practicable, to the level of available service capacity; and
Network Tasman's Group 2 & 3 line prices features kW and kVA price components directly related to the capacity demands consumers in these groups make on the distribution network and the transmission grid. Network Tasman's service level (kVA) signals are moderate for Group 2 consumers but are stronger for Group 3 consumers. Group 6 prices reflects service levels demanded via charges based on the level of dedicated and semi dedicated distribution assets Network Tasman commits to the supply of these consumers. Similarly within both Groups 3 & 6, Transpower's Interconnection Charge (a grid service capacity charge) is reflected directly through to each consumer on the basis of their capacity demands coincident with the grid's USI regional peak demand (RCPD). Where any consumer uses available network and grid capacity inefficiently Network Tasman reserves the right to apply a kVA based power factor correction charge on sites with non-compliant power factor (PF<0.95). In practice this has been applied to TOU metered sites to good effect with only 3 out of Network Tasman's top 150 sites incurring the power factor charge. As stated, Network Tasman also applies a kVA per kilometre network development levy regime for new loads locating on high cost, uneconomic segments of the network. The levy recognises demands for service capacity both in terms of network distance (km) and capacity

level (kVA).

Group 1 capacity/service level signals are relatively muted however every Group 1 ICP is restricted to a maximum demand capacity of 15 kVA via connection point fuses. Under the low user regulations a tariff option must be made available to all residential consumers with a fixed / capacity component of no more than 15 cents per day.

Historically, Network Tasman has applied the low user rate across all Group 1 ICP's in order avoid excessive transaction costs. For the 2019/20 regulatory period, Network Tasman has introduced new prices for connections up to 15kVA that are (1) secondary residences (eg baches) and primary residences that consume more than 8,000kWh per year, or (2) non-residential consumers. Network Tasman has retained a tariff that complies with the LFC regulations, but it is limited to connections that meet the qualifying criteria as specified in the regulations (primary residence consuming less than 8,000kWh per year).

This change will improve the extent to which Network Tasman's prices for 15kVa connections will reflect the available capacity service levels to these consumers. However, this is limited by the fact that approximately 65 per cent of Network Tasman's residential 15kVa connections use less than 8,000kWh per year and therefore qualify for the LFC tariff. Low use/low load factor consumers under pay for their available service capacity while high use/high load factor consumers over pay for the same capacity. This inefficiency and cross subsidy is an inevitable consequence of the low user tariff regulations.

Generally Network Tasman has very few load constraints on its network (given the use of load control) however the loading on the Stoke GXP is approaching a level which would require investment in a new GXP (see Network Tasman's Asset Management Plan for further detail). Network Tasman does not currently offer any formal arrangements to share any deferral of investment in distribution and transmission assets other than for embedded generators. However as noted in c(iii) below there are a number of useful indirect incentives within Network Tasman's line price structure and contractual agreements that reward any customer behaviour limiting peak demand or lowering Network Tasman costs.

- Some distributed generators are directly rewarded via pass through agreed savings they cause with respect to Network Tasman's Interconnection Charges. Any potential for deferral of distribution investment will be site and plant specific and so will be dealt with on a case by case basis.
- Group 6 consumers obtain full benefit from any reduction in RCPD coincident demands with respect to Interconnection Charges directly passed through by Network Tasman.
- Group 3 AMD and RCPD demand charges automatically reward any load reductions at critical times, whatever their cause, on Network Tasman's distribution network and the Upper South Island grid respectively.
- Group 2 capacity charges provide moderate rewards and incentives for constraining consumer's peak loads. Lower investment in LV assets such as conductor, transformers and fusing is thereby encouraged.
- Controlled and Night kWh prices incentivise and reward mass market consumers

for shifting load to off peak times or enabling their load to be interrupted. Network Tasman's peak network and grid loads are about 10-12% lower than they would have otherwise been as a result of historical uptake of controlled tariff options and use of centralized load control plant.

(iii) signalling, to the extent practicable, the impact of additional usage on future investment costs.

The term "additional usage" is undefined in the Guidelines but presumably relates to

- additional connections to the network; or
- additional kVA demands at connection points; or
- additional kWh consumption across the network.

Given a network's primary function is to provide connectivity and to deliver capacity (kVA) between points of injection and load, additional kVA is probably the most meaningful measure of additional usage for an electrical network.

In terms of "additional usage" future investment is driven by the location of new loads and their impact on the network segment at peak demand times. Developing price components that reflect potential future investment costs due to new loads with any precision requires, in theory, locational marginal prices, but in practice this most likely means kVA-based charges that have locational and timing components associated with them. Alternative tightly time bound (TOU) kWh based tariffs could also provide useful but less accurate signalling.

Within an ICP based pricing regime, the ability to provide signals for the effect additional use has on future investment has been problematic because:

- smart meter roll out is still underway. Consequently it is not yet possible to measure coincident maximum demands and create peak-time kVA-based charges or kWh-based charges that have a useful time components embedded within them for many connections.
- Secondly, there has been a desire by consumers, retailers and Network Tasman's trustee owners to avoid differentiated prices across geographical segments of the distribution network for mass market consumers . Many consumers also have an aversion to high capacity and demand based charges.

The alternative for mass market consumers is a set of relatively blunt pricing instruments focused on maximum demand measured by installed fuse sizes combined with peak time kWh tariffs. Network Tasman uses both these tools in its mass market prices.

Group 3 & 6 consumers all have TOU metering installed and face winter demand charges directly reflective of their contribution to the peak demand levels on the Upper South Island grid and on the distribution network. To the extent that the Interconnection Charge is reflective of Transpower's future grid upgrade costs, it is a very strong and clear signal.

Group 3 consumers also face an anytime demand charge which in part reflects the current and future cost of delivering capacity on the distribution network. However while it signals consumers to minimise demands in general, which is appropriate for lower network assets, it does not specify any critical network times or locations which would be more appropriate to upper network assets.

The distribution component of Group 6 network charges are based on the dedicated and semi-dedicated assets used to service these consumers. Any "additional usage" beyond the capacity of the existing dedicated assets will result in additional investment and the costs will be directly reflected back through to these consumers.

Network Tasman's new connection policy provides for a network development levy on any large new load wishing to connect to the distribution network. The levy reflects any potential shortfall between expected future revenues and the incremental costs caused by the new load. Additionally, Network Tasman has a standard network development levy for new loads locating in uneconomic zones of the network that is a reflection of future network reinforcement costs in these areas. The volume component of the levy reflects the incremental kVA demanded and its distance from the network's injection points and the price component reflects expected future reinforcement costs; usually capacitor bank installation costs or 11kV to 22kV conversion costs.

(b) Where prices based on 'efficient' incremental costs would under-recover allowed revenues, the shortfall should be made up by setting prices in a manner that has regard to consumers' demand responsiveness, to the extent practicable.

This test of efficient pricing focuses on Ramsey concepts of loading any revenue shortfalls over incremental cost onto consumers, products and services that are the least responsive to price changes.

Network Tasman's line charges typically make up 30-35% of most consumers power bills while the generation and retail component makes up the remaining 65-70%. As part of the overall price signal consumers are likely to receive, line price signals provide muted consumption signals. Sensitivity to choices concerning shortfall recovery is therefore also likely to be muted. Therefore the means used to spread and collect any under recovered incremental costs is only of modest importance especially given distribution charges tend to be a declining proportion of consumers' power bills.

Demand elasticity is largely a function of the availability of substitutes. In terms of electricity delivered through traditional centralised generation plant, power grids and distribution networks the alternatives that drive demand elasticity are primarily gas, coal, wood, distributed micro generation, solar water heating and energy efficiency substitutes.

For virtually all Network Tasman consumers:

- Coal and gas (other than gas for cooking) are not particularly viable substitutes in this region and commodity prices are likely to make them less so in the future.
- Incremental use of wood or coal is increasingly being marginalised as a heat source by clean air regulations in Network Tasman's major urban areas.
- Small scale distributed generation is generally not fully viable although a number of consumers choose to adopt these technologies out of interest and a desire for independence and "greenness" rather than as a primary reaction to

electricity prices. However recent price trends in PV panels have improved the economics of micro generation plant embedded "behind" the meter.

- Energy efficiency initiatives (insulation, better lighting & appliances etc) tend to present one off opportunities at discrete points of time for consumers to lower part of their consumption for the long term
- Solar water heating is now a reasonably viable option vis electrically heated water.

Other than for water heating and growth of solar generation substitution, most electrical consumption remains relatively inelastic in the short to medium term. Network Tasman also needs to retain off peak, controlled, night and summer kWh tariff rates at substantial discounts to peak and uncontrolled rates for network and demand efficiency reasons.

Use of fixed capacity or daily charges probably provides best means of making up for under-recoveries as these cause minimal distortion to consumption patterns at the mass market level. However the low user fixed charge regulations limit what can be achieved with respect domestic customers and force loadings on variable tariffs . While "peak" variable prices can also be used, these tend to also encourage the most substitution especially through solar generation installation and energy efficiency initiatives. Use of "off peak" and "controlled" rates for shortfall recoveries risks compromising network investment efficiency through encouraging less controllable and night loads.

(c) Provided that prices satisfy (a) above, prices should be responsive to the requirements and circumstances of stakeholders in order to:

(i) discourage uneconomic bypass;

Bypass may occur through alternative network assets (i.e. by overbuild of existing network) or by customers adopting alternative energy sources /substitutes.

Network prices can address overbuild bypass incentives by ensuring network charges remain below the standalone economic costs for alternative lines supply for particular consumers or groups of consumers. This matter is addressed in (a)(1) above and Network Tasman considers its network prices and polices discourage inefficient bypass by an alternative lines service. Network Tasman has historically reviewed bypass opportunities for major TOU customers but the businesses cases were not supported by Network Tasman's line prices. Network Tasman is unaware of any consumers exercising overbuild bypass choices solely in response to line charge levels.

Bypass via consumers adopting alternative energy sources is more problematic. This type of bypass is incentivised by the delivered cost of energy rather than just the lines cost. Network Tasman has limited influence over the delivered cost of electricity and as noted above Network Tasman's line charges typically make up only 30-35% of energy bills for most mass market consumers. Increasing the amount of lines revenue obtained from fixed daily charges and anytime kVA based charges would help lower incentives for inefficient bypass of network assets via small /micro generation, especially solar generation, embedded behind the meter. It would also reward and help the "best" network customers while challenging the most uneconomic.

(ii) allow for negotiation to better reflect the economic value of services and enable stakeholders to make price/quality trade-offs or non-standard arrangements for services; and

Network Tasman considers that for mass market consumers (98% of Network Tasman's 40,000 ICPs) the electrical network is a "general commons" and the notion of offering price quality/trade-offs for a specific mass market customer(s) is fundamentally flawed. Generally other than offering a choice of differing capacity levels and peak and off peak /controlled tariff options to mass market consumers, Network Tasman is generally unable to offer other differentiated lines services to one consumer without at the same time providing it to all other adjacent consumers sharing the same network segments, whether they want, or are prepared to pay for the service, or not.

However larger customers are more able to contract for different levels of service where they have high levels of asset dedication. Network Tasman's Group 6 consumers have specific and dedicated network requirements and these requirements are reflected in the assets provided, the service terms and the prices Network Tasman has in place with these consumers.

Network Tasman has surveyed and consulted with Group 3 & 6 and larger Group 2 consumers concerning price quality/trade-offs in the past as part of the thresholds price control regime. These consultations now continue as part of the AMP process. The consultations generally show these consumers have primary concerns over changes in the *delivered* price of electricity rather than concerns about changes to service quality. Quality was mostly of second order interest or priority. Network Tasman found it difficult to isolate consumers views down to those just centred on lines price and performance rather than those centred on the performance of the whole delivered energy package. Network Tasman has also canvased electricity retailer views (as representatives of their customers) over line pricing and their primary concerns focus on simplicity and pass through risk rather than anything remotely concerned with price quality trade-offs.

Network Tasman, as a consumer trust owned distributor, must agree on its SCI each year with Trustees (who are elected by and represent consumers interests). The SCI considers company pricing, revenue and cost targets as well as quality and reliability targets. Performance is regularly reported against these targets to the Trust. The Trustees hold the power to appoint Network Tasman's Directors and be consulted over any major transactions proposed by the company. This structure puts in place a viable feedback loop to the company from consumers and stakeholders.

(iii) where network economics warrant, and to the extent practicable, encourage investment in transmission and distribution alternatives (e.g. distributed generation or demand response) and technology innovation.

Network Tasman's line prices directly or indirectly encourage consideration of distribution and transmission alternatives and innovation in the following ways:

- Network Tasman only charges new embedded generators for their incremental costs of connecting to the network. Where warranted, Network Tasman will also consider passing through any avoided distribution costs directly attributable to new embedded generation plant.

- Network Tasman passes through Transpower Interconnection charges directly to Group 3 & 6 consumers, based on TOU data. They thereby gain full value from any means they may have of reducing or avoiding demand coincident with USI peak grid loads.
- Group 3 capacity based AMD prices encourage consumers to minimise their peak loads on the distribution network. Demand reduction such as on site power factor correction or any other means of limiting peak load is rewarded by way of materially lower network charges.
- Group 3 prices include a power factor charge for consumer sites where power factor is non-compliant (worse than 0.95). This combined with AMD and RCPD capacity charges strongly encourages consumers to install technology that enables scarce grid and distribution capacity to be used efficiently.
- Group 2 prices include capacity charges based on installed fused sizes. This provides moderate incentives for consumers to minimise their ICP fusing requirements and to find ways of avoiding increasing peak demands on the network. It also acts as a disincentive for consumers to move up to Group 2 from Group 1,where fixed charges are artificially low.
- Network Tasman pricing has, for all consumers, considerably higher kWh rates on tariffs chargeable on “peak” consumption than for “off peak” or “controlled” consumption. The “on peak” tariff rates are, in general, more than double the “off peak” and “controlled” rates so in theory consumers are incentivised to move consumption away from peak. However given Network Tasman’s line tariffs are mostly no more than 35% of the delivered power bill, these signals are substantially muted by energy retailers who tend to offer minimal, nil, or negative “off peak” incentives in the remaining portion (the other 65%) of consumers power costs.
- Network Tasman requires an upfront network development levy, reflecting both kVA and distance, for new loads seeking new capacity in uneconomic areas of the network. The development levy signal is stronger the larger the load and the further it is away from an Network Tasman GXPs or zone substations. This progressively encourages all remote new loads to minimise their new capacity demands on segments of distribution network that are uneconomic to reinforce and to explore alternative and more efficient ways of supplying their new capacity requirements. It also encourages new load to locate in lower cost areas of the network.
- Large new loads are subject to an economic test that assesses incremental cost against expected future revenue streams. Where there is a shortfall a network development levy can be sought. This incentivises minimisation of capacity use and consideration of alternatives. It also encourages new large load to locate in lower cost areas of the network.
- New connections/loads on Network Tasman’s distribution network are required to fund any new network extension assets (excluding transformers) necessary to

connect their new ICP to the existing distribution network. This policy helps Network Tasman avoid funding uneconomic and undesirable network extensions and incentivises new connections to consider the most economic means of getting power to their particular chosen localities.

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

Pricing transparency, stability and certainty is supported by Network Tasman in the following ways:

- Network Tasman makes commitments as to structure, stability and certainty for line prices in its SCI with the Network Tasman Trust
- Network Tasman is legally bound by its UOSA with retailers to consult over changes in pricing methodology and to provide adequate notice of changes in prices and pricing methodology.
- Network Tasman has commitments to price stability and certainty in its UOSA with retailers.
- Network Tasman commits to only change its distribution prices once in any 12 month period. However, Network Tasman reserves the right to alter transmission prices whenever Transpower changes its charges to Network Tasman.
- Network Tasman is a “controlled” line business under S54 of the Commerce Act and as such must adhere to the price control requirements of the Default Price Quality Regulation and the Starting Price Adjustment Process (Po) or seek a Customised Price Quality Price Pathway.
- Network Tasman has operated at or below its regulatory price path cap since its introduction in 2003 and this has promoted rate stability and certainty for retailers, consumers and stakeholders.
- Network Tasman has forgone temporary price increases in the past to promote certainty and stability and to avoid applying increases that would later have needed to be reversed.
- Network Tasman largely avoids cross subsidisation between consumer load groups and consequently the company accepts under recovery of allowable revenue in load groups where there are higher numbers of uneconomic consumers.
- Network Tasman annually makes available in the public domain (on its website or makes publicly available) its:
  - SCI (agreed with Trustee owners)
  - Annual Financial Statements (audited)
  - Pricing Methodology
  - Line prices split into distribution and transmission components
  - Non Standard supply contracts
  - Use of Systems Agreements

- AMP   - Default Price Path Compliance Statements (audited)   - Information Disclosures (audited)   - New connections and contributions policy   These documents directly or indirectly provide pricing and cost information and offer a high level of transparency to stakeholders.
(e) Development of prices should have regard to the impact of transaction costs on retailers, consumers and other stakeholders and should be economically equivalent across retailers.
The structure of Network Tasman's current line prices have evolved over time in consultation with retailers. More generally, line pricing is at ICP level and is simple to understand and apply while minimising transaction costs for retailers, consumers and Network Tasman. All retailers are treated in an even handed manner under this price structure, which is a requirement in standard UOSA terms. The Use of Systems line pricing is standard across, and applies equally to, all retailers: - There is one kVA capacity charge rate applicable for all standard Group 2 consumers (covers about 2700 Group 2 ICP's) unless consumers opt of a low fixed charge tariff or a high load factor tariff. ICP details and their chargeable capacities are updated on the Registry and are directly available to all electricity retailers   - There are just 4 core kWh prices applicable to consumers in each of Group 1 & 2   - The regulatory requirement to make available a low user charge for all domestic consumers more than doubles the number of lines in the Group 2 part of the price schedule despite only 43 residential customers in this group taking up the option. The regulations increase complexity and transaction costs for both Network Tasman and retailers.   - There is no price variation by regional/geographical area or by consumer type /use (i.e. by business, domestic, irrigation etc) for mass market consumers   - Group 3 line charges are relatively straight-forward but rely heavily on TOU data. Group 3 TOU consumers are split in categories by size with 151 of the consumers being in the most numerous category. Each Group 3 consumer faces Network Tasman's winter and anytime peak demand charges with the relevant annual chargeable demand quantities taken from TOU data. Consumption prices are TOU based and are split between day and night on a summer winter basis.   - At their request, Group 6 line charges are direct billed to customers rather than through retailers under UOSA's. Transmission costs are a direct pass through of TPNZ charges on a proportionate basis. Line charges are an annual rental amount, billed monthly without retailer involvement.

At the time of publication, the Electricity Authority was in the process of reviewing its distribution pricing principles. Should the Electricity Authority amend its pricing principles, Network Tasman will reflect these changes in the 2020/21 pricing methodology.

10 Future pricing strategy

The way that consumers use electricity and the way that it is generated is continuing to evolve. In this context Network Tasman considers it important to assess whether there are improvements that can be made to price structures to enable and support consumer choice, while at the same time continuing to provide a sustainable electricity network.

In the context of developing a forward strategy for pricing, Network Tasman has conducted initial consumer research on price structures and their interest in using emerging technologies such as solar panels, battery storage and electric vehicles. The results of that research as well as an overview of Network Tasman's next steps towards assessing possible price structure enhancements or alternatives are set out below.

10.1 Consumer perspectives on pricing

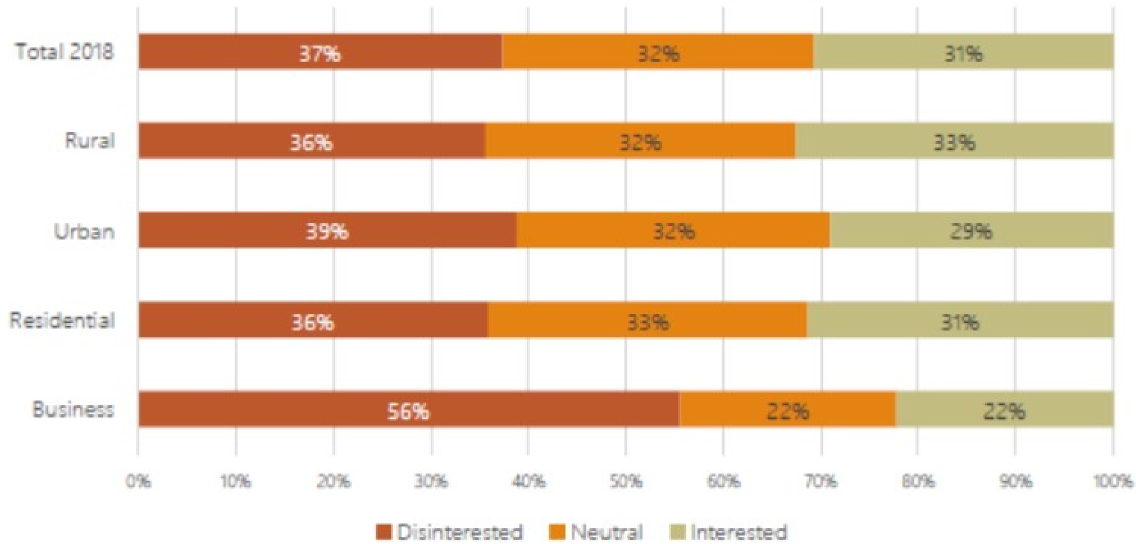
Network Tasman conducted a consumer survey in November 2018 which examined a range of issues including overall satisfaction with our service, willingness to pay for quality improvements and views on price structures. The survey results showed a high awareness of Network Tasman and a high level of satisfaction with the company's performance with regard to quality of service, continuity and restoration, with overall performance satisfaction being rated at 8.52/10.

With regard to the price-quality trade-off, the majority of customers surveyed (73%) would not be prepared to pay any more on top of current charges for an improvement to quality. Approximately 10% of customers responded that they would be willing to pay around $25 per year ($2 per month) for improved quality.

The issue of price-quality trade-offs is addressed in more detail in Network Tasman's upcoming Asset Management Plan (AMP) which contains the full results of the market research survey. Growth in connections and consumer capacity requirements will require significant investments over the next 10 years, with a number of these investments expected to provide improvements to security of supply. For example, the establishment of a new GXP (as signalled in the AMP) will reduce reliance on the existing Stoke GXP.

Customers were also surveyed on the structure of prices. Around 30% consumers indicated that they would be interested in a peak/off-peak plan where prices are higher during network peak periods such as morning and evening and less during off-peak periods. As discussed above in section 3.1, Network Tasman currently offers a day/night price option. Approximately 2% of mass market connections use the day/night price option with a further 10% using the night only rate.

Figure 4: Interest in peak vs off-peak plan (November 2018)



The deployment of advanced meters for Group 1 and 2 consumers could facilitate further uptake of these price options and/or development of other time-of-use price options. Network Tasman has conducted detailed analysis of TOU options, but concluded that further analysis of retail impacts and the inter-play with load control is required. Network Tasman will continue to review its day/night price signals over the next 12 months and engage in further analysis as to whether other time-of-use price options should be introduced.

More generally, Network Tasman considers that it is important is to continue to improve our engagement with consumers regarding prices.

10.2 Future pricing strategy

The deployment of smart meters in Network Tasman's region will significantly improve Network Tasman's ability to implement more sophisticated prices within the next few years. Network Tasman is conducting analysis and review which includes consideration of price structures enabled by advanced meters including, for example, time-of-use, capacity and demand price options. Network Tasman is working closely with the ENA and other electricity distribution businesses in examining these options.

Existing prices for Group 1 customers have a large consumption-based component. This does not reflect the service provided to customers nor does it reflect the underlying cost structure of an electricity distribution network. Looking to the future, technological change indicates that the way consumers use electricity may change significantly. Solar panels, battery storage and electric vehicles may over time become commonplace as technological improvements and scale economies result in reduced costs. Simplistic prices based on consumption may not properly support consumer choice in the way consumers use emerging technologies and also may not result in sustainable outcomes.

Although there is significant uncertainty over how popular these technologies will be in the long-term and how quickly adoption would occur, a small number of consumers already are taking an interest in the options becoming available to them. For example, approximately 2% of connections on Network Tasman's network have solar generation, and growth of electric vehicles has been strong over the past year with the number in the Nelson-Tasman region doubling in 2018.

In this context it is likely to become increasingly important that Network Tasman's prices better reflects the underlying costs in some way. Under existing prices for Group 1 (and to a lesser extent Group 2 prices) consumers without solar panels will disproportionately bear the burden of funding network costs. In addition, in the current scenario where most customers do not face a time-of-use price, there is little incentive for consumers to shift peak consumption to off-peak periods (for example, through the use of storage batteries) which would ultimately result in a lower total cost of service in the longer term.

At its simplest, improved price signals can be conveyed by setting lower prices during off-peak periods where there is substantial excess capacity on the network and higher prices during periods when the network is busy. Consumers are able to make choices according to the value they place on consumption at different times of day. For example, a consumer may choose to take advantage of a low off-peak rate and plug-in their electric vehicle primarily during off-peak times. Network Tasman's existing day/night prices are one example of these types of price signals, however the use of advanced meters allow more sophisticated time-of-use prices.

Other options include prices that are based on the amount of capacity that a consumer requires, either reflecting their total capacity requirement or their capacity requirements during peak network times. These types of prices better reflect that the cost of providing distribution network services is driven by capacity requirements and demand at peak times rather than consumption volumes.

Ultimately the choice of price structure will need to take into account a range of factors and there will be trade-offs to be considered between economically efficient prices, what is practicable and what retailers and consumers want. Network Tasman is of the view that it is crucial to work closely with other EDBs, the ENA and retailers to properly evaluate these options to facilitate a smooth implementation and that it is also vitally important to understand consumers' perspectives.

At the time of publication, the Electricity Authority is in the middle of a project reviewing its existing distribution pricing principles. Until the Authority completes its review, there is uncertainty about how the Authority wishes distributors to reform their prices in the future. Network Tasman will await the conclusion of the Authority's review before considering any further development of its future pricing strategy.

Appendix A: Glossary

Coincident maximum demand (CMD): Demand measure during the system peak.

Distributed Generator (DG): A party with plant or equipment capable of injecting electricity into Network Tasman's distribution network.

Grid Exit Point (GXP): A point of connection between Transpower's transmission system and the distributor's network.

EDB: Electricity Distribution Business

High-Voltage (HV): Voltage above 1,000 volts.

ICP: Installation Control Point, which is a physical point of connection on a local network which a Distributor nominates as the point at which a retailer will be deemed to supply electricity to a consumer.

Kilovolt-ampere (kVA): A measure of apparent power being the product of volts and amps. Used for the measurement of capacity and demand.

kilowatt (kW): A measure of electrical power. Used for the measurement of demand during peak periods for the allocation of transmission charges.

kilowatt-hour (kWh): A unit of energy being the product of power in watts and time in hours. Used for the measurement of electricity consumption.

Low-Voltage (LV): Voltage of up to 1,000 volts. Generally 230 or 400 volts for supply to consumers.

Regional Coincident Peak Demand (RCPD): The measure of demand used by Transpower for its transmission grid charges. It is measured as the 100 highest half-hour periods of regional demand (measured in kw) during the period 1 September to 30 August.

Regulatory Asset Base (RAB): The amount that Network Tasman has invested in its regulated network indexed to inflation and adjusted for depreciation.

Appendix B: Cost allocators by load group

Customer Group	Number of ICP's	Coincident Maximum Demand	Capacity	Winter Maximum RCPD	Total Consumption	RAB Value Allocated
	#	kW	kVA	kW	kWh	$'000m
Group 1	36,990	54,661	554,850	32,530	260,758,209	$ 84.11
Group 2	2,817	22,922	124,973	18,976	110,874,029	$ 44.10
Group 3	171	25,818	53,565	23,079	151,216,464	$ 29.88
Group 6	2	18,974	22,694	16,938	117,883,899	$ 2.70
Bulk supply	1	N/A	27,696	13,591	94,311,400	$ 3.77
Total	**39,981**	**122,375**	**783,778**	**105,113**	**735,044,001**	**$ 164.56**

Appendix C: Network Tasman prices effective from 1 April 2019

Network Tasman distributes electricity to connections in the Nelson-Tasman region, excluding central Nelson. The delivery prices in the table below cover the cost of our local distribution network and the cost of national transmission of electricity. These prices are used to charge electricity retailers. Electricity retailers determine how to package our charges together with the energy, metering and other retail costs when setting the retail prices that appear in your power account.

Discounts are credited directly to consumers' power accounts for eligible connections twice per year. The first discount will be calculated based on usage from 1 April 2019 to 31 August 2019. The second discount will be calculated based on usage from 1 September 2019 to 31 March 2020.

Understanding the table below:

Most residential consumers and some small businesses (those who have supplies with a maximum delivery capacity of 15kVA) are Group 1 consumers. Group 2 consumers have a delivery capacity of between 20kVA and 150kVA.

Price description	Price Code	Connections with this price	Units	2019-2020 Distribution price	2019-2020 Transmission price	2019-2020 Pass through price	2019-2020 Delivery price	2019-2020 Discount	2018-2019 Distribution price	2018-2019 Transmission price	2018-2019 Pass through price	2018-2019 Delivery price	2018-2019 Discount
Metered connections 15-150 kVA capacity													
Low-Use Residential (<8,000 kWh pa) connections. Price Category 1RL (new)													
Daily fixed price	1RL	21,560	$/day	0.1185	0.0307	0.0008	**0.1500**	**0.0000**	0.1185	0.0307	0.0008	**0.1500**	**0.0000**
Uncontrolled	1RLANY	21,238	$/kWh	0.0667	0.0239	0.0004	**0.0910**	**0.0293**	0.0635	0.0295	0.0004	**0.0934**	**0.0260**
Day (of day/night)	1RLDAY	237	$/kWh	0.0761	0.0264	0.0005	**0.1030**	**0.0330**	0.0697	0.0326	0.0005	**0.1028**	**0.0260**
Night	1RLNIT	2,286	$/kWh	0.0138	0.0081	0.0001	**0.0220**	**0.0098**	0.0210	0.0100	0.0001	**0.0311**	**0.0260**
Controlled water	1RLWSR	16,536	$/kWh	0.0209	0.0109	0.0002	**0.0320**	**0.0135**	0.0295	0.0134	0.0002	**0.0431**	**0.0260**
Generation Export	1RLGEN	565	$/kWh	0.0000	0.0000	0.0000	**0.0000**	**0.0000**	0.0000	0.0000	0.0000	**0.0000**	**0.0000**
Standard use Residential (>8,000 kWh pa) connections. Price Category 1RS (new)													
Daily fixed price	1RS	12,374	$/day	0.5925	0.1567	0.0008	**0.7500**	**0.0000**	0.1185	0.0307	0.0008	**0.1500**	**0.0000**
Uncontrolled	1RSANY	12,189	$/kWh	0.0392	0.0174	0.0004	**0.0570**	**0.0293**	0.0635	0.0295	0.0004	**0.0934**	**0.0260**
Day (of day/night)	1RSDAY	136	$/kWh	0.0462	0.0193	0.0005	**0.0660**	**0.0328**	0.0697	0.0326	0.0005	**0.1028**	**0.0260**
Night	1RSNIT	1,312	$/kWh	0.0100	0.0059	0.0001	**0.0160**	**0.0100**	0.0210	0.0100	0.0001	**0.0311**	**0.0260**
Controlled water	1RSWSR	9,491	$/kWh	0.0138	0.0080	0.0002	**0.0220**	**0.0136**	0.0295	0.0134	0.0002	**0.0431**	**0.0260**
Generation Export	1RSGEN	241	$/kWh	0.0000	0.0000	0.0000	**0.0000**	**0.0000**	0.0000	0.0000	0.0000	**0.0000**	**0.0000**
Non-Residential connections. Price Category 1GL (new)													
Daily fixed price	1GL	3,194	$/day	0.5925	0.1567	0.0008	**0.7500**	**0.0000**	0.1185	0.0307	0.0008	**0.1500**	**0.0000**
Uncontrolled	1GLANY	2,691	$/kWh	0.0392	0.0174	0.0004	**0.0570**	**0.0293**	0.0635	0.0295	0.0004	**0.0934**	**0.0260**
Day (of day/night)	1GLDAY	574	$/kWh	0.0462	0.0193	0.0005	**0.0660**	**0.0328**	0.0697	0.0326	0.0005	**0.1028**	**0.0260**
Night	1GLNIT	713	$/kWh	0.0100	0.0059	0.0001	**0.0160**	**0.0100**	0.0210	0.0100	0.0001	**0.0311**	**0.0260**
Controlled water	1GLWSR	840	$/kWh	0.0138	0.0080	0.0002	**0.0220**	**0.0136**	0.0295	0.0134	0.0002	**0.0431**	**0.0260**
Generation Export	1GLGEN	58	$/kWh	0.0000	0.0000	0.0000	**0.0000**	**0.0000**	0.0000	0.0000	0.0000	**0.0000**	**0.0000**
General (20-150 kVA) connections. Price Category 2													
Daily capacity price	2	2,692	$/kVA/day	0.0561	0.0146	0.0003	**0.0710**	**0.0000**	0.0381	0.0147	0.0003	**0.0531**	**0.0000**
Uncontrolled	2ANY	2,268	$/kWh	0.0498	0.0168	0.0004	**0.0670**	**0.0275**	0.0600	0.0216	0.0004	**0.0820**	**0.0260**
Day (of day/night)	2DAY	484	$/kWh	0.0569	0.0187	0.0004	**0.0760**	**0.0310**	0.0660	0.0240	0.0004	**0.0904**	**0.0260**
Night	2NIT	601	$/kWh	0.0200	0.0000	0.0000	**0.0200**	**0.0081**	0.0198	0.0073	0.0001	**0.0272**	**0.0260**
Controlled water	2WSR	708	$/kWh	0.0278	0.0000	0.0002	**0.0280**	**0.0120**	0.0278	0.0099	0.0002	**0.0379**	**0.0260**
Generation Export	2GEN	61	$/kWh	0.0000	0.0000	0.0000	**0.0000**	**0.0000**	0.0000	0.0000	0.0000	**0.0000**	**0.0000**
Residential Low Fixed (20 and 30 kVA cap		0											
Daily capacity price	2LLFC	41	$/day	0.1253	0.0239	0.0008	**0.1500**	**0.0000**	0.1185	0.0307	0.0008	**0.1500**	**0.0000**
Uncontrolled	2LANY	37	$/kWh	0.1102	0.0254	0.0004	**0.1360**	**0.0233**	0.0907	0.0325	0.0004	**0.1236**	**0.0260**
Day (of day/night)	2LDAY	5	$/kWh	0.1362	0.0273	0.0005	**0.1640**	**0.0281**	0.0965	0.0350	0.0005	**0.1320**	**0.0260**
Night	2LNIT	9	$/kWh	0.0340	0.0144	0.0001	**0.0485**	**0.0083**	0.0500	0.0184	0.0001	**0.0685**	**0.0260**
Controlled water	2LWSR	22	$/kWh	0.0434	0.0163	0.0001	**0.0598**	**0.0102**	0.0583	0.0209	0.0001	**0.0793**	**0.0260**
Generation Export	2LGEN	0		0.0000	0.0000	0.0000	**0.0000**	**0.0000**	0.0000	0.0000	0.0000	**0.0000**	**0.0000**
Residential Low Fixed (40 to 150 kVA capacity) connections. Price Category 2HLFC													
Daily capacity price	2HLFC	2	$/day	0.1253	0.0239	0.0008	**0.1500**	**0.0000**	0.1185	0.0307	0.0008	**0.1500**	**0.0000**
Uncontrolled	2HANY	2	$/kWh	0.1760	0.0355	0.0005	**0.2120**	**0.0250**	0.1259	0.0455	0.0005	**0.1719**	**0.0260**
Day (of day/night)	2HDAY	0	$/kWh	0.1970	0.0374	0.0006	**0.2350**	**0.0300**	0.1318	0.0479	0.0006	**0.1803**	**0.0260**
Night	2HNIT	0	$/kWh	0.1129	0.0246	0.0001	**0.1376**	**0.0110**	0.0850	0.0316	0.0001	**0.1167**	**0.0260**
Controlled water	2HWSR	1	$/kWh	0.1415	0.0264	0.0001	**0.1680**	**0.0140**	0.0937	0.0338	0.0001	**0.1276**	**0.0260**
Generation Export	2HGEN	3		0.0000	0.0000	0.0000	**0.0000**	**0.0000**	0.0000	0.0000	0.0000	**0.0000**	**0.0000**
High Load Factor (Up to 150 kVA) connections. Price Category HLF													
Daily capacity price	HLF	55	$/kVA/day	0.3387	0.0651	0.0021	**0.4059**	**0.0940**	0.3204	0.0834	0.0021	**0.4059**	**0.0940**
Uncontrolled	HLFANY	32	$/kWh	0.0171	0.0046	0.0001	**0.0218**	**0.0071**	0.0171	0.0059	0.0001	**0.0231**	**0.0072**
Day (of day/night)	HLFDAY	24	$/kWh	0.0185	0.0051	0.0001	**0.0237**	**0.0075**	0.0185	0.0065	0.0001	**0.0251**	**0.0072**
Night	HLFNIT	25	$/kWh	0.0053	0.0014	0.0001	**0.0068**	**0.0030**	0.0053	0.0018	0.0001	**0.0072**	**0.0072**
Controlled water	HLFWSR	10	$/kWh	0.0077	0.0020	0.0001	**0.0098**	**0.0051**	0.0077	0.0026	0.0001	**0.0104**	**0.0072**
Generation Export	HLFGEN	0	$/kWh	0.0000	0.0000	0.0000	**0.0000**	**0.0000**	0.0000	0.0000	0.0000	**0.0000**	**0.0000**

Large Commercial ≥150 kVA capacity, TOU metered (Group 3)												
Category 3.1												
Anytime kVA demand	AnyDem31	4	$/kVA/day	0.0924	0.0006	0.0332	**0.1262**	**0.0121**	0.0908	0.0006	0.0332	**0.1246**
RCPD kW demand	WinDem	4	$/kW/day	0.0327	0.0002	0.2956	**0.3285**	**0.0000**	0.0319	0.0002	0.3200	**0.3521**
Summer day	SD31	4	$/kWh	0.0046	0.0000	0.0000	**0.0046**	**0.0019**	0.0045	0.0000	0.0000	**0.0045**
Summer night	SN31	4	$/kWh	0.0024	0.0000	0.0000	**0.0024**	**0.0010**	0.0024	0.0000	0.0000	**0.0024**
Winter day	WD31	4	$/kWh	0.0082	0.0000	0.0000	**0.0082**	**0.0033**	0.0080	0.0000	0.0000	**0.0080**
Winter night	WN31	4	$/kWh	0.0024	0.0000	0.0000	**0.0024**	**0.0010**	0.0024	0.0000	0.0000	**0.0024**
Category 3.3												
Anytime kVA demand	AnyDem33	4	$/kVA/day	0.1194	0.0008	0.0330	**0.1532**	**0.0156**	0.1173	0.0008	0.0330	**0.1511**
RCPD kW demand	WinDem	4	$/kW/day	0.0327	0.0002	0.2956	**0.3285**	**0.0000**	0.0319	0.0002	0.3200	**0.3521**
Summer day	SD33	4	$/kWh	0.0138	0.0000	0.0000	**0.0138**	**0.0056**	0.0136	0.0000	0.0000	**0.0136**
Summer night	SN33	4	$/kWh	0.0073	0.0000	0.0000	**0.0073**	**0.0030**	0.0072	0.0000	0.0000	**0.0072**
Winter day	WD33	4	$/kWh	0.0354	0.0000	0.0000	**0.0354**	**0.0144**	0.0348	0.0000	0.0000	**0.0348**
Winter night	WN33	4	$/kWh	0.0073	0.0000	0.0000	**0.0073**	**0.0030**	0.0072	0.0000	0.0000	**0.0072**
Category 3.4												
Anytime kVA demand	AnyDem34	151	$/kVA/day	0.1274	0.0008	0.0330	**0.1612**	**0.0167**	0.1251	0.0008	0.0330	**0.1589**
RCPD kW demand	WinDem	151	$/kW/day	0.0327	0.0002	0.2956	**0.3285**	**0.0000**	0.0319	0.0002	0.3200	**0.3521**
Summer day	SD34	151	$/kWh	0.0138	0.0000	0.0000	**0.0138**	**0.0056**	0.0136	0.0000	0.0000	**0.0136**
Summer night	SN34	151	$/kWh	0.0073	0.0000	0.0000	**0.0073**	**0.0030**	0.0072	0.0000	0.0000	**0.0072**
Winter day	WD34	151	$/kWh	0.0354	0.0000	0.0000	**0.0354**	**0.0144**	0.0348	0.0000	0.0000	**0.0348**
Winter night	WN34	151	$/kWh	0.0073	0.0000	0.0000	**0.0073**	**0.0030**	0.0072	0.0000	0.0000	**0.0072**
Category 3.5												
Anytime kVA demand	AnyDem35	2	$/kVA/day	0.1194	0.0008	0.0330	**0.1532**	**0.0156**	0.1173	0.0008	0.0330	**0.1511**
RCPD kW demand	WinDem	2	$/kW/day	0.0327	0.0002	0.2956	**0.3285**	**0.0000**	0.0319	0.0002	0.3200	**0.3521**
Summer day	SD35	2	$/kWh	0.0094	0.0000	0.0000	**0.0094**	**0.0038**	0.0092	0.0000	0.0000	**0.0092**
Summer night	SN35	2	$/kWh	0.0058	0.0000	0.0000	**0.0058**	**0.0024**	0.0057	0.0000	0.0000	**0.0057**
Winter day	WD35	2	$/kWh	0.0302	0.0000	0.0000	**0.0302**	**0.0123**	0.0297	0.0000	0.0000	**0.0297**
Winter night	WN35	2	$/kWh	0.0058	0.0000	0.0000	**0.0058**	**0.0024**	0.0057	0.0000	0.0000	**0.0057**
Power factor charge (where applies)												
All group 3 categories	kVAr	3	$/kVAr/day	0.2610	0.0000	0.0000	**0.2610**	**0.0000**	0.2564	0.0000	0.0000	**0.2564**
Individually priced category (Group 6)[2]												
Cat 6.1 - Annual charge	6.1	1	$ per annum	220,075	*	1,792,187	**2,012,262**	**26,723**	216,184	*	1,911,716	**2,127,900**
Cat 6.2 - Annual charge	6.2	1	$ per annum	235,869	*	331,230	**567,099**	**39,432**	231,698	*	332,757	**564,455**
Cat CB - Annual charge		1	$ per annum	1,347,770	*	340,452	**1,688,222**	**0**	1,326,334	*	327,492	**1,653,826**
Unmetered connections (Group 0):Low capacity: Electric fences, communications etc - General												
Daily fixed price	0UNM	84	$/day	0.3600	0.0024	0.1776	**0.5400**	**0.0000**	0.3500	0.0024	0.1776	**0.5300**
Unmetered connections (Group 0): Streetlighting - General												
Streetlight only connection	0S	23	$/day	0.0000	0.0000	0.0000	**0.0000**	**0.0000**	0.0000	0.0000	0.0000	**0.0000**
Capacity price for streetlights	0STL	154	$/W/day	0.00081	0.00001	0.00037	**0.00119**	**0.00000**	0.00080	0.00001	0.00036	**0.00117**

Notes: *(1) All prices are GST exclusive; (2) Group 6 connections also attract monthly ancillary and LRR pass-through charges; (3) Residential Low Fixed Charge is available for connections with consumption less than 8,000 kWh per annum; (4) Day: 0700 to 2300, Night: 2300 to 0700; (5) High Load Factor pricing is best suited to high consumption Group 1&2 consumers with load factors exceeding 30%; (6) General metered supply includes both residential and non-residential; (7) Discounts are subject to any legislative or regulatory changes that would adversely affect the provision and/or receipt of discounts; (8) Transmission prices recover charges for the use of the national grid, ACOT payments to generators and the avoided transmission liability (as prescribed in clause 3.1.3(e) of the Electricity Distribution Services Input Methodologies Determination 2012). It is noted that Network Tasman's transmission pricing does not include the full avoided transmission liability, and instead only includes the portion that it chooses to recover, as permitted by an exemption granted by the Commerce Commission from the requirement in clause 2.4.18 of the Information Disclosure Determination. .*

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Appendix D: Proportion of Target Revenue collected through each price component

Price description	Price Code	Connections with this price	Units	Transmission	Pass through & recoverable	Distribution	Total
Metered connections 15-150 kVA capacity							
Low-Use Residential (<8,000 kWh pa) connections. Price Category 1RL (new)							
Daily fixed price	1RL	21,560	$/day	0.5%	0.0%	2.0%	2.6%
Uncontrolled	1RLANY	21,238	$/kWh	3.9%	0.1%	10.9%	14.9%
Day (of day/night)	1RLDAY	237	$/kWh	0.0%	0.0%	0.1%	0.1%
Night	1RLNIT	2,286	$/kWh	0.0%	0.0%	0.0%	0.1%
Controlled water	1RLWSR	16,536	$/kWh	0.7%	0.0%	1.4%	2.1%
Generation Export	1RLGEN	565	$/kWh	0.0%	0.0%	0.0%	0.0%
Standard use Residential (>8,000 kWh pa) connections. Price Category 1RS (new)							
Daily fixed price	1RS	12,374	$/day	1.6%	0.0%	5.9%	7.5%
Uncontrolled	1RSANY	12,189	$/kWh	3.7%	0.1%	8.4%	12.3%
Day (of day/night)	1RSDAY	136	$/kWh	0.1%	0.0%	0.1%	0.2%
Night	1RSNIT	1,312	$/kWh	0.0%	0.0%	0.1%	0.1%
Controlled water	1RSWSR	9,491	$/kWh	0.6%	0.0%	1.0%	1.6%
Generation Export	1RSGEN	241	$/kWh	0.0%	0.0%	0.0%	0.0%
Non-Residential connections. Price Category 1GL (new)							
Daily fixed price	1GL	3,194	$/day	0.4%	0.0%	1.5%	1.9%
Uncontrolled	1GLANY	2,691	$/kWh	0.7%	0.0%	1.5%	2.2%
Day (of day/night)	1GLDAY	574	$/kWh	0.0%	0.0%	0.0%	0.1%
Night	1GLNIT	713	$/kWh	0.0%	0.0%	0.0%	0.0%
Controlled water	1GLWSR	840	$/kWh	0.0%	0.0%	0.0%	0.1%
Generation Export	1GLGEN	58	$/kWh	0.0%	0.0%	0.0%	0.0%
General (20-150 kVA) connections. Price Category 2							
Daily capacity price	2	2,692	$/kVA/day	1.5%	0.0%	5.7%	7.2%
Uncontrolled	2ANY	2,268	$/kWh	2.6%	0.1%	7.7%	10.3%
Day (of day/night)	2DAY	484	$/kWh	0.7%	0.0%	2.2%	3.0%
Night	2NIT	601	$/kWh	0.0%	0.0%	0.4%	0.4%
Controlled water	2WSR	708	$/kWh	0.0%	0.0%	0.2%	0.2%
Generation Export	2GEN		$/kWh	0.0%	0.0%	0.0%	0.0%
Residential Low Fixed (20 and 30 kVA capacity) connections. Price Category 2LLFC							
Daily capacity price	2LLFC	41	$/day	0.0%	0.0%	0.0%	0.0%
Uncontrolled	2LANY	37	$/kWh	0.0%	0.0%	0.1%	0.1%
Day (of day/night)	2LDAY	5	$/kWh	0.0%	0.0%	0.0%	0.0%
Night	2LNIT	9	$/kWh	0.0%	0.0%	0.0%	0.0%
Controlled water	2LWSR	22	$/kWh	0.0%	0.0%	0.0%	0.0%
Generation Export	2LGEN			0.0%	0.0%	0.0%	0.0%
Residential Low Fixed (40 to 150 kVA capacity) connections. Price Category 2HLFC							
Daily capacity price	2HLFC	2	$/day	0.0%	0.0%	0.0%	0.0%
Uncontrolled	2HANY	2	$/kWh	0.0%	0.0%	0.0%	0.0%
Day (of day/night)	2HDAY	0	$/kWh	0.0%	0.0%	0.0%	0.0%
Night	2HNIT	0	$/kWh	0.0%	0.0%	0.0%	0.0%
Controlled water	2HWSR	1	$/kWh	0.0%	0.0%	0.0%	0.0%
Generation Export	2HGEN			0.0%	0.0%	0.0%	0.0%
High Load Factor (Up to 150 kVA) connections. Price Category HLF				0.0%	0.0%	0.0%	0.0%
Daily capacity price	HLF	55	$/kVA/day	0.2%	0.0%	1.0%	1.2%
Uncontrolled	HLFANY	32	$/kWh	0.0%	0.0%	0.2%	0.2%
Day (of day/night)	HLFDAY	24	$/kWh	0.0%	0.0%	0.2%	0.2%
Night	HLFNIT	25	$/kWh	0.0%	0.0%	0.0%	0.0%
Controlled water	HLFWSR	10	$/kWh	0.0%	0.0%	0.0%	0.0%
Generation Export	HLFGEN		$/kWh	0.0%	0.0%	0.0%	0.0%
				0.0%	0.0%	0.0%	0.0%
Large Commercial ≥150 kVA capacity, TOU metered (Group 3)							
Category 3.1							
Anytime kVA demand	AnyDem31	4	$/kVA/day	0.1%	0.0%	0.2%	0.2%
Summer day	SD31	4	$/kWh	0.0%	0.0%	0.0%	0.0%
Summer night	SN31	4	$/kWh	0.0%	0.0%	0.0%	0.0%
Winter day	WD31	4	$/kWh	0.0%	0.0%	0.1%	0.1%
Winter night	WN31	4	$/kWh	0.0%	0.0%	0.0%	0.0%
Category 3.3							
Anytime kVA demand	AnyDem33	4	$/kVA/day	0.1%	0.0%	0.2%	0.3%
Summer day	SD33	4	$/kWh	0.0%	0.0%	0.1%	0.1%
Summer night	SN33	4	$/kWh	0.0%	0.0%	0.0%	0.0%
Winter day	WD33	4	$/kWh	0.0%	0.0%	0.2%	0.2%
Winter night	WN33	4	$/kWh	0.0%	0.0%	0.0%	0.0%
Category 3.4							
Anytime kVA demand	AnyDem34	151	$/kVA/day	1.2%	0.0%	4.6%	5.8%
Summer day	SD34	151	$/kWh	0.0%	0.0%	1.5%	1.5%
Summer night	SN34	151	$/kWh	0.0%	0.0%	0.3%	0.3%
Winter day	WD34	151	$/kWh	0.0%	0.0%	2.9%	2.9%
Winter night	WN34	151	$/kWh	0.0%	0.0%	0.2%	0.2%
Category 3.5							
Anytime kVA demand	AnyDem35	2	$/kVA/day	0.1%	0.0%	0.4%	0.5%
Summer day	SD35	2	$/kWh	0.0%	0.0%	0.1%	0.1%
Summer night	SN35	2	$/kWh	0.0%	0.0%	0.0%	0.0%
Winter day	WD35	2	$/kWh	0.0%	0.0%	0.3%	0.3%
Winter night	WN35	2	$/kWh	0.0%	0.0%	0.0%	0.0%
RCPD kW demand (all Categories	WinDem	161	$/kW/day	5.0%	0.0%	0.6%	5.6%
Power factor charge (where applies)							
All group 3 categories	kVAr	3	$/kVAr/day	0.0%	0.0%	0.0%	0.0%
Individually priced categories							
Cat 6.1 - Annual charge	6.1	1	$ per annum	3.8%	0.0%	0.5%	4.3%
Cat 6.2 - Annual charge	6.2	1	$ per annum	0.6%	0.0%	0.5%	1.1%
Embedded Generator	CobbLine	1	$ per annum	0.8%	0.0%	3.0%	3.8%
Embedded Generator	MAT		$ per annum	0.0%	0.0%	0.0%	0.0%
Embedded Network	NEL	1	$ per annum	3.6%	0.0%	0.0%	3.6%
Unmetered connections (Group 0):Low capacity: Electric fences, communications etc							
Daily fixed price	0UNM	84	$/day	0.0%	0.0%	0.0%	0.0%
Unmetered connections (Group 0): Streetlighting - General							
Streetlight only connection	0S	23	$/day	0.0%	0.0%	0.0%	0.0%
Capacity price for streetlights	0STL	154	$/W/day	0.1%	0.0%	0.3%	0.4%

Note: As required under Section 2.4.3 (8) of the Electricity Information Disclosure Determination 2012.