# Nelson Electricity Limited
# Pricing Methodology Disclosure

For the period beginning 1 April 2024

The following information is disclosed in accordance with the Electricity Distribution Information Disclosure Determination 2012 under Part 4 of the Commerce Act 1986.

## TABLE OF CONTENTS

# Director Certification

**In accordance with the Commerce Act**
**Electricity Distribution Information Disclosure Determination 2012**

**<u>Nelson Electricity Limited - Pricing Methodology for the period beginning 1 April 2024</u>**

**SCHEDULE 17**
**Certification of Year-beginning Disclosures**

Clause 2.9.1

We, Oliver Rupert Kearney and Timothy James Cosgrove, being directors of Nelson Electricity Limited certify that, having made all reasonable inquiry, to the best of our knowledge:

a) The following attached information of Nelson Electricity Limited prepared for the purposes of clauses 2.4.1, 2.6.1, 2.6.3, 2.6.6 and 2.7.2 of the Electricity Distribution Information Disclosure Determination 2012 in all material respects complies with that determination.

b) The prospective financial or non-financial information included in the attached information has been measured on a basis consistent with regulatory requirements or recognised industry standards.

| | | | |
|---|---|---|---|
| Signed | | Signed | |
| Date | 28 March 2024 | Date | 28 March 2024 |

## Glossary and Abbreviations

| | |
|---|---|
| **Advanced Meter** | Also called a smart meter. Is a meter with the ability to measure energy use at various time intervals and with operational two-way remote communications capability. Installed at a Category 1 or 2 metering installation point (≤500Amps). |
| **Connection** | A point of connection to an electricity distribution network as identified by an Installation Control Point (ICP) identifier. |
| **Controlled Meter** | A meter that measures load where there is functionality to control the energy provided to permanently wired appliances (e.g. a hot water cylinder) that are connected to the meter. |
| **Distributor** | A company that owns or operates the power lines that transport electricity on local networks. Terms also used are 'distribution company', 'lines company' and 'network company'. |
| **Electricity Industry Act 2010 (Act)** | An Act that regulates the operation of the New Zealand electricity industry. |
| **Electricity Industry Participation Code (Code)** | The Code sets out the duties and responsibilities that apply to industry participants and the Electricity Authority. |
| **Electricity Information Exchange Protocol (EIEP)** | EIEPs provide a set of standardised formats for business-to-business information exchanges. |
| **Electricity Networks Association (ENA)** | Association of all 29 New Zealand electricity distributors. |
| **Information Disclosure (ID)** | Electricity Distribution Information Disclosure Determination 2012. |
| **Input Methodology (IM)** | Electricity Distribution Services Input Methodologies Determination 2012. |
| **Installation Control Point (ICP)** | See Connection. |
| **Kilowatt hour (kWh)** | kilowatt hour is also known as a unit of electricity and is the basis of retail sales and reconciliation of electricity in the market. |
| **Legacy meter** | A meter that measures cumulative energy consumption (kWh) and does not have remote communications capability. Installed at a Category 2 ICP or lower (≤500Amps). |
| **Low Fixed Charge Regulations (LFC Regulations)** | Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004. |
| **Loss Factor** | Loss factors are declared by distributors and used to reflect the normal difference between energy injected into a network and energy delivered from the network in the reconciliation process. |
| **Low Fixed Charge (LFC)** | Low Fixed Charge. |
| **Lower South region** | Stipulated in the LFC regulations as consumers supplied by the Arthur's Pass, Castle Hill, Papanui, and Hororata grid exit points, or any grid exit point that is located further south. |
| **Meter Categories (1, 2, 3, 4, and 5)** | Defined in the Schedule 10.1 of the Code. See Appendix 6. |
| **Meter register** | An energy measurement device on a meter. |
| **Peak Load** | Peak half hourly demand, measured in kW or kVA. |
| **Pricing Principles** | The distribution pricing principles as published by the Electricity Commission in March 2010, adopted by the Electricity Authority. |
| **Registry** | The registry is a national database that contains information on every point of connection on local and embedded networks to which a consumer or embedded generator is connected. |
| **ToU Meter** | Category 3, 4, or 5 metering installation capable of recording kWh and at least one of kVArh and kVAh on a half-hourly basis |
| **Transmission** | Conveyance of electricity at high voltages through the Transmission network. |
| **Transmission network** | New Zealand's national transmission network (national grid) owned by Transpower New Zealand Limited. |
| **Uncontrolled Meter** | A meter that measures load where there is no load control functionality. |
| **Unaccounted for Energy (UFE)** | The difference between reported energy injected into a network and the reported energy extracted from the network after it has been adjusted using Loss Factors. |

The Electricity Authority also publishes a glossary of key industry terms on its website.

# 1. Introduction

**Background**

Nelson Electricity Limited is the Electricity Distribution Business that delivers electricity to electricity users on behalf of energy retailers. Nelson Electricity is responsible for managing and operating the electricity distribution network in the central Nelson city area.

By way of brief background, Nelson Electricity was formerly the Municipal Electricity Department of the Nelson City Council. The Electricity Industry Reform Act 1998 required that all electricity companies split into either the supply business (generating and/or retailing electricity) or the delivery business (operating the local electricity network). In 1999, Nelson Electricity sold its retail operation to focus on its electricity delivery business.

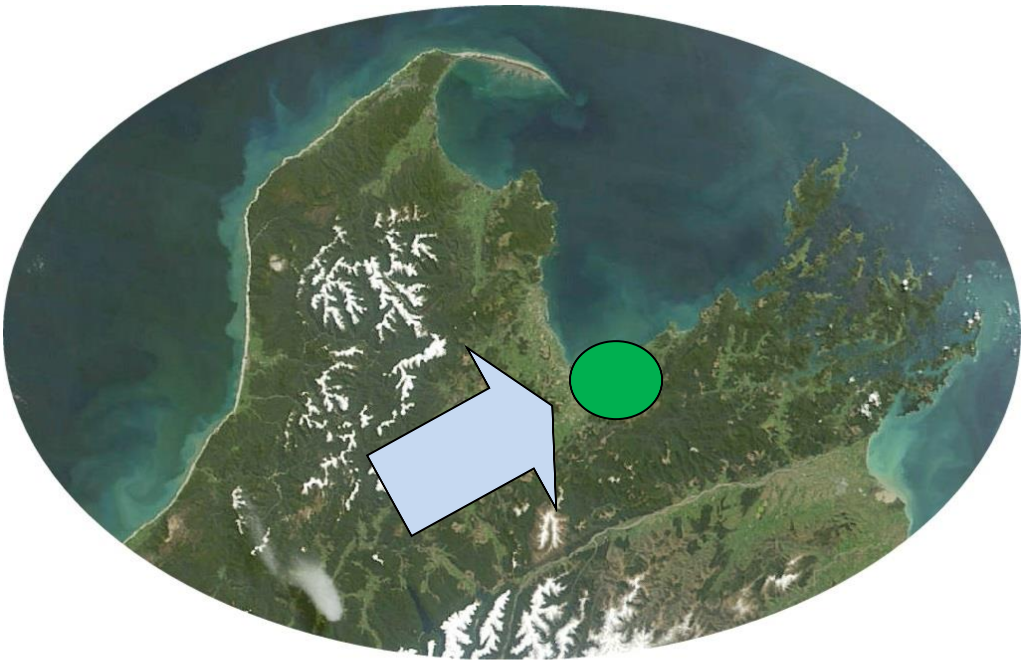


*Figure 1 Nelson Electricity is in Nelson city at the top of the South Island.*

Nelson Electricity is owned by Network Tasman and Marlborough Lines, each holding a 50% shareholding. The day-to-day operations are managed by a small team of executives, and all maintenance and capital work is outsourced to approved contractors by way of contestable tendering of works.

The Nelson Electricity network comprises approximately 9,300 connections in a concentrated area of 24 square kilometres in the central Nelson city area. The connections are largely CBD, industrial and dense urban. Nelson Electricity has a peak loading of 35MVA, during winter months and distributes 134GWh annually through the network.

Nelson Electricity derives its transmission services via Transpower's Stoke substation which is 7 kilometres from Nelson Electricity's only Zone Substation at Haven Road.

**kWh Consumption**
Nelson Electricity, from the 1950s up until 2008, had consistent kWh growth of approximately 1.0% - 1.5% per year.

Since 2008 kWh consumption has reduced at approximately 1.0% per year. The global financial crisis may have started the decline in consumption in 2008 but the decline continued due to the following changes at consumer level:

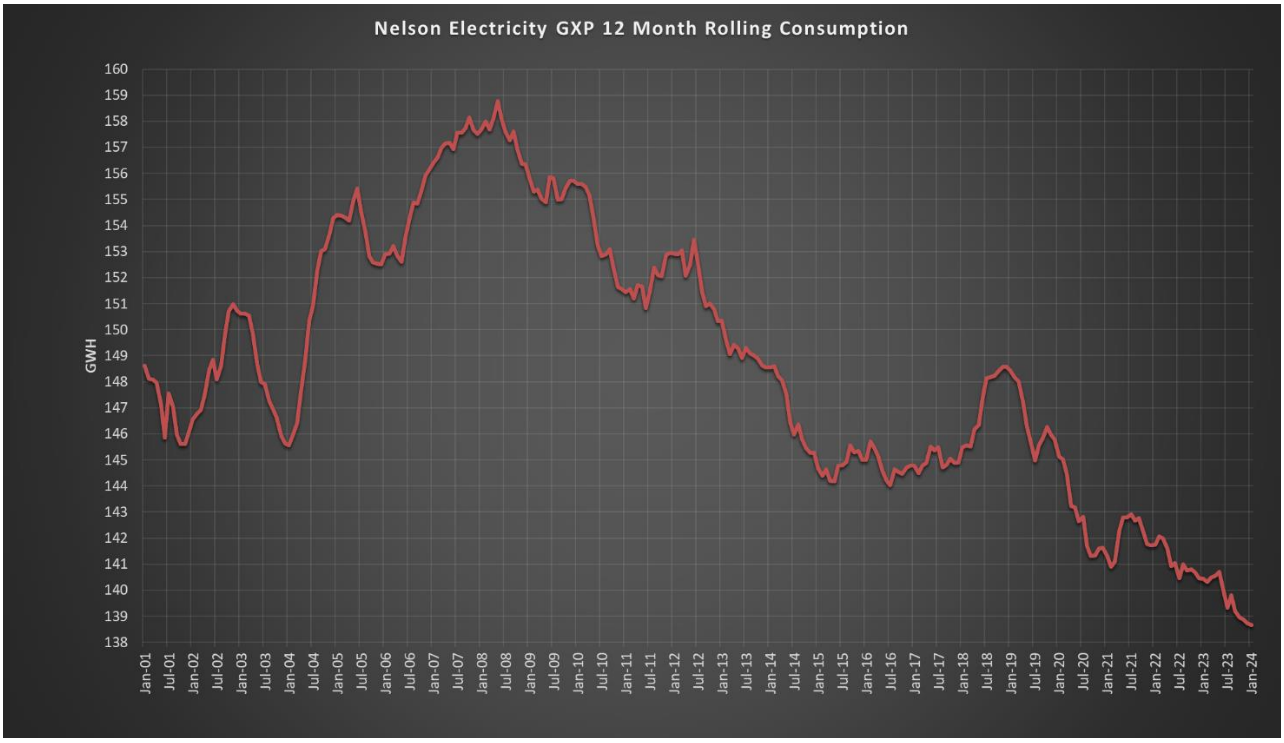
- Older appliances being replaced with more energy efficient options
- LED lighting replacing incandescent and compact fluorescent light bulbs
- Improvements in home insulation
- Greater energy conservation by electricity consumers
- Higher electricity prices
- Installation of solar PV

While there were signs of flattening to increasing consumption in the period 2015 - 2019, the impact of Covid19 has resulted in a continued decline in consumption on the network.

It is assessed that the short term (1–3 years) outlook for Nelson Electricity is consumption to flatten off. Consumption will then begin increasing in the medium term (4-10 years) at 1% to 1.5% per year for the following reasons:

- Electric vehicles being more cost effective,
- EV charging options become more prevalent on the network whether they be public or private,
- Decarbonisation of other energy uses, eg boilers and industrial machinery becomes more prevalent.

This increase in consumption will more than offset the increase of kWh being generated and used behind the meter through solar PV installations.



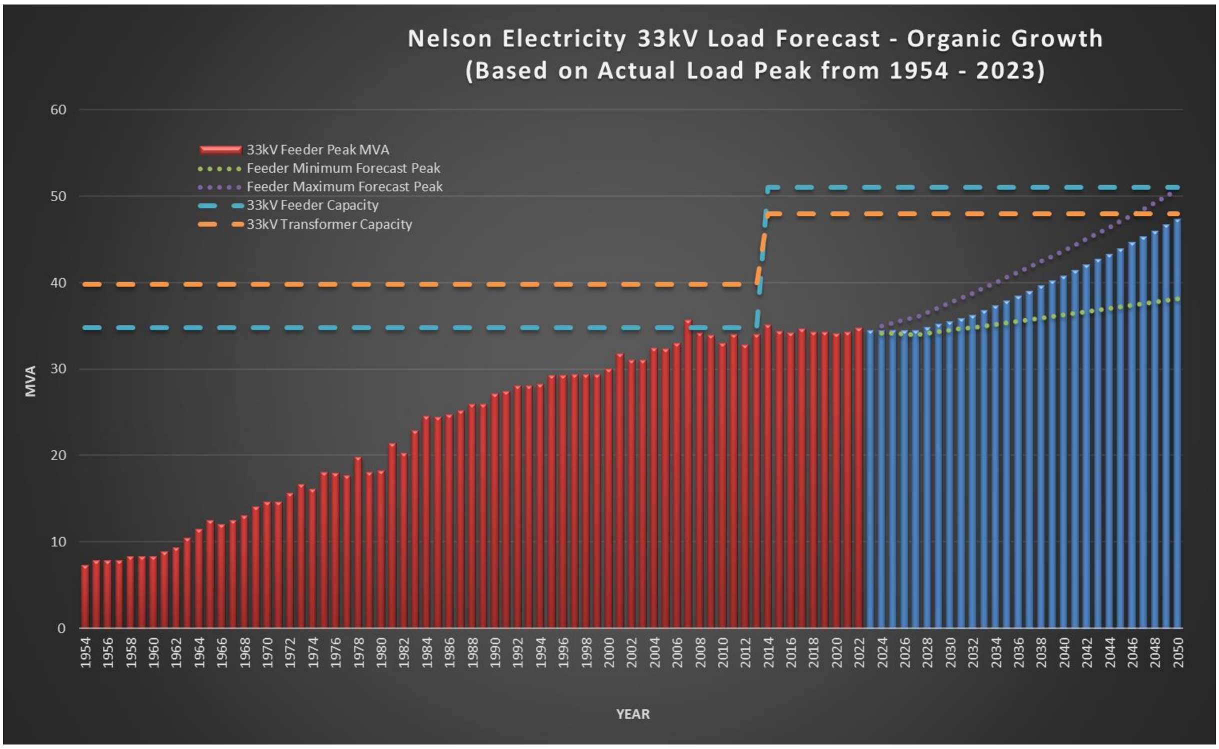
**Peak Demand**

Peak demand up until 2008 was also increasing at the same rate as kWh's at approximately 1.0% - 1.5% but since 2008 has flattened off but not decreased. This peak demand level has remained unchanged. The reason for peak demand growth has not tracked downward with consumption is due to the lower utilisation of load control at peak demand times. Load control is now being principally used for network and electrical industry emergency purposes and minimising transmission connection costs as there are currently no upper network constraints on the Nelson Electricity network to manage load for.

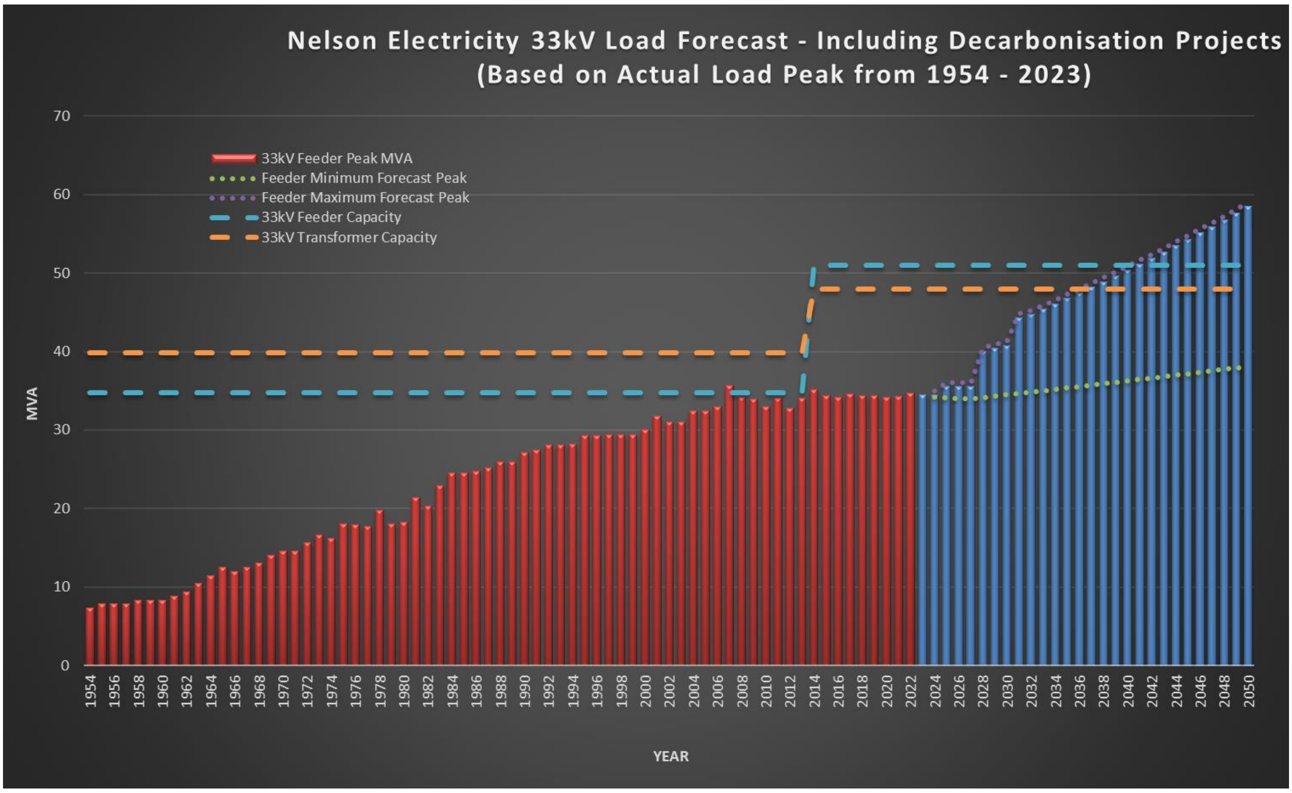
There is limited opportunity for new load/connections on the network as there is limited undeveloped land available in the central Nelson city area. Many recent re-developments of land typically have resulted in no additional growth given any new building uses less electricity overall.

The following graph demonstrates how the peak demand has flattened since 2008.

With the information Nelson Electricity has on hand, it is assessed that the short to medium term (1-5 years) outlook for Nelson Electricity is no change to peak demand with 0% growth. Depending on the number and behaviour of EV charging and decarbonisation of other energy uses, peak demand could start to increase by 1% - 1.5% per year thereafter.




The peak demand would increase significantly should there be larger decarbonisation of boilers and other industry processes. These known potential currently uncommitted decarbonisation opportunities would significantly alter the network and result in advancing the need for additional sub-transmission and zone substation capacity from the current forecast of 2050 back to as early as 2038.



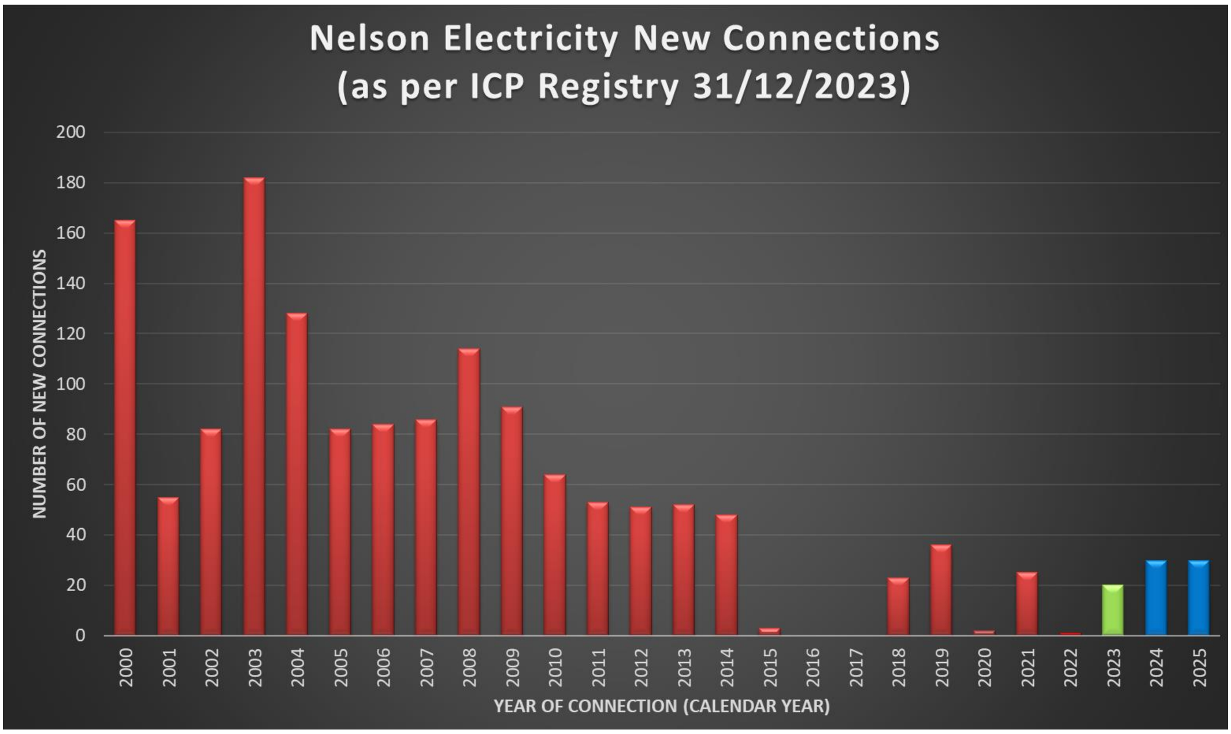

**Connection Numbers**

Connection number changes are calculated as being the difference between decommissioned and new connections. Between 2010 and 2015 Nelson Electricity had on average 50 new ICPs a year. Most were typically new residential connections. Since 2015, decommissioned ICPs have offset most of the new ICPs which has meant connection numbers have been flat for eight years. This is, however, not an indication of lack of growth as many decommissioned sites are making way for new future connections and the applications are now coming to fruition.

Nelson City Council has been working on a change to its District Plan, which has involved conversations with the community over what future housing might look like. The Government has also encouraged councils to reduce restrictions on housing developments and to provide for more intensive housing. The intent is to make intensified housing easier to build. The benefits are more housing, less land being taken up, more people being able to live closer to the city centre. Any changes will occur from 2025.

Whilst the impacts of change will take time to deliver intensification results, there will clearly be a change in number of connections, consumption, and peak demand. This may begin to materialise in the medium to long term (5 years plus).

Nelson Electricity has taken a conservative approach with forecasting 30 new connections in the 2024-2025 year.




**Technology – Times are Changing**
On top of the flat consumption forecast, there is an increased uncertainty as to the effect certain technologies and industry evolution will have on the role the electricity network will play in the future. Nelson Electricity recognises its place as the key infrastructure that supports the Nelson region's community and economy. Key areas of focus are as follows:

- Increasing numbers of solar PV installations;
- Increasing number of retailers providing many different pricing options for consumers;
- Introduction of battery storage;
- Electric vehicles and vehicle chargers;
- Internet of things.

The electricity consumer is starting to dictate the network's future with their decisions on uptake and utilisation of these technologies and switching to different pricing options as electricity retailers adapt and modify their offerings. Nelson Electricity is, therefore, having to review its network pricing structure to ensure it is fit for the upcoming changes and ensure that the network is sustainable for the long term.

The reliance of consumers sourcing all electricity from the distribution network and transmission system is slowly reducing. With distributed generation already being installed and with home scale batteries beginning to be installed, this creates the opportunity for new electricity retail offerings to benefit these consumers including time of use pricing and peer to peer trading. Nelson Electricity is adapting to ensure the network can facilitate the changes and stay relevant for the community it serves.

Nelson Electricity has been actively working with the Electricity Network Association and neighbouring networks to develop and introduce a form of service-based/cost reflective pricing that meets the changing landscape. The new pricing options being introduced, Peak/Off-Peak pricing and locational pricing achieves the two key objectives:

- Ensure, as much as practicable, that all electricity consumers pay "their fair share" of the costs to provide the electrical infrastructure.
- The electricity consumer can make rational choices when investing in any new technologies.

Currently, consumers who can afford to invest in distributed generation and batteries and other things are not paying their fair share of network related costs. These costs are being subsidised by consumers that currently do not or cannot afford to invest in these technologies. The new pricing options begin to address this issue.

**Decarbonisation of Energy**

Nelson Electricity is mindful of the changes in consumption and demand in the near future. The Climate Change Response (Zero Carbon) Amendment Act 2019 provides a framework by which New Zealand can develop and implement clear and stable climate change policies that allows New Zealand to prepare for, and adapt to, the effects of climate change. The key target is the need to reduce net emissions of all greenhouse gases (except biogenic methane) to zero by 2050. The removal of carbon out of the many uses of energy is a key requirement to meet this target.

This decarbonisation of energy presents a unique set of challenges and opportunities. As more renewable energy sources are integrated into the electricity system, there is a need for new infrastructure and technology to manage the variability of the sources and ensure a stable and reliable supply of electricity.

One of the main challenges for distribution networks is the integration of distributed energy resources, such as the rooftop solar panels. Solar can be unpredictable, and the output can fluctuate depending on weather conditions, which can cause voltage fluctuations and other technical issues in the distribution network.

The decarbonisation of energy also presents challenges for the network infrastructure. As more electric vehicles are introduced and decarbonisation of other sectors continues, there will be a need for upgrades to the distribution network to ensure that it can handle the increased demand for electricity.

At the same time, decarbonisation of energy presents opportunities for distribution networks to become more flexible and efficient. The use of smart grid technologies, such as advanced metering infrastructure and demand response programmes, can help to better manage the integration of distributed energy resources and balance the supply and demand of electricity.

Overall, the decarbonisation of energy presents both challenges and opportunities for distribution networks. As the electricity system transitions to a more sustainable and resilient future, there is a need for ongoing investment in infrastructure and innovation to ensure that distribution networks can manage the challenges and take advantage of the opportunities presented by this transition.

# 2. Regulatory Requirements

Nelson Electricity is a natural monopoly and is not directly exposed to the competitive forces that drive other markets to deliver improved efficiency and service. To this extent Nelson Electricity is classed as non-exempt from the control regime under the regulations for electricity network owners under the Commerce Act 1986. This means Nelson Electricity must comply with the Electricity Distribution Services Default Price-Quality Path Determination 2020 (DPP) administered by the

Commerce Commission. Nelson Electricity must also comply with the Electricity Distribution Information Disclosure Determination 2012 under Part 4 of the Commerce Act 1986 of which includes the disclosure of its Pricing Methodology. Recent changes also require the pricing methodology to demonstrate how the Nelson Electricity pricing is in line with the Electricity Authority Distribution Pricing Principles.

Nelson Electricity has taken all requirements into account in the preparation of this document.

### 2.1 Electricity Distribution Services Default Price-Quality Path Determination

Nelson Electricity must comply with the Electricity Distribution Services Default Price-Quality Path Determination 2020 (DPP). The Commerce Commission resets the Price-Quality Path every five years. The 2024-2025 year is the last year of the current five-year path from 1 April 2020 – 31 March 2025. Nelson Electricity sets prices that when multiplied by forecasted quantities so that the net forecasted revenue is less than the Net Allowable Revenue.

**Default Price Path Compliance Summary**
Nelson Electricity, for the year ending 31 March 2024, will comply with the Default Price-Quality Path (DPP) revenue requirements. The Nelson Electricity Forecast Revenue which is based on 2024-2025 prices multiplied by forecasted 2024-2025 quantities will be less than the Forecast Allowable Revenue. This will be demonstrated in the Nelson Electricity Default Price-Quality Path Annual Price Setting Compliance Statement.

### 2.2 Electricity Distribution Information Disclosure Determination

The key requirements in complying with the disclosure of pricing methodologies is outlined in 2.4.1 – 2.4.5 of the Electricity Distribution Information Disclosure Determination 2012. The requirements outline the framework to demonstrate to the "Interested Person" how Nelson Electricity allocates costs to different Load Groups and the basis on how prices are set.

## 3. Pricing Principles

### 3.1 Electricity Authority Distribution Pricing Principles

The Electricity Authority's pricing principles are as follows:

**(a) Prices are to signal the economic costs of service provision, by:**

**(i) being subsidy free (equal to or greater than incremental costs, and less than or equal to standalone costs);**

**Standalone Cost**
Nelson Electricity is a dense urban network with no other reticulated energy options. The cost to either go off grid or bypass the network is too high for all Load Groups except for our one consumer in Load Group 4 of which bypass is possible due to proximity to our neighbouring network. Special pricing has been in place reflecting this for the Load Group 4 consumer for over 25 years.

The opportunity for consumers in Load Groups 1, 2 and 3 to go off grid is through use of distributed generation or changing to other sources of energy. The overall cost of these options (including upfront and ongoing costs) is materially higher than the cost of receiving supply from the Nelson Electricity network.

The number of solar panels required to go off grid has a cost and real estate implication. The quantity if complimented by batteries would have to be based on the peak consumption days, which is in wintertime. Most consumers will not have enough roof space to satisfy the kW requirements to be standalone. Consent issues with using wind and other natural resources is also an issue in a dense urban environment, so this is only a real possibility for a very small number of consumers on the fringes of the network. The only other alternative is changing or complementing distributed generation with batteries and another energy source, but there are limited options for competing fuels in Nelson city. Nelson has bottled LPG available, which could only satisfy the heating requirements. With the decarbonisation of energy use in New Zealand in the coming years, LPG will become less viable leaving its likely replacement hydrogen if and when this gas becomes viable and available.

Nelson Electricity will keep an eye on the standalone costs for each Load Group as the price of solar panels and home scale batteries reduces.

**Avoidable Costs**
Avoidable costs are those that can be avoided by not supplying a consumer or group of consumers. This can include the costs of billing and consumer service costs, connection costs specific to the consumer or consumer group and additional maintenance costs. Given Nelson Electricity is primarily a fixed cost business, the incremental effect on costs of a consumer or group of consumers disconnecting from the network is low. The effect on transmission costs is also low given the changes to the TPM. The current annual estimates of avoidable costs on a per consumer basis is:

Load Group 1 $103 per consumer compared to average revenue of $462.
Load Group 2 $113 per consumer compared to average revenue of $966.
Load Group 3 $4,397 per consumer compared to average revenue of $22,341.

**Long Run Marginal Cost (LRMC)**
A Long Run Marginal Cost model has been developed that now assists in the setting of the Nelson Electricity pricing levels to recover the appropriate proportion of revenue through fixed and variable charges. This also provides guidance on the economically efficient level of peak period and controlled prices.

The Peak/Off-Peak pricing was introduced in 2023. There will be a transition over time to align the controlled prices and pricing differential between Peak and Off-Peak prices with the LRMC.

**(ii) reflecting the impacts of network use on economic costs;**

The network is currently not constrained from sub-transmission down to the 11kV network level. A study was recently undertaken to determine any potential constraints at the low voltage network level because of electric vehicle charging, battery storage and solar PV. The results showed there were no immediate constraints. **There are areas in the low voltage network that may be susceptible should the numbers of electric car chargers increase at a faster rate than forecast** (this could be an overall increase or specific areas or pockets). Nelson Electricity's pricing needs to ensure the relevance of load control for this medium-term eventuality to eliminate the congestion or defer the need for network upgrades.

Network costs are predominantly stable with a relatively smooth capital and operational expenditure profile for the next 10 years (excluding the recent inflationary and service provider changes in costs). These network costs are mostly not location specific thus requiring multiple pricing areas.

**There is one area on the network where a separate pricing area was introduced in 2023 where the economic cost for Nelson Electricity is significantly greater than the revenue received.** The Fringed Hill area supplying four commercial consumers has a two kilometre rural distribution line that is subject to additional costs compared to the rest of the network. Those being annual tree management, access corridor clearing, line maintenance and additional insurance. The true economic cost of providing line function services to the four consumers is greater than 400% - more than the current revenue received through standard pricing. Currently these consumers are on standard pricing. The new increase in prices will be fixed in nature given the additional costs are not load dependant.

The Nelson Electricity pricing regime has adapted over time with the gradual increase in revenue received through fixed charges. In 2015 fixed charges represented 52% of revenue and in 2024 fixed charges will represent 67% of revenue. The true economic cost recovery should be a significantly higher proportion of revenue from fixed charges than the current levels due to there being no significant constraints on the network. **The new pricing regime introduced in April 2023 continues to reflect this transition to a higher proportion of fixed prices.**

The Nelson Electricity delivery prices will be based on there being no constraints at any level in the short term (1–4 years) with demand management becoming more relevant as load increases in some areas of the low voltage network as the number of electric vehicles increase in the medium term (4–10 years).

The current pricing reflects different network service offerings that account for price and quality trade-offs, asset usage requirements, and consumption preferences that have evolved over time. Key examples of consumer service preferences that are catered for in our pricing are also discussed:

- **Connection Capacity**
  Nelson Electricity sees connection capacity as being the key pricing component. Every consumer can increase or decrease the connection capacity to suit their individual requirements. Current residential consumers have their connection capacity assessed at a standard residential fuse size of 15kVA to reduce the complexity of our pricing due to the inefficient impacts of the Low Fixed Charge regulations. **Business consumers can increase and decrease connection capacity to reflect their changing needs**. Nelson Electricity does not charge a consumer for any decrease but will charge actual costs for any increase in capacity. Increases are subject to network capacity availability.

- **Controllable Load**
  Nelson Electricity pricing allows for controllable load options typically used for hot water and winter heating for Load Groups 1 and 2, and winter control period demand for Load Group 3 consumers. Pricing for controllable loads for Load Groups 1 and 2 is on a per kWh basis so consumers get the direct benefit of the cost differential between uncontrolled and controlled prices. Load Group 3 consumers have access to a load control channel for the winter control period demand. They can opt for any of the business load to be controlled through that winter period.

The benefit to the consumer is a lower Winter Demand, which reduces the charges that are applied the following year.

- **Power Factor Charge**
  To encourage power factor management, a power factor charge is applied to Group 3 and 4 consumers who have a monthly peak demand below a power factor of 0.95. This signals to the consumer the need to manage power factor to optimise network capacity and quality of supply.

- **Non-Standard Arrangements**
  Large business consumers who have differing needs can enter into a non-standard agreement with us. There are currently two consumers with Dedicated Connection Contracts that has allowed them to better manage their network and transmission costs.

Nelson Electricity introduced a Time of Use Pricing (Peak/Off-Peak) for Load Groups 1 and 2 in 2003 that complements the existing capacity charges. The new pricing regime provides consumers incentives to utilise electricity outside of peak demand times in advance of and to reduce the medium term forecasted low voltage network constraints.

**(ii) reflecting differences in network service provided to (or by) consumers; and**

Pricing is primarily centred around capacity (the maximum demand a consumer can draw from the network at any point in time). Nelson Electricity also uses load control to shift load out of peak times that can incur additional cost (transmission connection costs) or manage demand in an emergency or times of a constraint on the network. Peak/Off-Peak pricing also provides an incentive to shift consumption out of peak times. The price options available provide for some flexibility on the utilisation of both key options. Consumers can change options as and when they assess there is value.

**(iii) encouraging efficient network alternatives.**

Network pricing should be encouraging efficient investments in alternatives to transmission or distribution network supply. Current network alternatives include distributed generation, battery storage, interruptible demand, and demand management. **Nelson Electricity has introduced Time of Use (Peak/Off-Peak) pricing for Load Groups 1 and 2 in 2023 and plans to steadily increase the proportion of fixed prices which will assist in providing a stable long term pricing structure. This will provide the consumer greater certainty when evaluating investing in efficient network alternatives.**

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

Nelson Electricity introduced new pricing options in 2023 that better signal economic costs. The new pricing options were introduced with the knowledge that the network is currently not constrained in the short term (1–4 years). **The medium to longer term (5 years plus) will most likely see an increase in consumption and demand with the increase of electric vehicles as well as the decarbonisation of energy, which will see a transition from fossil fuels to electricity over the next 25-30 years. This will start to put pressure on the low voltage network resulting in the increasing need to utilise load control for network purposes.**

Nelson Electricity's pricing regime has been moving more towards cost-reflective pricing with improved cost allocations between variable pricing options and the increasing of fixed charges to recover the shortfall. The new cost-reflective pricing structure introduced in 2023 will accelerate the transition to ensure consumers can respond/consider the true economic signals Nelson Electricity requires to maintain an efficient network.

If Nelson Electricity were to set prices according to the economic cost of the current environment of no network constraints, the proportion of revenue received from variable costs would reduce from 33% to approximately 10% - 20%. There would also be the lessoning of the variable pricing differential between uncontrolled and controlled in the short term. Pricing in the medium to long term, due to upcoming low voltage network constraints, would result in the increase again of total revenue from variable charges and increased differential of controlled/uncontrolled or peak/off peak prices.

**(c) Prices should be responsive to the requirements and circumstances of end users by allowing negotiation to:**

**(i) reflect the economic value of services; and**

As noted above, prices above stand-alone cost could not be sustained in a competitive market and may result in inefficient bypass of the existing infrastructure. As prices are significantly below the stand-alone costs, bypassing the network is discouraged suggesting that the prices reflect the economic value of services. However, Nelson Electricity is open to entering into non-standard arrangements for large connections that may be prone to bypass.

**(ii) enable price/quality trade-offs**

The Commerce Commission's Default Price-Quality Path regime limits incentives to offer price/quality trade-offs. It is not practical to offer mass market consumers a price/quality trade-off on an individual basis, given the nature of fault response and shared use of network assets. Nelson Electricity cannot offer slower response times or less redundancy to some mass market consumers and not others. Nelson Electricity has more ability to offer price/quality trade-offs to consumers that connect at higher voltages, but few incentive opportunities exist to do so especially if there is a want for lower quality. SAIDI/SAIFI is recorded on faults that are 11kV or higher. If Nelson Electricity entered into an agreement with a consumer connected to the HV network that offered lower lines charges and lower service quality, there is a risk of a higher SAIDI/SAIFI than we would otherwise incur – increasing our chances of breaching quality standards.

Nelson Electricity engages with larger consumers who are looking for a network service offering that differs from the current pricing. **Currently, there are two direct connection contracts and one non-standard arrangement. All three have differing requirements which have been met and are all mutually beneficial.**

Price/quality trade-offs for smaller consumers in Load Groups 1 and 2 are primarily around choosing the pricing option that is most appropriate to their situation. Currently there are several pricing options available to them.

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

The information provided in this Pricing Methodology demonstrates the transparent process used in setting prices. This Methodology includes information around benefits or incentives of each currently available pricing option.

The development of prices focusses on achieving efficient outcomes for the long-term benefit of customers. In addition to this, retailer transaction costs are also taken into consideration.

A new Time of Use (Peak/Off-Peak) pricing structure was introduced in 2023. The pricing is simple to apply for retailers and is easy for consumers to understand the benefits of shifting consumption. There will not be any significant price shocks for individual consumers as a result of this change.

Previous to the introduction of the Peak/Off-Peak prices, there had been no wholesale changes to pricing. NEL has, however, incrementally introduced a range of changes to simplify the application of our pricing.

- The simplification of Loss Codes and naming convention was introduced to better align with Load Groups and reduce risk of confusion. This made billing easier for retailers as the original codes were numeric and conflicted with some systems.

- Changed the start date by one month of when the Load Group 3 annual Winter Demand reset was to apply from. By changing the start date from September to October meant that the retailer could advise its customers within appropriate notice periods.

- Moves to standardisation expressed all prices in dollars which had previously been a combination of dollars and cents.

- Introduction of the NEL Pricing Guide to provide Electricity Retailers and electricity consumers assistance in the application of the charges for delivery of line function services on the Nelson Electricity Network.

**Additional Commentary on Compliance with Electricity Authority Pricing Principles**

Nelson Electricity has prepared this pricing methodology in accordance with, or as close as possible to, the Electricity Authority Pricing Principles.

Consumer behaviour, as a response to network pricing, is limited. The line prices represent approximately 30% of the total electricity invoice they receive from electricity retailers so unless a network can significantly amplify or exaggerate the pricing differential levels then the consumer behaviour will be based more on electricity retailer offerings. In addition to that, in the setting of controllable line charges, any incentives in these areas are often reduced further through the interface the customer has with their electricity retailer. Additional meter costs for measuring controllable loads are typically loaded onto the controllable price further reducing the pricing incentive for the line price option.

Prices are set attempting to minimise cross subsidisation and price discrimination between load groups. A key success has been in the mass market with the combining of business and residential tariffs, excluding those who qualify, and have opted to be on the low fixed charge option as per the Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004.

This has reduced published pricing options for the mass market consumers also simplifying the pricing for electricity retailers to apply to their customers.

Upon completion of the new Zone Substation at Haven Road and installation of the new 33kV feeder in 2014, there have been changes in cost allocations given the reduced requirement for utilisation of ripple control for network related constraints or operational requirements. Ripple control is now principally used for minimising maximum network peak demand so reduces some transmission costs for consumers. This can be seen in the pricing schedules where **the transmission component is completely removed from the controllable pricing options**.

Nelson Electricity does not have any significant new expenditure projects or material changes to its Asset Planning in the coming years. There is however a marked shift in civil costs which may materially affect line charges. Future load increases will see parts of the low voltage network start to be constrained and so there may be additional renewal/growth expenditure or the utilisation of load control or other load shifting options to mitigate against this.

Nelson Electricity currently offers a Time of Use line price option for larger commercial consumers. It is optional for all larger commercial consumers with a connected capacity up to 150kVA, above 150kVA is compulsory. This option is of benefit if those consumers can manage their load during peak winter demand times and incentivises the reduction of fused capacity. The consumer can choose what level of supply they require and will be charged accordingly. Noting that the winter demand charges are set in the winter and applied for the following 12 months from 1 October each year.

The Nelson Electricity's pricing structure has remained stable for several years. The structure has provided stability and certainty. This does also minimise the transaction costs for retailers. The pricing is transparent, and all retailers have access to and are charged the same line charges for each different classification of consumer. Nelson Electricity also considers retailer feedback into line charges. There were some minor adjustments to the new Peak/Off-Peak Pricing introduced in 2023 resulting from retailer feedback.

Overarching the network pricing is that Nelson Electricity considers the requirements of its stakeholders. These are as follows:

| Stakeholder | Interests |
|---|---|
| Electricity Customers | Delivery of a safe, reliable, efficient and sustainable supply of electricity at minimum cost. Surveys across the board say that most consumers do not want to pay more for a more reliable network. |
| Electricity Retailers | Delivery of a safe, reliable, efficient and sustainable supply of electricity at minimum cost. Diverse views on pricing options / standardisation and transparent pass through. |
| Government (Ministry of Innovation and Economic Development, Commerce Commission, Electricity Authority) | Legislate and control compliance of statutory requirements and economic efficiency. |
| Landowners | Landowners with Nelson Electricity assets on their property have interests in safety, easements and access requirements. |

| Stakeholder | Interests |
|---|---|
| Property Developers | Property developers wish to ensure that connection policies and costs are fair and that network expansion plans are timely. |
| Shareholders | Achievement of an adequate return on investment and good corporate citizenship. |
| Territorial Local Authorities | Territorial authorities have interests in minimising environmental impacts, development of underground power systems, local economic development and in the control of assets in road reserves. |
| Transit NZ | Transit NZ are interested in controlling assets in road reserves. |
| Transpower | Nelson Electricity relies on the Transpower grid to deliver electricity through to the Nelson Electricity network and Transpower relies on the Nelson Electricity network to deliver the electricity to end use customers. |

Stakeholder interests have been identified and accommodated in the pricing of Nelson Electricity line charges through the following processes:

- The Nelson Electricity Board of Directors agrees to an annual Statement of Corporate Intent which details corporate strategy with respect to pricing.

    - To ensure the Company complies with all legislative requirements including health and safety legislation and all industry initiatives in respect of public safety and health and safety in the workplace;
    - To operate as a successful business in the distribution of electricity and other related activities;
    - To have regard among other things the desirability of ensuring the efficient use of electricity;
    - To ensure that all services and responses to maintenance and fault requirements are provided with an appropriate standard of customer service;
    - To maintain existing levels of reliability;
    - To have consideration of the consumer for price and quality;
    - To improve operational efficiency and productivity;
    - To adopt non-discriminatory pricing and network access policies for all users of the Nelson Electricity network;
    - To ensure that all resources, financial, physical, and human are utilised efficiently and economically;
    - To achieve a commercially acceptable return and to seek to maximise the longer-term value of shareholder's funds;
    - To provide for future development of the network through investigation and the acquisition of land and physical assets as is appropriate;
    - To be a good employer providing;
        - ✦ Remuneration consistent with performance,
        - ✦ A safe, satisfying and stimulating work environment,
        - ✦ Equal employment opportunities.

- Corporate organisational goals and objectives support the pricing methodology consistent with the corporate mission.

*"Nelson Electricity's principal mission is to own and operate the electricity network within the central Nelson area commensurate with appropriate standards of maintenance and reliability of supply whilst maximising shareholder value and providing a commercially acceptable return."*

- Surveys of residential, commercial and large user customers provide valuable feedback on pricing, security and reliability of supply which assists in network planning, and on the price-quality trade-off. The key outcome is that most consumers are happy with current quality and don't want to pay any more for improved quality. Consumers also are not willing to subsidise the line charges of those investing in new technologies.

- Government and territorial authority legislation provide a key input into the way pricing is set.

Any conflicting stakeholder interests are managed by systems that ensure that appropriate levels of separation, accountability and authority are in place. Pricing decisions are ultimately made at Board level with appropriate supporting evidence and recommendations from the General Manager.

# 4. Distribution Network Characteristics

Nelson Electricity is classed as an urban network and is supplying the following types of connections:

- Unmetered/Builders temporary – 46
- Residential – 7,820
- Small / Medium business – 1,380
- Larger Business (Time of Use) – 88

Nelson Electricity's pricing combines the residential and small/medium businesses (Load Group 2) for the purposes of pricing as the load characteristics are similar. The Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004, require Nelson Electricity to have a low fixed charge option for residential consumers using less than 8,000kWh per year (Load Group 1), which does result in some cross subsidisation between the two groups 1 and 2.

The Nelson Electricity network is centred on the business district of Nelson City and Port area. It has a larger proportion of business connections compared to most other networks in New Zealand. As a result, the network peaks are typically experienced in the morning instead of early evenings.

The Nelson Electricity network peaks are highest during the colder winter mornings when business load increases to start the day and residential is dropping off after morning breakfasts and showers. The key driver is the high level of electrical heating load for both residential and business.

The Nelson Electricity network is surrounded geographically by the Network Tasman network to the north and south. There is the ability for a very small number of consumers to bypass the Nelson Electricity network where the neighbouring electrical infrastructure is nearby. The cost to bypass in almost all situations is uneconomic given the cost to install network infrastructure versus the payback through any potential reduced line charges. Nelson Electricity would review any instance of potential uneconomic bypass and, if necessary, look at a non-standard pricing arrangement.

# 5. Discussion on the Existing Pricing Regime

The existing Nelson Electricity delivery pricing has been developed and modified to cater to the changing dynamics of the Nelson Electricity network. Network costs are allocated across all Load Groups and the pricing moves towards a more cost reflective regime where possible. Given the network is small geographically, there is no real benefit to have multiple pricing regions except for one small area on the network of which the economic cost for Nelson Electricity is greater than the revenue received.

Nelson Electricity as an Electricity Distribution Business sells capacity, the ability for electricity retailers to supply consumers with electricity. The consumer capacity limit is based on the fuses at the network connection point. The larger the fuses the greater the capacity available to the consumer at any time which potentially leads to higher capacity network infrastructure requirement to supply the network connection point.

## 5.1 Time of Use (Large Commercial)

The Time of Use pricing is for larger commercial connections. The pricing regime has not been materially changed since its introduction in the early 1990s. The delivery prices are split into five separate categories and priced accordingly so to ensure as much as possible that larger consumers are paying their fair share of the delivery costs and that there is minimal cross subsidisation. These prices are designed to be cost-reflective. The delivery prices in this group are clear and targeted which should incentivise the consumer to alter behaviour to minimise its delivery charges which will assist in optimising and maximising the utilisation of the network.

For Time of Use consumers, the pricing is centred on the connection capacity (size of fuses or transformer) and contribution to the network and transmission peak demand. The consumer can change both to reduce their overall delivery charges and also assist in making the Nelson Electricity network more efficient. Given the pricing option has been in place for over 20 years, most of the efficiency gains have already been achieved in this group.

The weighting of the pricing categories has been modified over time to cater to the changing pricing signals required for the load group to match changing costs. An example is the reduction of Winter Demand pricing and the increase to the fixed Capacity after the changes to the Transmission Pricing and the removal of RCPD interconnection (demand based) charges in 2023.

Analysis of the pricing regime suggests it is still relevant and delivers the required pricing signals for larger consumers to respond to.

## 5.2 Mass Market

All Commercial and Residential consumers (except consumers on the low fixed charge tariff option) have been grouped together to optimise the Nelson Electricity mass market pricing. There used to be a pricing differential between business and residential consumers, and over time, this differential was reduced and finally removed in 2009. It made it possible to link the two consumer groups together as it is also now extremely difficult to differentiate between the two groups where often there are businesses operating from home - bed and breakfasts as an example.

The linking of the groups also reduced the number of published line prices and simplified the pricing to be disclosed making it easier for retailers to administer Nelson Electricity prices and consumers easier to understand.

Nelson Electricity also wanted to incentivise larger mass market consumers to optimise their electrical consumption and capacity. This was achieved by changing the fixed daily price which was a one size fits all to a price based on actual fuse size. This means that the larger mass market consumers pay a fixed delivery price based on their connected fuse size which is their ability to consume a higher electrical demand. They can also reduce their fuse size (free of charge) if they can change their load consumption behaviour. This delivery price option has proven successful with many consumers opting to have their fuse sizes reduced which then provides for reserved network capacity to be utilised elsewhere.

Larger consumers in this group can also opt to go on to the Time of Use tariff if there is a benefit for them to manage their load further. This option is, however, seldom taken up. There is more of a migration from Time of Use tariff to mass market and this is a result of the retail pricing options rather than the Nelson Electricity delivery prices.

Given that there are forecasted changes in consumption and peak demand in the medium to long term, it has been determined that a form of Time of Use (peak/Off-Peak) pricing be introduced to ensure there is a pricing mechanism in place to incentivise shifting uncontrollable load into off peak times.

It was also determined that location pricing be introduced for a small number of consumers that are serviced by a 2km rural line. The economic cost to serve these consumers is significantly greater than actual revenue received so is being heavily subsidised by others on the network.

### 5.3 Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004

One complication with the capacity based fixed delivery price is the Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004 which means that a residential consumer using less than 8,000kWh must have access to a regulated fixed delivery price of which is increasing as the regulations are phased out. To comply with this regulation and to minimise delivery price options, Nelson Electricity has assessed all residential consumers fuse capacity at 15kVA. Currently a residential consumer with a larger fuse size is only paying the standard price of the typical 15kVA connection.

The compounding effect is that the average residential consumer on the Nelson Electricity network currently uses approximately 6,750 kWh per year compared to 7,400kWh per year in 2008. This is 9% lower than the deemed average consumer as determined under this regulation. This exposes Nelson Electricity to more cross subsidisation if more consumers switch to this price option. a small concern to Nelson Electricity is up to 70% of all residential consumers would benefit from being on the Low Fixed Charge option (Group 1). It is noted that since 2022 the number of consumers switching over has reduced to a point where they are offset by consumers switching back, so the concern has significantly lessoned.

While the Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004 are being phased out, Nelson Electricity is exploring options to minimise the cross subsidisation as much as possible that this Regulation has created as it undermines the ability to adapt prices for changes in the network utilisation characteristics. Currently the consumers on Group 2 and Group 3 are subsidising the consumers on Group 1.

# 6. 1 April 2024 Pricing

## 6.1 Summary

The Nelson Electricity delivery price regime will not be changing. The only change is in the pricing. The overall impact is an average increase of 10%.

The Nelson Electricity Delivery Price Schedule that applies from 1 April 2024, is included in Section 13.

## 6.2 Consumer Impact

The following tables demonstrate the approximate changes in annual revenue for individual consumers on Load Groups 1 and 2 due to the pricing changes 1 April 2024. They show that the impact on the pricing change reduces as electricity consumption increases. This is due to most of the line price increases are in the fixed or capacity component of the line prices.

Average electricity consumption patterns are used for each Load Group.

Consumers with lower consumption experience the largest increases in line charges for 2024/25. This is due to the ongoing rebalancing of the proportion of revenues recovered via fixed and variable charges.

**Load Group 1 - Residential Low Fixed Charge Option (15kVA)**

| Annual kWh | Change in Total Line Charges | % Change |
|---:|---:|---:|
| 0 | $54.75 | 33.3% |
| 1,000 | $53.75 | 25.4% |
| 2,000 | $52.75 | 20.4% |
| 3,000 | $51.75 | 16.9% |
| 4,000 | $50.75 | 14.3% |
| 5,000 | $49.75 | 12.4% |
| 6,000 | $48.75 | 10.9% |
| 7,000 | $47.75 | 9.6% |
| 8,000 | $46.75 | 8.6% |

Load Group 1 are Residential Consumers that are on the Low Fixed Charge option and predominantly use less than 8,000kWh per year. Changes in the Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004 allow for the increase in the daily fixed charge from 45 cents/day to 60 cents per day. This change is represented in the capacity charge change of 3 cents/kVA/day up to 4 cents/kVA/day. The highest percentage impact is with consumers using low levels of electricity. This reduces and consumption increases.

**Load Group 2 – Residential (15kVA)**

| Annual kWh | Change in Total Line Charges | % Change |
|---|---|---|
| 0 | $43.80 | 11.3% |
| 1,000 | $45.26 | 11.1% |
| 2,000 | $46.73 | 10.9% |
| 3,000 | $48.19 | 10.7% |
| 4,000 | $49.66 | 10.6% |
| 5,000 | $51.12 | 10.4% |
| 6,000 | $52.58 | 10.3% |
| 7,000 | $54.05 | 10.2% |
| 8,000 | $55.51 | 10.1% |
| 9,000 | $56.98 | 10.0% |
| 10,000 | $58.44 | 9.9% |
| 11,000 | $59.90 | 9.8% |
| 12,000 | $61.37 | 9.7% |
| 13,000 | $62.83 | 9.6% |
| 14,000 | $64.30 | 9.5% |
| 15,000 | $65.76 | 9.5% |
| 16,000 | $67.22 | 9.4% |
| 17,000 | $68.69 | 9.3% |
| 18,000 | $70.15 | 9.3% |

The Load Group 2 Residential Consumers have less percentage variance of impact due to the higher capacity price and lower variable.

Residential consumers have a capacity of 15kVA.

**Load Group 2 - Commercial (45kVA)**

| Annual kWh | Change in Total Line Charges | % Change |
|---|---|---|
| 0 | $131.40 | 11.3% |
| 2,500 | $135.06 | 11.1% |
| 5,000 | $138.72 | 10.9% |
| 7,500 | $142.38 | 10.8% |
| 10,000 | $146.04 | 10.7% |
| 12,500 | $149.70 | 10.5% |
| 15,000 | $153.36 | 10.4% |
| 17,500 | $157.02 | 10.3% |
| 20,000 | $160.68 | 10.2% |
| 22,500 | $164.34 | 10.1% |
| 25,000 | $168.00 | 10.0% |
| 27,500 | $171.66 | 9.9% |
| 30,000 | $175.32 | 9.9% |
| 32,500 | $178.98 | 9.8% |
| 35,000 | $182.64 | 9.7% |
| 37,500 | $186.30 | 9.7% |
| 40,000 | $189.96 | 9.6% |
| 42,500 | $193.62 | 9.5% |
| 45,000 | $197.28 | 9.5% |
| 47,500 | $200.94 | 9.4% |
| 50,000 | $204.60 | 9.4% |

The Load Group 2 Commercial Consumers have significant and different connection characteristics in both capacity size and consumption patterns. The percentage impact will vary greatly between consumers as a result. The table above is based on a commercial connection of 45kVA.

# 7. Peak/Off

## 7.1 Summary

Nelson Electricity introduced Peak/Off-Peak pricing options for ICPs in consumer Groups 1 and 2 (15kVA -150kVA) in April 2023. These new pricing options being 1P and 2P.

The peak period is proposed to cover 7am to 11pm weekdays, with the off-peak period covering all other times including weekends (no differentiation for public holidays).

Nelson Electricity transferred all Load Group 1 and Load Group 2 consumers with HHR meters from the existing pricing options 1 and 2 to the new Peak/Off-Peak pricing options 1P or 2P on 1 April 2023.

Nelson Electricity also introduced locational pricing for a small group of Load Group 2 consumers that are supplied by a rural line which incurs significant additional costs to maintain compared to the rest of the electricity network. The fixed line charges will be increased over a 5–10 year period to recover the additional costs to maintain the rural line. The new pricing option is 2R.

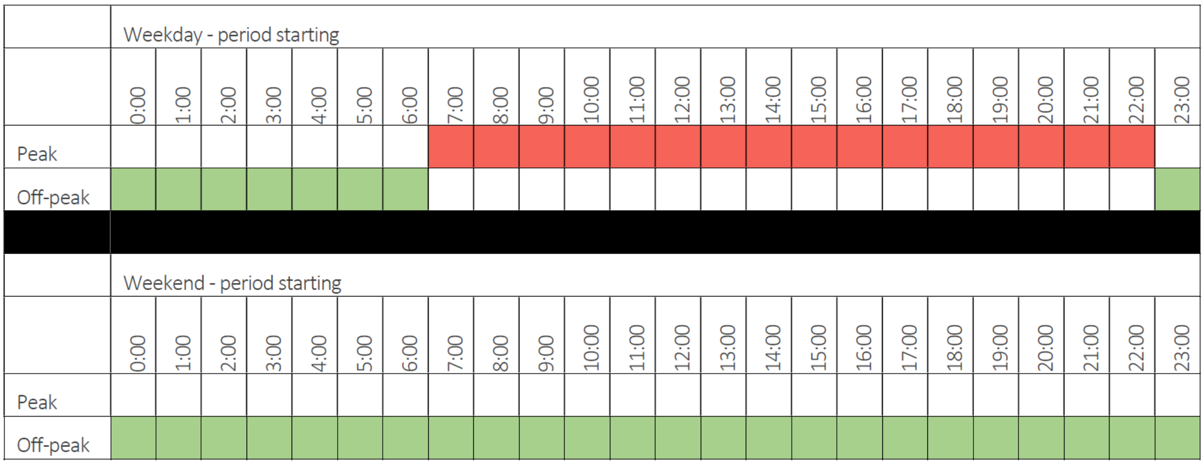
### 7.2 Peak/Off-Peak Price Plans

Nelson Electricity introduced two new uncontrolled pricing options: Peak/Off-Peak for each of the new 1P and 2P price categories.

These two price options must be used in combination and are proposed to have the following characteristics:

- Peak - Weekdays 07:00 to 23:00
- Off-peak – All periods outside of Weekdays 07:00 to 23:00.
- No differentiation for public holidays.

The illustrations below show when the two tariff options will apply.




*Peak/Off Peak Pricing Timeframes*

All consumers on the 1-24HR or 2-24HR - Anytime (uncontrolled) tariff identified on the Registry as having a communicating a HHR meter were moved to the Peak/Off-Peak tariff 1P-PEAK and 1P-OFFP or 2P-PEAK and 2P-OFFP tariffs. Consumers with legacy meters remained on the existing Anytime tariff (eg; 1-24HR or 2-24HR).

Existing Price Categories “1”and “2” that include pricing codes with the suffix “24HR” are now closed to new consumers from 1 April 2023. The default uncontrolled tariffs will become the Peak/Off-Peak tariffs in pricing groups “1P” and “2P”. The standard controlled water heating price code “WATER” and “NIGHT” remained unchanged.

**Operational Matters**
The introduction of a Peak/Off-Peak pricing options for Load Group 1 and 2 consumers requires half hour data to be time-sliced and consolidated into the relevant peak and off-peak periods for network reporting.

Nelson Electricity recognises HHR meters are imperfect, and retailers may not have the systems in place so may not be unable to procure the data necessary to provide actual Peak/Off-Peak consumption for an ICP. To account for this, Nelson Electricity has introduced a 'Default' pricing code for each price category "1P-DEF" and "2P-DEF" that retailers can use in circumstances where they are unable to provide actual Peak/Off-Peak consumption.

Where a retailer has reported against the default tariff in the initial EIEP1 reporting cycle, Nelson Electricity prefers the retailer to report Peak/Off-Peak consumption for the ICP if the data is available for the R3 replacement EIEP1 reporting cycle.

The 'Default' uncontrolled rate is set at the same as pricing options 1 and 2 - 24HR uncontrolled rate.

There is no difference in price between the old Group 1 pricing and the new Group 1P (Peak/Off-Peak) pricing when using the 'Default' uncontrolled rate. There is also no difference in price between the old Group 2 pricing and the new Group 2P (Peak/Off-Peak) pricing when using the 'Default' uncontrolled rate.

**Defining the Tariff Profile**

The driver of how we designed this tariff was informed by the timing and duration of our network peaks. This is because we want to encourage consumers to shift discretionary demand, such as EV charging, dishwashers, washing machines, etc away from the peak periods and into the off-peak periods.

The average network load profile exhibits morning and evening peaks with a trough in demand during the middle of the day and a large trough in load overnight. Generally, the Nelson Electricity load follows this profile.

When designing this tariff, we focused on what the network load will be on the worst day of the year - not the average - when areas of the network could be reaching its capacity limit and load-shifting capability was fully utilised. This is because it is load at these times that trigger network investment. How consumers use the network on these days has a significant effect on the timing of network investment.

**Customer Impact Assessment**

The design and introduction of Peak/Off-Peak pricing is to have minimal impact on consumers in the 1–2 year period. The aim is to bed down the new tariff structure and, as the requirement for greater consumption shifts out of peak time, then to have the pricing differential between Peak and Off-Peak increased.

Our analysis does show that the average mass market consumer will benefit from the Peak/Off-Peak pricing change. Also, the more they can shift load from Peak to Off-Peak time then the more they will benefit. Note - the ICPs with the maximum savings are those with the highest uncontrolled kWh consumption. The savings compare Pricing Categories "1" with "1P" and "2" with "2P".

## 7.3 Locational Pricing

Nelson Electricity has undertaken a study on its network to determine whether there are any areas where locational pricing should be considered. There has been one area identified where the economic cost for Nelson Electricity is significantly greater than the line charge revenue received. The supply to these consumers is being subsidised by the rest of the Nelson Electricity consumer base.

The Fringed Hill area supplying four commercial consumers on Load Group 2 has a 2 kilometre overhead rural distribution line that is subject to significant additional cost due to location compared to the rest of the network, that being annual tree management, access corridor clearing, line maintenance and additional insurance. The true economic cost of providing line function services to these consumers is greater than 400% more than the current revenue received through standard pricing.

A new remote tariff group option was also introduced in April 2023 - "2R". The fixed charge 2R-Fixed is being introduced with a corresponding "2R-24hr" uncontrolled kWh option. The kWh rates will be the same as the standard Group 2 pricing.

Any increase in prices will be fixed in nature given the additional costs are not load dependant. It is proposed that the fixed capacity charge be increased annually over a five to 10-year period to a point where consumers on top of Fringed Hill are contributing to the full cost service their connection.

# 8. Derivation of Line Prices

The Derivation of Line Prices are described in the following sections.

- Customer Groups
- Customer Group Statistics
- Allocation and Recovery of Network and Transmission Charges
- Cost Recovery per Load Group
- Fixed v's Variable Charges

### 8.1 Consumer Groups or Load Groups

Nelson Electricity has split its consumers into five distinct consumer groups/load groups to assist in the fair allocation of costs and setting line price levels. The Groups are based on the type of connection which considers typical load patterns, fuse size and annual kWh consumption. The number of groups is set at five as a balance between minimising complexity and ensuring costs are appropriately apportioned between consumers. The groupings are relatively in line with other electricity networks in New Zealand.

- <u>Load Group 0 – (Pricing Categories 0-UM, 0-BT and 0-SL)</u>
  Unmetered Load or Metered Builders Temporaries. This group is for the smaller/lower fused connections (under 15kVA) either metered or unmetered that do not fall into the other groups as listed below. Most of the connections are either metered builder's temporary supplies or small unmetered supplies to telephone boxes and streetlights. This group has smaller connections with differing load characteristics, so a fair allocation of costs is difficult to demonstrate but the overall revenue of this group is only 0.05% of total revenue (excluding local council streetlights), so they are grouped together.

- <u>Load Group 1 – (Pricing Categories 1 and 1P)</u>
  Residential consumers Low Fixed Charge Options – Connections that are a residential home that exhibit a typical residential load profile using less than 8000kWh per year. A residential connection is where electricity is supplied to a premise that is used or intended for occupation by a person principally as a place of residence. It does not include a premise that constitutes

any part of a premise described in section 5(c) to (k) of the Residential Tenancies Act 1986 (which refers to places such as jails, hospitals, hostels, hotels, and other places providing temporary accommodation). The connection size is set at 15kVA.

The Nelson Electricity Limited (NEL) Network Code allows for single phase 60amp, two phase 40 amp or three phase 30amp supplies to be classed as a residential connection. A residential type load profile not on the Low Fixed Charge option is typically categorised as Load Group 2.

- Load Group 2 – (Pricing Categories 2, 2P and 2R)
  Residential and Small Business consumers – Connections that are 15kVA up to 150kVA. Residential consumers not on Low User Option are also in this group. The residential and commercial consumers are grouped together as much as Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004 allow. Existing residential consumers are all assessed as 15kVA. Electricity network key costs are driven based on capacity (the ability for a consumer to take as much electricity up to the fused capacity at the Nelson Electricity network connection point). While there is a difference in load profiles from a typical business and a domestic connection it is proving more difficult as time goes on to differentiate between the two as many connections are a mixture of the two. To avoid complications in grouping allocations and number of tariffs, Load Group 2 joins the two consumer types together. By doing this it has removed any price discrimination that existed when commercial and residential were grouped separately.

- Load Group 3 (Pricing Categories T-03 – T-13 and T-15)
  Large Commercial consumers with supply up to 2400kVA - This group is for any connection with a supply up to 2400kVA that wants to be on a Time of Use tariff. Time of Use tariffs were first offered to consumers in the early 1990s and the early rationale for the consumer being in this Group was if they used greater than 50,000kWh per year. The kWh requirement has since been removed and a mandatory requirement of connections with a capacity of greater than 150kVA to be Time of Use introduced. Those below that limit can opt to be on Load Group 2 or Load Group 3. This group is ideal for consumers that can manage their peak demand to minimise line charges as the line charge regime for this group more accurately reflects the consumer's fair allocation of costs.

- Load Group 4 – (Pricing Category T-14)
  This group is for the largest commercial consumers on the network. Consumers with capacity supplied of greater than 3000kVA with supply from dedicated 11kV/400V substations.

## 8.2 Consumer Group Statistics

Statistics are collected and analysed as per the customer groupings as described in the previous section. This information is used as a base to Nelson Electricity's pricing allocations as described further in this report. Information used for the 2024-2025 year is as follows:

- Number of Connections per group.

**Number of Connections**

| Load Group | Number |
|---|---|
| 0 | 46 |
| 1 | 4369 |
| 2 | 4861 |
| 3 | 86 |
| 4 | 1 |
| Total | 9,363 |

- Anytime Maximum Demand per group

**Anytime Maximum Demand (AMD) Based on NEL top 12 peaks**

| Load Group | Demand |
|---|---|
| 0 | 0 |
| 1 | 6,509 |
| 2 | 15,902 |
| 3 | 7,700 |
| 4 | 2,307 |
| Total | 32,418 |

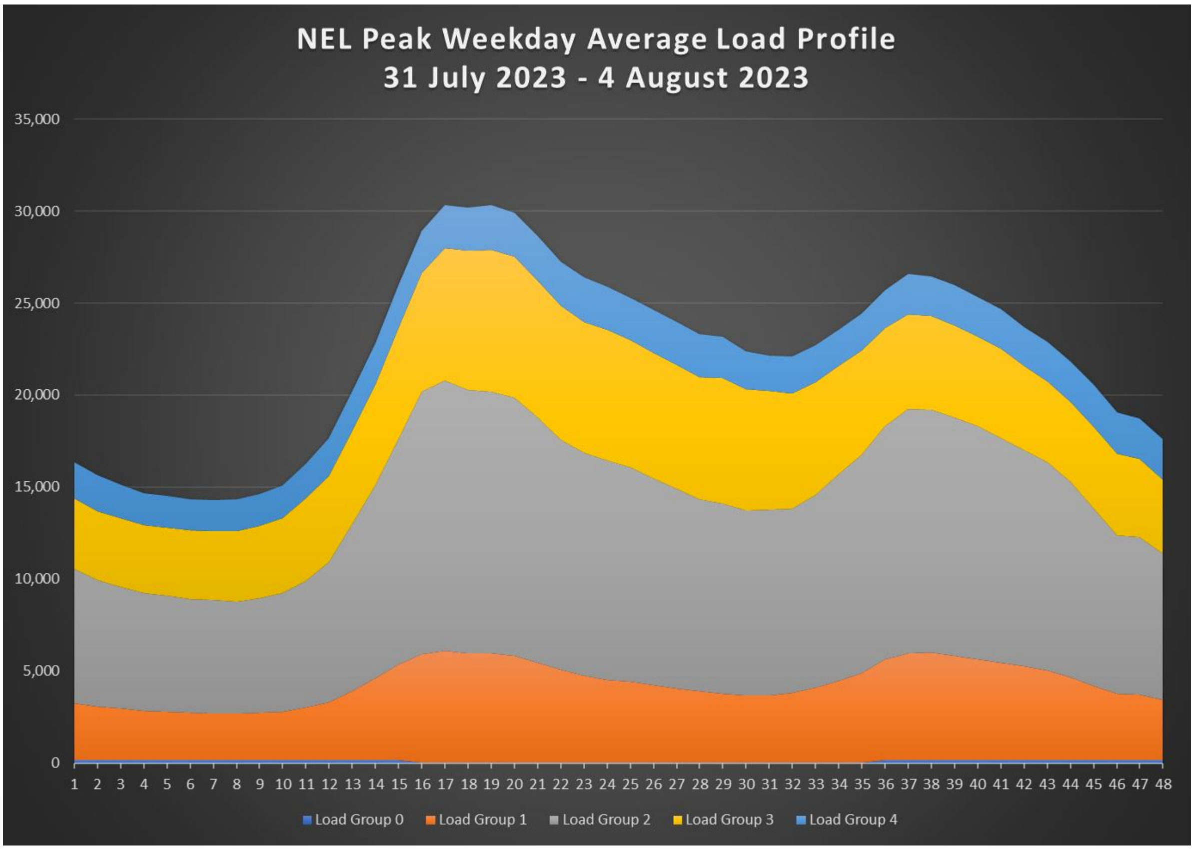
- Winter Demand Peak per group.

**Control Period Demand (Winter Demand) kVA**

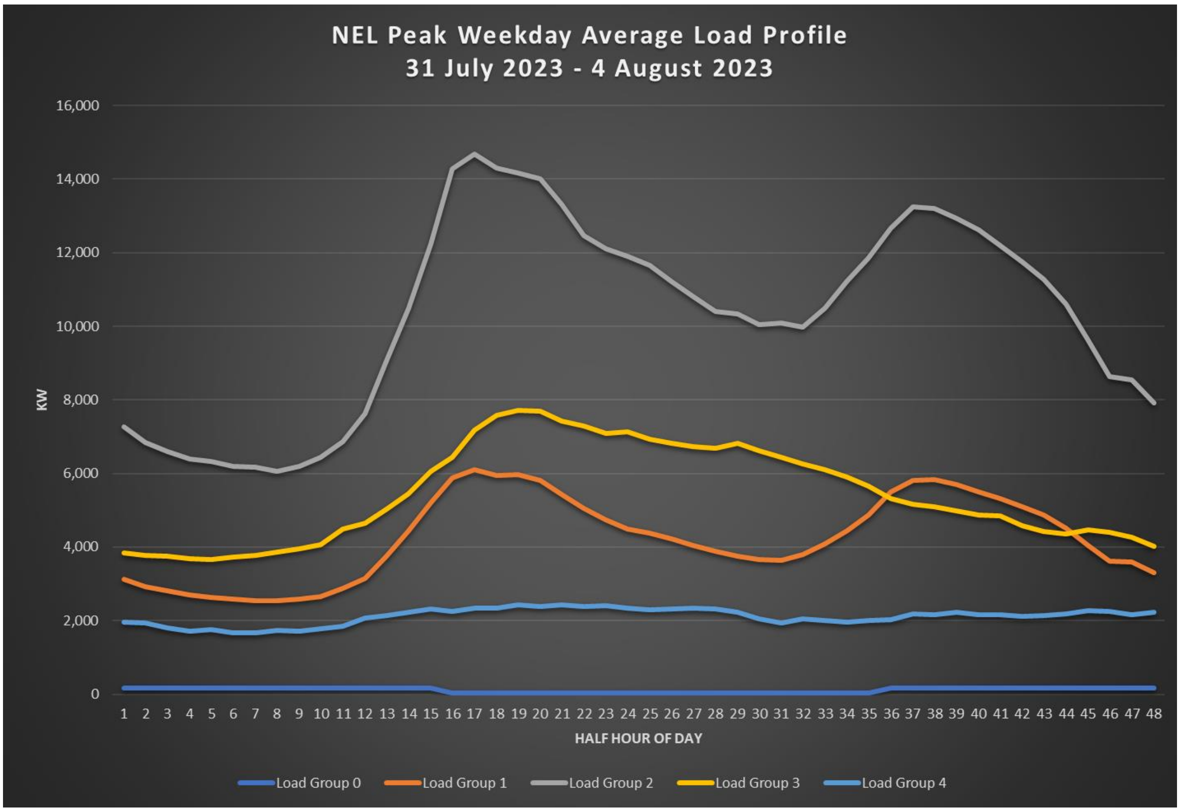
| Load Group | 8:30am-11:30am | 5:00pm-6:00pm | CPD Allocation |
|---|---|---|---|
| 0 | 30 | 97 | 47 |
| 1 | 5,579 | 5,186 | 5,480 |
| 2 | 13,580 | 12,266 | 13,251 |
| 3 | 7,428 | 5,492 | 6,944 |
| 4 | 2,387 | 2,012 | 2,294 |
| Total | 29,004 | 25,053 | 28,016 |

Nelson Electricity has a winter load that peaks between 8.30 am – 11.30 am and 5.00 pm – 6.00 pm. The morning load is predominantly commercial load with the morning residential load dropping off and the evening peak is typically influenced by the residential load with the commercial load dropping off. The statistics required are to ensure the right pricing signals are sent to each group and that charges are as fair and equitable as possible for all connections.

The Winter Demand is one important part of the allocation of Transmission Costs between groups. It is also important when allocating costs for the local network in allocating costs based on load group contribution to peak demand and maximum loading on assets.




The graph below shows each load group contribution to the average peak winter load profile for the highest consumption week Monday 31st July 2023 – Friday 4th August 2023. The impact of load control of hot water during the weekday mornings can be seen in Groups 1 and to a lesser degree Group 2.



- MWh per group.

**MWh**

| Load Group | Winter | Summer | Total |
|---|---|---|---|
| 0 | 327 | 360 | 687 |
| 1 | 11,671 | 10,652 | 22,323 |
| 2 | 28,514 | 28,153 | 56,667 |
| 3 | 17,909 | 22,977 | 40,886 |
| 4 | 6,335 | 7,015 | 13,350 |
| **Total** | 64,756 | 69,156 | 133,912 |

These consumption figures are estimated per Load Group with no loss allocation back to GXP. Winter months are May – September, Summer months are October – April. This is consumption only and is not offset by any distributed generation. The total consumption exported onto the Nelson Electricity network for the year ending January 2024 was 0.85MWh compared to 0.62 MWh for the previous 12 months.

- Regulatory Value of System Fixed Assets as at 31 March 2022 per group allocation

| | **Regulatory Value of System Fixed Assets** | | | | | |
|---|---|---|---|---|---|---|
| **Asset Group** | **0** | **1** | **2** | **3** | **4** | **Total** |
| **33kV Lines** | $14,961 | $1,033,394 | $2,532,021 | $1,465,442 | $482,110 | 5,527,928 |
| **Zone Sub** | $28,408 | $1,962,157 | $4,807,678 | $2,782,509 | $915,406 | 10,496,158 |
| **11kV Lines** | $22,704 | $1,714,474 | $3,988,613 | $2,223,781 | $438,956 | $8,388,527 |
| **11kV/400V Sub** | $26,935 | $2,230,258 | $5,497,253 | $2,110,561 | $86,793 | $9,951,799 |
| **400V Lines** | $122,512 | $2,535,803 | $6,267,314 | $1,363,861 | $0 | $10,289,490 |
| **Other** | $12,532 | $986,757 | $2,242,061 | $1,227,507 | $161,533 | $4,630,390 |
| **Total** | $228,051 | $10,462,843 | $25,334,941 | $11,173,660 | $2,084,798 | $49,284,292 |

Regulatory Asset Base Valuation allocation is assessed on each load group’s utilisation of assets. As an example, Group 4 does not utilise any of the 400V lines so there is no value assigned.

- Cost of Capital

For the financial year commencing 1 April 2022 Nelson Electricity, being a price controlled EDB, has used the Commerce Commission’s WACC for the five-year DPP price control period 1 April 2020 - 31 March 2025. This vanilla WACC of 4.23% is set at the 67$^{th}$ percentile.

**Table 2: Values used to calculate WACC estimates for EDB DPP and Transpower IPP**

| Parameter | EDB and Transpower |
|---|---|
| Risk-free rate | 1.12% |
| Average debt premium | 1.60% |
| Leverage | 42% |
| Asset beta | 0.35 |
| Equity beta | 0.60 |
| Tax adjusted market risk premium | 7.0% |
| Average corporate tax rate | 28% |
| Average investor tax rate | 28% |
| Debt issuance costs | 0.20% |
| Cost of debt | 2.92% |
| Cost of equity | 5.00% |
| Standard error of WACC | 0.0101 |
| **Mid-point vanilla WACC** | **4.13%** |
| **Mid-point post-tax WACC** | **3.78%** |

*The numbers are rounded to two decimal points.

Based on the above input parameters, the Weighted Average Cost of Capital (WACC) is 4.23% of Regulatory Asset Base = $2,085k.

### 8.3 Maximum Allowable Revenue

Nelson Electricity is a non-exempt EDB and as such the forecasted revenue cannot exceed the forecast allowable revenue as determined by the Electricity Distribution Services Default Price - Quality Path Determination 2020 (DPP3). The overall forecast allowable revenue from delivered line prices is $9,190k up 10% from the forecast allowable revenue for the year ending 31 March 2022 of $8,354k.

| Forecast allowable revenue RY25 | | |
|---|---|---|
| **8.4(a) - Forecast Allowable Revenue Calculation as per Schedule 1.5** | | |
| Term | Description | Value ($000) |
| Forecast net allowable revenue | *Forecast net allowable revenue as set out in Table 1.4.1 in Schedule 1.4 for the period ending 31 March 2025* | 5,954 |
| Forecast pass through costs | *Forecast pass-through costs and forecast recoverable costs* | 120 |
| Forecast recoverable costs | *Forecast recoverable costs, excluding any recoverable cost that is a revenue wash-up drawn down amount* | 2,541 |
| Opening wash-up account balance | *The opening wash-up account balance for the third assessment period of the DPP regulatory period as set out in Schedule 1.7 (2)* | 651 |
| Pass-through balance allowance | *The Pass-through balance allowance for the third assessment period of the DPP regulatory period is nil as set out in Clause 4.2* | |
| **Total** | | 9,266 |
| **8.4(b) - Forecast revenue from prices for the previous assessment period x (1 + limit on annual percentage increase in forecast revenue from prices)** | | |
| Term | Description | Value ($000) |
| Previous assessment forecast revenue | Forecast revenue from prices, Assessment Three | 8,354 |
| Maximum allowable increase | Limit on annual percentage increase in forecast revenue from prices | 10% |
| Max allowable revenue increase | | **9,190** |
| **Forecast allowable revenue RY25** | | |
| Term | Description | Value ($000) |
| Forecast Allowable Revenue | Lesser of 8.4(a) or 8.4(b) | **9,190** |

**Key Changes in Revenue Building Blocks.**

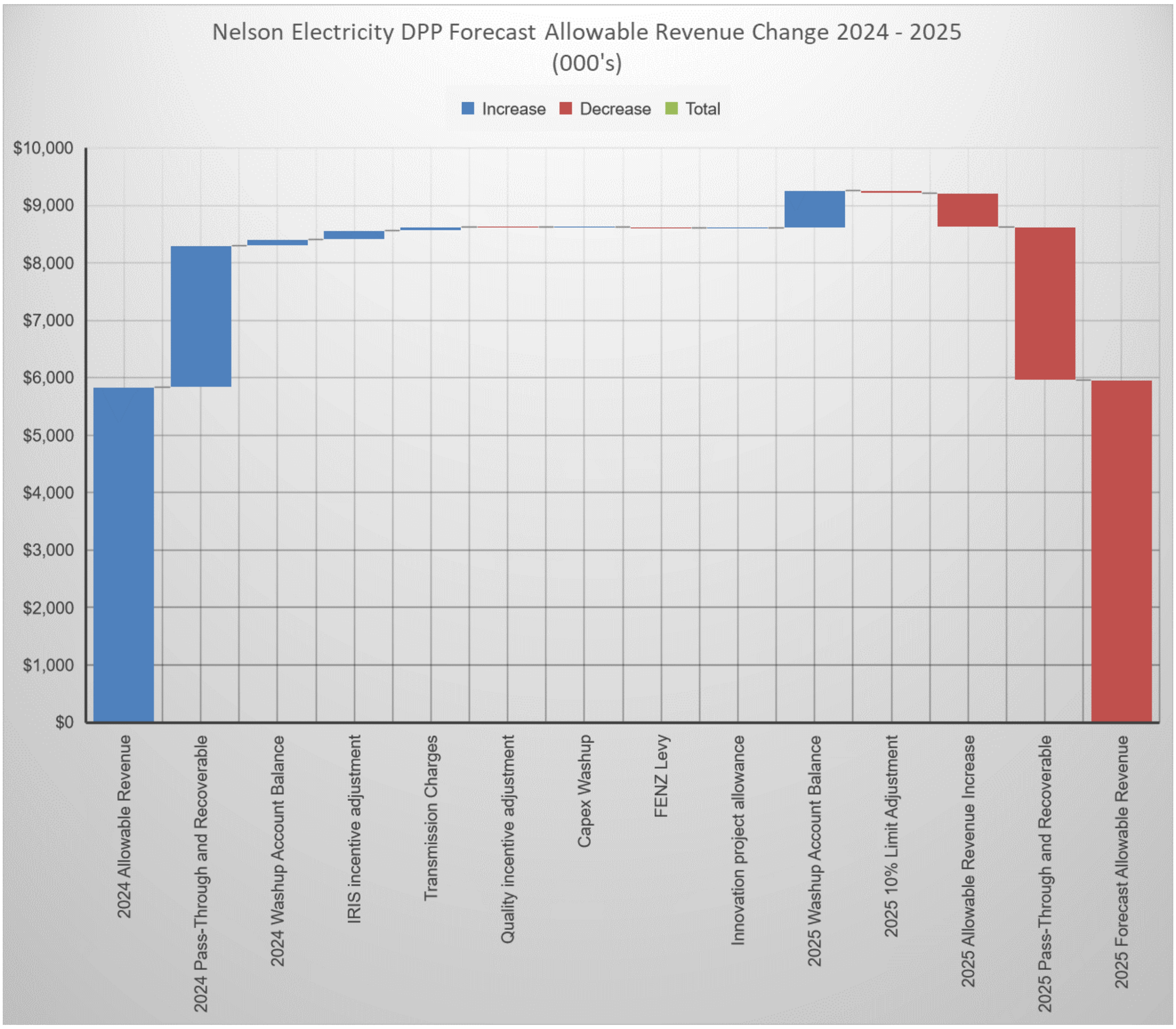
**Forecast net allowable revenue.** The forecast net allowable revenue as determined by DPP3 $5,954k up $117k from $5,837k for the year ending 31 March 2024.

**Transmission Costs.** The forecasted transmission costs for the year is $2,555k up$67k from $2,488k for the year ending 31 March 2024.

**IRIS (Incremental Rolling Incentive Scheme) Incentive Adjustment.** The calculated IRIS adjustment is -$66k up $145k from -$211k for the year ending 31 March 2024. The IRIS incentive adjustment varies from year to year based on the actual Capex and Opex levels compared to the Default Price Path allocations. The IRIS mechanism allows Nelson Electricity to retain any cost saving for five years after the saving is made. This gives a consistent, time-invariant incentive to make cost reductions.

The following building graph and table demonstrates the changes to the individual Forecast Allowable Revenue building blocks.

| Pass-Through and Recoverable Cost Summary (000's) | | | |
|---|---|---|---|
| | | | |
| **Forecast pass-through costs** | **2023-24** | **2024-25** | **Change** |
| Rates on system fixed assets | $41 | $42 | $1 |
| Commerce Act levies | $33 | $31 | -$2 |
| Electricity Authority levies | $46 | $41 | -$5 |
| Utilities Disputes levies | $6 | $6 | $0 |
| **Total forecast pass-through costs** | **$126** | **$120** | **-$6** |
| | | | |
| | | | |
| **Forecast recoverable costs** | **2023-24** | **2024-25** | **Change** |
| IRIS incentive adjustment | -$211 | -$66 | $145 |
| Transpower transmission charges | $2,488 | $2,530 | $42 |
| New investment contract charges | $0 | $0 | $0 |
| System operator services charges | $0 | $0 | $0 |
| Avoided transmission charges - purchased assets | $0 | $0 | $0 |
| Distributed generation allowance | $0 | $0 | $0 |
| Claw-back | $0 | $0 | $0 |
| Catastrophic event allowance | $0 | $0 | $0 |
| Extended reserves allowance | $0 | $0 | $0 |
| Quality incentive adjustment | $2 | -$3 | -$6 |
| Transmission asset wash-up adjustment | $0 | $0 | $0 |
| Reconsideration event allowance | $0 | $0 | $0 |
| Quality standard variation engineers fee | $0 | $0 | $0 |
| Urgent project allowance | $0 | $0 | $0 |
| Fire and emergency NZ levies | $35 | $33 | -$2 |
| Capex Washup | $21 | $22 | $1 |
| Innovation project allowance | $0 | $0 | $0 |
| **Total forecast recoverable costs** | **$2,336** | **$2,516** | **$180** |
| | | | |
| **Washups** | **2023-24** | **2024-25** | **Change** |
| Washup Account Balance | $110 | $651 | $541 |
| Pass-Through Balance Allowance | | | |
| **Total Washup Costs** | **$110** | **$651** | **$541** |
| | | | |
| **Total Recoverable and Pass-Through** | **2023-24** | **2024-25** | **Change** |
| | **$2,572** | **$3,287** | **$716** |
| | | | |
| **Total Recoverable and Pass-Through (Less Transmission)** | **2023-24** | **2024-25** | **Change** |
| | **$84** | **$757** | **$674** |




## 8.4 Allocation and Recovery of Network and Transmission Charges

Network Delivery Prices are set to recover indirect operating costs, direct operating costs, depreciation, and cost of capital. Total cost recovery cannot exceed the Forecast Allowable Revenue as described in Section 8.3. The setting of the charges also considers historical charging practices and methodologies.

The company annual revenue requirements for 2024/2025 are:

| | |
|---|---|
| Operating Costs (Network R&M) | $951k |
| Transmission Costs | $2,555k |
| Overhead Costs | $1,944k |
| Depreciation | $1,948k |
| Target Return (before tax) | $1,795k |

With Nelson Electricity being a small predominantly urban network there was no need to sectionalise it into separate pricing areas. There is, however, one rural uneconomic line supplying a small number of consumers of which a separate pricing option which was introduced in 2023.

## 8.5 Cost Recovery per Load Group

Following is a table outlining the cost recoveries per load group.

| Load Group | Operating | Transmission | Overhead | Depreciation | Target Return | Total |
|---|---|---|---|---|---|---|
| 0 | $46,411 | $14,920 | $6,398 | $9,014 | $31,343 | $108,086 |
| 1 | $203,221 | $526,057 | $643,763 | $413,552 | $233,843 | $2,020,436 |
| 2 | $494,764 | $1,081,418 | $964,477 | $1,001,383 | $1,156,058 | $4,698,101 |
| 3 | $194,104 | $692,237 | $249,872 | $441,648 | $343,467 | $1,921,327 |
| 4 | $12,500 | $215,901 | $79,686 | $82,403 | $30,646 | $421,136 |
| **Total** | $951,000 | $2,530,532 | $1,944,196 | $1,948,000 | $1,795,356 | $9,169,085 |

The methodology used for the above cost apportionment is as follows:

Operating Costs – Operating cost is the Operational Expenditure Budget that covers both the planned and unplanned network R&M expenditure on the network. The Operational Expenditure Budget is split into the different asset types as per the Regulatory Asset Value of System Fixed Assets table groups. The asset group expenses are then allocated to each load group first based on whether the Group utilises that class of asset (eg; Group 4 does not utilise the 400V network so does not contribute towards those associated costs) then through the assessed balance of each group's kWh consumption (60%) and Winter Demand contribution (40%). This percentage allocation attempts to provide a balance between a Groups peak demand utilisation and overall usage.

Some re-balancing is required for load group specific costs, eg; Group 0 where actual Council streetlighting associated maintenance costs of $40,000 are directly allocated to the associated tariff. This allocation is offset against Group 1 and 2 apportioned based on kWh.

| **Regulatory Value and Operating Cost Percentage Allocation** | | | | | | |
|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | Total |
| 33kV Lines | 0.27% | 18.69% | 45.80% | 26.51% | 8.72% | **100.00%** |
| Zone Sub | 0.27% | 18.69% | 45.80% | 26.51% | 8.72% | **100.00%** |
| 11kV Lines | 0.27% | 20.44% | 47.55% | 26.51% | 5.23% | **100.00%** |
| 11kV/400V Sub | 0.27% | 22.41% | 55.24% | 21.21% | 0.87% | **100.00%** |
| 400V Lines | 1.19% | 24.64% | 60.91% | 13.25% | 0.00% | **100.00%** |
| Other | 0.27% | 21.31% | 48.42% | 26.51% | 3.49% | **100.00%** |
| **Operational Cost Allocation** | | | | | | |
| Asset Group | 0 | 1 | 2 | 3 | 4 | Total |
| 33kV Lines | $30 | $2,045 | $5,010 | $2,900 | $954 | $10,938 |
| Zone Sub | $136 | $9,423 | $23,089 | $13,363 | $4,396 | $50,409 |
| 11kV Lines | $311 | $23,505 | $54,684 | $30,488 | $6,018 | $115,006 |
| 11kV/400V Sub | $139 | $11,488 | $28,317 | $10,872 | $447 | $51,262 |
| 400V Lines | $4,966 | $102,793 | $254,056 | $55,286 | $0 | $417,102 |
| Other | $829 | $65,270 | $148,304 | $81,195 | $10,685 | $306,283 |
| Sub Total | $6,411 | $214,525 | $513,460 | $194,104 | $22,500 | $951,000 |
| Reallocation | $40,000 | -$11,304 | -$18,696 | | -$10,000 | **$0** |
| Total | $46,411 | $203,221 | $494,764 | $194,104 | $12,500 | **$951,000** |

Transmission Costs – Transmission costs are an unavoidable cost. It covers the upstream costs from our sub-transmission connection points at STK0331. The transmission cost allocation has changed due to the changes in the Transmission Pricing Methodology (TPM) in 2023. Transmission costs are now mostly fixed but are allocated between Load Groups in alignment with the Electricity Authority Practice Note and ENA recommended approach to passing through of transmission charges.

| **Allocation (000's)** | | |
|---|---|---|
| **Transmission Charge** | **Load Group Allocation** | **Value** |
| Benefit Based Charge | kWh | $332 |
| Residual Charge | kWh/AMD | $1,997 |
| Connection Charge | AMD | $218 |
| Transitional Cap | kWh/AMD | $7 |
| | | **$2,553** |

The methodology for recovery of transmission charges changed in 2023 with the change in the TPM. The proportion of transmission cost recovery from the consumer is changing significantly from 22% fixed and 78% variable for the year ending 31 March 2023 to 70% fixed to 30% variable from 1 April 2023. Transmission charge recovery from consumers reflects the new TPM as far as practical with a high proportion being fixed in nature.

Group 1 fixed cost recovery proportion is limited by the LFC Regulations. All variable cost recovery in Groups 1 and 2 is through uncontrolled pricing options. There are now no transmission charges on any controlled pricing options.

For Group 3, transmission costs are recovered via a mixture of Fixed, Capacity (37%), Winter Control Period Demand charge (13%) and a variable kWh charge (50%) proportion. There are two consumers on Load Group3 and one on Load Group 4 that have transmission charges individually assessed and passed through on a fixed monthly basis, so the proportions on the table below include that difference. Refer to the table below.

| **Fixed V's Variable** | **Fixed** | | **Variable** | | **Total** |
|---|---|---|---|---|---|
| | **%** | **$** | **%** | **$** | **$** |
| **Group 0** | **100%** | **$14,848** | **0%** | **$72** | **$14,920** |
| **Group 1** | **47%** | **$246,104** | **53%** | **$279,953** | **$526,057** |
| **Group 2** | **82%** | **$887,462** | **18%** | **$193,957** | **$1,081,418** |
| **Group 3** | **60%** | **$418,552** | **40%** | **$273,684** | **$692,237** |
| **Group 4** | **100%** | **$215,901** | **0%** | **$0** | **$215,901** |
| **Total** | **70%** | **$1,782,867** | **30%** | **$747,665** | **$2,530,532** |

**The methodology for passing-on settlement residual rebates (Loss Rental Rebates) is described in Section 18.**

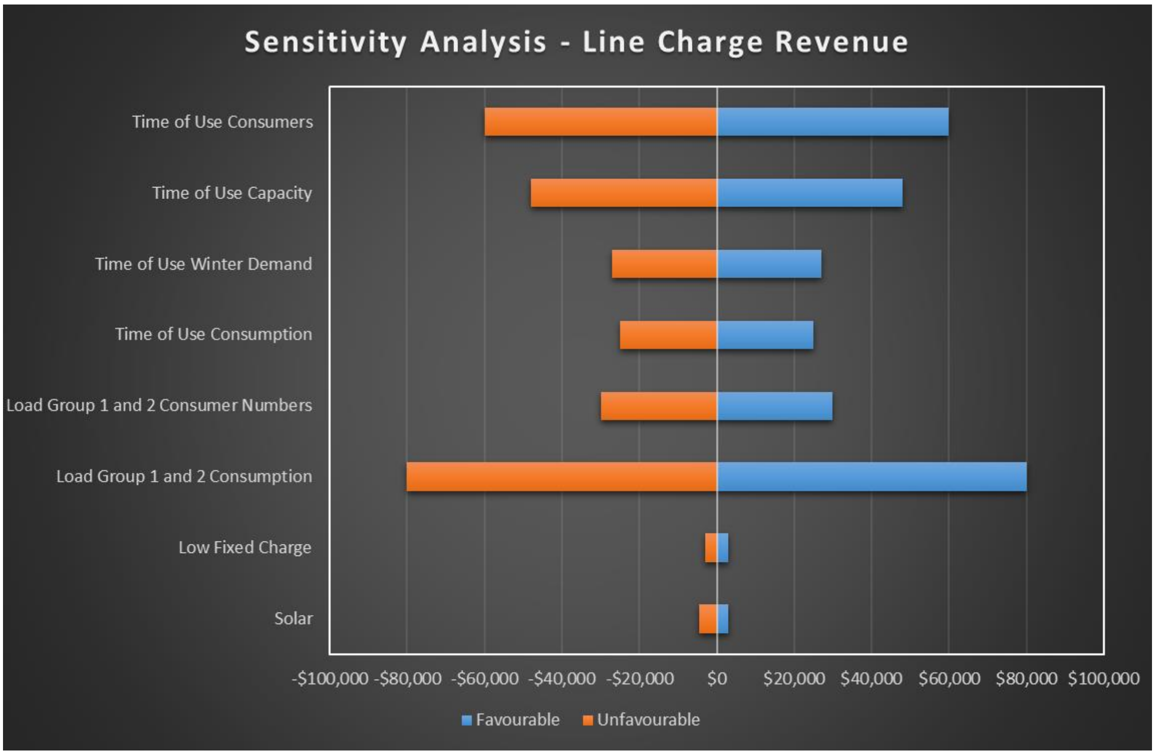
Overhead Costs – Are apportioned by using two measures. The number of network connections and the control period demand of the load group. This gives a balance of spreading overhead costs between the business of selling capacity and the number of consumers connected.

Depreciation – This is apportioned by using the assessed **depreciation** using the NEL Regulatory Asset Base model as a base and follows the same rationale as Operating Costs (except without re-allocation of Load Group specific costs).

Target Return - This is apportioned to load groups as per the Regulatory Asset Base % split per load group as per the rationale of the operating costs. It is, however, important to note that the Regulatory Asset Base valuation for assets installed prior to 2004 still undervalues the underground network value and so the target return takes this into account.

## 8.6 Sensitivity Analysis

The Nelson Electricity revenue estimate for 2024-2025 is $9,169k. There is a potential variation of 3.0% or a range from $8,900k to $9,440k for the year.




## 8.7 Fixed versus Variable Charges

The proportion of charges that are deemed by Nelson Electricity as fixed or variable had previously been set based on historical pricing. This is now changed to align with the Electricity Authority's Distribution Pricing: Practice Note - Second Edition v 2.2, 2022 (Practice Note).

The only major variation is the provision of a LFC price option for Residential consumers as required under the Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004. This issue is slowly being remedied as the LFC is phased out.

Nelson Electricity has reviewed the Electricity Authority's Practice Note in attempting to determine the revenue required from pricing signals then recover remaining revenue through using pricing that least distorts choices. The initial outcome was that with no constraints on the network in the short term, the pricing signals required should be very low and result in 10% to 20% of revenue derived through variable charges and the rest made up of some form of fixed charge. Nelson Electricity's concern, however, is that price signals will need to be stronger and cater for the medium/long term to be confident that long-term decisions are in the best interests of customers. It is determined that a transitional approach be implemented to reach truly cost reflective pricing. The assessed proportion of revenue from variable charges in 2024/25 is 33% down from 36%.

Groups 1 and 2 have a higher variable proportion while groups 3, 4, and 5 have a higher fixed proportion. Refer to the table below.

| Fixed V's Variable | Fixed | | Variable | | Total |
|---|---|---|---|---|---|
| | % | $ | % | $ | $ |
| **Group 0** | 100% | $107,748 | 0% | $338 | $108,086 |
| **Group 1** | 46% | $937,539 | 54% | $1,082,897 | $2,020,436 |
| **Group 2** | 66% | $3,103,744 | 34% | $1,594,357 | $4,698,101 |
| **Group 3** | 81% | $1,558,751 | 19% | $362,576 | $1,921,327 |
| **Group 4** | 100% | $421,136 | 0% | $0 | $421,136 |
| **Total** | **67%** | **$6,128,917** | **33%** | **$3,040,167** | **$9,169,085** |

Consumer behaviour as a response to network pricing is limited. The line price revenue represents only 30% of the total electricity invoice consumers receive from electricity retailers so unless a network can significantly amplify or exaggerate the pricing differential levels then the consumer behaviour will be based on what the electricity retailer wants to achieve.

Nelson Electricity is in the business of selling electrical capacity to consumers and most of its costs as identified in Section 6.4 are fixed. If the true proportion of fixed and variable costs were charged in the same proportions to all consumers, the fixed charge proportion of Groups 0, 1 and 2 consumers would increase significantly with the variable charges reduced. The incremental cost of any consumer using more kWhs, while not increasing their peak demand, is extremely low compared to a consumer wanting more capacity where there is a cost associated with the increases in peak demand.

For further breakdown on the revenue influence of specific prices, refer to Section 14 Price / Quantity / Revenue Schedule.

- **Load Group 0 – Unmetered and Builders Temporary**
  Builders Temporary (metered) - Network costs are broken down into the following:

  - Daily Price (Fixed)
  - Uncontrolled kWh Price

  For the average Builders Temporary, fixed prices recover approximately 60% of total network costs.

  Unmetered Supply – Network costs are fully fixed with no variable component.

  Load Group 0 prices are predominantly fixed given that the low consumption does not make metering practical or economic for retailers. The only metered load in Group 0 is for builder's temporary connections. This type of connection is in Group 0 as the fuse size is low (limited to single phase 30 amps), the consumption is typically low and the load characteristics do not fit other load groups and the revenue impact is low.

- **Load Group 1 and 1P – Residential Consumers (LFC Options)**
  Network costs are broken down into the following:

  - Capacity Supplied Price is based on connection capacity of 15kVA variable kWh Price. This price value depends on whether the load is controlled by ripple control or uncontrolled. The controlled prices are significantly lower than the uncontrolled price as Nelson Electricity can ensure they are turned off at peak times, therefore, reducing potential network stress and other peak demand associated costs. Variable charges contribute 53% of the total line charge revenue for the Load Group. The transmission costs are allocated to the fixed and uncontrolled kWh pricing options as per Section 8.4.
  - There are two controlled kWh pricing options:

    a. Controlled (Hot water) – This is a key network control option to control supply to all hot water cylinders on the network. This can manage up to 10% of network load at peak demand times approximately 3MW. Typically, supply is only controlled during the winter peak demand times to minimise the Maximum Demands that will assist in minimizing transmission connection costs. Also used for other emergency load management purposes.

    b. Night Only - This is an option for consumers that can utilise electricity in off-peak times between 11.00 pm and 7.00 am, typically used for larger hot water cylinders and night storage heaters.

  - Distributed Generation. A price is included based on kWh exported onto the NEL network. This price recovers some of the costs associated with the auditing and safety aspects of the distributed generation connection.

  For the average Group 1 customer, fixed prices recover approximately 39% of total network cost.

  This Group exists to comply with the Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004. Any eligible residential consumer can opt to be in this group. The average annual residential consumption is also reducing and for Nelson Electricity it is now approximately 6,750 kWh per year.

- **Load Group 2, 2P and 2R – Connections from 15kVA – 150kVA (Residential and Commercial)**
  Network costs are broken down into the following:

  - Capacity Supplied Price (based on fuse capacity (in kVA).

  - Variable kWh Price. This price value depends on whether the load is controlled by ripple control or uncontrolled. The controlled prices are significantly lower than the uncontrolled price as Nelson Electricity can ensure they are turned off at peak times therefore reducing potential network stress and other peak demand associated costs. Variable charges contribute 34% of the total line charge revenue for the Load Group. The transmission costs are allocated to the fixed and uncontrolled kWh pricing options as per Section 8.4.

  - There are two controlled kWh pricing options:

a. Controlled (Hot water) – This is a key network control option to control supply to all hot water cylinders on the network. This can manage up to 10% of network load at peak demand times approximately 3MW. Typically, supply is only controlled during the winter peak demand times to minimise transmission connection costs. Also used for other emergency load management purposes.

b. Night Only - This is an option for consumers that can utilise electricity in off-peak times between 11.00 pm and 7.00 am, typically used for larger hot water cylinders and night storage heaters.

- Distributed Generation. A price is included based on kWh exported onto the NEL network. This price recovers some of the costs associated with the auditing and safety aspects of the distributed generation connection.

For the average Group 2 customer, capacity-based charges recover approximately 66% of total network costs. All residential and business consumers are eligible from 15kVA up to 150kVA. It is designed so that the larger the fuse at the network connection point then the higher the fixed charges. The variable charges remain unchanged.

This Group has a price design to encourage consumers to manage their electricity use by providing an incentive to lower fused capacity. There is one current limitation with this design due to the Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004. The Regulation ensures that for every pricing option a residential consumer can be eligible for, there must be a pricing option they can shift to that meets the requirements of the regulations ie; fixed daily charge of no greater than 60 cents per day. To meet the regulation Nelson Electricity would require a significant increase in line pricing options by 40 (one set of four for each of the 10 potential fuse size combinations). To comply with the requirements and remove the potential complexity, the residential consumers in Group 2 (3,471) currently have their fused capacity set at 15kVA while non-residential (1,373) have capacity based on actual fuse size.

- **Load Groups 3 – Large Commercial**
  This Price Group is designed for the larger installations on the network. These sites must have Time of Use metering installed. Nelson Electricity can set network prices based on the individual site configuration and usage pattern more accurately. The prices in this category are explained below.

1. **Metered Installation**. This is a fixed price per connection designed to capture the fixed network admin costs associated with each connection. The value is the same no matter what size.

2. **Winter Demand**. Winter Demand is a $/kW/day fixed price and is a method of apportioning transmission and network peak demand costs. The measure is the single highest half hour kVA demand recorded in the months of June, July, and August between 8.30 am-11.30 am and 5.00 pm-6.00 pm. The winter demand assessment period excludes weekends and public holidays. The winter demand value is used for billing purposes from the month of October and for the following 12 months until reset again the after the following winter.

3. **Capacity Supplied**. Capacity Supplied is a $/kVA/day fixed price and is the actual size of the connection to the Network (either fuse size or transformer size). This represents the maximum demand the site can draw from the network. This charge is used to recover local network costs.

4. **Energy**. The Energy charge is a variable price based on the total energy consumption for the connection. This is used to recover both transmission and network costs.

5. **Power Factor**. This monthly variable price is used to encourage consumers to maintain a power factor of greater than 0.95. The charge is for the kVAr required at peak time to bring the power factor up to 0.95. A charge is not applied if the power-factor at peak is > 0.95.

6. **Distributed Generation**. This is a new variable price that is for kWh exported onto the network. This recovers costs associated with the auditing and safety aspects of the distributed generation connection.

## 8.8 Chargeable Capacity

The following is the typical fuse size combinations and associated capacity rating accepted at a Nelson Electricity Network Connection Point. Larger connections are on a case-by-case basis.

**Fuse Rating Table**

| No. of Phases | Fuse size (Amps) | kVA Rating |
|---|---|---|
| 3 | 30 | 15 |
| 2 | 40 | 15 |
| 3 | 40 | 28 |
| 1 | 60 | 15 |
| 2 | 60 | 30 |
| 3 | 60 | 45 |
| 1 | 80 | 20 |
| 2 | 80 | 40 |
| 3 | 80 | 60 |
| 1 | 100 | 23 |
| 2 | 100 | 46 |
| 3 | 100 | 69 |
| 3 | 125 | 87 |
| 3 | 150 | 105 |
| 3 | 160 | 110 |
| 3 | 200 | 138 |

The two phase 40 amp and three phase 30 amp supplies are assessed at the minimum capacity of 15kVA to cater to those connections on multiple phases prior to the capacity charges coming into effect.

### 8.9 Changing Pricing Plan Limitations

Where a consumer has a choice of pricing plan, Nelson Electricity reserves the right to limit changes between pricing plans to one change in any 12-month period eg; Nelson Electricity offers the Low Fixed Charge plans (Pricing Category 1 and 1P) to qualifying residential connections and a standard plan (Pricing Category 2 and 2P) for residential connections. This condition is included in the Nelson Electricity Use of System Agreement for the purposes of managing the risk of consumers shifting principally between the regulatory imposed Group 1 Pricing and the Group 2 Pricing to take advantage of the summer/winter differences.

## 9. Future Changes

Nelson Electricity will continually review the existing pricing structure to ensure it is providing the right pricing signals for consumers that will assist in running the electricity network as efficiently as possible.

Areas for consideration are:

**Electric Vehicle Charging Pricing Option**
A separate electric vehicle charging option that incentivises charging out of peak times is being considered. This could either be controlled via Ripple Control during peak demand times or be time controlled to only be on during late evenings through to early morning. The one complication is that occasionally consumers may require their Electric Vehicles to be charged outside of these control periods and there needs to be a mechanism in place to allow this to occur.

**Load Groups 1 and 2 - Peak/Off-Peak Pricing Differential**
Nelson Electricity will be reviewing the required pricing differentials between Peak and Off-Peak times to ensure consumers are provided the right level of incentives as we progress towards the forecasted growth in the medium to long term.

**Load Group 3 – Simplifying Capacity Price Option**
Nelson Electricity will be reviewing the benefits of removing the capacity grouping price codes T-03 through to T-015 and changing to charging based on the Capacity value held in the Capacity field on the registry. This change does not change the amount charged to consumers but would reduce the complexity of the Group 3 charges.

## 10. Non-Standard Contracts

Nelson Electricity will consider offering a non-standard contract to consumers it can be demonstrated that there is a benefit to both parties to do so. The key consideration would be if the consumer is large enough typically over 1,000kVA connected capacity and can manage peak load for the benefit of minimising any peak demand times, either transmission or network related.

The management of peak load could be through load shedding or utilisation of distributed generation.

Currently there are two non-standard contracts in place and all other consumers are charged as per the pricing schedule attached to this document. The expected revenue to be received in the coming year is $280k from the two non-standard contracts.

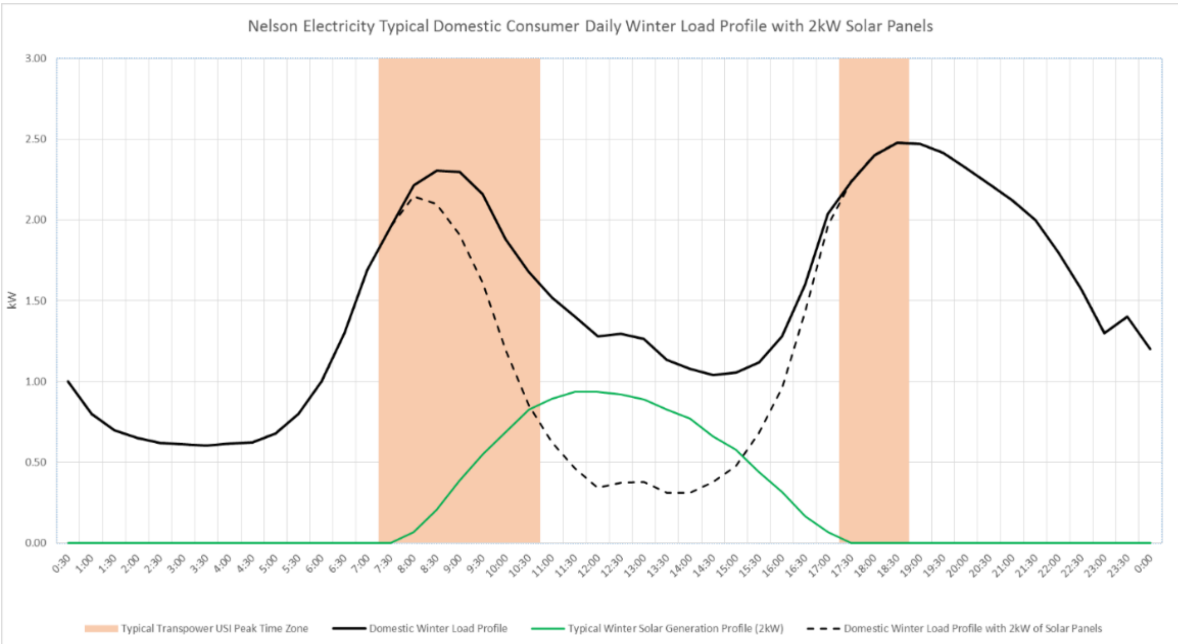
In determining a non-standard contract line charge, Nelson Electricity would determine the potential reduction in costs associated with a consumer connection if they were able to manage their load in a particular way. An example is a consumer being able to manage load in the peak demand times. This may result in a lowering of transmission connection charges for Nelson Electricity which the consumer could benefit from.

Nelson Electricity will consider any application from a consumer for a non-standard contract if it can be demonstrated that there is a benefit for both parties to do so, whether it be due to load management, distributed generation, or bypass potential.

## 11. Distributed Generation

Nelson Electricity allows the connection of distributed generation to its network. There are additional requirements for these connections to satisfy Nelson Electricity that these connections are safe. The requirements are posted on the Nelson Electricity Website [www.nel.co.nz](http://www.nel.co.nz).

While these connections can inject electricity back into the Nelson Electricity network the timing of this, if through solar, is not at a time when Nelson Electricity would benefit and assist in reducing network costs. Nelson Electricity infrastructure is designed to meet the peak capacity of the network which is on the coldest winter mornings when there is high level of cloud cover. The benefit of any solar distributed generation is negligible.

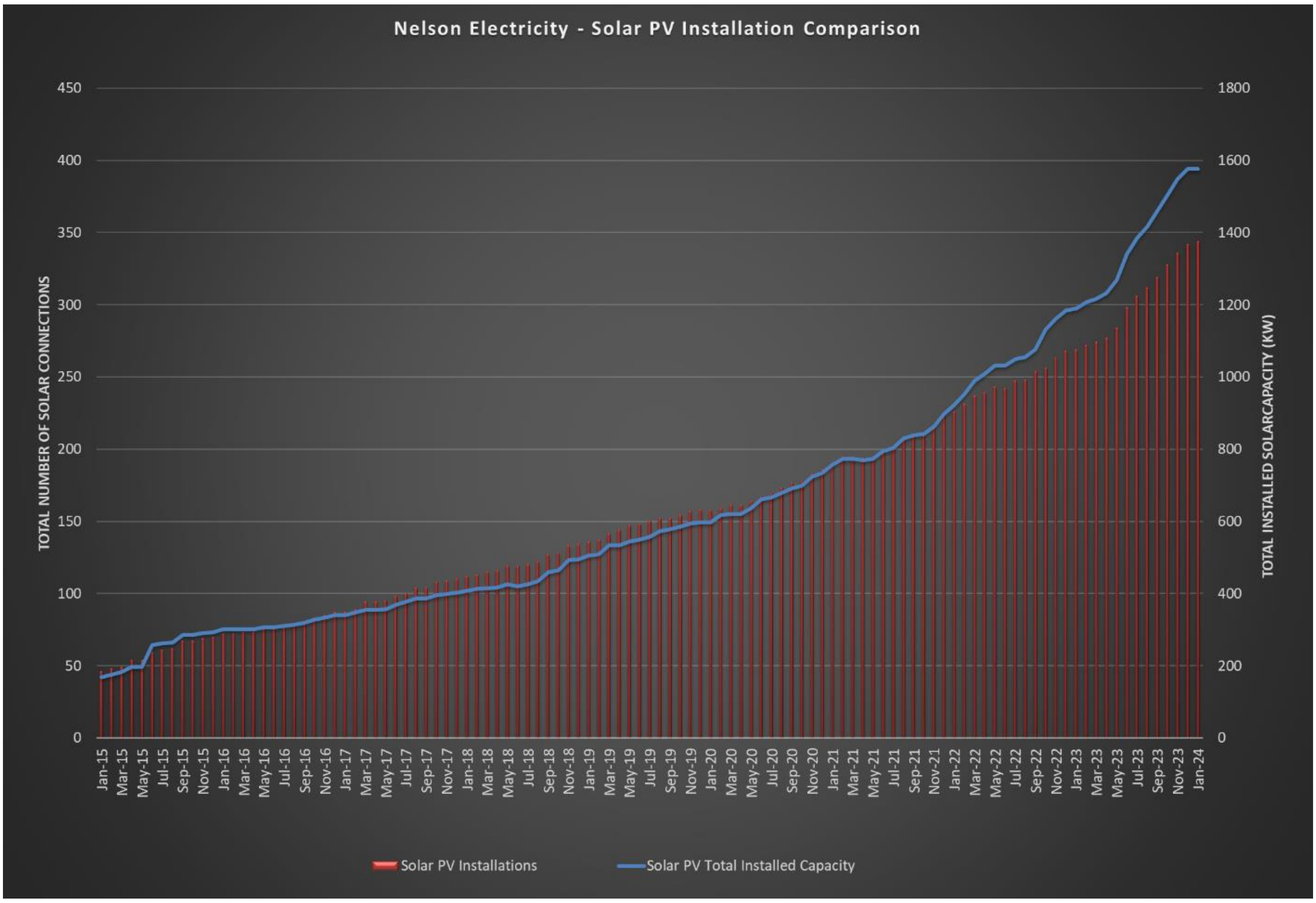


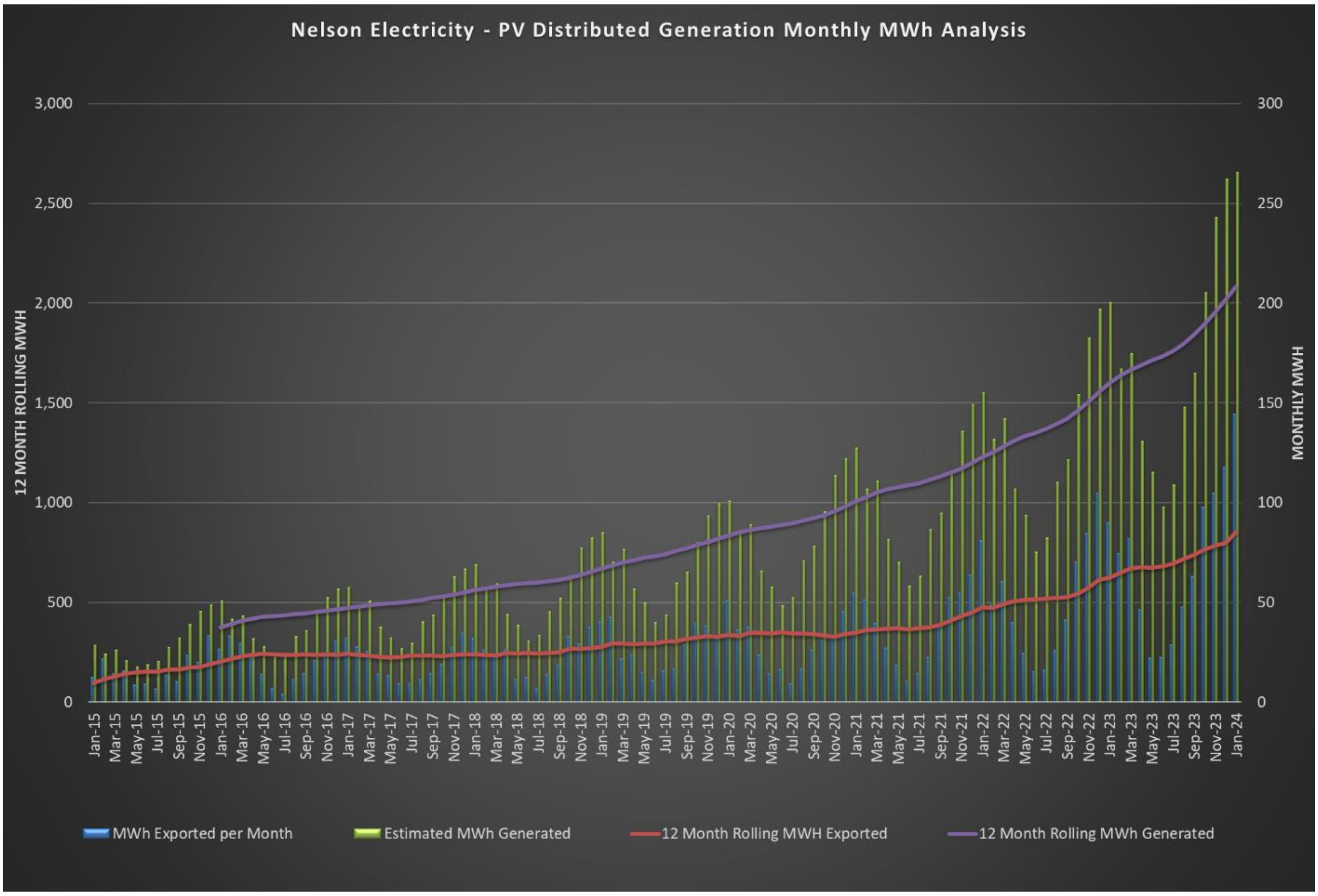

For this reason, Nelson Electricity does not offer any pricing benefit for distributed generation connections for either local line or transmission charges. Analysis of existing installations is being undertaken to ensure that any exported electricity is within the related voltage limits and of appropriate quality.

Nelson Electricity has been reviewing the costs associated with processing new distributed connections and auditing of the connections as there are additional costs associated with managing these connections to ensure they comply with appropriate standards.  A new price option was created from 1 April 2014 for the exporting of kWh on to the Nelson Electricity network for Groups 1 and 2, and now introduced to Group 3 from 1 April 2018.  Although the level of the price is only 0.5 cents per kWh, this is designed to capture some of the safety audit costs of distributed generation sites.  As an example, the annual audit costs are approximately $15 per year and the 0.5 cents per year will only recover $10 per year at 2,000kWh per site.

As the installed price of distributed generation decreases, the financial viability for consumers to install increases.  Nelson Electricity is mindful that connections that have solar PV installed do not contribute fairly to their cost to supply electricity as their peak electricity usage in the middle of winter has not materially changed as per the graph above.  Any electricity consumer looking to invest in distributed generation must take this into consideration.

There are currently 344 distributed generation installations on the network (as of January 2024) totalling 1,588kW of generating capacity.  There were 75 new installations in the last 12 months.  It is expected that the numbers will slowly increase as the installed price decreases.






## 12. Electricity Networks Association – Pricing Guidelines for Electricity Distributors

The Electricity Networks Association in New Zealand in 2015 completed a Distribution Pricing Guideline and updated in 2016 and again in September 2022 for the purpose of the assisting electricity distribution businesses to describe and present their distribution prices in a consistent manner.

This Pricing Methodology as far as practical has been written to be in line with the guidelines to provide increased consistency with other networks. It is expected that over time that as the guidelines get developed further, then this pricing methodology be improved further.

## 13. Pricing Schedule

# Nelson Electricity Ltd
# Delivery Price Schedule
# From 1 April 2024

NELSON ELECTRICITY LTD

Nelson Electricity Ltd is adjusting delivery prices effective 1 April 2024.

The prices in this schedule are used to charge electricity retailers for the delivery of electricity over the Nelson Electricity electricity network. Electricity retailers determine how to allocate this cost together with energy, metering and other retail costs when setting the retail prices that appear on a customer's power account.

Nelson Electricity distributes electricity to connections in the central Nelson city including most of the Port, Port Hills, Nelson South, Toi Toi, Brook, Wood, Nelson East and CBD areas.

| Nelson Electricity - New Pricing | | | | New Delivery Prices from 1 April 2024 | | | Equivalent Existing Prices to 31 March 2024 |
|---|---|---|---|---|---|---|---|
| **Price Code** | **Description** | **Consumer Numbers** | **Units** | **Distribution Price** | **Transmission Price** | **Delivery Price** | **Delivery Price** |
| **Load Group** | | | | | | | |
| **Price Category 0 Unmetered and low capacity connections** | | | | | | | |
| **Builders Temporary (7kVA)** | | 8 | | | | | |
| 0-BT-FIXED | Builders Temp - Fixed | | $/day | 0.8500 | 0.1500 | **1.0000** | **0.8000** |
| 0-BT-24HR | Builders Temp - Anytime | | $/kWh | 0.0670 | 0.0180 | **0.0850** | **0.0810** |
| **Unmetered Connection (< 1 kW)** | | 37 | | | | | |
| 0-UM-FIXED | Unmetered - Fixed | | $/day | 0.2000 | 0.0000 | **0.2000** | **0.1500** |
| 0-UM-KW | Maximum Demend | | $/kW/day | 0.9400 | 0.1600 | **1.1000** | **1.0000** |
| **Streetlighting** | | 1 | | | | | |
| 0-SL | Streetlight | | $/day | 214.0000 | 35.00 | **249.00** | **225.00** |
| **Load Group 1** | | | | | | | |
| **Piece Category 1 (NHH Metering Only)** | | | | | | | |
| **Residential Low Fixed Charge (15kVA)** | | 510 | | | | | |
| 1-FIXED | Fixed | | $/kVA/day | 0.0295 | 0.0105 | **0.0400** | **0.0300** |
| 1-24HR | Anytime | | $/kWh | 0.0380 | 0.0180 | **0.0560** | **0.0570** |
| 1-WATER | Controlled (Hot Water) | | $/kWh | 0.0320 | 0.0000 | **0.0320** | **0.0330** |
| 1-NIGHT | Night Rate (11pm-7am) | | $/kWh | 0.0270 | 0.0000 | **0.0270** | **0.0280** |
| 1-DG | Distributed Generation | | $/kWh | 0.0050 | 0.0000 | **0.0050** | **0.0050** |
| **Price Category 1P (Peak/Off-Peak) - (HHR Metering)** | | | | | | | |
| **Residential Low Fixed Charge (15kVA)** | | 3859 | | | | | |
| 1P-FIXED | Fixed | | $/kVA/day | 0.0295 | 0.0105 | **0.0400** | **0.0300** |
| 1P-PEAK | Peak | | $/kWh | 0.0440 | 0.0180 | **0.0620** | **0.0630** |
| 1P-OFFP | Off Peak | | $/kWh | 0.0290 | 0.0180 | **0.0470** | **0.0480** |
| 1P-WATER | Controlled (Hot Water) | | $/kWh | 0.0320 | 0.0000 | **0.0320** | **0.0330** |
| 1P-NIGHT | Night Rate (11pm-7am) | | $/kWh | 0.0270 | 0.0000 | **0.0270** | **0.0280** |
| 1P-DEF | Default | | $/kWh | 0.0380 | 0.0180 | **0.0560** | **0.0570** |
| 1P-DG | Distributed Generation | | $/kWh | 0.0050 | 0.0000 | **0.0050** | **0.0050** |
| **Load Group 2** | | | | | | | |
| **Price Category 2 (from 15kVA to 150kVA) - (NHH Metering Only)** | | | | | | | |
| **General - Residential and Commercial** | | 849 | | | | | |
| 2-FIXED | Fixed | | $/kVA/day | 0.0564 | 0.0226 | **0.0790** | **0.0710** |
| 2-24HR | Anytime | | $/kWh | 0.0280 | 0.0040 | **0.0320** | **0.0300** |
| 2-WATER | Controlled (Hot Water) | | $/kWh | 0.0066 | 0.0000 | **0.0066** | **0.0060** |
| 2-NIGHT | Night Rate (11pm-7am) | | $/kWh | 0.0022 | 0.0000 | **0.0022** | **0.0020** |
| 2-DG | Distributed Generation | | $/kWh | 0.0050 | 0.0000 | **0.0050** | **0.0050** |
| **Price Category 2P (Peak/Off-Peak from 15kVA to 150kVA) - (HHR Metering)** | | | | | | | |
| **General - Residential and Commercial** | | 4008 | | | | | |
| 2P-FIXED | Fixed | | $/kVA/day | 0.0564 | 0.0226 | **0.0790** | **0.0710** |
| 2P-PEAK | Peak | | $/kWh | 0.0310 | 0.0040 | **0.0350** | **0.0330** |
| 2P-OFFP | Off Peak | | $/kWh | 0.0220 | 0.0040 | **0.0260** | **0.0240** |
| 2P-WATER | Controlled (Hot Water) | | $/kWh | 0.0066 | 0.0000 | **0.0066** | **0.0060** |
| 2P-NIGHT | Night Rate (11pm-7am) | | $/kWh | 0.0022 | 0.0000 | **0.0022** | **0.0020** |
| 2P-DEF | Default | | $/kWh | 0.0280 | 0.0040 | **0.0320** | **0.0300** |
| 2P-DG | Distributed Generation | | $/kWh | 0.0050 | 0.0000 | **0.0050** | **0.0050** |
| **Price Category 2R - (Remote - Fringed Hill)** | | | | | | | |
| **Fringed Hill - Commercial** | | 4 | | | | | |
| 2R-FIXED | Fixed | | $/kVA/day | 0.1274 | 0.0226 | **0.1500** | **0.1060** |
| 2R-24HR | Anytime | | $/kWh | 0.0280 | 0.0040 | **0.0320** | **0.0300** |

| Load Group 3 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Price Category 3 LARGE COMMERCIAL (up to 2400kVA)** | | | | | | | |
| **TIME OF USE** | | 86 | | | | | |
| 3-FIXED | Metered Installation | | $/day | 1.6000 | 0.0000 | **1.6000** | **1.4500** |
| 3-WD | Winter Demand (kVA) | | $/kVA/day | 0.1300 | 0.0200 | **0.1500** | **0.1350** |
| 3-24HR | Energy | | $/kWh | 0.0022 | 0.0088 | **0.0110** | **0.0100** |
| | Capacity Supplied (one of) | | | | | | |
| T-03 | T-03 | 16kVA – 42kVA | $/day | 1.9300 | 0.84 | **2.77** | **2.52** |
| T-04 | T-04 | 43kVA – 69kVA | $/day | 3.1700 | 1.38 | **4.55** | **4.14** |
| T-05 | T-05 | 70kVA – 110kVA | $/day | 5.0600 | 2.20 | **7.26** | **6.60** |
| T-06 | T-06 | 111kVA – 138kVA | $/day | 6.3500 | 2.76 | **9.11** | **8.28** |
| T-07 | T-07 | 139kVA – 218kVA | $/day | 10.0300 | 4.36 | **14.39** | **13.08** |
| T-08 | T-08 | 219kVA – 300kVA | $/day | 13.8000 | 6.00 | **19.80** | **18.00** |
| T-09 | T-09 | 301kVA – 500kVA | $/day | 23.0000 | 10.00 | **33.00** | **30.00** |
| T-10 | T-10 | 501kVA – 750kVA | $/day | 34.5000 | 15.00 | **49.50** | **45.00** |
| T-11 | T-11 | 751kVA – 1000kVA | $/day | 46.0000 | 20.00 | **66.00** | **60.00** |
| T-12 | T-12 | 1001kVA – 1500kVA | $/day | 69.0000 | 30.00 | **99.00** | **90.00** |
| T-13 | T-13 | 1501kVA – 2000kVA | $/day | 92.0000 | 40.00 | **132.00** | **120.00** |
| T-15 | T-15 | 2400kVA | $/day | 110.4000 | 48.00 | **158.40** | **144.00** |
| 3-DG | Distributed Generation | | $/kWh | 0.0050 | 0.0000 | **0.0050** | **0.0050** |
| 3-PF | Power Factor <0.95 | | $/kVAr/mth | 7.0000 | 0.0000 | **7.0000** | **6.5000** |

**All prices exclude GST.** All prices as shown above are also available from our website www.nel.co.nz

**Pricing Guide -** Details on how these delivered prices are applied are included in our Pricing Guide which is available on our website.

**Load Group 0 -** Loads that meet Electricity Authority Unmetered Load Guidelines and Metered Builders Temporary Supplies (Builders Temp > 7kVA use Load Group 2).

**Load Group 1** - Residential households (principal place of residence only) with connection capacity of 15kVA using less then 8,000kWh per year as required to comply with the Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004.

**Load Group 2** - Available to <u>all</u> residential and commercial connections with capacity from 15kVA to 150kVA.

**Load Group 1 & 2 -** All existing residential households have an assessed connection capacity of 15kVA.

**Load Group 3** - Available to any large commercial connections up to 2400kVA with Time of Use metering.

**Load Group 1, 2 and 3 -** Distributed Generation charge is for electricity exported into the Nelson Electricity network.

Any questions about the line charges, please email us at enquiry@nel.co.nz, or phone (03) 546-0486.

# 14. Price / Quantity / Revenue Schedule

**Total Revenue Table using 31 March 2025 Prices and 2024/2025 Quantities**

Number of Days: 365

| Tariff or Fee | Number of ICPs at 31/03/2025 | Billed kWh at 31/3/2025 | Billed kVA at 31/3/2025 | Billed Days at 31/3/2025 | Distribution Charges | | | | Notional Distribution Revenue ($) | | Total Revenue ($) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Fixed | | | Variable (c/kWh) | Fixed | Variable | |
| | | | | | $/day | c/kVA/day | Other | | | | $P_{,2025}$ $Q_{,2025}$ |
| **Group 0** | | | | | | | | | | | |
| Streetlights | 1 | 583,740 | - | 365 | 249.00 | 0.00 | 0.00 | 0.00 | 90,885 | - | 90,885 |
| Unmetered Fixed | 37 | - | - | 13,505 | 0.20 | 0.00 | 0.00 | 0.00 | 2,701 | - | 2,701 |
| Unmetered Capacity | | - | 10,220 | - | 0.00 | 110.00 | 0.00 | 0.00 | 11,242 | - | 11,242 |
| Builders Temp | 8 | - | - | 2,920 | 1.00 | 0.00 | 0.00 | 0.00 | 2,920 | - | 2,920 |
| BT-kWh | | 3,975 | - | - | 0.00 | 0.00 | 0.00 | 8.50 | - | 338 | 338 |
| **Group 1 (Standard)** | | | | | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| Fixed | 510 | - | 2,726,550 | - | 0.00 | 4.00 | 0.00 | 0.00 | 109,062 | - | 109,062 |
| Anytime | | 1,748,735 | - | - | 0.00 | 0.00 | 0.00 | 5.60 | - | 97,929 | 97,929 |
| Controlled | | 803,090 | - | - | 0.00 | 0.00 | 0.00 | 3.20 | - | 25,699 | 25,699 |
| Nightrate | | 74,926 | - | - | 0.00 | 0.00 | 0.00 | 2.70 | - | 2,023 | 2,023 |
| DG | | 50,552 | - | - | 0.00 | 0.00 | 0.00 | 0.50 | - | 253 | 253 |
| **Group 1P (Peak/Off-Peak)** | | | | | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| Fixed | 3,859 | - | 20,711,925 | - | 0.00 | 4.00 | 0.00 | 0.00 | 828,477 | - | 828,477 |
| Peak | | 3,162,158 | | | 0.00 | 0.00 | 0.00 | 6.20 | - | 196,054 | 196,054 |
| Off Peak | | 2,855,101 | | | 0.00 | 0.00 | 0.00 | 4.70 | - | 134,190 | 134,190 |
| Controlled | | 5,647,193 | - | - | 0.00 | 0.00 | 0.00 | 3.20 | - | 180,710 | 180,710 |
| Nightrate | | 284,785 | - | - | 0.00 | 0.00 | 0.00 | 2.70 | - | 7,689 | 7,689 |
| Default | | 7,786,944 | - | - | 0.00 | 0.00 | 0.00 | 5.60 | - | 436,069 | 436,069 |
| DG | | 456,186 | - | - | 0.00 | 0.00 | 0.00 | 0.50 | - | 2,281 | 2,281 |
| **Group 2 (Standard)** | | | | | | | | | | | |
| Fixed | 849 | - | 7,745,784 | - | 0.00 | 7.90 | 0.00 | 0.00 | 611,917 | - | 611,917 |
| Anytime | | 8,639,787 | - | - | 0.00 | 0.00 | 0.00 | 3.20 | - | 276,473 | 276,473 |
| Controlled | | 1,137,725 | - | - | 0.00 | 0.00 | 0.00 | 0.66 | - | 7,509 | 7,509 |
| Nightrate | | 246,367 | - | - | 0.00 | 0.00 | 0.00 | 0.22 | - | 542 | 542 |
| DG | | 64,423 | - | - | 0.00 | 0.00 | 0.00 | 0.50 | - | 322 | 322 |
| **Group 2P (Peak/Off-Peak)** | | | | | | | | | | | |
| Fixed | 4,008 | - | 31,500,531 | - | 0.00 | 7.90 | 0.00 | 0.00 | 2,488,542 | - | 2,488,542 |
| Peak | | 7,188,205 | | | 0.00 | 0.00 | 0.00 | 3.50 | - | 251,587 | 251,587 |
| Off Peak | | 5,483,890 | | | 0.00 | 0.00 | 0.00 | 2.60 | - | 142,581 | 142,581 |
| Controlled | | 6,451,431 | - | - | 0.00 | 0.00 | 0.00 | 0.66 | - | 42,579 | 42,579 |
| Nightrate | | 360,783 | - | - | 0.00 | 0.00 | 0.00 | 0.22 | - | 794 | 794 |
| Default | | 27,125,560 | - | - | 0.00 | 0.00 | 0.00 | 3.20 | - | 868,018 | 868,018 |
| DG | | 459,334 | - | - | 0.00 | 0.00 | 0.00 | 0.50 | - | 2,297 | 2,297 |
| **Group 2R (Remote - Fringed Hill)** | | | | | | | | | | | |
| Fixed | 4 | | 21,900 | | 0.00 | 15.00 | 0.00 | 0.00 | 3,285 | - | 3,285 |
| Anytime | | 51,698 | | | 0.00 | 0.00 | 0.00 | 3.20 | - | 1,654 | 1,654 |
| **Time of Use** | | | | | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| Metered Installation Charge | 84 | - | - | 30,660 | 1.60 | 0.00 | 0.00 | 0.00 | 49,056 | - | 49,056 |
| Energy | | 31,100,500 | - | - | 0.00 | 0.00 | 0.00 | 1.10 | - | 342,106 | 342,106 |
| Winter Demand | | - | 3,557,290 | - | 0.00 | 15.00 | 0.00 | 0.00 | 533,594 | - | 533,594 |
| Capacity Supply (Sum of kVA) | | - | 10,143,715 | - | 0.00 | 6.60 | 0.00 | 0.00 | 669,485 | - | 669,485 |
| Power Factor (kVAr) | | - | 2,772 | - | 0.00 | 0.00 | 7.00 | 0.00 | 19,404 | - | 19,404 |
| DG | | 16,528 | - | - | 0.00 | 0.00 | 0.00 | 0.50 | - | 83 | 83 |
| **TOU Sealord** | | | | | | | | | | | |
| Fixed | 1 | 13,281,086 | - | - | 0.00 | 0.00 | 421,136.00 | 0.00 | 421,136 | - | 421,136 |
| Power Factor (kVAr) | | - | - | - | 0.00 | 0.00 | 7.00 | 0.00 | - | - | - |
| | | | | | 0.00 | 0.00 | 0.00 | 0.50 | | | |
| **Direct Connection** | | | | | | | | | | | |
| Energy | | 9,266,687 | - | - | 0.00 | 0.00 | 0.00 | 0.22 | - | 20,387 | 20,387 |
| Installation | 2 | - | - | 730 | 1.60 | 0.00 | 0.00 | 0.00 | 1,168 | - | 1,168 |
| Winter Demand | | - | 610,645 | - | 0.00 | 13.00 | 0.00 | 0.00 | 79,384 | - | 79,384 |
| Capacity Supplied | | - | 1,241,000 | - | 0.00 | 4.60 | 0.00 | 0.00 | 57,086 | - | 57,086 |
| Power Factor (kVAr) | | - | 564 | - | 0.00 | 0.00 | 7.00 | 0.00 | 3,948 | - | 3,948 |
| Transpower Cold Storage | | - | 1 | - | 0.00 | 0.00 | 50,092.00 | 0.00 | 50,092 | - | 50,092 |
| Transpower NMDHB | | - | 1 | - | 0.00 | 0.00 | 95,534.00 | 0.00 | 95,534 | - | 95,534 |
| DG | | 276 | - | - | 0.00 | 0.00 | 0.00 | 0.50 | - | 1 | 1 |
| $\Sigma\ \Pi,2025\ \Theta,2025$ | 9,363 | 133,284,366 | | | | | | | **6,128,917** | **3,040,167** | **9,169,085** |
| | | | | | | | | | **67%** | **33%** | |

# 15. Future Pricing Roadmap Table – Progress Summary

Nelson Electricity introduced a form of future pricing from 1 April 2023. The prices were introduced after significant research, analysis and consultation with stakeholders.

The implementation of the new prices ran smoothly with most retailers charging their consumers to Peak/Off-Peak prices. There is, however, a high level of consumption using the default price option of which we expect will be changed over this coming year.

Nelson Electricity is currently in the review phase of the process. There has been some minor shift in the price differential between Peak and Off-Peak prices for 2024 but any significant change will be undertaken from 2025 when Nelson Electricity will have a full 12 month consumption pattern data to analyse.

Consideration is being given to the merits of introducing a separate Electric Vehicle charging pricing option as described in Section 9.

## Future Pricing Roadmap Checklist EDB : Nelson Electricity Limited

| Roadmap Stages | Activities | 2022 Q1 | 2022 Q2 | 2022 Q3 | 2022 Q4 | 2023 H1 | 2023 H2 | 2024 | 2025 | Resource requirements | Progress since 2022 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **1. Initiate pricing reform** | | | | | | | | | | | |
| Problem Identification & Discovery | Justification and early modelling | X | | | | | | | | NEL | Completed |
| Define overall objectives for reform | Set overall goals including target dates or date ranges | X | | | | | | | | NEL / ENA / Shareholders | Completed |
| Develop strategy to deliver reform | Develop ideas on how to go ahead (including long list of future pricing options if available) | X | | | | | | | | NEL / ENA / Shareholders | Completed |
| Communicate | Prepare and publish future pricing roadmap, include reasoning and and why it's important | X | | | | | | | | NEL | Completed |
| Identify challenges | eg, resourcing implications, billing systems, EIEP1 file formats, AMI penetration and technology, accessing data | X | | | | | | | | NEL - New Billing System | Completed |
| Consult retailers | Socialise ideas & plans with retailers | | X | | | | | | | NEL / ENA | Completed |
| Establish high level plan | Gain commitment to reform, agree plan, allocate resources | | X | | | | | | | NEL | Completed |
| Gather basic data for analytics | What do we need to know to progress reform? (eg. AMI penetration? Survey customers?) | | X | | | | | | | NEL / ENA / Shareholders | Completed |
| Define pathway | Prepare final strategic pricing plan (including target dates) | | X | | | | | | | NEL / ENA / Shareholders | Completed |
| Alignment across EDBs | Compare plan with other EDB's, form coalitions | | X | | | | | | | NEL / ENA / Shareholders | Completed |
| **2. Plan changes in more detail** | | | | | | | | | | | |
| Develop detailed plans, including: | Identify issues/prepare detailed pricing reform plans | | X | | | | | | | NEL / ENA / Shareholders | Completed |
| - customer interactions | Establish research program (retailer + end-user) | | X | | | | | | | NEL / ENA / Shareholders | Completed |
| - pricing trials to test ideas | Conduct in-market testing, examine impact on customer groups | | | X | | | | | | NEL / ENA / Shareholders | Completed |
| - data analysis to assess customer impacts | Narrow down preferred options and test market impacts | | | X | | | | | | NEL / ENA / Shareholders | Completed |
| - implementation and transition arrangements | Identify what will drive success | | | X | | | | | | NEL / ENA / Shareholders | Completed |
| - feedback loops and issues resolution | Develop processes to account for stakeholder views and review against target dates. Participate in ENA | | | X | | | | | | NEL / ENA / Shareholders | Completed |
| - communication | Educate customers and retailers about change | | | X | | | | | | NEL / ENA / Shareholders | Retailers educated, Ongoing customer education |
| - regulatory compliance | Check plan meets regulatory expectations | | | X | | | | | | NEL / ENA / Shareholders | Completed |
| **3. Manage roll out of new pricing options** | | | | | | | | | | | |
| Develop transition strategies | Incentivise and manage take-up over time for retailers and customers | | | | X | | | | | NEL / ENA / Shareholders | Completed |
| Adopt risk management approach | Identify and manage risks to markets, customers, EDBs *(eg political and financial risks)* | | | | X | | | | | NEL / ENA / Shareholders | Completed |
| Implement New Pricing | Introduce the new pricing options | | | | | X | | | | NEL | Completed |
| Review progress and make adjustments | Actively consider progress towards outcomes over time | | | | | | | X | | NEL | Ongoing |
| Ongoing customer interactions | Monitor customer responses and manage as required | | | | | | | X | | NEL | Ongoing |

## 16. Loss Factors to Apply for the Period 1 April 2024 – 31 March 2025

Loss Factors will remain unchanged for the year. An assessment was undertaken in December 2023 which has shown that both technical and non-technical losses for consumption has been 4.0% +/- 0.25% for the last year. Losses remain in the current acceptable range with the average loss factor as per table below being 3.9%.

| Loss Code | Description | Loss Factor Consumption | Loss Factor Generation |
|---|---|---|---|
| L0 | Group 0 Unmetered and Builders Temporary Supply | 1.044 | 1.019 |
| L1 | Group 1 Residential (Low Fixed Charge Option) | 1.044 | 1.019 |
| L2 | Group 2 Residential and Business | 1.044 | 1.019 |
| L3 | Group 3 Large Commercial - Supplied from 400V Network | 1.033 | 1.022 |
| L4 | Group 4 Large Commercial - Direct 400V feed from Transformer | 1.033 | 1.022 |
| L5 | Group 5 Large Commercial - Dedicated Transformer 400V Metering | 1.033 | 1.022 |
| L6 | Group 6 Large Commercial - Dedicated Transformer 11kV Metering | 1.027 | 1.017 |

# 17. Compliance with Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004

**Nelson Electricity Domestic Line Charge Comparison**

**to comply with Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004**

**Prices as at 1 April 2024**

| | | | | | Anytime and Controlled 15 (2) (b) (i) | | | Anytime and Night 15 (2) (b) (ii) | | | Anytime | | | Anytime and Controlled and Night | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Load Group 1** | | **No of ICP's** | **Type of Charge** | **Line Charge** | | | **Total** | | | **Total** | | | **Total** | | | **Total** |
| **Residential Low Fixed Ch** | | 563 | | | | | | | | | | | | | | |
| 1-FIXED | Fixed | | cents/kVA/day | 4.000 | 365 | days | $219.00 | 365 | days | $219.00 | 365 | days | $219.00 | 365 | days | $219.00 |
| 1-24HR | Anytime | | cents/kWh | 5.600 | 4800 | kWh | $268.80 | 6000 | kWh | $336.00 | 8000 | kWh | $448.00 | 5120 | kWh | $286.72 |
| 1-WATER | Controlled (Hot Water) | | cents/kWh | 3.200 | 3200 | kWh | $102.40 | | | | | | | 2240 | kWh | $71.68 |
| 1-NIGHT | Night Rate (11pm-7am) | | cents/kWh | 2.700 | | | | 2000 | kWh | $54.00 | | | | 640 | kWh | $17.28 |
| | | | | | | | **$590.20** | | | **$609.00** | | | **$667.00** | | | **$594.68** |
| | | | | | | | | | | | | | | | | |
| **Load Group 2 (from 15kVA to 150kVA)** | | | | **Line Charge** | | | **Total** | | | **Total** | | | **Total** | | | **Total** |
| **Residential and Business** | | 874 | | | | | | | | | | | | | | |
| 2-FIXED | Fixed | | cents/kVA/day | 7.900 | 365 | days | $432.53 | 365 | days | $432.53 | 365 | days | $432.53 | 365 | days | $432.53 |
| 2-24HR | Anytime | | cents/kWh | 3.200 | 4800 | kWh | $153.60 | 6000 | kWh | $192.00 | 8000 | kWh | $256.00 | 5120 | kWh | $163.84 |
| 2-WATER | Controlled (Hot Water) | | cents/kWh | 0.660 | 3200 | kWh | $21.12 | | | | | | | 2240 | kWh | $14.78 |
| 2-NIGHT | Night Rate (11pm-7am) | | cents/kWh | 0.220 | | | | 2000 | kWh | $4.40 | | | | 640 | kWh | $1.41 |
| | | | | | | | **$607.25** | | | **$628.93** | | | **$688.53** | | | **$612.56** |
| | | | | | | | | | | | | | | | | |
| | | | | | **Peak/Off-Peak and Controlled 15 (2) (b) (i)** | | | **Peak/Off-Peak and Night 15 (2) (b) (ii)** | | | **Peak/Off-Peak** | | | **Peak/Off-Peak and Controlled and Night** | | |
| **Load Group 1P** | | **No of ICP's** | **Type of Charge** | **Line Charge** | | | **Total** | | | **Total** | | | **Total** | | | **Total** |
| **Residential Low Fixed Ch** | | 3771 | | | | | | | | | | | | | | |
| 1P-FIXED | Fixed | | cents/kVA/day | 4.000 | 365 | days | $219.00 | 365 | days | $219.00 | 365 | days | $219.00 | 365 | days | $219.00 |
| 1P-PEAK | | | cents/kWh | 6.200 | 2640 | kWh | $163.68 | 3300 | kWh | $204.60 | 4400 | kWh | $272.80 | 2816 | kWh | $174.59 |
| 1P-OFFP | | | cents/kWh | 4.700 | 2160 | kWh | $101.52 | 2700 | kWh | $126.90 | 3600 | kWh | $169.20 | 2304 | kWh | $108.29 |
| 1P-WATER | Controlled (Hot Water) | | cents/kWh | 3.200 | 3200 | kWh | $102.40 | | | | | | | 2240 | kWh | $71.68 |
| 1P-NIGHT | Night Rate (11pm-7am) | | cents/kWh | 2.700 | | | | 2000 | kWh | $54.00 | | | | 640 | kWh | $17.28 |
| | | | | | | | **$586.60** | | | **$604.50** | | | **$661.00** | | | **$590.84** |
| | | | | | | | | | | | | | | | | |
| **Load Group 2P (from 15kVA to 150kVA)** | | | | **Line Charge** | | | **Total** | | | **Total** | | | **Total** | | | **Total** |
| **Residential and Business** | | 3980 | | | | | | | | | | | | | | |
| 2P-FIXED | Fixed | | cents/kVA/day | 7.900 | 365 | days | $432.53 | 365 | days | $432.53 | 365 | days | $432.53 | 365 | days | $432.53 |
| 2P-PEAK | | | cents/kWh | 3.500 | 2640 | kWh | $92.40 | 3300 | kWh | $115.50 | 4400 | kWh | $154.00 | 2816 | kWh | $98.56 |
| 2P-OFFP | | | cents/kWh | 2.600 | 2160 | kWh | $56.16 | 2700 | kWh | $70.20 | 3600 | kWh | $93.60 | 2304 | kWh | $59.90 |
| 2P-WATER | Controlled (Hot Water) | | cents/kWh | 0.660 | 3200 | kWh | $21.12 | | | | | | | 2240 | kWh | $14.78 |
| 2P-NIGHT | Night Rate (11pm-7am) | | cents/kWh | 0.220 | | | | 2000 | kWh | $4.40 | | | | 640 | kWh | $1.41 |
| | | | | | | | **$602.21** | | | **$622.63** | | | **$680.13** | | | **$607.18** |

**Load Group 1** is for domestic households with connection capacity of 15kVA only (Low Fixed Tariff Option)

**Load Group 2** is available to <u>all</u> connections with capacity from 15kVA to 150kVA.

**Load Group 1 & 2** All current domestic households have an assessed connection capacity of 15kVA.

**Anytime, Controlled and Night assessment ratios** based on average consumption of all ICP's with the three meters - Uncontrolled 64%, Controlled 28% and Night meters 8%.

**Conclusion**

**Low Fixed Charge Option complies**

**In all tariff configurations the General Tariff Option is higher in cost at the 8,000kWh level compared to Low Fixed Charge Option.**

# 18. Methodology for Passing on Settlement Residual Rebates

In November 2022, the Electricity Authority published a decision to amend the Code to require distributors to pass through settlement residual rebates (otherwise known as *losses and constraints excess* payments) to their customers.

The newly amended Code states the purpose of the requirement to pass-on settlement residue is to allocate settlement residue to customers in proportion to the transmission charges paid by those customers in respect of each connection location.

Distributors must allocate these residues on a monthly basis to customers that pay lines charges directly. Distributors must develop a methodology for allocating settlement residue to its customers that gives effect to the purpose of the Code amendment.

Accordingly, Nelson Electricity's methodology for passing-on monthly settlement residues received from Transpower for any trading period on or after 1 April 2023 is described below.

Settlement residual for a given connection location will be allocated to customers in proportion to the transmission charges paid by each customer to Nelson Electricity at that connection location.

A customer's transmission charges at a connection location will be calculated by multiplying the transmission prices published on Nelson Electricity's regulated price schedule by the equivalent billing quantities used by that customer at the connection location.

For the avoidance of doubt, billing quantities refer to the initial quantities used by Nelson Electricity to invoice the customer for the month and connection location in question.

The settlement residual received by Nelson Electricity for a given location will be allocated to customers in proportion to their contribution to the total transmission charge received from all customers at that connection location.

The formula below summarises the methodology to be used:

$$\begin{aligned} &Monthly\ settlement\ residual\ payment \\ &\qquad = Monthly\ settlement\ residual \times \left(\frac{Monthly\ transmission\ charge\ paid_x}{\sum_x Monthly\ transmission\ charge\ paid}\right) \end{aligned}$$

Where:

x = customer

Monthly settlement residual = Sum of monthly settlement residual payment from Transpower to Nelson Electricity and Network Tasman for connection location y

Monthly transmission charge paid$_{x,}$ = Transmission charge paid by customer x to Nelson Electricity

To avoid unnecessary complexity, payments will be based on initial billing quantities and will not be subject to adjustments.

Payments to customers will be made monthly.