



# POWERCO

PRICING GUIDE 2017

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# Introduction

Thank you for taking the time to review Powerco's electricity pricing guide.

It is important you understand our role in the industry and how our charges work as this will help you make the best decisions about your power use.

The guide shows how our charges apply to you and how we compare to other electricity distributors.

Powerco's electricity and gas networks provide an essential service and we are committed to providing a reliable supply to our 434,000 electricity and gas customers. Our business is in the vital infrastructure that connects your home and business with electricity and gas.

Our mission is to power the future of New Zealand through the delivery of safe, reliable and efficient energy. We are conscious of the impact of our charges and continually seek the right balance between price and reliability.

The guide is a relatively brief explanation and therefore some of the more technical or complex details about our prices are not covered.

Our pricing policy and pricing methodology documents provide a complete view of the technical details and prices that apply. These are available at: [www.powerco.co.nz/Publications/Pricing-Schedules/Electricity/](http://www.powerco.co.nz/Publications/Pricing-Schedules/Electricity/)

If you have any feedback or questions please send an email to: [corp.office@powerco.co.nz](mailto:corp.office@powerco.co.nz)  
Attn: Electricity Revenue Manager



A stylized, handwritten signature in black ink.

**Andrew McLeod**  
General Manager  
– Electricity



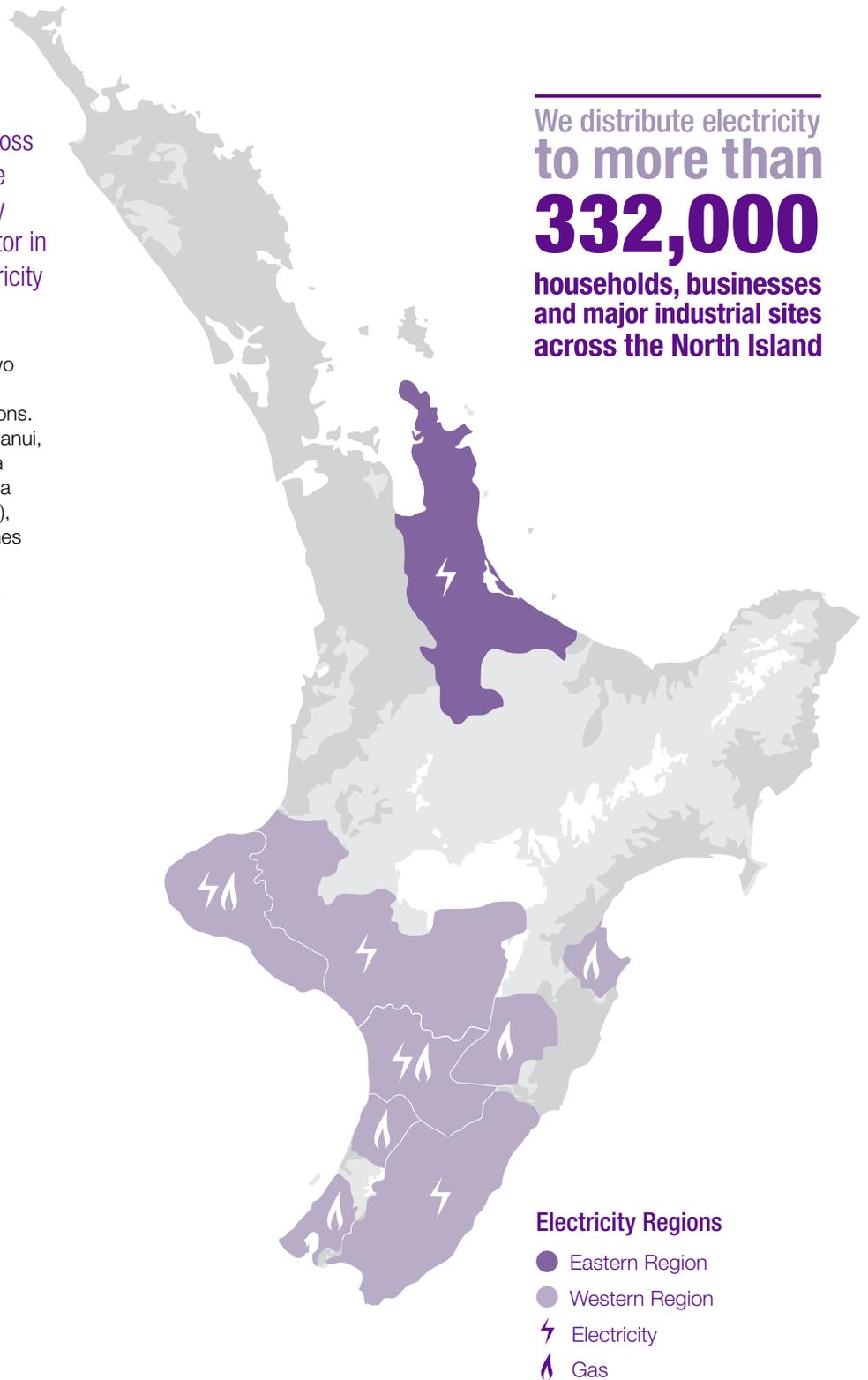
# Who we are

Powerco owns and maintains electricity and gas networks across parts of the North Island. We are New Zealand's largest electricity and second largest gas distributor in terms of network length – electricity 30,000km and gas 6,170km.

Our electricity prices are based on two distinctive areas which we refer to as Powerco's Western and Eastern regions. Western includes the Taranaki, Wanganui, Rangitikei, Manawatu, and Wairarapa areas while Eastern includes Tauranga (including the surrounding rural areas), eastern and southern Waikato, Thames and the Coromandel.

For more information about Powerco please go to: [www.powerco.co.nz/About-Us/Our-Business/](http://www.powerco.co.nz/About-Us/Our-Business/)

We distribute electricity to more than **332,000** households, businesses and major industrial sites across the North Island



# The Electricity Industry

To better understand our pricing it is important to know how the New Zealand electricity industry is structured. There are four stages in the supply chain before electricity reaches you.



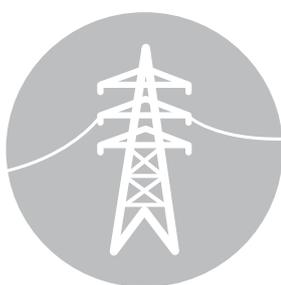
## GENERATION

High voltage electricity is created using water (hydro), wind, geothermal, gas and coal stations.

There are 6 main generation companies:

- Meridian Energy
- Contact Energy
- Genesis Energy
- Trustpower
- Mighty River Power
- Nova Energy

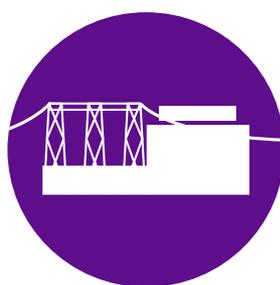
These generators produce and sell electricity.



## TRANSMISSION (national grid)

High voltage electricity is moved from the generators to the distributors through pylons.

This network is called the National Grid and is owned and operated by Transpower.



## DISTRIBUTION

Substations transform electricity from high to low voltage ready for customer use. The electricity is distributed to homes and businesses by power lines and distribution networks.

**Powerco is one of 29 distribution companies in New Zealand.**



## RETAIL

Retailers sell purchased electricity to homes and businesses.

There are 14 retailers trading under the Powerco distribution network.

## The Electricity Industry continued...

### Competition and Regulation

In 1998 the electricity industry was deregulated creating separate distribution and retailing businesses. Powerco concentrated on distribution which, unlike the generation and retail sectors, has no real competition and is a natural monopoly.

However, Government regulation protects your interests by:

- Keeping our prices in check by setting our price path which limits any ability for us to earn excessive profits
- Setting targets for the amount and duration of power cuts to ensure we maintain the quality of supply to our customers
- Ensuring we conduct meaningful consultation with our customers

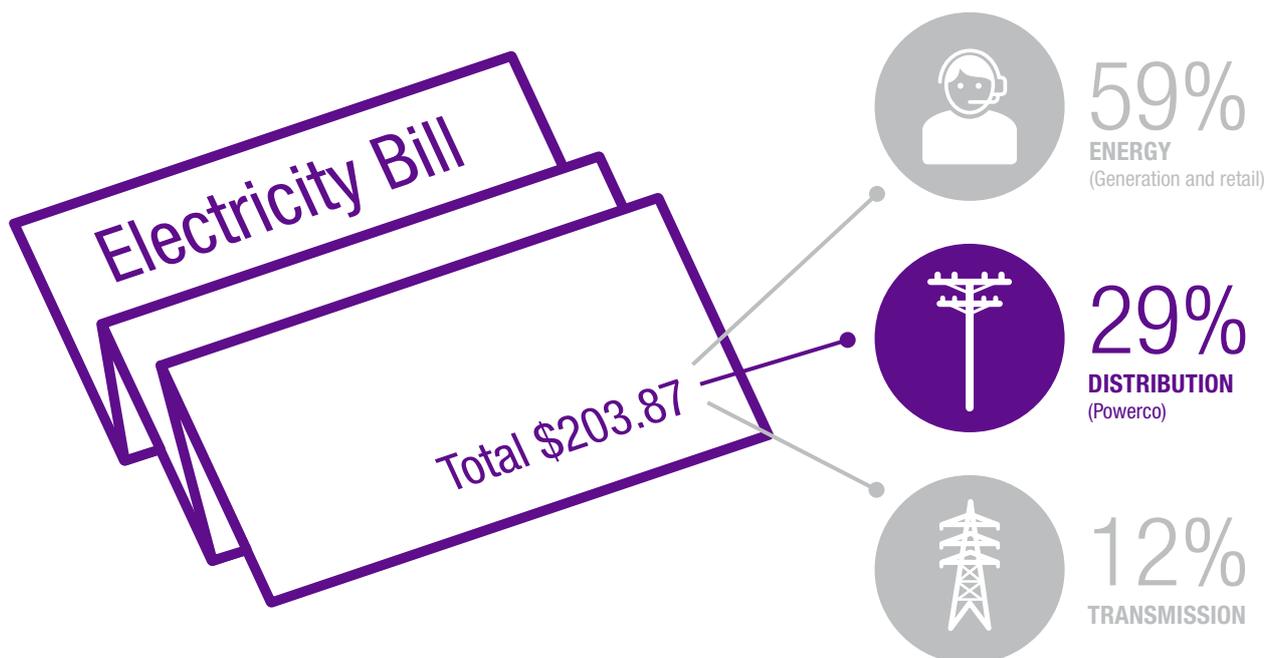
### The impact of regulation on prices

In 1999 more than half the average electricity bill went towards transmission and distribution. Today, it's just over one third with the balance taken up by energy and retailing charges.

Distribution and transmission charges combine to form the line charges on your electricity bill. While line charges since 1999 have been relatively stable, energy, and retailing charges have steadily increased.

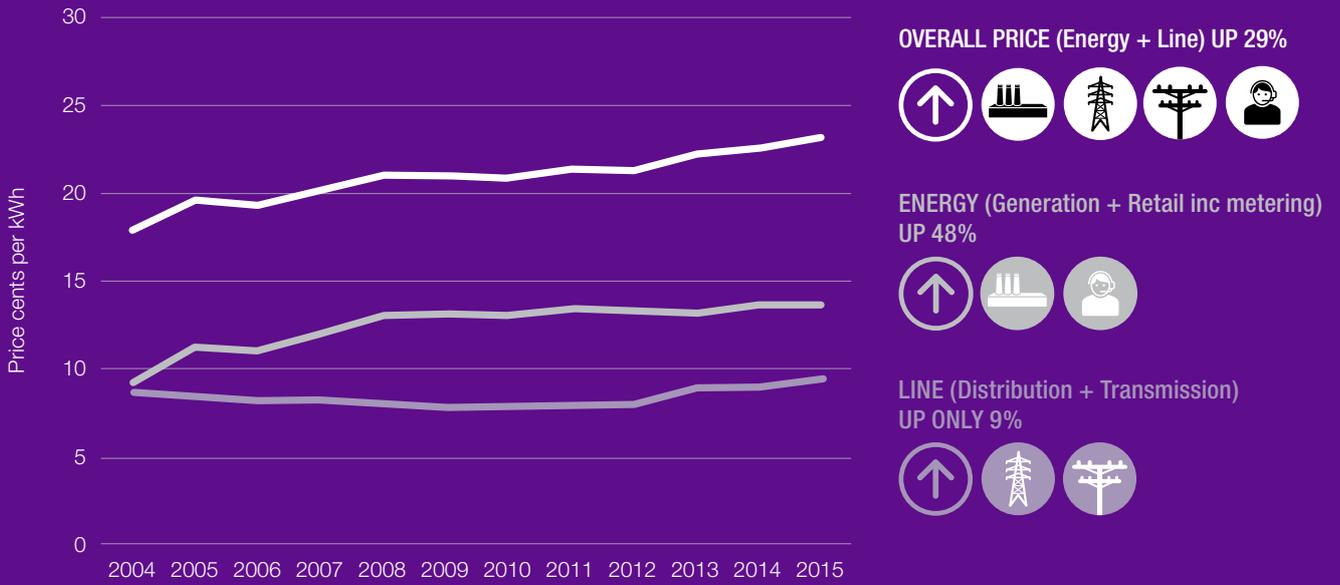


### Composition of an average electricity bill (2016)



Source: MBIE data as of Aug 2016. Calculations are based on an average 8000kWh low-use residential consumer on Powerco's networks.

## Average electricity bill price trend graph



This graph shows the trend in electricity prices over the last 10 years in real, or inflation-adjusted, terms.

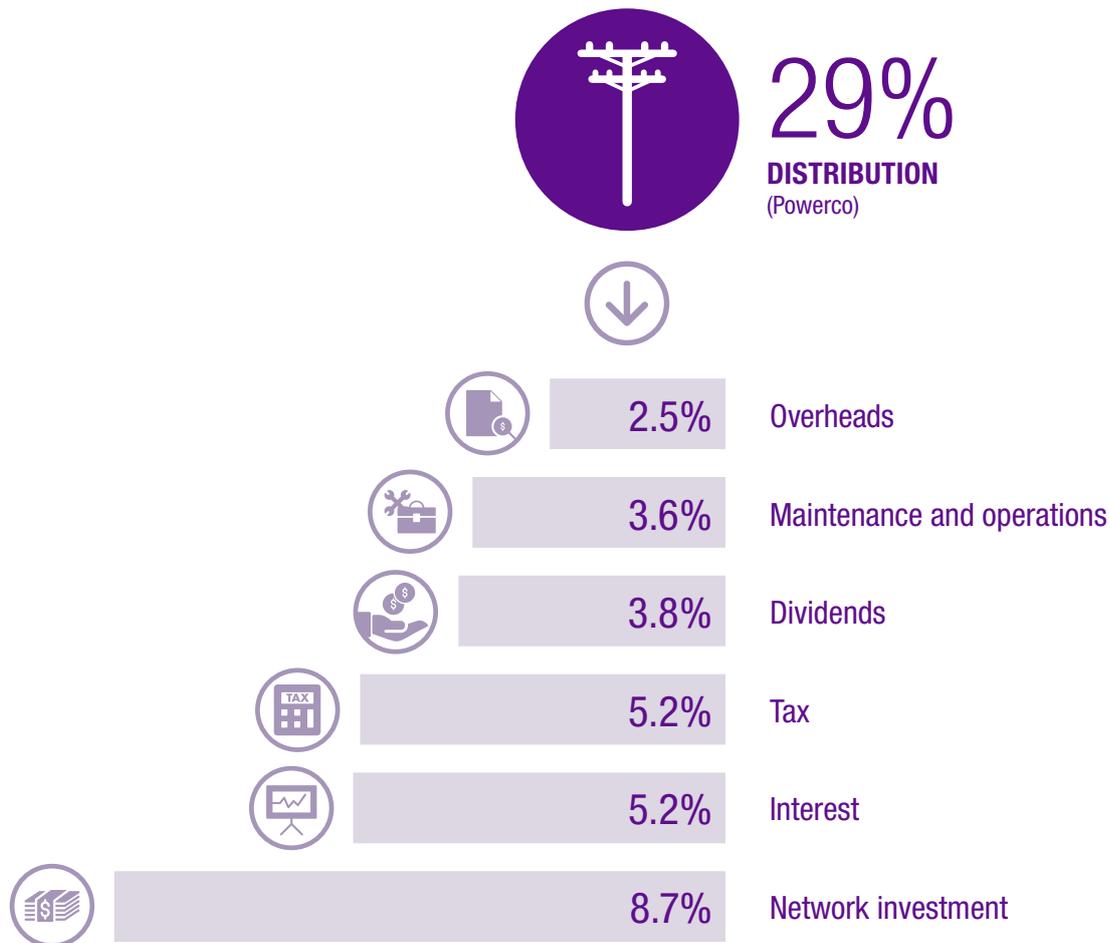
# Our Pricing Philosophy

Our job is to keep the lights on. Because our network has limited capacity, we must continually reinforce and maintain it to ensure increasing peak demands never exceed the available capacity.

No other distributor covers such a large and diverse geographical area. Our pricing structure makes sure customers who use more (and contribute towards setting our peak demands) are charged more. There are different prices for different regions so charges can be tailored to reflect the costs in each region (where applicable).

There are financial incentives for customers who are able to shift consumption to off-peak periods (such as 11pm-7am), similar to customers with managed hot water heating in peak times. Retailers choose how these incentives are passed on to customers.

## Where your \$\$\$ go



# How Powerco performs

## Price

Powerco supplies some of the most rugged terrain in New Zealand yet our average price in 2015 (8.21 c/kWh) was 4% below the industry average.

## We deliver what we say we will

Powerco delivered all of its works programme in 2015 and was 1.4% under budget.

**Powerco**  
supplies some of the  
most rugged terrain  
in new zealand  
yet our average price  
in 2015 (8.21c/kWh) was

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# Pricing Methodology

Your location will impact on how you are charged. Powerco's network is split into two regions, Western and Eastern.

They use different pricing methodologies because of mergers and their historic charging models. We are looking to combine these regions and have one single methodology in the coming years.

The fundamental difference between the two methods is the way electricity quantities are measured and charged.

**The Western region** (Taranaki, Wanganui, Rangitikei, Manawatu, Tararua and Wairapa) uses what is called a Grid Exit Point (GXP) pricing methodology. This is a wholesale delivery model whereby we calculate and charge your retailer in aggregate for all of their customers' usage at each GXP. Your retailer then independently determines your charges based on the metered consumption at your home and bills you accordingly. So this means Powerco bills your retailer for all of their customers in aggregate at each GXP rather than individual connections.

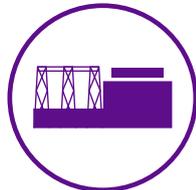
Retailers then choose how they pass these charges onto you on an individual basis.

**The Eastern region** (Tauranga, Thames Valley and Coromandel) uses what is called an Installation Control Point (ICP) pricing methodology. This is a retail delivery mode whereby Powerco calculates and charges a retailer per each individual connection. So that means, Powerco bills per connection, not as a whole consumer group.

## The Western Network – Pricing Methodology



TRANSMISSION



GRID EXIT POINT (GXP)



DISTRIBUTION



DISTRIBUTION

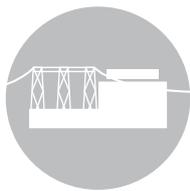
## The Eastern Network – Pricing Methodology



GENERATION



TRANSMISSION



DISTRIBUTION



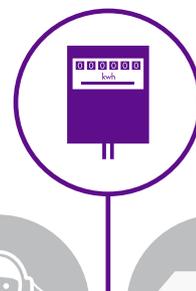
DISTRIBUTION



RETAILERS



CUSTOMER



# The Western Region

## The Western Region has three price categories:

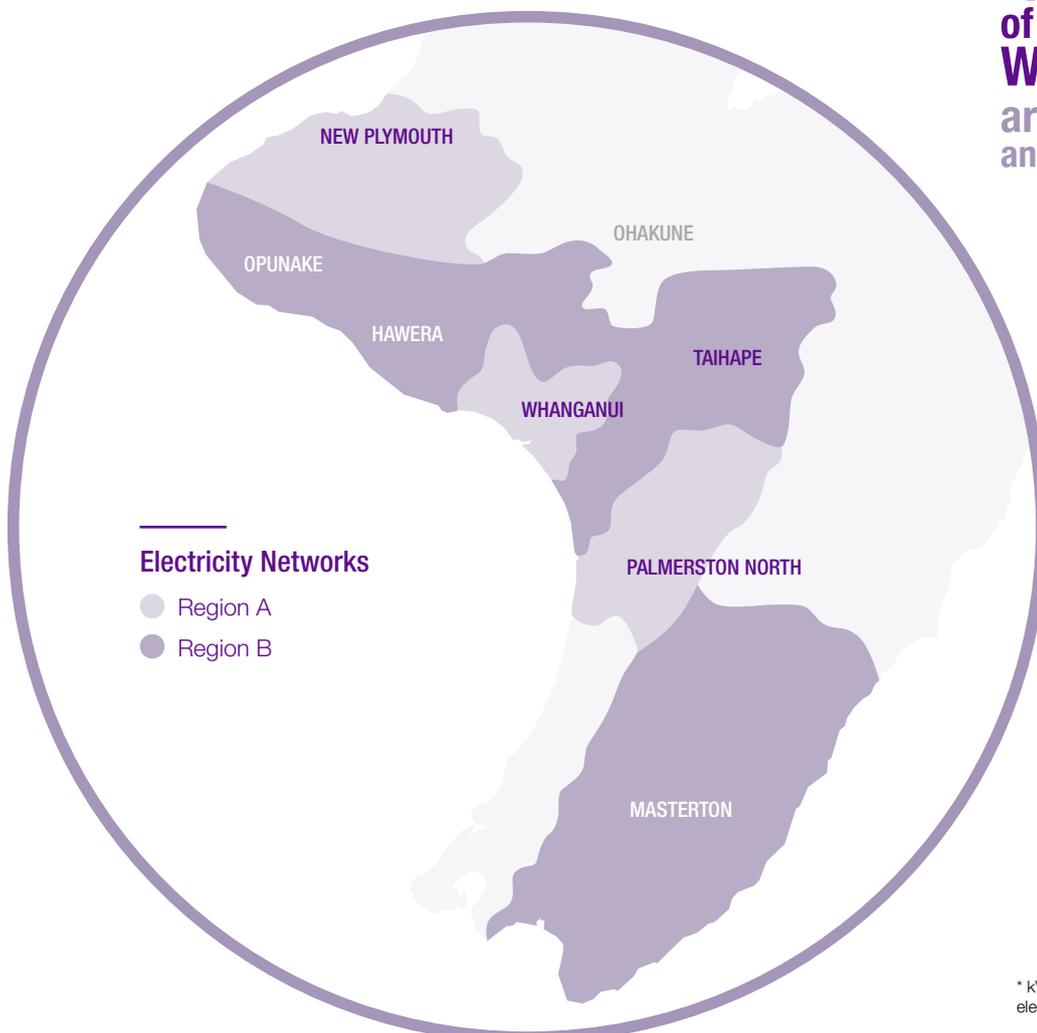
- E1: Residential and small commercial customers with capacity less than 100 kVA\*. These are homes and small businesses. They have lower level demands and make up the majority of customers in this region
- E100: Commercial customers with capacity between 100-300 kVA\*. These customers have a moderate level of demand requiring specific on-site assets.

- E300/SPECIAL: Commercial/ industrial customers with capacity of greater than 300 kVA\*. Their high level of demand places pressure on the network and often require both dedicated on-site and upstream assets

Western is split into sub-regions to allow specific cost drivers in pricing. These sub-regions reflect a grouping of GXPs with similar characteristics, such as network density, connection type and geographical location.

The E1 price category is split into zones A and B. Zone A is for those in urban centres of New Plymouth, Wanganui and Palmerston North. Zone B is for all remaining customers in the low density and rural areas.

**99.7%**  
of customers in the  
Western region  
are E1/Residential  
and small commercial



\* kVA: Kilovolt - ampere (amp). A unit of electrical power equal to 1000 volt amperes.

## The Western Region continued...

### Residential and small commercial customers

About 168,100 of our 168,600 Western region connections fall within the E1 price category. Charges include a combination of demand, variable or fixed options. These reflect the costs of providing electricity to your home.

#### Demand Charges (\$/kW\*):

These reflect the higher costs associated with the consumption of electricity during times of peak demand. Typically peak demand times occur around 8am when households are showering, cooking breakfast and heating, and at 5:30pm when households are cooking, heating and lighting their homes. These peak demand charges contribute to the cost of maintaining and growing our network.

#### Variable Charges (\$/kWh\*):

These are based on the amount of electricity used. We have different variable charges that apply based on time of use. The Day variable charge applies from 7am–11pm and the Night variable charge applies from 11pm–7am. The higher Day variable charge and the lower Night variable charge reflect the available network capacity over these times.

#### Fixed Charges (\$/day):

The fixed daily charge is based on the number of days a customer is connected to our network. It helps recover fixed costs associated with electricity supply.

### Commercial and industrial customers

E100 and E300 pricing covers those businesses ranging from a small supermarket to an industrial processing plant. E100 is for those with a connected capacity of 100-300 kVA. E300 pricing is for those with a capacity greater than 300 kVA.

These price categories are split into 10 zones (A-J) which are based on



geographical groupings of GXPs located within a specific region. The number of zones represent Powerco's preference for greater transparency of costs, to better allow individual customer behaviour to be reflected in the underlying cost structure.

Connections with this level of capacity place varying demand on such assets as sub-transmission, high voltage (11kV) and low voltage (400V) which require dedicated transformers and switchgear.

#### Charges here include:

- A fixed monthly charge (E100) or a fixed monthly capacity charge (E300)
- A distribution demand charge based on the single highest peak demand (kW) over the previous calendar year (\$/kW/day)
- A transmission demand charge based on the average demand over the previous 100 coincident peak demands (September – August) (\$/kW/day)
- A power factor charge which applies if your power factor falls below 95% across any month

### Commercial and industrial asset based pricing

A small number of connections are in the SPECIAL price category. These customers have a capacity of greater than 1,500 kVA and have opted for an Asset Based Price. These charges are a fixed daily amount applied over a year and are determined on individual use of network assets and allocation of costs.

They are based on each connection's contribution to peak demand, the value of assets used, associated maintenance costs and an allocation of direct and indirect costs. They are much more cost reflective for a given individual connection than the standard E300 charges which are based more on average network metrics.

For more information on Asset Based Pricing for Commercial and Industrial customers refer to our current Pricing Methodology and Price Schedule [www.powerco.co.nz/Publications/Pricing-Schedules/Electricity/](http://www.powerco.co.nz/Publications/Pricing-Schedules/Electricity/)

\* kVA: Kilovolt - A unit of electrical power equal to 1000 watts.

\* kWh: Kilowatt hour - Number of kilowatts used per hour.

# The Eastern Region

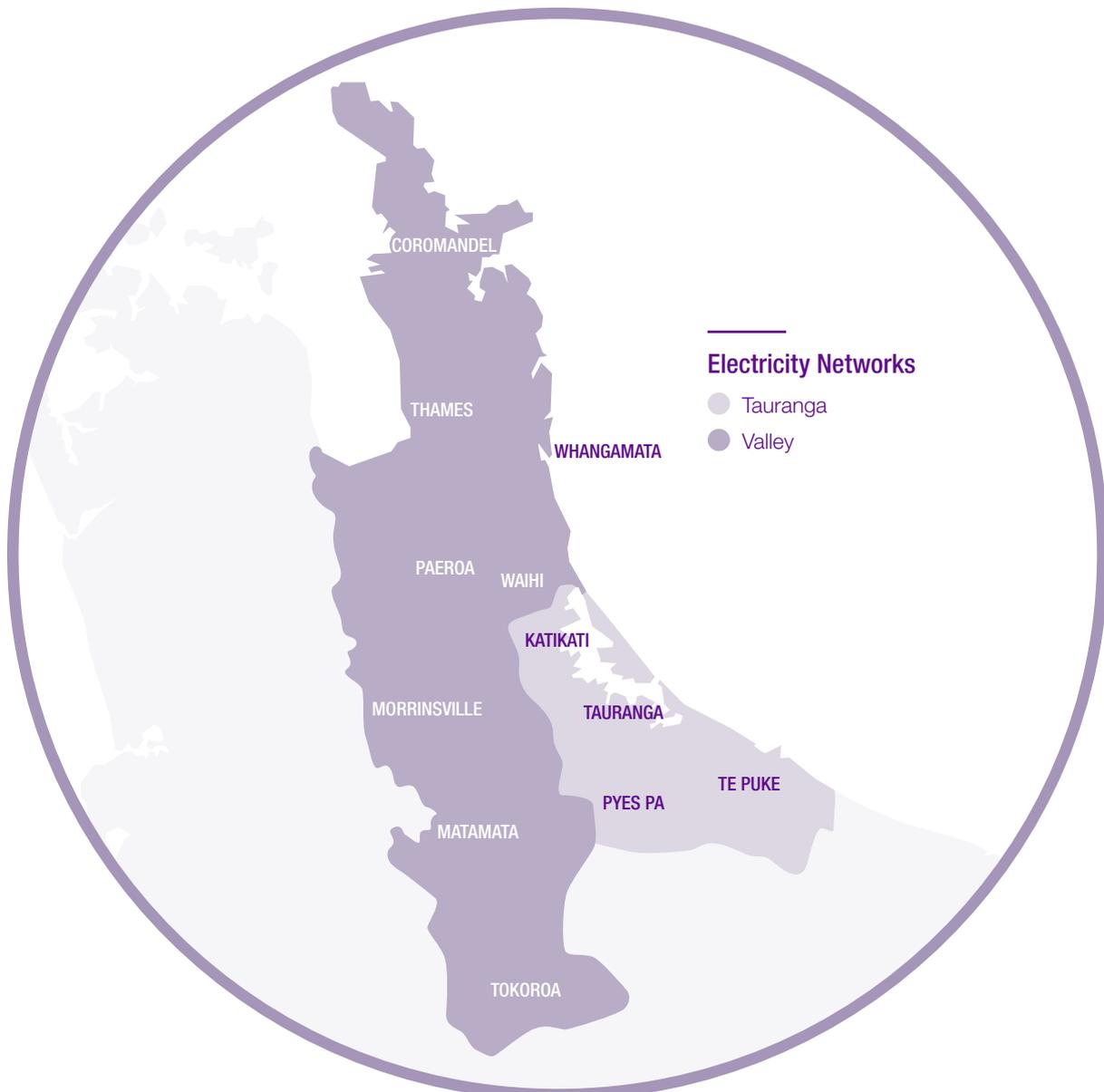
This region has six distinct price categories. They are defined around groups with similar load characteristics, such as installation type, fuse size and installed capacity.

**These are defined as:**

- Unmetered connections such as street lights
- All residential and small commercial customers with a fuse size of three-phase 60 amps or less
- Commercial fuse size greater than three-phase 60 amps up to and including 250 amps

- Commercial 200 – 299 kVA
- Commercial 300 – 1,499 kVA
- Commercial 1,500 kVA and greater

There are two distinct price schedules in this region – Tauranga and the Valley (see map). They represent different network density and geographical locations.



## The Eastern Region continued...

### Residential and small commercial customers

All residential and small commercial customers are on the price categories V05/T05, and V06/T06. In this region we calculate charges based on the individual metered consumption provided to us by your retailer and we charge them accordingly.

146,900 of our 148,300 eastern connections are in these categories. They cover all connections with fuse sizes of up to (and including) three-phase 60 amps

Residential users have the choice of Low Fixed Charges (15 cents/day and a relatively high variable charge) or Standard Charges (higher fixed charge but a proportionally lower variable charge). The low fixed charges are only available for a customer's primary place of residence and only benefit those who use less than 8,000 kWh/year.

Both the Low Fixed Charges and the Standard Charges are a mix of variable and fixed charges. The Variable Charge (\$/kWh) is based on the amount of electricity you use. We have different variable charges (such as uncontrolled, controlled and night) which reflects the

availability of supply and is based on the relevant metering options installed at your premises.

The Fixed Charge (\$/day) is based on the number of days a customer is connected to our network. It helps recover fixed costs associated with the supply of electricity.

### Unmetered connections

The price categories V01/T01 and V02/T02 are for unmetered connections such as private lights, security cameras and distributed streetlights. These are typically public or private streetlights that are managed by local councils or the New Zealand Transport Agency (NZTA).

### Commercial Customers

The majority of all eastern region commercial customers are on the T22, T24, T41 and V24, V28 price types. These may range from a small dairy farm to a small supermarket. About 1,050 of our 147,400 eastern connections are in these prices. T22/V24 represents fuse sizes greater than three-phase 60 amps up to 250 amps while T24/T41/V28 signifies connections of greater than 200 kVA up to 299 kVA.

Our charges in these price categories are a combination of variable and fixed charges: Variable Charge (\$/kWh): Based on the amount of electricity you use. We have different variable charges (uncontrolled, controlled and night) which reflect the availability of supply and are based on the type of meter at your site.

Fixed Charge (\$/day): This fixed daily charge is based on the number of days you are connected to our network. This charge helps to recover our fixed costs associated with the supply of electricity.

### Large commercial and industrial consumers

These have an installed capacity of 300 kVA and greater (T43/T50/V40 and T60/V60) and almost all price categories in these groups are on individual asset based charges. Approximately 324 connections fall in to this group and are based on each connection's contribution to peak demand, the value of the assets they use, associated maintenance costs, and an allocation of direct and indirect costs. This results in individual charges for each customer which are much more cost reflective than the standard charges.

For more information on asset based pricing for commercial and industrial customers refer to our current Pricing Methodology and Price Schedule [www.powerco.co.nz/Publications/Pricing-Schedules/Electricity/](http://www.powerco.co.nz/Publications/Pricing-Schedules/Electricity/)



