

PRICING GUIDE

A guide to Orion's pricing for **2009/10**



Orion
yourNETWORK

About Orion

Orion New Zealand Limited owns and operates the electricity distribution network in central Canterbury between the Waimakariri and Rakaia rivers and from the Canterbury coast to Arthur's Pass. Our network covers 8,000 square kilometres of diverse geography, including Christchurch city, Banks Peninsula, farming communities and high country.

Our shareholders are:

- Christchurch City Council 89.3%
- Selwyn District Council 10.7%.

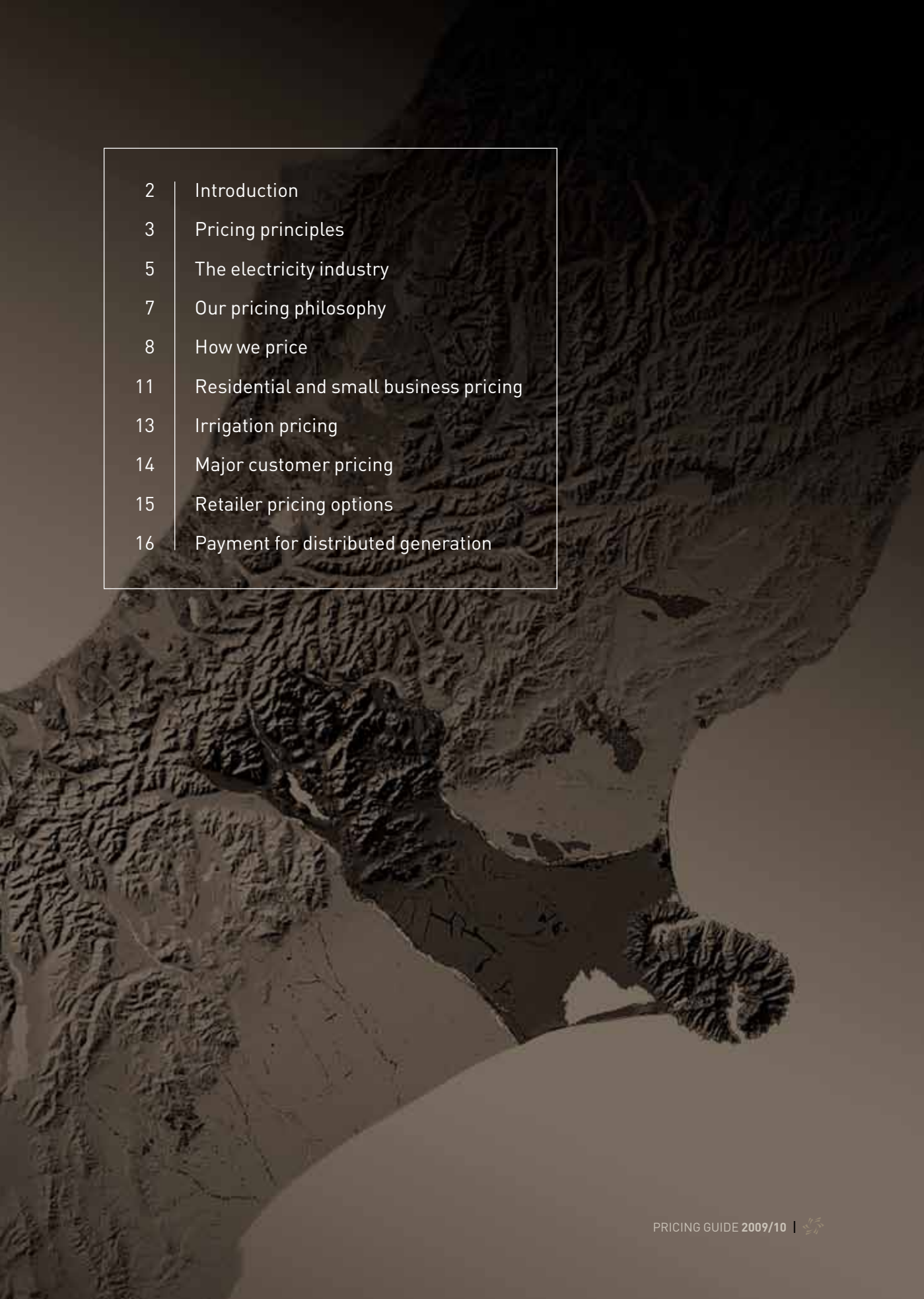
Further information about Orion is available from our:

- website – oriongroup.co.nz
- annual report
- asset management plan – a document detailing Orion's asset replacement, reinforcement and maintenance strategies over the next 10 years (a summary of this plan is also available)
- network quality report – a report that examines Orion's performance in providing a reliable electricity distribution system.

Network summary for year ended 31 March 2009

Number of customer connections	190,000
Network maximum demand (MW)	624
Electricity delivered (GWh)	3,402
Total kilometres of lines and cables	14,518
Value of network assets	\$940m

Front cover image: Orion contract coordinator James May is part of a team that manages the construction, repair and maintenance of Orion's overhead lines and poles, which stretch for thousands of kilometres across central Canterbury. James is a qualified line mechanic with 15 years' experience in the electricity supply industry.



2	Introduction
3	Pricing principles
5	The electricity industry
7	Our pricing philosophy
8	How we price
11	Residential and small business pricing
13	Irrigation pricing
14	Major customer pricing
15	Retailer pricing options
16	Payment for distributed generation

Introduction

I am pleased to release Orion's fifth annual network pricing guide. The purpose of this guide is to help you understand our prices, note how they compare with those of other electricity distributors in New Zealand, and enable you to better judge our overall performance.

Regular consultation tells us that customers want us to deliver electricity reliably and keep prices down. In order to meet this expectation, we work hard to find the right balance between costs for customers and network investment. Our success in achieving this balance is reflected in our prices, which are below average, and in our ranking as one of the most reliable electricity networks in the country.

This year, in order to give a full picture of our electricity delivery pricing, we detail our prices to distribute electricity as well as Transpower's charges to transmit electricity.

We don't attempt to describe the pricing of other industry participants such as electricity generators, retailers or metering providers, which makes up about two thirds of a household's electricity bill. Our delivery prices typically amount to the other third.

As this guide is a plain English explanation of our pricing, some technicalities are not covered. Full details can be found on our website at oriongroup.co.nz, under Publications & Disclosures/ Pricing.

We hope you find this guide of interest and we welcome any comments you may have on it or any other aspect of Orion's performance. Comments can be emailed to me at roger.sutton@oriongroup.co.nz.

Roger Sutton
CHIEF EXECUTIVE OFFICER



Pricing principles

Our pricing reflects a range of considerations, including the following key principles:

- Our prices reflect our actual costs.
Our pricing structure reflects the actual cost of delivering electricity across our network. This structure enables us to pass savings onto customers who use less electricity which, in turn, lowers our network costs. It also helps customers to make informed choices between electricity and its alternatives, such as gas.
- We aim to share network efficiencies with our customers through our pricing.
All of our customers share our network. As our network grows, we gain efficiencies through size and the increasingly diverse range of electrical loads. Our pricing aims to ensure that all customers share the benefits of these efficiencies.
- We provide simple pricing and a stable pricing approach.
Our customers need to easily understand our pricing, particularly when deciding whether to invest in new electrical equipment or replace appliances. So, we provide simple 'pricing signals'¹ to help customers use electricity efficiently, and offer stable prices to give customers confidence that cost advantages will remain.
- We set our network pricing taking into account several regulatory requirements.
In particular:
 - we seek to improve efficiencies and aim to keep our price increases consistently less than the rate of inflation to comply with the Commerce Commission's price/quality threshold regime
 - our prices to distribute electricity do not differentiate between our urban and rural areas
 - regulations require us to provide options with low fixed charges for residential customers – for residential and small business customers on our network, there is no fixed daily charge
 - where distributed generation brings benefits, we pass on those benefits to the distributed generation customer.
- We aim to make a rate of return that is appropriate for the commercial risk of our business.
Our moderate rate of return typically results in Orion's prices being below average (compared with other New Zealand electricity distributors) even though we provide one of the most reliable electricity networks in the country.

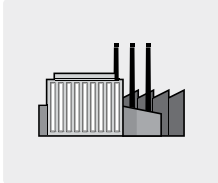
We publish our full pricing principles and objectives in our pricing methodology document, available on our website oriongroup.co.nz under Publications & Disclosures/Pricing.

¹ For more information about pricing signals, see our "pricing philosophy" on page 7.



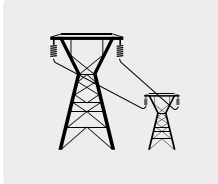
The electricity industry

A basic understanding of New Zealand's electricity industry is required to understand how we set our prices. Electricity usually moves through five steps to get from where it's generated to where it's needed. The steps below show how electricity is moved through the various stages to get to you.



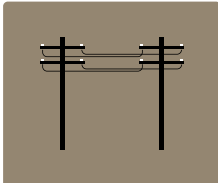
Generators

Generators produce electricity. Almost all electricity generated for retail purposes in New Zealand is sold into the wholesale electricity market for supply to electricity retailers. Several private and government-owned companies are generators – they include Contact Energy, Genesis Energy, Meridian Energy, Mighty River Power, Todd Energy and TrustPower. Most generators are also electricity retailers.



Transpower

Transpower is the state-owned enterprise responsible for transmitting the electricity produced by generators. It operates the national grid of high voltage power lines and tall pylons that connects to the power stations to send electricity around the country.



Distributors

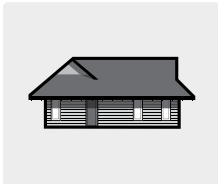
Also called lines companies or network companies, distributors own the lower voltage power lines, cables and distribution networks in local areas. These connect to the national grid to deliver power to businesses and homes.

Orion is one of 29 electricity distributors in New Zealand.



Retailers

Sometimes referred to as power companies, electricity retailers purchase electricity from the wholesale market to sell to residential and business users. Seven electricity retailers operate in the Orion network area in central Canterbury – Contact Energy, Genesis Energy, Meridian Energy, Mercury Energy (Mighty River Power's retail business), Powershop, Simply Energy and TrustPower.



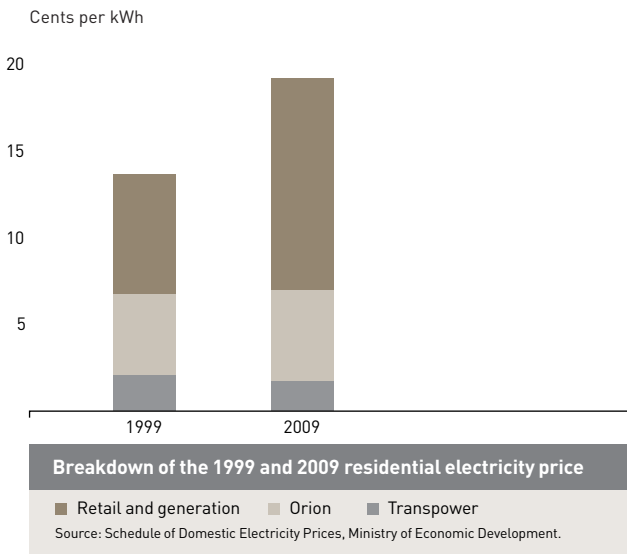
Customer usage

The last step in the process is providing power to your home or business. You can buy electricity from any retailer in your area.

The electricity bill you receive each month covers the cost of:

- generating the electricity
- transmitting the electricity
- distributing the electricity
- retailing services, including metering costs.

This pricing guide details how we determine Orion’s charges for delivering electricity via our network – incorporating our prices to distribute electricity within our region and Transpower’s prices to transmit electricity to our region. It does not discuss the charges of other industry participants such as generators, retailers or metering providers.



Our pricing philosophy

Like roads, electricity networks have limited capacity. Orion's 'rush hours' typically occur on very cold winter mornings and evenings – when people get up and go to work and when they arrive home from work, turn on their lights and heaters and cook dinner. If electricity demand gets too high during these periods, we run the risk of power cuts.

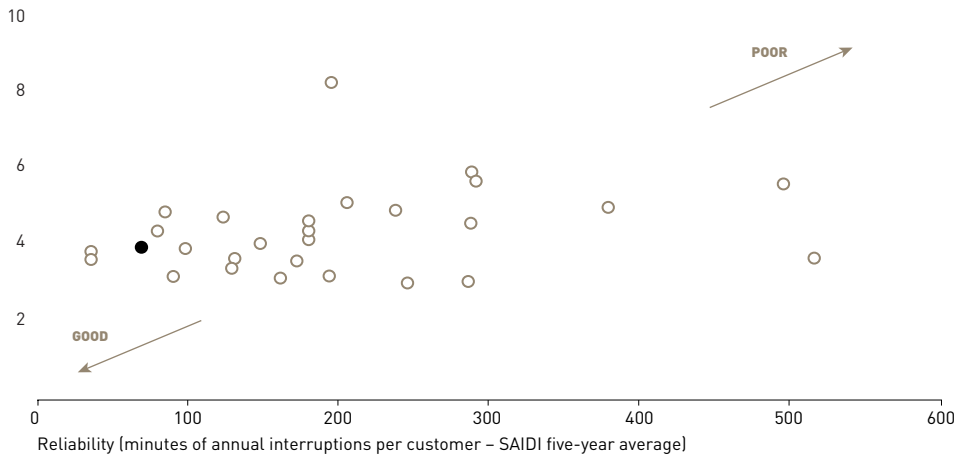
One solution is to expand our network's capacity – much like making roads bigger to handle the traffic. But this is expensive and we would have to increase our prices to cover the cost. We think it makes better sense to promote other cheaper options – for example, during periods of high or 'peak' electrical demand, we use 'ripple control' to turn off household electric hot water cylinders automatically. Turning the cylinders off reduces the congestion on our network.

We also use 'price signals' that reflect the significant investment that would be required to expand our network's capacity. By price signals we mean charging higher prices during periods of high electricity demand and lower prices during low demand periods. This approach leads electricity retailers to encourage their household and business customers to turn off non-essential appliances while the network is heavily loaded.

Our pricing structure is designed to reflect the cost of delivering electricity across our network during peak demand periods. This structure results in savings to customers who reduce their load during these periods, encourages greater energy efficiency and minimises environmental effects².

Our objective is to keep prices low for customers while still providing our community with the quality of electricity supply it requires. Our pricing philosophy of charging higher prices during periods of high electrical demand helps us achieve that goal.

Cost (cents) – (distribution revenue per kWh)



How we perform at delivering a reliable supply of electricity at low cost

● Orion ○ Other New Zealand electricity distribution companies

Source: New Zealand Gazette notices, information disclosures for line businesses.

² As a result of our efforts to reduce peak electricity demand in our network over the last 15 years, Orion has won numerous environmental awards, including New Zealand's highest environmental award for businesses – the Green Ribbon 'Business Caring for the Environment Award'. By reducing peak demand we have saved the use of many thousands of tonnes of aluminium, steel and copper.

How we price

Orion's approach to pricing is that if customers choose to use electricity when the network is heavily loaded, then they pay more to cover our costs in providing additional network capacity to carry the heavy load. We can then use this extra revenue to upgrade our network.

If a customer avoids using electricity during peak demand times, we receive no additional revenue and we don't have to spend millions of dollars expanding our network's capacity unnecessarily.

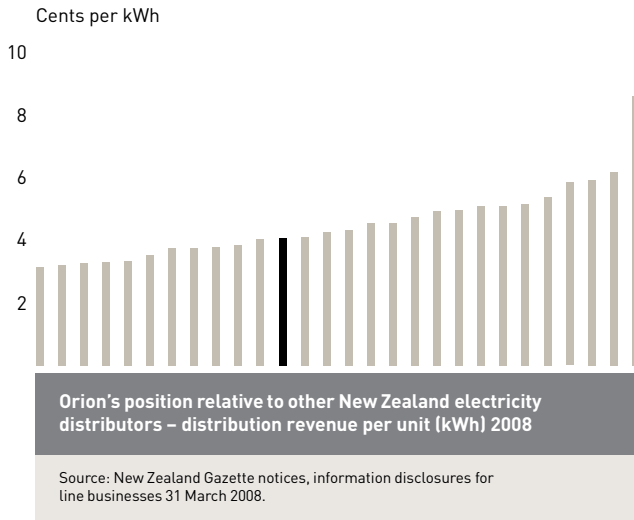
Working out how much extra to charge customers during periods of high electricity demand is quite complicated. Some parts of our network cost more than others, and different parts are used to deliver electricity to each of our 190,000 individual customer connections. Individual customer pricing is therefore not feasible.

To recognise the key differences in the use and cost of our network, we separate customer connections into various categories for pricing as follows:

- general (residential and small business) connections – where maximum electricity use is in winter
- major customer connections – businesses that are major electricity consumers; Orion has lower prices for these companies because it costs less to deliver electricity in bulk to them
- irrigation connections – for farms with large irrigation requirements
- street lighting³ connections – for private and publicly-owned dedicated lighting connections supplied from Orion's separate lighting network
- large capacity³ connections – for very large businesses that consume a significant amount of electricity, where Orion negotiates an individual price due to their size and impact on the local network.

³ Street lighting and large capacity connections relate to only a few customers, so are not discussed further in this guide.

It is difficult to compare our prices with other New Zealand electricity distributors because they use different customer price groupings to ours. One way to compare average prices is to measure the revenue that electricity distributors receive against the volume of energy they deliver. This comparison, which excludes transmission revenue, is shown in the graph below:



Considering our proven track record in delivering electricity consistently and reliably (see our network quality report which shows Orion's performance in this area ranks among the best in the country), we believe our pricing compares very favourably with other New Zealand electricity distributors.

Furthermore, our pricing covers a cost that, to the best of our knowledge, no other electricity distributor incurs. Most other distributors maintain electrical equipment up to the boundary of a property – beyond the boundary it is the property owner's responsibility. Orion, however, commits to maintaining the lines, poles and all other electrical equipment right up to the point of entry to a house or business building⁴.

We do this regardless of whether the electrical equipment between the boundary of the property and the building is owned by Orion, the property owner or some other third party. Orion maintains this policy as we wish to provide our community with the best possible service.

⁴ This service covers fair wear and tear, including storm damage, but does not cover damage caused by the customer or a third party. Further information on this service can be found in section 4.7 of our network code which is available on our website oriongroup.co.nz under Your Network/Connecting to the network.

Residential and small business pricing

We do not charge each home or business on our network individually. Instead, we charge retailers for the total electricity used by all of their residential and small business customers.

Because of this approach, we only have to invoice the seven electricity retailers operating in our region – Contact Energy (including Empower), Genesis Energy, Meridian Energy, Mercury Energy, Powershop, Simply Energy and TrustPower. This process is considerably cheaper than charging each customer and, therefore, results in lower costs for the customer.

Our charges to retailers are based on the amount of electricity entering our network from Transpower's national transmission grid. These entry points, called grid exit points⁵, have sophisticated meters that measure electricity demand throughout the day, allowing us to identify times of heavy loading and charge appropriately.

Our pricing structure

Our pricing structure for general residential and small business connections has two components – a 'peak price' and a 'volume price' – each of which we charge to retailers.

Orion's general connection delivery prices as at 1 April 2009 (excluding GST)	
Peak price	\$155.10 per kW ⁶ per year
Volume price	
7am to 9pm on working weekdays	6.105 cents/kWh ⁷
9pm to 7am and on weekends and public holidays	0.770 cents/kWh

The peak price is only charged during periods of high load on our network, and is based on the average demand during these 'peak periods'⁸. The peak charge reflects our costs to build and reinforce our network to meet peak demand.

Peak periods occur on the coldest weekday mornings and evenings, generally for about 150 hours each winter. We provide signals to retailers at the beginning and end of each peak period, prompting them to encourage customers to turn off non-essential appliances and other electrical equipment and avoid the higher prices charged when the network is heavily loaded.

The volume price component is simply a price for the amount of electricity used, but is charged at differing 'cents per kWh' depending on the time of day. We generally charge less at night to influence retailers to, in turn, encourage households and businesses to use their appliances at night when our network has lighter loads.

Unlike many other electricity distributors, we do not apply a fixed daily charge for each residential and small business connection. Most retailers still show a fixed daily charge on their electricity accounts, however, this generally reflects their other fixed costs such as metering costs. We believe our network costs are adequately reflected through the volume and peak charges described above.

⁵ There are 10 grid exit points (GXPs) on Orion's network.

⁶ The kilowatt (kW) is a measure of the rate of energy consumption, showing how fast electricity is being used at a particular time. Our peak price equates to about \$1 per kWh during peak periods, based on 150 hours of peak periods occurring per year.

⁷ The kilowatt-hour (kWh) is a unit of energy equivalent to one kilowatt of power expended for one hour of time. This is the normal measure of energy shown on most electricity accounts.

⁸ Just when a peak period occurs is determined by the 'load threshold setting' in our ripple control system, which is determined in consultation with retailers. Refer to the Load Management section of our website oriongroup.co.nz, for more information.



Retail pricing plans

The amount we charge to deliver electricity to residential and small business customers depends on the 'time-of-use' of that electricity. Retailers offer a number of pricing plans that 'repackage' our charges for customers.

Two common pricing plans are:

- **'Economy or controlled'** – this type of plan provides a lower price for all electricity used, taking into account that the customer's water heater is generally switched off during peak periods.
- **'Day/night'** – customers on this type of plan have their day and night usage separately measured. Night usage is provided at a lower price because our charges are less due to lighter electricity loads. Customers who can move their usage to night periods can save on these plans (for example, heating water cylinders at night, using night-store space heaters, and even starting the dishwasher after 9pm).

Please refer to page 15 for more information about retailer pricing options.

Smart metering

'Smart meters' give retailers the ability to offer more cost-reflective pricing options to their customers.

Retailers can use smart meter data to charge different electricity prices at different times of the day or season, encouraging customers to reduce energy consumption at peak network demand times and lower their electricity bills.

We are pleased that the two main retailers operating in our area – Meridian Energy and Contact Energy – are installing smart meters at all of their customers' premises. About three quarters of all residential and small business customers in our network area now have smart meters, which will allow customers to be better informed about their electricity use. We are very interested to see future pricing plans developed by retailers in response to smart meters.

Irrigation pricing

Our rural network is heavily loaded in summer months due to the widespread use of irrigation throughout central Canterbury for dairy farming and agriculture. Irrigation customers use about 75% of the peak demand of our rural network during summer.

Irrigation load is very different to other electrical loads. Most of our customers use more electricity during winter, and the amount they use can vary considerably throughout the day. In contrast, our rural irrigation customers use the majority of their electricity during summer when they irrigate their properties. During dry, hot months, we reach a point where almost all irrigation load is on at the same time.

With this pattern of electricity use, irrigation customers uniquely contribute to our costs. Compared to other connections, these customers make a small contribution to our transmission charges from Transpower, but a high contribution to our distribution costs, which we reflect in our pricing.

About 1,100 of our rural customers are irrigation customers. This category includes all connections of irrigation equipment with a capacity of more than 20kW which is used for commercial irrigation of agricultural land. For historical reasons, it also includes some smaller irrigation connections.

The following pricing components apply for irrigation connections:

- **Capacity charge** – this is generally based on the ‘nameplate rating’⁹ of irrigator pump motors and doesn’t vary from year to year. This charge reflects the capacity we must provide for irrigation connections, regardless of how much the pump is used in a season. It also reflects the small contribution irrigation customers make to our transmission costs.
- **Volume charge** – this is a price for the amount of electricity used, charged at differing ‘cents per kWh’ depending on the time of day. This provides an incentive for irrigation customers to shift their irrigation load away from our peak times.
- **‘Power factor correction’ rebate** – we credit the retailer of an irrigation customer with a rebate if that customer installs and maintains a capacitor on their pump motor to improve the ‘power factor’¹⁰ of the pump. Poor power factors increase load on our network and can cause voltages to drop, which affects other customers.
- **‘Interruptibility’ rebate** – we provide this rebate to the retailers of those irrigation customers who allow us to automatically interrupt their power supply in the event of an emergency. Irrigation customers can generally accept occasional interruptions with no significant impact on their business operations. The rebate is designed to reduce Orion’s need to invest in additional and costly back-up systems. In the event of a fault, we can interrupt the supply of electricity to irrigation systems and divert any available power to more essential electrical loads such as dairy sheds and rural homes.

The table below outlines our delivery prices for the irrigation pricing components above.

Orion’s irrigation connection delivery prices as at 1 April 2009 (excluding GST)	
Capacity charge (from 1 October to 31 March only)	\$49.35 cents/kW/day
Volume charge 7am to 9pm on working weekdays	6.105 cents/kWh
9pm to 7am and on weekends and public holidays	0.770 cents/kWh
Power factor correction rebate (from 1 October to 31 March only)	14.69 cents/kVAr/day
Interruptibility rebate (from 1 October to 31 March only)	3.67 cents/kW/day

⁹ Nameplate rating is the output of the pump motor as specified by the manufacturer.

¹⁰ Power factor is a measurement of power efficiency.

Major customer pricing

Of the 190,000 connections on our network, approximately 470 are categorised as major customer connections. While major customers make up only 0.2% of our customers by number, they use around 25% of the total electricity delivered over our network.

To qualify as a major customer, a business needs to have a maximum demand for electricity of at least 250kVA. This total compares to the maximum electricity demand of a typical house of about 10kVA.

These large customers receive their electricity supply in bulk. They often have transformers and other switchgear dedicated to their connection, and generally use only our high voltage network. Major customers also have a greater need for security of supply. We reflect these differences in their prices.

We do not charge major customers on a 'cents per kWh' basis. Instead we have two main charges – the control period demand charge and the assessed capacity charge. These 'peak charges' are based on the major customer's contribution to our peak network loads and their own maximum power demands in the previous 12 months.

The table below outlines the four components of our major customer delivery pricing.

Orion's major customer delivery prices as at 1 April 2009 (excluding GST)	
Control period demand charge	
Based on customer's contribution to our peak loading levels	\$140.10/kVA ¹¹ /year
Assessed capacity charge	
Based on customer's peak load for their own connection during working weekdays	\$46.10/kVA/year
Fixed annual charge	
Per connection	\$528 per year
Charge for any back-up connections	\$281 per year
Orion equipment charge	
For Orion's equipment dedicated to delivering electricity to major customer	Depends on equipment used

During periods of high electricity demand, Orion uses 'ripple control signals' to tell major customers that they are in a high price period, called a 'control period'.

Similar to our signals for general customers during peak periods, we provide a signal at the beginning and end of each control period to give major customers the opportunity to reduce their electrical use (and therefore save money) through such means as turning off boilers and freezers and running generators.

If a typical major customer responded to Orion's pricing signals by turning off their entire electrical load during control periods, it would reduce their following year's charges from Orion by around 75%. Even modest efforts to reduce electrical load during control periods can result in significant savings for major customers.

¹¹ The kilovolt-ampere (kVA) is an alternative measure of the rate of energy consumption which is more accurate for larger commercial loads.

Retailer pricing options

Orion's charges for delivery (including distribution and transmission) of electricity to homes or businesses are just one of the many costs that retailers factor into their prices which they charge customers. Their other costs are:

- the cost of purchasing wholesale electricity
- customer metering – to provide and maintain meters, and read and process readings
- the retailer's own costs to produce each electricity bill, process money received and communicate with customers.

Retailers look at all of these costs, and return on investment requirements, and package them into various pricing plans which they then use to charge residential and business customers.

Seven retailers supply customers on Orion's network. Because they have different pricing plans it is not always easy to know which retailer's plan is best for you.

Lower cost pricing plans are usually available if you:

- are willing to have your electric water heater turned off during peak loading times
- choose a 'day/night' pricing plan and do some household activities after 9pm (such as clothes washing, running the dishwasher or water heating).

Not only do these measures deliver savings to customers, they also help Orion. They transfer demand for electricity to times of the day or night when our network load is lighter and reduce the need for us to expand our network's capacity.

For detailed information about retail pricing, please contact your electricity retailer. To work out which retailer's pricing plan is the cheapest for your home we recommend you visit the PowerSwitch section of the Consumers' Institute website consumer.org.nz/powerswitch

Payment for distributed generation

As well as encouraging customers to use less electricity during peak demand periods, our prices encourage reliable 'distributed generation' within our network.

Distributed generators, also known as 'embedded generators', are generators located at a home or business which are capable of generating electricity for that home or business's own use. They may also be capable of putting surplus electricity back into our network. These generators can take many forms; diesel generators, wind turbines and solar panels are the most common.

Distributed generators that reliably and consistently respond when Orion's network is heavily loaded assist Orion in two main ways:

- they add security to our community's electricity supply
- they delay the need for us to expand our network capacity by supplying electricity close to where the power is consumed.

Orion provides credits for pre-approved reliable distributed generators connected to our network, based on the amount of electricity they provide during periods of high network loading. We have a standard set of credit prices for smaller generators, and individually consider credits for larger (more than 750kW) generators.

Not all network companies in New Zealand pay for distributed generation. However, we believe reliable distributed generation should be encouraged as it makes our community's electricity supply more secure.

While we encourage distributed generation, we try to ensure that one group of customers does not subsidise any other group of customers. Consequently, if a distributed generator imposes costs on Orion – for instance, a wind turbine is erected away from our existing network and we need to build new lines to connect the turbine to our network – then we will seek to recover those extra costs from the customer who owns the generator. This practice ensures that established customers do not cross-subsidise new customers.

Orion also credits customers who run their generators in response to a signal from Orion. This arrangement is separate from our other pricing arrangements, and is used sparingly in emergencies and during periods following peak loading to lessen interruption to hot water supply.

Further information on our commercial arrangements for distributed generation can be found on our website oriongroup.co.nz under Publications & Disclosures/Pricing.





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