



Pricing Policy

Applicable from 1 April 2017

Issued 2 February 2017

Pricing Policy

1.	Introduction.....	1
2.	Streetlighting connections.....	2
3.	General connections.....	3
3.1.	Peak charge	3
3.2.	Volume charge.....	4
3.3.	Low power factor charge.....	6
4.	Irrigation connections.....	7
4.1.	Capacity charge	8
4.2.	Interruptibility rebate	8
4.3.	Power factor correction rebate	9
5.	Major customer connections	10
5.1.	Fixed charge.....	11
5.2.	Control period demand charge.....	11
5.3.	Control period incidence and duration.....	11
5.4.	Nominated maximum demand charge	12
5.5.	Metered maximum demand charge	13
5.6.	New and modified connections	13
5.7.	Metering	14
5.8.	Equipment charges	14
6.	Large capacity connections	15
7.	Changes between connection categories	15
8.	Transmission rental rebates and ancillary services charges	15
9.	Billing and invoicing	15
9.1.	Data requirements.....	15
9.2.	Invoicing	16
9.3.	Pricing information on the Registry	17
9.4.	Price component codes	18

1. Introduction

This document states the basis for charging for our electricity delivery services, applicable from 1 April 2017, as referenced in our delivery services agreements with retailers and directly contracted customers. It provides details on the process and methods we use to set chargeable quantities, apply prices, and invoice charges. We generally update this document each year to reflect any changes in our pricing policy.

Details on how we set our pricing structure and derive prices are provided in the document *Methodology for deriving our delivery prices*, and details on the application of our export and generation credits for approved connections with distributed generation are provided in the document *Export and generation credits policy* (both available from our website).

Charges apply to connections in five categories, in summary:

Category	Summary of charging basis
Streetlighting	A fixed (\$/day) charge is applied for each streetlighting connection. In addition, these connections attract the peak and volume charges described for general connections.
General	Peak (\$/kW/day) and volume (\$/kWh) charges are calculated from total energy volumes injected onto our network, measured at Transpower's grid exit points (GXPs) and other embedded generation points, as reconciled between retailers by the reconciliation manager. A separate low power factor charge is applied on a fixed daily basis (\$/day) for the assessed reactive load (per kVAr) at sites that have a substandard power factor (this charge is only applied in exceptional circumstances).
Irrigation	An irrigation specific pricing category where we apply a fixed (\$/kW/day) charge based on the capacity of the installation. These connections also contribute to our volume charges described for general connections. We provide rebates for irrigation connections that provide access to interruptible load and those that have appropriate power factor correction equipment installed. Irrigation is not generally used during our winter based peaks (which occur only during the coldest weather conditions) and these connections avoid our winter based peak charges.
Major customer	The chargeable quantities for major customer connections are individually set and adjusted. The charge components are: <ul style="list-style-type: none">• fixed (\$/connection/day),• control period (\$/kVA/day, updated annually, average load during Orion's control period),• nominated maximum demand (\$/kVA/day, initially nominated, then increased where higher loadings are observed),• metered maximum demand (\$/kVA/day, updated annually, highest loads during weekdays), and• dedicated equipment (\$/day or similar).
Large capacity	Individually assessed prices and charge structure.

Orion determines which category applies for each connection. The calculation of charge components for each connection category is described in the following sections of this document.

We invoice all charges monthly to the party who has contracted with us for our delivery service, the retailer in most instances. Monthly charges are invoiced at the start of the month and are due for payment within the month that delivery services are provided. Connection specific fixed and demand based daily charges are not applied in respect of periods where a connection is not energised (generally based on the status recorded on the Electricity Authority's registry).

In addition to the category based connection charges, we apply a monthly invoice and contract charge to each party that we invoice to cover our costs of maintaining separate contracts and preparing invoices.

2. Streetlighting connections

Streetlighting connections are recorded wherever a customer's lighting circuit connects directly to our dedicated streetlighting network (there are multiple lights on some circuits). Most streetlighting connections relate to local authority or Transit streetlighting, but a number of private outside lighting connections also exist.

Electricity used by streetlighting contributes to, and is charged together with, the peak and volume charges described for general connections in section 3 below. In addition, we apply a fixed (dollars per day) charge for each connection. The prices are available in our schedule of *Delivery prices*, available on our website.

The chargeable quantity for the fixed charge is the number of streetlighting connections at the start of each month. Changes to this quantity (for additions, removals or switches between retailers) are not backdated and there is no wash-up of charges.

Orion maintains a record of the number of streetlighting connections.

3. General connections

Our general connection category includes all residential connections and most business connections, including a number of sites with half-hour interval metering, but excludes connections that belong to the other connection categories (those in the streetlighting, irrigation, major customer and large capacity connection categories).

Two main pricing components apply, and the chargeable quantities are based on the total electricity volume delivered to all general connections, as measured at Transpower's grid exit points (GXPs) and other injection points from embedded generation, and reconciled between retailers by the reconciliation manager. We use initial estimates and a wash-up process to revise retailer invoices as revised allocations of energy become available from the reconciliation manager. At the time a wash-up is performed, the previously invoiced amount is reversed out and replaced with a new amount calculated using the revised quantities. The invoice states both the newly calculated amount and the reversal, resulting in either a net credit or debit.

The prices are available in our schedule of *Delivery prices*, available on our website.

General connections may also be subject to our low power factor charge, described below. Interruptibility and power factor correction rebates are not available to connections categorised as general connections (see irrigation connections category).

3.1. Peak charge

The peak charge (using a dollars / kW / day price) is based on each retailer's contribution to the peak loading on our network. The peak loading is measured during peak periods that occur during winter (May to August) and applied on a monthly basis throughout the year (April to March).

Calculation of quantities

The peak charge is based on the average real power loading (kW) during our chargeable peak period. Peak periods occur when, in the absence of load management, our network load would exceed predetermined trigger points, and we notify these periods using our ripple system, text messages and emails. To focus on the period of highest loading, we set and adjust the trigger points with the aim of accumulating between 100 and 150 hours of signalled peak period during the winter season (May to August). The actual accumulated duration varies significantly from year to year mainly as a result of variations in weather which significantly influences network loading levels.

The chargeable peak period is the integral half-hours within the ripple signalled peak period, and we always ensure that the signal remains on long enough to include at least one integral half-hour. We maintain a history of the half-hours making up the chargeable peak periods on the load management page on our website.

The duration of the signalled peak period in a season does not, of itself, affect the amount of the peak charge because we charge for the average load during chargeable peak periods.

The peak chargeable quantity is calculated from each retailer's reconciled real energy at each of our grid exit points (which includes a share of any export from embedded generation), as follows:

Step 1 Calculate the component that relates to general connections for each half-hour of chargeable peak period.

$$\begin{array}{l} \text{Retailer's general} \\ \text{connection real} \\ \text{energy (kWh)} \end{array} = \begin{array}{l} \text{Reconciled real energy for} \\ \text{the retailer (kWh)} \end{array} \text{ less } \begin{array}{l} \text{Retailer's major customer, and large} \\ \text{capacity connection loss adjusted real} \\ \text{energy (kWh)} \end{array}$$

Step 2 Calculate the chargeable peak demand for the retailer.

$$\text{Retailer's chargeable peak period demand (kW)} = \frac{\text{Sum of the retailer's general connection real energy over all chargeable peak period half-hours (kWh)}}{\text{Duration of chargeable peak period (h)}}$$

Energy volumes for independently reconciled embedded networks (connections categorised with reconciliation type "LE") are not included in the reconciliation of their parent grid exit point, and the reconciliation of volumes *within* these embedded networks is not used in our pricing. We charge for our delivery service to these "LE" ICP connections using our major customer pricing and:

- energy volumes for embedded networks that contract with a retailer for Orion's delivery service (regardless of whether they are globally reconciled or not) are added to that retailer's reconciled real energy volumes then deducted off with the rest of the major customer deduction,
- energy volumes for embedded networks that contract directly with us for delivery services are not added to any retailers' volumes.

We aim to have a minimum of ten half-hours of peak period per season. If the chargeable peak period is less than ten half-hours, the balance of the peak period is made up from the appropriate number of half-hours occurring during the highest loadings for the season.

Estimates and wash-ups

At the outset of each pricing year beginning 1 April our peak demands are not known and we establish an estimate for delivery invoicing. We base this estimate on final peak period demands from previous winters, with an allowance for growth and any change in market share (and subject to any additional information retailers may provide). We apply this estimate for six months (April to September).

In October the first complete set of consumption data is available for the winter period and we use this to calculate the interim wash-up for the peak charge. We then apply this figure for the following six months (October to March) using the figure calculated in October. At the same time, we begin washing-up the estimates applied in the first six months (April to September) to reflect the October calculation and apply these in sequence with our volume charge wash-ups.

The following April, we recalculate the final wash-up for the peak charge, and begin applying this in subsequent invoices in sequence with our volume wash-ups.

In exceptional circumstances, where we consider it appropriate, we may apply additional wash-ups up to 24 months after the charges are initially applied. These circumstances may arise, for example, where the reconciliation manager agrees to provide additional wash-ups in its reconciliation process.

3.2. Volume charge

The volume charge (using dollars / kWh prices) is based on each retailer's reconciled energy volumes. We apply a low price for nights and weekends and a higher price for weekdays between 7am and 9pm. The volume chargeable quantity is calculated from the reconciled real energy at each of our grid exit points (which includes a share of any export from embedded generation), as follows:

Calculation of quantities

$$\text{Retailer's chargeable capacity volume, by period (kWh)} = \text{Reconciled real energy for retailer (kWh)} \text{ less } \text{Retailer's major customer, and large capacity connection loss adjusted real energy (kWh)}$$

Energy volumes for independently reconciled embedded networks (connections categorised as “LE” ICPs for reconciliation) are not included in the reconciliation of their parent grid exit point, and the reconciliation of volumes *within* these embedded networks is not used in our pricing. We charge for our delivery service to these “LE” ICP connections using our major customer pricing and:

- energy volumes for embedded networks that contract with a retailer for Orion’s delivery service (regardless of whether they are globally reconciled or not) are added to that retailer’s reconciled real energy volumes then deducted off with the rest of the major customer deduction,
- energy volumes for embedded networks that contract directly with us for delivery services are not added to any retailers’ volumes.

Estimates and wash-ups

We estimate the current month’s charges by using the chargeable general quantities from two months prior, which are adjusted by a seasonal factor to improve the estimating accuracy. The seasonal estimation adjustment factors are:

Billing month	Factor
January	0.94
February	0.93
March	1.09
April	1.14
May	1.18
June	1.36
July	1.25
August	1.01
September	0.77
October	0.78
November	0.87
December	0.89

The estimate is washed-up two months later using the reconciliation manager’s data and then washed-up three further times in synchronisation with the wholesale energy market wash-up process, together with a delay of one month, as follows:

Wash-up number	Reconciliation manager’s wash-up delay (months)	Orion’s wash-up delay (months)
Estimate		0
Wash-up 1	1	2
Wash-up 2	3	4
Wash-up 3	7	8
Wash-up 4	14	15

In exceptional circumstances, where we consider it appropriate, we may apply additional wash-ups up to 24 months after the charges are initially applied. These circumstances may arise, for example, where the reconciliation manager agrees to provide additional wash-ups in its reconciliation process.

3.3. Low power factor charge

We may apply an additional low power factor charge in situations where a connection's power factor is materially below 0.95 lagging with adverse (or possible future adverse) impacts on our delivery service (in our opinion).

We will determine a chargeable kVAr, generally based on twice the largest difference between the recorded kVArh and one third of the recorded kWh in the same half-hour period, between 7am and 9pm on weekdays. If metering information is not available for this assessment we will install temporary power quality metering and determine an appropriate chargeable kVAr.

Once the chargeable kVAr is established, the charge is applied as a fixed daily charge (dollars / kVAr / day) until such time as we reassess the chargeable kVAr, or the charge is removed.

To enable corrective action to be taken, we will generally provide 3 months' notice to the affected customer and their retailer before applying or increasing a low power factor charge.

At any time, a customer (or their retailer) may ask us to reassess the power factor at a connection with a low power factor charge (or notice of). We will carry out the reassessment within a reasonable period of time and adjust or remove the low power factor charge accordingly. Where we find that the power factor remains materially below 0.95 lagging, we will charge the cost of the reassessment to the party that requested the reassessment.

The low power factor charge does not apply to streetlighting or irrigation connections.

4. Irrigation connections

We provide a specific irrigation pricing category which is mandatory for irrigation connections with a pump capacity greater than 20kW, except that:

- the category is optional for irrigation connections with a pump capacity between 20kW and 40kW that are solely used for non-commercial¹ purposes, and
- irrigation for sports fields (including golf courses) and flood pumps are not classified as irrigation connections.

For the above categorisation, the capacity considered is the combined capacity of the water pumping motors at the connection (excluding other ancillary motors, such as rig drives). Connections in this category are required to remain as dedicated irrigation connections, and must remain separate from other types of load (eg an irrigation connection and a house cannot be combined into a single supply).

For historical reasons, and as a result of reductions in pump size, some irrigation connections with 20 kW or less pump capacity are included in this pricing category. The customer or retailer for these connections may elect to apply to Orion for the connection to be recategorised as a general connection from the first of the month following the date of application. New connections with pump capacity of 20kW or less will not be placed in the irrigation category – they will be placed in the general connection category.

The following price components apply for connections in this category:

- Capacity charge – dollars / kW / day based on the chargeable capacity
- Interruptibility rebate – dollars / kW / day based on the chargeable capacity
- Power factor correction rebate – dollars / kVAr / day based on the reactive power rating of installed capacitors
- Volume charges – dollars / kWh as described for general connections

The capacity charge and rebates are applied on a daily basis only during the period 1 October to 31 March. Volume charges apply year-round, and are applied together with the volume charges for general connections. The prices and rebates are available in our schedule of *Delivery prices*, available on our website.

Wash ups for capacity charges and rebates are applied in sequence with our volume wash-ups.

Irrigation connections generally avoid our GXP based winter peak period charges which occur on the coldest days, often during poor weather conditions, as they are not operational at these times. In the unusual situation where a retailer can provide suitable metered evidence that a connection in this category has contributed to the winter peak period, we will calculate an appropriate reduction for the retailer's peak period charge.

Orion will carry out audits of irrigation connections from time-to-time to check that the relevant quantities are correct, and that any necessary equipment is functioning correctly.

¹ Non-commercial use is determined by Orion, generally meaning that the scale of production matches the on-site domestic consumption and no income is derived from the irrigated land.

4.1. Capacity charge

Orion determines and updates each irrigation connection's chargeable capacity (kW) based on the sum of the installed pump-motor nameplate ratings at the connection, including an allowance for associated motors (for example, centre pivot rig drive motors) that normally or regularly operate while the irrigator is being used. As an alternative, we consider either:

- Metered chargeable capacity – on application from a customer or their retailer, to cater for customers that consistently operate their irrigation pumps below their rated capacity, we will consider assessing a connection's chargeable capacity based on half-hour metered loadings.

The assessment will generally be based on the highest of the average of the top 12 half-hour readings measured during each of the previous three irrigation seasons, but not less than a third of the kVA rating of the transformer supplying the irrigation pump.

We will update the assessment annually to apply from 1 October each year. This option will only be available where the retailer makes suitable half-hour interval metering data available to us.

- or -

- Individual assessed chargeable capacity – where it's not practical or appropriate to apply the standard approach or the metered chargeable capacity, Orion may assess a chargeable kW demand for a connection.

Changes to the chargeable capacity (for example, when a pump is upgraded or a customer applies for a metered chargeable capacity) will generally apply from the first of the month following any new assessment or upgrade.

4.2. Interruptibility rebate

An optional interruptibility rebate is available to retailers in respect of irrigation connections that provide us with the ability to interrupt supply in emergencies.

The purpose of this rebate is to reduce the need for Orion to invest in contingency assets that are needed to provide backup following faults on our network. If we can interrupt some irrigation loads there can be sufficient capacity remaining in the network to continue with supply to more essential loads, such as dairy sheds. The savings from this reduced investment supports the rebate and lowers the overall cost of electricity delivery.

The rebate is based on the chargeable capacity of the pumps that are interruptible, and is only available for irrigation connections designated as having a Decabit ripple coding within our rural area (see below). To be eligible for the rebate, the retailer must ensure that an appropriate interruptibility relay programmed to the channel that we allocate, is installed and maintained at the connection (and report any changes to the relay to us).

To establish if a connection is designated as having Decabit ripple coding, and which ripple control channel should be installed, please call our contact centre on 0800 363 9898. Alternatively, you can look up the control channel coding using the "Search ICP" facility on our website (see www.oriongroup.co.nz/SearchICP).

In an emergency, we may interrupt delivery to irrigation connections under this rebate arrangement. Emergencies include:

- failure of a line resulting from severe weather, such as high winds,
- a fault on the network resulting from a car hitting a pole,
- a fault in switchgear or a transformer at a district substation, and
- a capacity shortage on Transpower's grid that affects our ability to provide delivery services.

In any one area, we expect such events to occur approximately once in five years, with a maximum duration of eight hours, and once in ten years with a maximum duration of 48 hours. There could be more or longer interruptions under extreme circumstances.

We will restore delivery of electricity to the irrigation load as soon as practicable but will give priority to the restoration of delivery to other loads.

In addition, we will periodically interrupt delivery to irrigation connections to test the level of load response. These tests may occur at any time of the day and will be carried out without warning. Tests will not last more than 30 minutes and, under normal circumstances, we will not carry out more than two tests per season.

4.3. Power factor correction rebate

The power factor correction rebate is available to retailers in respect of irrigation connections that have appropriate power factor correction equipment installed and maintained.

In rural areas, the amount of real power that we can deliver is restricted by the reactive power demanded by irrigation loads. The purpose of this rebate is to provide a financial incentive to meet our minimum power factor correction requirements in order to reduce this delivery restriction.

The rebate is based on the amount of kVAr of power factor correction capacitance at the connection. To be eligible for the rebate, the electricity retailer or electrical contractor must provide us with the value of reactive power capacity (kVAr), determined by nameplate rating on the capacitors that are installed at the irrigation connection.

The rebate is limited to the capacitance required to achieve a unity power factor. While connections must meet our minimum power factor requirement in all situations, the amount of the rebate is further limited to the capacitance required to correct a power factor of 0.8 to unity. In practise, this means that the power factor correction rebate (kVAr) is capped at 75% of the chargeable capacity (kW).

For pump-motors with variable speed drives or active filters that increase the effective power factor, we apply an estimate of an equivalent correction capacitance, proportioned on the basis of 25kVAr per 100kW of pump-motor nameplate rating (based on correcting the power factor from 0.87 to 0.95)

5. Major customer connections

Orion's major customer connection category caters for the connections with larger loads and reconciled embedded networks. These connections take delivery in bulk, are able to provide accurate half-hour interval metering data by connection, and generally do not use our low voltage network.

In summary, we apply five pricing components in respect of major customer connections. These are:

- fixed (\$/connection/day),
- control period (\$/kVA/day, the loading level when the network peaks occur),
- nominated maximum demand (\$/kVA/day, the capacity available for the connection),
- metered maximum demand (\$/kVA/day, the actual peak load reached each year), and
- dedicated equipment (\$/day or similar).

The following sections describe the electricity delivery pricing and charging basis, including our process for determining chargeable quantities. The actual delivery prices are provided in Orion's schedule of *Delivery prices* available on our website (see www.oriongroup/DeliveryPricing).

Orion determines the connections that are categorised as major customer connections. Our assessment is generally based on loading levels where we consider any contracted capacity (for new or modified connections) and/or the 100th highest half-hour loading in either of the most recent two years, and:

- where the loading or export level is between 250kVA and 300kVA the customer (or their retailer) may elect to be classified as a major customer connection, or
- where the loading or export level is above 300kVA the connection will be classified as a major customer connection.

However:

- irrigation connections, streetlighting connections and large capacity connections will not be categorised as major customer connections,
- reconciled embedded networks will be classified as major customer connections.

Orion will review the connections that are classified as major customer connections from time to time and, where appropriate, will reclassify connections (providing appropriate notice to affected retailers and customers). These reclassifications will generally only take effect from 1 April of each year. Where a general connection becomes a major customer connection, we will estimate the chargeable quantities based on the latest information available.

All prices are expressed as daily prices and charges are applied monthly (and vary depending on the number of days in each month, or the number of days for which the chargeable quantities apply).

5.1. Fixed charge

A fixed daily price applies to each individually metered connection to our network.

5.2. Control period demand charge

This is based on the contribution to the peak load on the entire network. The chargeable control period demand (CPD) is the average apparent power (kVA) during the complete real-time half hours (ie those beginning or ending on the hour) within our ripple signalled control periods which occur during the winter season, May through August. For existing major customer connections, the chargeable CPD is generally updated annually. If there is less than five hours of control period in a season we will continue with the result from the previous season. In summary:

Control period season (winter):	1 May to 31 August
Updated control period demand notified by:	28/29 February of the following year
Updated control period demand applied from:	1 April to 31 March of the following years

5.3. Control period incidence and duration

Control periods occur when, in the absence of load management, our network load would exceed predetermined trigger points, and we notify these periods using our ripple system, text messages and emails. To focus on the period of highest loading, we set and adjust the trigger points with the aim of accumulating 80 to 100 hours of signalled control period during the winter season (May to August).

Control period loads are measured over the integral half hours (ie half hours beginning or ending on the hour) within the period our control period ripple channel is turned on. The time between when we turn the control period ripple channel on and the beginning of the next integral half hour provides an opportunity for customers to respond and lower loading levels.

Text and email alert messages are also sent out at the start and end of each control period. The service is provided at Orion's discretion and it relies on several third party service providers. We initiate the alerts when the control period ripple channel is switched and it generally takes a few minutes for them to get through. These alerts are not guaranteed – occasionally they are delayed for long periods or lost altogether. To register for the text or email alert service, send a request to loadmanagement@oriongroup.co.nz.

Control periods have a minimum duration of one integral half hour and typically last 2 to 3 hours. We aim to limit the duration of individual control periods to no more than 4 hours but, in extreme conditions, they can extend to 6 hours. The accumulated duration of the control period over a season can vary between approximately 20 and 150 hours, depending on the weather, but we aim to set and adjust our trigger parameters to accumulate between 80 and 100 hours per season.

Major customer connections are split between two control period groups (group 1 and group 2) so that we can stagger the change in load when control periods start and finish. Both groups receive approximately the same incidence and duration of control periods. We maintain separate ripple channels, text and email alerts for each group.

5.4. Nominated maximum demand charge

Also referred to as the “booked capacity”, this is initially based on requested capacity for new or upgraded connections, and then increased to reflect any higher loading levels on a monthly review basis.

The nominated maximum demand will be increased from the 1st of the month (following the monthly review) where the greater of:

- the average of the 12 anytime maximum half hour kVA loads, or
- the average of the 12 anytime maximum half hour kVA exports

from the previous 12 months is found to exceed the current level by a threshold of 10 kVA or more. As an example of the timing of the monthly review:

Review month	November
Loading information assessed	November to October prior
Updates notified by:	Mid November
Updates applied from:	1 December following

The monthly review is intended to capture seasonal and other normal variations in loading to reflect the long term capacity that Orion needs to reserve for the connection. A separate network application is needed where there is to be a permanent increase or decrease in demand as a result of changes at the premise. This allows Orion to consider what upgrades or changes might be required and the terms on which this can be provided.

All changes are subject to the following:

- The minimum nominated maximum demand is 300 kVA,
- For new connections, the initial nominated maximum demand will generally be set to 70% of the requested capacity, and for upgraded connections it will generally be increased to 70% of the requested capacity,
- Customers may apply for a permanent reduction in the nominated maximum demand in relation to changes in plant, or where they can demonstrate a permanent change in behaviour has reduced load (the latter being assessed over a year). Reductions will not be provided within 3 years after a connection is first commissioned or upgraded to provide additional capacity requested by the customer. Reductions are not backdated.
- Any increase or request for an increase within 12 months of a reduction being applied will, in addition to any other terms, include a requirement to pay the additional amount had the original reduction not been applied (but capped at the requested level, if this is lower than the original level),
- Where a customer has more than one major customer connection at one location supplied by the same electricity retailer, we may use the lower combined (totalised) or after-diversity loadings of the sites for the nominated maximum demand. Factors considered include the cost of interconnection within the customer’s premises, the investment implications on our network and the supply security requirements.
- The monthly review may be carried out using less than a years’ metering information where metering information is not available at the time the review is undertaken.

5.5. Metered maximum demand charge

This is based on each connection's own peak load, updated annually to reflect increases and decreases in loading levels.

The metered maximum demand is reviewed annually based on metering from the previous calendar year and set to the greater of:

- the average of the 12 highest weekday half hour kVA demands (Monday to Friday, between 7am and 9pm), or
- half the average of the 12 highest anytime half hour kVA demands.

(This effectively means that night and weekend loads need to be more than double the weekday loads before there is an impact on charges, and above this level, night and weekend loads are charged at half the rate of weekday loads.)

[the above section was revised on 15 March 2017 to include the omitted anytime assessment which was in previous versions of this document]

In summary:

Assessment period:	1 January to 31 December
Updates notified by:	28/29 February following
Updates applied from:	1 April to 31 March following

The metered maximum demand is subject to the same consideration of combined (totalised) or after-diversity loadings noted for the nominated maximum demand above. However, it is not subject to the 300kVA minimum, and does not include an assessment of export.

5.6. New and modified connections

For new major customer connections (including where an existing connection is newly classified as a major customer connection) and significantly modified connections, Orion establishes initial "deemed quantities" that apply for the control period demand, nominated maximum demand and metered maximum demand based on the information available and may subsequently reassess these earlier than 1 April of each year if loading levels exceed the deemed quantities. (We use "deemed" because these initial quantities do not necessarily reflect metered quantities.) Where appropriate, the initial nominated maximum demand is set and adjusted using the approach described in 5.4 above. Other deemed quantities will be updated in the normal cycle once loading information is available for a full control period season.

For new major customer connections, the deemed quantities generally apply from the date of livening. In some circumstances, such as where livening occurs to allow the completion of construction, the deemed quantities may apply from a later date. In such cases the status of the connection will be reviewed from time to time.

Reductions for significantly modified connections will only occur where Orion becomes aware of physical changes to plant that are likely to create a long term change in demand.

Any changes to chargeable quantities resulting from an early reassessment will generally apply from the 1st of the month following the reassessment (changes will not be back dated).

5.7. Metering

Electricity retailers are responsible for providing appropriate metering data for their interposed and directly contracted major customer connections, and embedded network operators are responsible for providing appropriate metering data for their connections. All major customer connections must have half-hour interval metering (or equivalent) measuring real energy (kWh) and reactive energy (kVArh). Metering must meet the requirements of the Electricity Industry Participation Code.

Connections with synchronised embedded generation must also have real and reactive export metering and this metering information must be submitted to the reconciliation manager for reconciliation under the Electricity Industry Participation Code.

5.8. Equipment charges

We charge separately for some permanently installed equipment that we own and that is dedicated in servicing a major customer connection in order to reflect differences between connections (for example, this approach results in lower delivery charges where a customer provides its own transformers).

Equipment charges are applied for:

- Extra switchgear
- 11kV metering equipment
- Transformer capacity, and
- Dedicated 11kV lines and cables

For dedicated equipment, we provide standard maintenance, replacement (at the end of the asset's useful life), and component certification (where appropriate).

We generally charge customers for initial (non-recoverable) installation costs (including foundations, labour, and miscellaneous charges for plant and materials used) when the connection is established, upgraded or reconfigured. Customers fund the full initial cost of any dedicated lines or cables and our dedicated equipment charge for these assets covers maintenance and replacement only (we do not apply the dedicated equipment charge for up to the first 100 metres of dedicated line or cable). Any additional services or other equipment changes are provided on a 'fee for service' basis.

Extra switchgear includes circuit breakers, oil switches, overcurrent relays or air break isolators that are provided over and above the switchgear configuration installed for our normal security standard.

Transformer capacity is normally based on the rating of the dedicated transformer. Where a transformer is shared, the chargeable transformer capacity is based on the standard size transformer that would otherwise be provided to meet the nominated maximum demand.

For us to provide and maintain this equipment the customer must provide reasonable access. For maintenance of underground cables, access should not be unreasonably encumbered. Where reasonable access is not provided, we will generally charge for any costs associated with re-routing cables to resolve a fault.

6. Large capacity connections

Orion has a large capacity connection category to accommodate individual very large connections that require individual pricing consideration as a result of their size and impact on the local network to which they connect.

Pricing and charge structures are individually negotiated and charged directly to the customer.

7. Changes between connection categories

Orion may change the category for any connection in line with the category descriptions above. Generally, Orion will only change (or accept requests to change) category with effect from 1 April of each year. The most likely changes are general connections becoming major customer connections (due to load growth) and vice versa.

In some situations, where a category change occurs on a date other than 1 April, Orion may determine adjustments to chargeable quantities (for example, the chargeable peak period demand for general connections) to negate under or over charging relating to timing differences between the pricing approaches for the categories.

8. Transmission rental rebates and ancillary services charges

The monthly transmission rental rebates and ancillary service charges paid or charged to Orion by Transpower are allocated to all the electricity retailers (including all “traders” as that term is defined in the Electricity Industry Participation Code) that operate on our network. We credit the rebate amount we receive in any month to the retailers based on their network total reconciled real energy (kWh) for the same month. This amount is not washed-up. We charge retailers for any ancillary service charges on the same basis.

9. Billing and invoicing

Subject to the provisions in our delivery services agreements, we prepare and issue invoices for a particular month by the 10th day of same month, and the invoices are due for payment by the 20th day of the same month (or the following business day, if the 20th is not a business day). The monthly invoice and contract charge is only applied when other delivery services are being provided and charged for.

9.1. Data requirements

Orion obtains data from the reconciliation manager and uses this in the calculation of peak and volume charges for streetlighting connections, general connections and the volume component for irrigation connections. We also manage the data associated with capacity charges and rebates for irrigation connections.

Retailers are required to submit (to Orion or its agent) half-hour interval metering data for major customer connections, some embedded networks, large capacity connections, irrigation connections that elect to use a metered chargeable capacity and for connections with larger generators that export into our network.

Embedded network operators that contract directly with us for delivery services are required to submit the half-hour interval metering data to Orion for their connection to our network. Generally this obligation is fulfilled by a retailer acting for the embedded network operator.

Half hour metering data must be provided separately for each ICP (even when we subsequently combine or totalise loadings). The data must include both real (kWh) and reactive (kVARh) volumes separately for load and for export (where synchronised embedded generation is installed).

We require half hour interval metering data to be provided in a format consistent with the industry standard information protocol EIEP3 version 10 (available from the Electricity Authority’s website). The use of the EIEP3, when exchanging half hourly volume information, was regulated by the Electricity Authority from 1 November 2014 and industry participants are required to use this protocol under clause 12A.14 of the Electricity Industry Participation Code 2010.

For smaller exporting connections (without half hour metering), we require monthly export volumes to be submitted to Orion.

The information must be provided monthly by 4pm on the 10th business day of the following month.

9.2. Invoicing

We provide the following information in support of our monthly delivery services invoices:

Invoice	Delivery charge totals for the estimate and each wash-up month, invoice and contract charge, itemised miscellaneous adjustments, application of GST and any balance brought forward from the previous month.
Delivery charges calculation(s)	Summary of chargeable quantities, prices and charges.
EIEP1	Itemised chargeable quantities and charges by ICP for all fixed streetlighting, irrigation and major customer connection pricing components and the general connection low power factor pricing components. A separate file is supplied for each billed month. Excludes export credits, transmission rental rebates, miscellaneous adjustments and the invoice and contract charge.
EIEP2	Chargeable quantities and charges for the streetlighting, general and irrigation volume and peak pricing components based on network total reconciled volumes. A separate file is supplied for each billed month.
Peak loading report	The general peak quantity (kW demand) measured during the season to date.
TOU energy report	The kWh allocated to the retailer by the reconciliation manager during each volume charging time period. This is provided for the retailer and for the entire network so individual retailers can evaluate their market share.
kWh comparison reports	The reconciliation manager’s kWh and major customer connection kWh allocated to the retailer for each wash-up of each billed month.
Transpower payments report	Details for the retailer (and for the network total) of the transmission rental rebates and ancillary service charges that Orion has passed directly to the retailer.

Note that invoices providing wash-ups for periods prior to 1 April 2016 include a different set of information, as documented in prior versions of this document

9.3. Pricing information on the Registry

The “registry” is a database of all electricity connections in New Zealand which is provided by the Electricity Authority. The registry allows retailers and distributors to manage the process of switching customers between retailers by facilitating the exchange of information and enabling energy flows between retailers to be reconciled. Orion is required to maintain information relating to delivery pricing on the registry, and we populate the pricing fields against each ICP as follows:

Field Name	Data type	Populated with
Event date	dd/mm/yyyy	The date the pricing information applies from (usually the first of the month following any change or update)
Price category	char 15	Code for the pricing category that applies to the ICP. Codes are: LIG Streetlighting connection GEN General connection IRR Irrigation connection MCC(...) Major customer connection. The bracketed term additionally identifies: G1/G2 – whether the connection belongs to group 1 or group 2 for control periods (see section 5.3) DIRECT – denotes connections where customers contract directly with Orion for delivery services (and are charged directly) LCC Large capacity connections (directly contracted) For new connections Orion always determines the applicable price category in advance of liveness, and therefore does not use “placeholder” price category codes.
Loss code	char 7	Code defining the appropriate loss factors that apply for the ICP. Refer to Orion’s published schedule of loss factors. In summary, the codes are: LVL Low voltage metered connections (230V or 400V) 11L 11kV metered connections SSL, FSL Connection specific factors for 11kV connections in our LCC price category
Chargeable capacity	num 10	For irrigation connections only, this field is populated with the chargeable capacity (in kW). For all other connections, this field is blank. Contact Orion for chargeable capacities for major customer connections.
Installation details	char 30	For irrigation connections, this is populated as a multivalue field (separated with a semicolon) to show the credit quantities for rebates (if any), as follows: PFC### Irrigation power factor correction rebate, ### is the creditable kVAr (with up to 2 decimal places) INT### Irrigation interruptibility rebate, ### is the creditable kW (with up to 2 decimal places) For major customer connections, this field is used in free form to advise if metered quantities are totalised with another connection for the purpose of delivery charging.
Direct billed status	char 60	Populated with “Distributor” for connections where we contract with and charge the customer directly for delivery services.
Direct billed details	char 60	Not populated

9.4. Price component codes

For each delivery price component we set a “price component code” for use in in our mandatory "electricity information exchange protocol" files, and these codes are also shown on our delivery price schedule. Within these files, rebate prices are quoted as negative values, export and generation credits are quoted as positive values with the flow direction noted as injection.

Price component codes are:

Price category	Price category code (as recorded on the Registry)	Price component	Price component code
Streetlighting connections	LIG	Fixed charge Peak charge (peak period demand) Volume charge Weekdays (7am - 9pm) Volume charge Nights, weekends	STFXD GENPK VOLWD VOLNW
General connections	GEN	Peak charge (peak period demand) Volume charge Weekdays (7am - 9pm) Volume charge Nights, weekends Low power factor charge	GENPK VOLWD VOLNW LOWPF
Irrigation connection	IRR	Capacity charge Volume charge Weekdays (7am - 9pm) Volume charge Nights, weekends Power factor correction rebate Interruptibility rebate	ICCAP VOLWD VOLNW ICPFC ICIRR
Major customer connection	MCC(G1) MCC(G2) MCC(G1-DIRECT) MCC(G2-DIRECT)	Fixed charge Peak charge (control period demand) Nominated maximum demand Metered maximum demand Equipment Charges Extra switches 11kV Metering transformers 11kV Underground cabling 11kV Overhead lines Transformer capacity	MCFXD MCCPD MCNMD MCMMD EQESW EQMET EQUGC EQOHL EQTFC
Large capacity connections	LCC	Codes not defined as customers are charged directly	

Price category	Price category code (as recorded on the Registry)	Price component	Price component code
Export credits	Any	0 - 30kW generation Anytime credits (without PV) Anytime credits (with PV) 0 - 30kW generation Peak period credits (with or without PV) 30 - 750kW Control period credits Real power credit Reactive power credit	EXPA EXPAPV EXPPP EXPCP1 EXPCP2
Generation credits	Any	Generation period credit	GEN1