



## **Application of delivery prices**

**Applicable from 1 April 2011**

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# Application of delivery prices

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## 1. Introduction

This document states the basis for charging for our electricity delivery services, applicable from 1 April 2011, 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 delivery charges.

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 *Application of export and generation credits* (both available from our website).

We generally update this document each year to reflect any changes in the application of delivery pricing.

Charges apply to connections in five categories:

Category	Summary of charging basis
Streetlighting	A fixed (cents per day) charge is applied for each streetlighting connection. In addition, these connections attract the peak and volume charges described for general connections.
General	Peak (cents per kW per day) and volume (cents per 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 (cents per 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, applying for all commercial irrigation connections with a pump-motor nameplate capacity of greater than 20kW. We apply a fixed (cents per kW per day) charge based on the capacity of the installation and 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 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 established based on metered volumes and generally apply for a 12 month period. The charge components are: <ul style="list-style-type: none"><li>• fixed (cents per connection per day),</li><li>• control period (cents per average kVA (during Orion's control period) per day),</li><li>• assessed capacity (cents per kVA (generally based on the top kVA readings on working weekdays) per day), and</li><li>• dedicated equipment (cents per day).</li></ul>
Large capacity	Individually assessed prices and charge structure.

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. Payment is due on the 20th of the month in which the delivery service is provided.

## 2. Streetlighting connections

Streetlighting connections are recorded wherever a customer's lighting circuit connects directly to our 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 (cents 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 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 cents / 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 as a result of weather and other effects that are beyond our control.

The chargeable peak period is the integral half-hours within the ripple signalled peak period, and each chargeable peak period has a minimum duration of 30 minutes. We maintain a history of the half-hours making up the chargeable peak periods on the load management page on our website.

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.

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

**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 beginning of each financial year 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 cents / kWh prices) is based on each retailer's reconciled energy volumes. We apply a low price for nights, weekends and the days on which national public holidays and Canterbury anniversary day are observed. We apply a higher price for working 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*

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

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:

<b>Billing month</b>	<b>Factor</b>
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 working 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 (cents / 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 pricing category for irrigation connections, which is mandatory for all irrigation connections with combined pump-motor capacity of greater than 20 kW which are used for the commercial irrigation of agricultural land (as determined by Orion). 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-motor 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 – cents / kW / day based on the chargeable capacity
- Interruptibility rebate – cents / kW / day based on the chargeable capacity
- Power factor correction rebate – cents / kVAr / day based on the reactive power rating of installed capacitors
- Volume charges – cents / 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.

### 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. 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 50% 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 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**

The 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 fed from our Springston and Hororata grid exit points. To be eligible for the rebate, the retailer must ensure that an appropriate interruptibility relay is installed and maintained at the connection (and report any changes to the relay to us).

Interruptibility relays must be programmed to the channel we allocate. To establish 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/your-network/retailers/search-icp.aspx](http://www.oriongroup.co.nz/your-network/retailers/search-icp.aspx)).

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 (but limited to the capacitance required to achieve a unity power factor). 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.

For pump-motors with variable speed drives that increase the effective power factor, we will accept an estimate of an equivalent correction capacitance, proportioned on the basis of 25kVAr per 100kW of pump-motor nameplate rating. The basis for this estimate is that the power factor on a submersible pump-motor is typically increased from 0.87 to 0.95, with the addition of a variable speed drive. We will also consider non-typical cases on their individual merits.

## 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 four pricing components in respect of major customer connections. These are:

- Fixed (cents / connection / day),
- control period (cents / kVA (average during control periods) / day),
- assessed capacity (cents / kVA (generally based on the average of the top 12 readings during working weekdays) / day), and
- dedicated equipment (cents / day).

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 ([www.oriongroup.co.nz](http://www.oriongroup.co.nz)).

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 100<sup>th</sup> highest half-hour loading in the most recent two years, and:

- where the loading 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 level is above 300kVA the connection will be classified as a major customer connection.

However:

- irrigation connections and streetlighting 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 installations (providing appropriate notice to affected retailers and customers).

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

The fixed “standard connections” price generally applies to each individually metered connection to our network. Additional connections that are provided for use in contingencies (eg to provide continuity of delivery during planned or unplanned interruptions) are charged at the “secondary connections” price.

## 5.2. Control period demand charge

The chargeable control period demand (CPD) is the average apparent power (kVA) during our ripple signalled control period season, May through August. The CPD is generally updated annually and the same quantity is used for both distribution and transmission charges. 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. This service relies on several third party service providers and, while we initiate the alerts when the control period ripple channel is switched, 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](mailto: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. Assessed capacity charge

The chargeable assessed capacity for each major customer connection is calculated as the average of the 12 highest half hour kVA demands during working weekdays between 7am and 9pm. We take working weekdays as every day except Saturdays, Sundays, and the days on which national public holidays and Canterbury anniversary day are observed. The assessed capacity is generally updated annually and assessed over a 12 month period. The assessment includes some adjustments (noted below) which leads to different figures being applied for distribution and transmission charges for some connections. In summary:

Assessment period:	1 January to 31 December
Updated assessed capacities notified by:	28/29 February of the following year
Updated assessed capacities applied from:	1 April to 31 March of the following years

## 5.5. Adjustments

The assessed capacity for either distribution and/or transmission charges may be adjusted as follows:

(a) Minimum assessed capacity

For distribution charges only, the minimum assessed capacity is 300kVA.

(b) High loads at other times

If a connection's loading level outside the working weekdays is more than twice the level assessed (see 5.4 above) then we reassess the chargeable loading based on half the average of the highest anytime 12 half hour kVA demands.

(c) Multiple connections

Where the customer has more than one major customer connection at one location, we may give some consideration to the combined (totalised) or after-diversity loadings, and reduce the assessed capacity accordingly. Factors considered include the cost of interconnection within the customer's premises, the investment implications on our network and the supply security requirements.

(d) Predetermined

For distribution charges only, if, when establishing a new connection or upgrading an existing connection, the customer or the customer's agent has requested that a certain capacity be provided, then that is used as the assessed capacity until negotiated otherwise.

(e) Close proximity to grid exit point

For distribution charges only, if the location of the connection is close to a Transpower grid exit point (GXP) that other parties could viably and economically connect to, we may recognise the alternative opportunity available and may reduce the assessed capacity to approximate the lower than average cost to distribute over the shorter distance. However, under this consideration we will not reduce the assessed capacity below the 300kVA minimum noted above.

## 5.6. Early reassessment for new or modified connections

For new connections, where there is a lack of history to go by, or significantly modified connections, the chargeable CPD and assessed capacity may be reassessed and changed earlier than 1 April of each year. Reassessments will only occur where Orion becomes aware of exceptional changes to physical plant that are likely to create a long term change in demand.

Any changes to chargeable quantities resulting from an early reassessment will apply from a future date (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).

## 5.8. Equipment charges

We charge for permanently installed equipment that we own and that is dedicated in servicing a major customer connection. In some situations, transformers are only partially dedicated to individual connections and we assess the charges based on a reduced transformer size sufficient to meet the connection's load or anticipated load.

Equipment charged includes:

- Switchgear
- Protection relays
- Transformer
- Substation housing (eg kiosks)
- Metering current and voltage transformers and test blocks

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

We 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 generally 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.

For us to provide and maintain this equipment the customer must provide reasonable access. We will generally apply an additional charge for any special access requirements (for example, for after-hours maintenance or for aerial 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.

We do not charge for the minimum switching equipment required to supply each connection. In general, this means that there's no charge for the first switch at each connection. Xiria units incorporate a number of switches, and the cost of each switching circuit is considered individually (for example, for a Xiria unit with 3 circuits dedicated to a connection, we would provide the first circuit without charge).

Charges can apply for equipment that is both upstream and downstream from the connection point:

- upstream equipment is electrically connected between the connection point and the 11kV "point of common coupling" with any other customer,
- downstream equipment is equipment that is connected within the customer's installation, but is owned by Orion.

Prices for this equipment are published in our schedule of *Dedicated equipment prices* available on our website. Prices are generally updated once per year with new prices applying from 1 April.

## 5.9. Changes and transitional terms

Orion introduced a number of modifications on 1 April 2011 which are described below. In some cases the changes involve the provision of transitional terms which are also described.

### (a) Signalling control periods

We previously provided a 10 minute warning before each control period using a separate ripple channel. With other changes it is no longer feasible to provide this warning. However, to provide an opportunity for customers to adjust their systems we will continue to provide the warning signal during the winter 2011 control period season. During this transition the minimum control period duration will remain as 30 minutes (rather than the full integral half hour described above).

### (b) Measuring control periods

We previously promoted the use of specific metering, where control period loadings were recorded in separate meter registers, allowing the part half hours at the start and end of each control period to be included in the assessment. Where provided, we will continue to accept and assess this metering for control period loadings during the winter 2011 control period season, subject to a range of validation checks.

### (c) Definition for working weekday for minimum assessed capacity

Prior to 1 April 2011 we assessed working weekdays over a shorter period from 7:30am to 8:30pm (now 7am to 9pm). For existing customers we will continue to assess this shorter period for the year to 31 December 2011 to provide an opportunity for customers to adjust their systems.

(d) Proximity factors for assessed capacity

Last year we changed our approach to the assessment of proximity factors. For charges from 1 April 2011 we are applying the new approach for existing connections. Where this has resulted in a significant change we are phasing the new approach in over the next few years. Affected customers have been notified directly.

(e) Minimum charge for assessed capacity

For charges from 1 April 2011 we are standardising our application of the 300kVA minimum assessed capacity. Previously we did not apply the minimum to customers that were in the category prior to 1999 when the provision was introduced. Where this results in a significant change in charges we are phasing in the minimum over the next few years. A small number of customers (including some with generation receiving export credits) will remain exempt from the minimum and we will consider their individual circumstances in the near future. Affected customers have been notified directly.

(f) High night loads for assessed capacity

Prior to 1 April 2011 we individually considered the assessed capacity for connections where the night loads were more than 20% higher than the standard working weekday assessment. The new approach provides a standardised basis that applies only when loadings exceed twice the working weekday load. This change affects a small number of customers and we will individually consider how we implement the new approach and advise affected customers accordingly.

## **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. Transmission rental rebate 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 retailers that trade 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.

## **8. Billing and invoicing**

### **8.1. 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 (to Orion or its agent) the half-hour interval metering data 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 under 5.5(c) above). The data must include both real (kWh) and reactive (kVArh) volumes separately for load and for export (where appropriate).

We prefer half hour interval metering data to be provided in a format consistent with the industry standard information protocol established by the Electricity Authority, EIEP3 version 5 or 6 (available from the Electricity Authority's website). We accept alternative formats, by agreement, if necessary. We also continue to accept the file format that was specified prior to the adoption of the industry standard - the main difference with this old format is that consumption data is loss-adjusted, whereas under the industry standard format it is not.

For smaller exporting connections (without half hour metering), we require monthly export volumes to be submitted directly to Orion. Depending on the credit option, this will either be the total monthly export volume or export volumes during our peak period (from a ripple switched export meter) for each ICP.

The information must be provided monthly by 4pm on the 15<sup>th</sup> business day of the following month.

## 8.2. Invoicing

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

<b>Invoice</b>	Totals for the estimate and each wash-up month by distribution and transmission, invoice charge, application of GST and any balance brought forward from the previous month.
<b>Distribution &amp; transmission charges calculation(s)</b>	The quantities and charges of general peak and capacity billed to the retailer.
<b>Major chargeable quantities</b>	The quantities and charges of fixed, peak, capacity and equipment applied to each major customer connection billed to the retailer.
<b>Equipment schedule</b>	Lists all dedicated equipment items per ICP and provides backup documentation for summarised quantities and amounts shown in the <i>Distribution &amp; transmission charges calculation(s)</i> and <i>Major chargeable quantities schedules</i> .
<b>Schedule of irrigation connections</b>	Confirmation of chargeable quantities and rebates for each of the irrigation ICPs for the current month and all subsequent wash up months. Provides a breakdown of summarised quantities and amounts shown in the <i>Distribution &amp; transmission charges calculation(s) schedule</i> .
<b>Peak loading report</b>	The general peak quantity (kW demand) measured during the season to date.
<b>TOU energy report</b>	The kWh allocated to the retailer by the reconciliation manager during each Orion's volume charging time period. This is provided for the retailer and for the entire network so individual retailers can evaluate their market share.
<b>kWh comparison reports</b>	The reconciliation manager's kWh and major customer connection kWh are allocated to the retailer for each wash-up of each billed month.
<b>Transpower payments report</b>	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.

### 8.3. 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 its 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)
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 ULV, U11, RLV, R11, where: U - denotes connections supplied by one of our urban GXPs R - denotes connections supplied by one of our rural GXPs LV - denotes connections with low voltage metering 11 - denotes connections with 11kV metering
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 multivalued 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.