
# Electricity Distribution Business Pricing Methodology for Prices Effective 1 April 2013

## 1 March 2013

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## 1. Glossary

Electra has sought to develop its pricing methodology using standard industry terminology and including sufficient information to enable pricing decisions to be readily understood by consumers. This glossary is provided for the convenience of the reader.

| | |
|---|---|
| **AMP** | Asset Management Plan: A record of the company's plans to manage the network to provide a specified level of service. |
| **Coincident Maximum Demand (CMD):** | Relative demand (typically expressed in kWs or kVA) of a particular consumer or consumer group at the GXP system peak (i.e. as measured by system maximum demand). |
| **Commerce Commission** | Responsible for the economic regulation of electricity distribution businesses as provided for under Part 4 of the Commerce Act 1986. |
| **Electricity Authority (EA)** | Responsible for regulation of the electricity market as provided for under the Electricity Industry Act 2010. |
| **GXP** | Grid Exit Point: The point at which Electra's network is deemed to connect to Transpower's transmission network. |
| **ICP** | Installation Control Point: A point of connection on a local network which the distributor nominates as the point at which a retailer will be deemed to supply electricity to consumers (i.e. a consumer connection point). |
| **Information Disclosure Determination** | As set out in the Commerce Commission's Electricity Distribution Information Disclosure Determination 2012, issued 1 October 2012 (Decision No. NZCC22). |
| **kVA:** | Kilo Volt-Amp: Measure of apparent electrical power usage at a point in time. |
| **kWh** | Kilowatt hours: Measure of real electrical power usage per hour. |

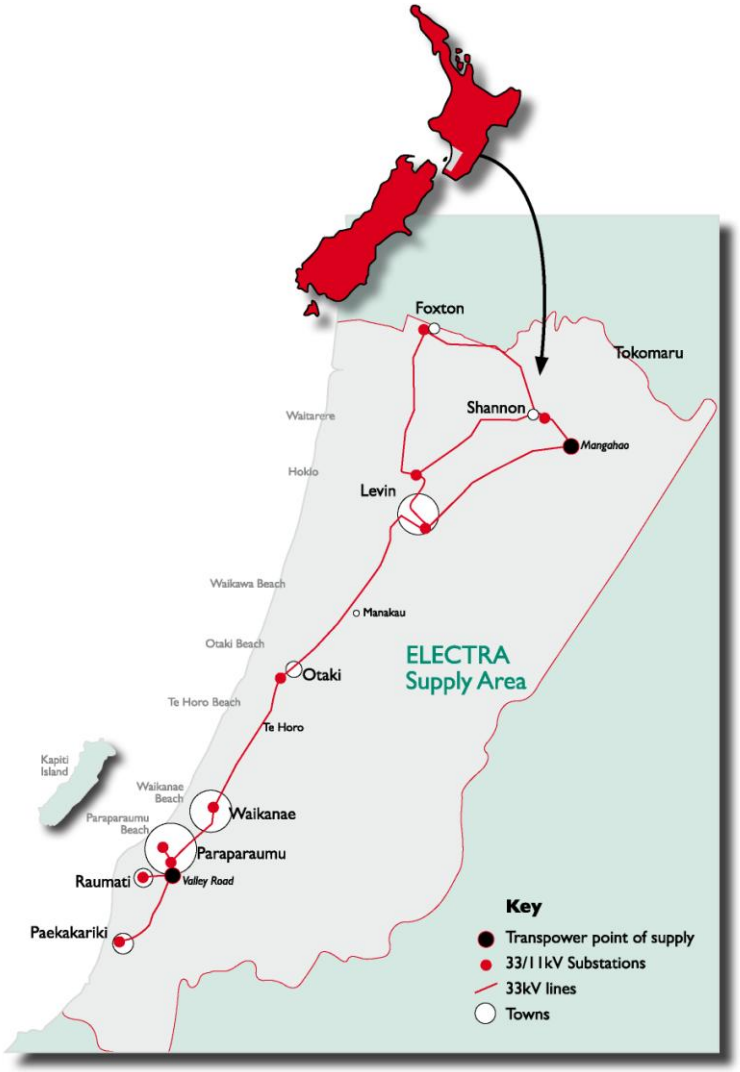
| | |
|---|---|
| **Low fixed charge regulations** | As set out in the Electricity (Low Fixed Tariff Option for Domestic Consumers) Regulations 2004. These require Electra to make a tariff option available for domestic consumers who have annual usage less than 8,000kWhs. Prices must be set such that the fixed daily charge does not exceed 15 cents (excl GST) and consumers should be no worse off under this tariff option at the break point of 8,000kWhs relative to other tariff options. |
| **Power Factor** | The ratio of real power (e.g. kWs) to apparent power (e.g. kVA). 0.98 is considered normal on Electra's network. |
| **Pricing Year:** | The year starting 1 April and ending on 31 March. |
| **RCPD** | Regional Coincident Peak Demand: Transpower calculates its interconnection charge for each GXP by its relative share of RCPD. |
| **SOLEC Methodology** | A methodology for setting electricity distribution prices as set out in the 'Guide to Derivation of Line Charges', prepared by the Separation of Line and Energy Charges (SOLEC) Working Party for the Supply Committee of Electricity Supply Association of New Zealand (ESANZ). |
| **Sub-transmission** | A power line that transports or delivers electricity at 33kV on Electra's network. |
| **System Maximum Demand** | Aggregate peak demand for the network, being the coincident maximum sum of GXP demand and embedded generation output. |
| **Target revenue requirement** | The revenue that Electra estimates needs to be recovered through prices over the pricing year in order to recover its costs of investing in and operating the network. |
| **TOU** | Time of Use: Refers to tariff options that rely on meters that measure consumption by time of use. |
| **Transpower** | Transpower New Zealand Limited: The state owned enterprise that is the owner and operator of the national electricity transmission network. Transpower delivers electricity from generators to distribution networks and large direct connect consumers around the country. |

## 2. Introduction

The purpose of this document is to describe Electra Limited's ('Electra') methodology for setting electricity distribution prices that will apply to consumers from 1 April 2013.

Electra owns and operates the electricity distribution network in the Kapiti and Horowhenua regions. This is a geographic area of around 1700 square kilometres where the network is concentrated mainly along the coast to supply a number of towns from Paekakariki to Foxton. Paraparaumu and Levin are the largest of these towns.

The towns in Kapiti have their origins as seaside resorts for Wellingtonians, and more recently as fast growing dormitory areas where a good proportion of residents travel to Wellington for work. The Horowhenua includes a number of seaside villages with holiday homes, but also includes a more developed commercial sector centred on Levin.



Electra receives electricity supply from Transpower's national transmission grid at two locations situated at either end of its network; at Valley Road in Paraparaumu and at Managahao. Electricity is then distributed to 42,595 consumers across 2,583kms of electrical circuit.

Electra is owned by the Electra Trust, which appoints Directors and holds all the shares on behalf of all those consumers connected to the network. Consumer trust ownership means that all surpluses not required for the operations and development of the core business are returned to consumers via sales discounts on their electricity accounts.

Electra's network is a 'natural monopoly', in that it is considered more economically efficient for one network to supply all consumers, due to the significant economies of scale. However, this also means Electra is not directly exposed to the competitive forces that drive other markets to deliver improved efficiency and service. While legislators would typically seek to regulate such businesses to ensure price and quality outcomes consistent with competitive markets, consumer trust ownership provides the necessary incentives to ensure Electra delivers an efficient and reliable service to its consumers (who are also its owners) at fair prices. In 2008, this was formally recognised when Electra was exempted from the price and quality regulations applying to electricity distribution networks under section 54G(2) of Part 4 of the Commerce Act 1986, as administered by the Commerce Commission.

While exempt from direct regulatory control, Electra is subject to regulatory oversight in the form of information disclosure. This includes this pricing methodology, which is required to be disclosed under Sub-Part 2.4 of the Commerce Commission's new Information Disclosure Determination. This pricing methodology has been developed and published consistent with this determination.

We are also required by the Electricity Authority (EA) to describe the extent to which our pricing methodology is consistent with its electricity distribution pricing principles and to consider its information disclosure guidelines in developing our pricing methodology (both of which were published by the Electricity Commission in March 2010). We have summarised the consistency of our pricing methodology with these principles in section 13.

## 3. Changes to the pricing methodology

Figure 1 sets out the key changes made to the pricing methodology in the last three years.

**Figure 1: Change log**

| **Pricing Methodology valid from:** | **Summary of key changes** |
|---|---|
| 1 April 2013 | • Introduction of Standard Industrial tariff option.<br>• Prices were reset to recover the 2014 target revenue requirement.<br>• The content and structure of the document was updated to ensure consistency with the requirements of the new Information Disclosure Determination. |
| 1 April 2012 | • Prices were reset to recover the 2013 target revenue requirement.<br>• The logical structure of the document was improved and further explanation included providing interested parties with a better understanding of our key pricing decisions. |
| 1 April 2011 | • Prices were reset to recover the 2012 target revenue requirement.<br>• The Triple Saver option was limited to new consumers consuming above 25,000kWh. This had no impact on existing consumers, thus there were no transitional issues to consider.<br>• A section was added to explain the extent to which our pricing methodology is consistent with the EA's pricing principles. |

## 4. Pricing objectives

Electra's pricing and commercial objectives that guide the development of this pricing methodology include:

- ***Recovery of our costs, including a commercially acceptable rate of return commensurate with the consumer trust ownership structure:*** This recognises that Electra must recover its costs, including those related to making returns to shareholders and financing of debt, in order to remain commercially sustainable.
- ***Clarity and simplicity for both consumers and retailers:*** It is important that consumers understand how prices are set and how they will be affected. Gaining 'buy-in' from retailers on our pricing methodology is also crucial given most consumers deal only with their retailer, and in order to ensure that any price signals are appropriately passed on to consumers in retail prices.
- ***Fairness to all consumers and retailers:*** As a consumer owned business, fairness in pricing is particularly important to us. One tangible example of this is that, in the main, we do not differentiate consumers based on such characteristics as whether they are domestic or commercial, rural or urban, but rather on their usage of the network.
- ***Encouragement for consumers to shift load away from peak periods and to use assets efficiently:*** Electra must build and maintain its network to meet the peak demands of its consumers. Any deferral of investment to increase capacity on the network will be beneficial to consumers if it can be managed without compromising service delivery. Over the longer term, we recognise the importance of the efficient use of energy and behaviours consistent with reducing peak demand. Pricing is one tool that can be used to incentivise such outcomes.
- **Full consideration and compliance with regulatory requirements relating to pricing, including**:
    - Section 2.4 of the Information Disclosure Determination;
    - the EA's distribution pricing principles and information disclosure guidelines;
    - the low fixed charge regulations; and

- Part 6 of the Electricity Industry Participation Code on pricing distributed generation.

## 5. Overview of approach to setting prices in 2013

In 2012 Electra undertook a detailed review of the effectiveness of its current pricing structures. As part of this review we wanted to assess the consistency of our prices with the EA's pricing principles as well as build a cost of supply model to test new tariff structure options and verify prices against implied cost allocations.

The key conclusions of the review were that existing prices were broadly consistent with implied cost allocations and were mostly effective in meeting Electra's current pricing objectives. However, the introduction of a Standard Industrial tariff option targeted at time of use (TOU) consumers using more than 40,000kWh per annum was seen as beneficial. This new tariff was split out of the current Triple Saver tariff and has a similar pricing structure. The key difference is that a higher fixed charge applies in order to better recognise fixed costs incurred in providing services to these consumers. This is off-set by a reduced variable charge. This change leaves the current Triple Saver tariff open for use as a mass market TOU tariff option, which could in the future complement any deployment of smart meter technology on the network.

Electra's approach to price setting also includes annual market research with residential and commercial consumers in relation to a variety of issues including charging, reliability and service. The last survey was carried out in December 2012. In addition to this the Electra Trust provides feedback from time to time on behalf of all Electra's consumers that it represents. The new Standard Industrial tariff was not directly discussed with consumers, but feedback from a number of the larger businesses was used to inform the overall review process. Retailers were advised about the Standard Industrial tariff in November 2012 and asked how we might work together to advise all their current Triple Saver customers who could be advantaged by transferring to the new "Standard Industrial" price option after 1 April 2013.

Aside from the changes mentioned above, our price setting process remains largely unchanged and focuses on updating annual prices to recover the new revenue requirement. The key steps in this process include:

- Updating the annual target revenue requirement based on budget forecasts;

- A high-level review of the tariff options to determine if changes are warranted to better meet Electra's pricing objectives, network cost drivers, or as a result of market changes;
- Setting tariffs to recover the target revenue requirement, with consideration of pricing objectives and strategies, cost of supply model analysis, and forecast consumption; and
- Ensuring that the pricing methodology and resulting tariffs are consistent with the applicable regulatory requirements.

Each aspect of this approach is set out in more detail in the following sections. A brief overview of the key characteristics of the network firstly provides useful context for the reader.

## 6. Network characteristics

Electra receives supply from the national grid from two Transpower Grid Exit Points (GXPs). Transpower does not permit continuous connection between these GXPs, but load is transferred between north and south to meet operational requirements. Electra's northern area (Horowhenua) takes 33kV supply at the Mangahao GXP. The southern area (Kapiti) takes 33kV supply at the Paraparaumu GXP.

Due to the historically higher growth on the southern network, prudent and timely up-sizing of the GXP assets to maintain capacity, security, reliability and voltage will be an on-going challenge for Electra and Transpower. The Mangahao GXP is also facing growing capacity constraints.

A meshed 33kV sub-transmission network extends from the GXPs to the main population centres in Paraparaumu, Raumati, Waikanae, Levin and Otaki. The sub-transmission supplies the 11kV distribution network that extends radially, with extensive meshing in urban areas. 11kV supply is stepped down to the 400V network, which supplies all but a handful of consumers who take supply at 11kV.

The utilisation of the network is heavily weighted towards small consumers (i.e. domestic and small commercial users represent approximately 98% of connections and over 80% of maximum demand). This is evidenced by the fact that Electra continues to have the lowest average use per consumer of all New Zealand electricity distribution businesses (i.e.

9,701kWhs per ICP for year ending 31 March 2012). It is partly for this reason that Electra's tariff structure is strongly focussed on the needs of the mass market.

The table below highlights several key network statistics, as sourced from Electra's 2012 information disclosures.

**Figure 2: Key network statistics**

| Consumer Numbers | Maximum Demand (MWs) | Energy Conveyed (GWh) |
|---|---|---|
| 42,595 | 104 | 413 |

*Source: 2012 Information Disclosures*

## 7. Target revenue requirement

In order to determine the level of prices to be charged from 1 April 2013, Electra firstly determines its annual target revenue requirement for the 2014 pricing period (1 April 2013 – 31 March 2014) from internal budgets. This is set out in Figure 3, with the 2013 target revenue requirement provided for comparison. It shows that transmission related costs charged by Transpower make up the majority of the price increase, accounting for over $0.9m (84%) of the change in the revenue requirement. By contrast distribution related costs have only increased by $0.17m in aggregate.

**Figure 3: 2014 Annual Target Revenue Requirement**

| | 2014 | 2013 | Change (%) |
|---|---|---|---|
| Transmission Charges | $8.74m | $7.84M | 11.48% |
| Direct Costs: Operational & Maintenance | $6.48m | $6.10M | 6.23% |
| Indirect Costs: Administration / Overheads | $2.96m | $3.16M | -6.33% |
| Depreciation | $7.49m | $7.09M | 5.64% |
| Return on Investment (before tax) | $9.77m | $10.18M | -4.01% |
| | $35.44m | $34.37M | 3.11% |

We discuss each component briefly below.

***Transmission Charges***

The transmission component of the revenue requirement includes Transpower's:

- *Interconnection Charges:* calculated based on Electra's share of Regional Coincident Peak Demand (RCPD) in the Lower North Island (LNI) region;
- *Connection Charges:* in relation to the provision of GXP connection assets to which Electra's network connects to. Connection assets are also shared with the Mangahao hydro scheme. Electra is responsible for all connection charges associated with the GXP but our consumers share in any avoided interconnection

charges resulting from the notional embedding of the Managahao hydro generation; and

- *New Investment Agreement Charges:* in relation to new connection assets.

Electra is obliged by legislation to pay Transpower, even if Electra is not paid by electricity retailers for these charges.

Transpower also calculates rental rebates and returns these to distributors over the pricing year. As these are not known at the time of setting prices, Electra estimates the rebates on an annual basis and includes this credit in the target revenue required to cover Transpower transmission charges. Any rental rebates received above this estimate are returned to consumers through sales discounts. Electra carries the risk of any deficit.

***Operating Costs***

Operating costs associated with providing electricity distribution services can be classified as 'direct costs', associated with the maintenance and operation of the network, and 'indirect costs', associated with general management and administration.

*Direct Costs***:**

- Maintenance & Operating Costs

  Direct costs include expenditure required to operate and maintain the network. In particular, forecast maintenance costs are driven by our detailed Asset Management Plan (AMP). The target revenue requirement for the forthcoming pricing year reflects the first year of this forecast.

*Indirect Costs***:**

- Administration & Overheads

  These are costs incurred in running the distribution business activities of Electra. They comprise general management, finance, office services and other administrative costs.

- Regulatory Costs

  These costs relate to regulatory compliance and industry levies.

***Capital related charges***

Capital charges reflect a return of the capital investment Electra has made in the network (i.e. annual depreciation) and a return on that capital investment, reflecting target profit levels. These charges reflect the total value of distribution business assets.

## 8. Cost drivers

In order to allocate the target revenue requirement to consumers groups we have considered the relevant drivers of the costs we are seeking to recover. This section sets out the key cost drivers which are relevant to price setting.

The target revenue requirement, presented in Figure 3 above, highlights the costs associated with supplying electricity distribution services. 92% of this revenue requirement is associated with directly investing in, maintaining and operating the network, as well as receiving supply from Transpower. The remaining 8% is associated with general management and administration of the business. The key cost drivers relevant to setting prices are therefore weighted heavily to investment in, and operation of, the network. Electra considers that the key network cost drivers in this respect are:

- the engineered capacity of the network (measured as kVA);
- the length of circuit required to supply consumers (measured as kms);
- number of consumer connections (measured as ICPs); and
- consumer specific asset usage (measured as dedicated asset value or length).

***Network capacity***

The network is designed and operated to meet forecast electricity demand up to an engineered peak and at a level of service consistent with consumers' expectations. As demand reaches system limits, Electra must consider further investments in network capacity to meet demand. Consumer usage of the available network capacity is therefore a key driver of existing and future network costs.

The network currently faces constraints at the two Transpower GXPs, which are both approaching maximum capacity. Electra is in discussions with Transpower to upgrade the capacity of connection assets at these GXPs, but the timing of this is still uncertain. Any additional Transpower charges, as well as costs associated with our own corresponding

network investments, will need to be recovered from consumers unless utilisation of existing capacity on the network can be reduced.

***Circuit length***

The distance between the demand base and the GXP influences the length of lines and cables required to deliver electricity to consumers. Consumers who are further from the main supply areas create relatively higher costs for Electra.

In practice, extensive meshing of the distribution network in urban centres makes it difficult to distinguish line length for a particular consumer, as it is difficult to track the flow of electricity. The key distinguishing distance factor is therefore the relative length of the sub-transmission and distribution feeder network required to supply different load centres.

While a demarcation could conceivably be made between rural and urban consumers on this basis, such a pricing approach is inconsistent with our strong community focus and consumer ownership. It does not reflect the regional benefits that accrue to both urban and rural consumers from services provided to each other, and is potentially at odds with government policy intentions with regards to electricity pricing in rural areas. Therefore, while circuit length is a relevant cost driver we have not factored this into our pricing.

***Consumer connections***

New connections, and upgrades to connections, drive asset-related and ongoing operations and maintenance costs. Electra's policy is for consumers to pay for connection asset costs upfront. Each new consumer also creates operations and maintenance costs, including network operations and planning, fault restoration, maintenance and general administration costs.

***Consumer specific asset usage***

Network costs that directly relate to one consumer or group of consumers should be identified and recovered from those parties where practical. The provision of street-lighting and community lighting is a service category that is identifiable to a dedicated group of consumers.

We have recently considered as part of our pricing review whether consumer specific asset usage could be better reflected in our pricing methodology. In particular, distinctions based on network regions, use of the high voltage network only, and use of dedicated equipment (i.e. transformers) have been considered. We have concluded that there is very little

variation in asset utilisation across consumers (e.g. less than 0.1% of consumers directly connect to 11kV feeders). For those consumers that require dedicated equipment this is generally dealt with at the time of connection, rather than through pricing. Similarly, while Electra operates two distinct networks, both the north and south networks comprise compact geographical areas with similar network and consumers characteristics. We have therefore concluded that there is very little value in recognising dedicated asset usage in pricing, apart from for street-lighting and community lighting.

***Summary of key cost drivers applicable to pricing***

The key cost drivers that are relevant to our pricing methodology are usage of network capacity, the number of connections, and street light consumer specific asset usage.

## 9. Consumer groupings

This section outlines the rationale for the consumer groupings we have adopted for pricing, with reference to our pricing objectives, the primary cost drivers and our pricing history.

Electra's pricing analysis carried out in the mid 1990s (when the SOLEC methodology formed part of the light handed information disclosure regulations for electricity supply businesses) concluded that the small number of large consumers and lack of middle sized commercial load did not justify segmenting the customer base into load groupings. In other words, the substantial common costs of supplying all consumers vastly outweighed the added complication of attributing costs directly to specific individual consumers or small groups of consumers. This was reinforced by the fact that there was a diversity of end user types across the entire network.

Electra as a then line-owner/retailer instead opted to offer the same distribution and energy tariff options to (effectively) all customers (i.e. not differentiating between residential or commercial). This enabled consumers to choose the best option for their circumstances from a pricing tariff menu.

This standard approach of treating all consumers equally was amended when the Triple Saver tariff band was introduced, in recognition of the ability and desire of medium to large consumers to manage peak load. This year, Electra has also decided to introduce a new Standard Industrial tariff option. Based on the Triple Saver pricing structure, albeit with different prices, this new tariff option is targeted at large TOU consumers with annual consumption in excess of 40,000kWhs. The distinction between the Triple Saver and

Standard Industrial options has been made to better recognise the difference between medium and large TOU consumers, their usage of the network, and the proportion of fixed and variable charges attributed to each. Looking forward, we anticipate that the existing Triple Saver tariff could eventually be repackaged as a mass market TOU tariff for consumers with smart meters (which are expected to be rolled out on our network over time).

Another exception to the standard approach is made for street lighting and community lighting, which accommodates use of dedicated assets across known usage times and volumes.

Tariffs have also been developed to provide strong signals to encourage consumers to shift their usage off-peak. This aligns pricing to the key capacity utilisation cost driver and the known GXP capacity constraints. A number of controlled load and TOU tariff options are available to consumers that incorporate signals to incentivise off peak consumption, but which also give consumers options to satisfy their own requirements.

The tariff options we have applied are set out in the following section.

## 10. Tariff options and the approach to setting tariffs

This section sets out the 2013 tariff options, developed based on the above considerations, and our approach and rationale to setting final unit tariffs for each. Figure 4 provides a brief description of each of the tariff options that Electra offers:

**Figure 4: Tariff options offered by Electra**

| Tariff Group | Description | Users (est.) | 2012 kWhs |
|---|---|---|---|
| **Anytime/ Paygo** | A standard price for using electricity at any time of the day. Can be used in conjunction with other TOU tariff options.<br>PayGo is the alternative tariff label for Anytime consumers that are on pay as you go retail tariffs. | 37,928 | 200,486,118 |
| **Managed Saver** | A price which consumers may choose for hot water heating (and for other uses) on the basis that they accept interruptible supply in return for a lower price. Electra is able to switch off the load for up to 4 hours each day at peak times. | 24,092 | 55,527,101 |
| **Combined** | A combination of Anytime and Managed Saver prices on a weighted average (60:40) basis. This was implemented to assist consumers who wanted to make use of either Thrifty or Super Thrifty tariffs, while retaining Anytime and Managed Saver options, but did not have room on their switchboard for a third meter. From 1 April 2009 this option was closed to new | 3,342 | 23,691,520 |

| | | | |
|---|---|---|---|
| | consumers. | | |
| **Triple Saver** | A three rate (peak, off-peak and night) TOU option for medium to large commercial consumers with the ability to either move load or otherwise take advantage of price signals. As from 1 April 2011, Electra limited the triple saver option to those consumers with annual consumption in excess of 25,000kWh for new connections. Existing consumers who have elected this tariff can continue to use it. | 671 | 110,183,571 |
| **Standard Industrial** | A new three rate (peak, off-peak and night) TOU option differentiated from Triple Saver by higher fixed and lower variable charge components. It is targeted at larger commercial consumers and still rewards the ability to either move load away from peak, or otherwise take advantage of price signals.<br>This tariff is available from 1 April 2013. As it will advantage larger electricity users it is expected that many will migrate from Triple Saver to take advantage of the benefits that it offers. | 0 | 0 |
| **Night/Day** | For continuous electricity supply at two time of use prices: A lower off-peak rate set for the 10 hours between 9pm and 7am and a higher peak-rate during the day. | 1,602 | Night: 5,099,722<br>Day: 7,651,779 |
| **Super Thrifty** | A night rate between 11pm and 7am reflecting the large amount of available capacity on the network at this time. | 682 | 1,744,253 |

| | | | |
|---|---|---|---|
| | Designed for hot water, storage heating or under floor heating loads. Anytime rates apply outside these times. | | |
| **Thrifty** | As for Super Thrifty with the addition of an afternoon heating boost. | 2,023 | 4,284,279 |
| **Street Lighting** | For connection and management of street lights. | - | 3,170,839 |
| **Community Lighting** | For connection and management of community lighting (e.g. sports fields, shop verandas) | - | 572,282 |
| **Total** | | 43,543 | 412,411,464 |

All tariff groups are charged a variable tariff levied on kWh consumption and a fixed daily charge. Separate consumption based variable charges are levied for TOU and controlled load tariff options. Fixed and variable tariffs are also split into distribution and transmission tariff components. The latter seeks to recover Transpower's transmission charges.

Each tariff option has been specified to achieve certain objectives. However, Electra is reliant upon electricity retailers to fairly reflect our prices in their own tariffs. Retailers must also supply accurate electricity consumption data by time of day.

**Cost Allocation**

In 2012 Electra reviewed its pricing and as part of this developed a new cost of supply model which allocates target revenue to consumer groups and tariffs based on appropriate cost allocators derived from network cost drivers. The outputs of this model helped inform our pricing decisions, including our tariff setting process, but were not applied explicitly to prices. Rather the model was used to:

- test whether current prices are consistent with implied allocations of costs to consumer groups and tariffs;

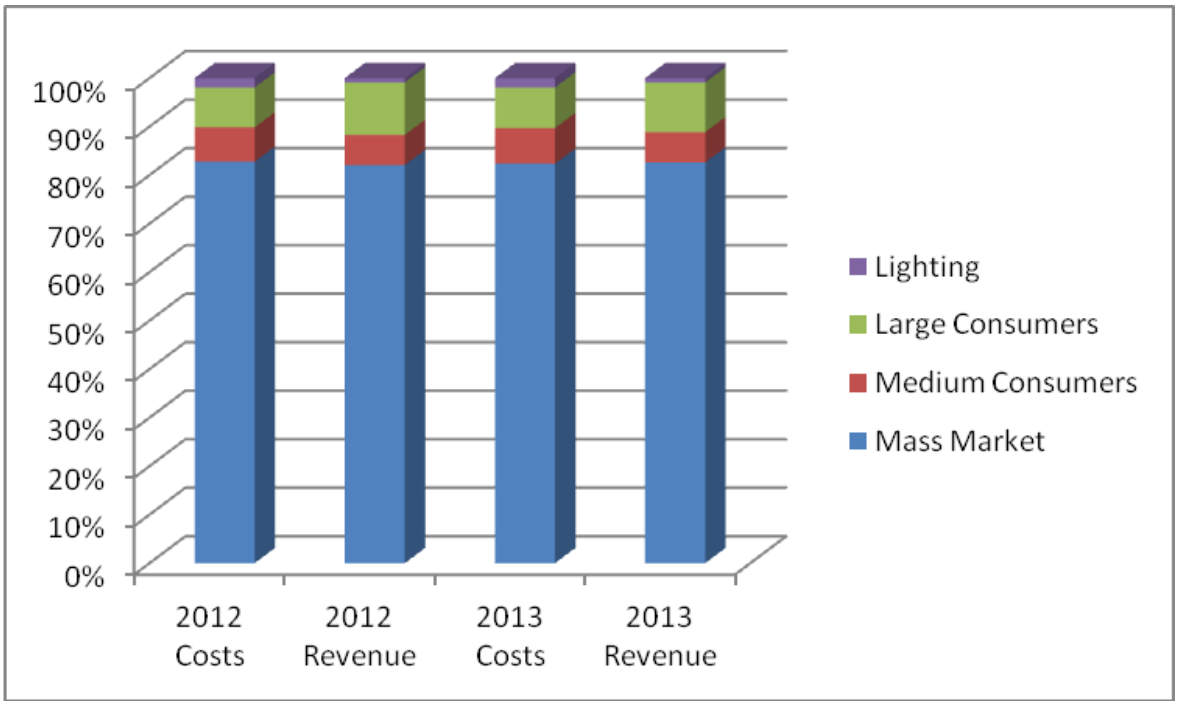
- test the current assumption that all consumers comprise a single load group and examine whether there is a definable layer between large consumers and the mass market; and
- analyse alternative approaches to setting fixed and variable charges, which may better encourage efficient usage during peak periods, while still complying with the low fixed charge regulations.

The model allocates the various components of the target revenue requirement on the following basis, consistent with the cost drivers identified above:

- Network costs (i.e. capital costs and direct costs) are allocated to each group by their relative usage of network assets weighted by the value of those assets. Streetlight assets are directly attributed to the streetlight consumer group for this purpose;
- Transmission costs are allocated based on a share of each consumer group's estimated coincident maximum demand (CMD) in recognition of the fact that Transpower charges are based on providing a level of capacity either through the interconnection charge (based on RCPD) or connection charge; and
- General administration and overhead costs, system management and operations, industry levies, and depreciation on non-system fixed assets are allocated by ICPs. A weighting of ICPs and kWhs was used for some cost items in order to reflect that larger consumers are likely to create relatively higher costs.

Our findings are that the allocation of costs to consumer groups implied by the model are broadly consistent with our existing pricing structures. Figure 5 (over page) summarises our analysis and highlights that 2012 prices for the mass market, triple saver and street light tariff groups are broadly in line with cost allocations. 2013 tariff proportions, taking into account the introduction of a new Standard Industrial tariff, give us confidence that 2013 prices are more consistent with implied cost allocations.

**Figure 5:** ***Preliminary cost allocations versus revenues***




Our modelling also showed us that additional segmentation of medium and large consumers for pricing purposes has merit. As a result we have introduced a Standard Industrial option which is offered from 1 April 2013. The new tariff seeks to recover a higher proportion of fixed costs from this group in return for lower variable charges while better reflecting actual costs.

***Variable charges***

A variable tariff based on kWh consumption is applied to all tariff groups to proxy the network capacity considerations discussed above. Consumption is currently used as this readily aligns with standard industry practice, low fixed charge regulations, and with retailers' existing pricing structures. While a charge based on relative share of coincident maximum demand would more accurately align with the capacity cost driver, it is impractical to apply this to the mass market due to the lack of appropriate metering data. A maximum demand charge can, however, be proxied through the combination of a variable charge levied on time of use periods which are reflective of network constraint periods. Electra has adopted such an approach and offers a number of variable tariff options that utilise peak, shoulder and off peak charges. These tariffs are designed to incentivise reduced usage during peak periods by setting higher variable prices at peak periods and lower prices during the shoulders and off peak periods.

Controlled load tariff options are also offered. These permit Electra to disconnect load for up to four hours a day, typically either during times of network congestion or in order to facilitate timely restoration of network faults.

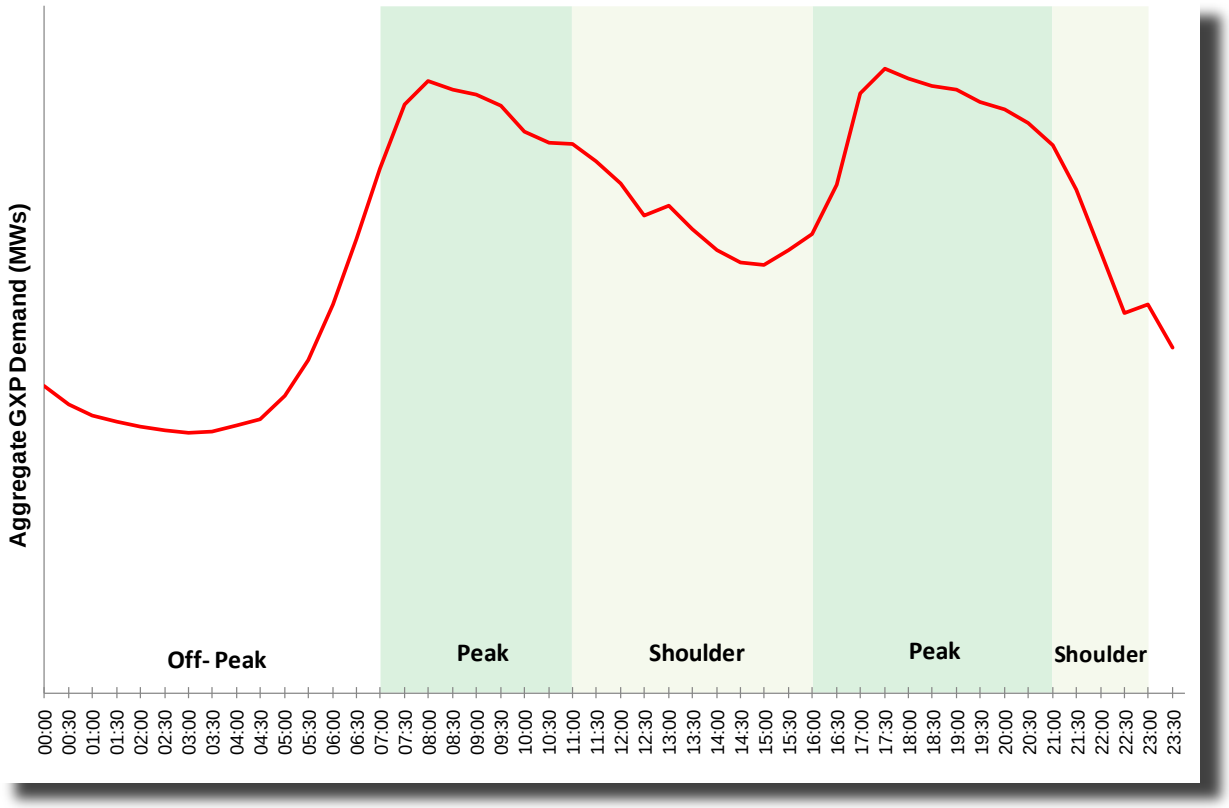
Figure 6 sets out the TOU periods used in our TOU tariff options.

**Figure 6:** ***Actual variable pricing periods***

| **TOU Tariff Group** | **TOU Periods** |
|---|---|
| Super Thrifty | • Off-peak rate from 2300-0700<br>• Other times charged at the Managed Saver or Combined rates |
| Thrifty | • Off-peak rate from 2300-0700<br>• Boost from 1300-1600<br>• Other times charged at the Managed Saver or Combined rates |
| Night/Day | • Off-peak rate from 2100-0700<br>• Peak rate from 0700-2100 |
| Triple Saver and Standard Industrial | • Night rate from 2300-0700<br>• Peak rate from 0700-1100 & 1700-2100<br>• Off-peak rates from 1100-1700 and 2100-2300 |

Figure 7 provides an example of the typical peak-demand-day profile and associated pricing periods.

**Figure 7:** ***Typical TOU periods relative to typical peak-demand-day profile (illustrative)***




### *Fixed charge*

The introduction of the low fixed charge regulations in 2004 provided an opportunity for Electra to reconsider its tariff structures and consumer groupings. At this time it was confirmed that the characteristics of the network continued to justify no further segmentation for tariff setting purposes. Accordingly, in 2005 Electra opted to apply the 15 cent per day low fixed charge, consistent with the regulations, to all consumer groups and to continue with consumption based pricing with variable tariff options reflective of contribution to the peak.

An exception to this has recently been made for the new Standard Industrial tariff which is charged a fixed daily charge of 70 cents per day. This change seeks to better align fixed charges for large consumers with the fixed costs attributable to these consumers. We consider that a fixed daily charge appropriately recognises per connection cost drivers and our need for revenue stability.

The low fixed charge is split into transmission and distribution components with the transmission fixed charge of 10 cents per day and distribution fixed charge of 5 cents per day. The setting of transmission charges is discussed further below.

**Transmission charges**

Electra on-charges Transpower charges to electricity retailers on a cost-recovery basis plus a small administration charge. Fixed and variable transmission tariffs are set to recover transmission costs using forecasts of consumption and connections. This calculation accommodates different variable (kWh) charges relating to off peak and peak pricing.

Any over recovery of transmission charges is returned to consumers through the sales discount. Any under recovery is borne by Electra.

***Power factor charge***

Electra reserves the option to apply an additional charge in the situation where a commercial consumer has a power factor materially below 0.95 lagging. This charge allows Electra to signal that the consumer needs to improve its power factor and has the ultimate goal of helping to avoid unnecessary network reinforcement.

***Distributed Generation***

Electra has less than 20 distributed generation sites connected to its network. These are all small sites (less than 5kW) supplying at 400V. Electra uses standard charging for the import meters only and does not charge for distributing any energy exported. Electra does not make direct payments to distributed generation for avoided transmission. Avoided costs are recognised in our decision not to charge for distribution services. We believe this approach is consistent with the requirements of schedule 6.4 of Part 6 of the Electricity Industry Participation Code, which requires distributors to price distributed generation at no more than incremental cost, taking into account any avoided costs.

Mangahao power station near Shannon is notionally embedded for transmission purposes, but is not connected to Electra's network nor does it use Electra's distribution services.

***Non-Standard pricing***

Electra currently does not have any non-standard pricing arrangements. However, we will assess any requests for non-standard pricing as required.

## 11. 2013 Prices

Figure 8 details Electra's 2013 electricity distribution prices and compares these to 2012 prices. It shows that the proportion of the target revenue requirement sought from each tariff is similar to that recovered in 2012.

**Figure 8: 2013 Combined Prices (excluding GST)**

**Combined Price option**

| | | 2013 NEW (c/unit) | % 2013 revenue | 2012 OLD (c/unit) | % 2012 revenue |
|---|---|---|---|---|---|
| **Anytime/Paygo** | | 11.181 | 62.57% | 10.330 | 61.20% |
| **Managed Saver** | | 3.420 | 5.30% | 3.420 | 5.61% |
| **Combined** | | 8.662 | 5.73% | 8.000 | 5.60% |
| **Night/Day** | **Night** | 1.110 | 0.16% | 1.110 | 0.17% |
| | **Day** | 11.722 | 2.50% | 10.840 | 2.45% |
| **Super Thrifty** | | 0.960 | 0.05% | 0.960 | 0.05% |
| **Thrifty** | | 1.150 | 0.14% | 1.150 | 0.15% |
| **Street lighting** | | 8.521 | 0.75% | 7.830 | 0.73% |
| **Community Lighting** | | 9.851 | 0.16% | 9.080 | 0.15% |
| **Triple Saver - LFC[1]** | **Night** | 0.960 | 0.11% | 0.960 | 0.12% |
| | **Off Peak** | 2.370 | 0.42% | 2.370 | 0.44% |
| | **Peak** | 11.979 | 1.93% | 11.080 | 1.89% |
| **Standard Industrial[1]** | **Night** | 0.910 | 0.16% | 0.960 | 0.18% |
| | **Off Peak** | 2.280 | 0.60% | 2.370 | 0.66% |
| | **Peak** | 10.752 | 2.59% | 11.080 | 2.83% |
| **TOU Loggers - Standard Industrial[1]** | **Night** | 0.910 | 0.46% | 0.960 | 0.51% |
| | **Off Peak** | 2.280 | 1.65% | 2.370 | 1.81% |
| | **Peak** | 10.752 | 7.70% | 11.080 | 8.40% |
| **Supply charge # customers** | | 0.150 | 6.55% | 0.150 | 6.94% |
| **Supply charge TS & TOU** | | 0.700 | 0.48% | 0.150 | 0.11% |

Note: 1 – revenue based on estimated uptake of the new Standard Industrial tariff option. 2012 prices based on Triple Saver tariff option.

The key changes to 2013 prices arise from:

- Updating the target revenue requirement. As shown in Figure 3, the majority of this increase relates to increases in Transpower charges.

- Introducing a new Standard Industrial Tariff. The quantitative impact of this change is not yet known as consumers are able to self-select this tariff option. Consumers that adopt this tariff option will be charged higher fixed charges but lower variable charges with a slightly lower overall price, when compared to the Triple Saver option.

## 12. Pricing strategy

Last year's pricing strategy was to complete a review of prices to ensure they are consistent with our pricing objectives and the new pricing regulations. Upon completion of this review our pricing strategy for the next five years (including 2013) now turns to:

- Monitoring uptake of the Standard Industrial tariff option and refining pricing in response to consumer feedback and usage behaviours;
- Increasing the differential between peak and non-peak tariffs to encourage further reductions in consumption during peak periods to avoid further expenditure on network reinforcement. This will be carried out incrementally to avoid price shocks ;
- Monitoring the consistency of prices against our cost of supply model outputs (as required); and
- Monitoring deployment of mass-market smart meters on the network and investigating, where necessary, potential TOU tariff options that can make use of this technology (e.g. adjusting Triple Saver to the mass market).

## 13. Consistency with the Electricity Authority's (EA's) pricing principles

This section describes the extent to which Electra's pricing methodology is consistent with the EA's pricing principles. In preparing this document we have also had regard to the EA's Information Disclosure Guidelines and to the observations made by Concept Consulting Group in their sample review of pricing methodologies, undertaken in 2011 on behalf of the EA. Electra considers its prices are consistent with the EA's pricing principles as set out below.

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

*(i) being subsidy free, that is, equal to or greater than the incremental costs and being less or equal to standalone costs, except where subsidies arise from compliance with legislation and/or other regulation*

Electra agrees that it is both economically and commercially desirable for its charges to be subsidy free. This pricing principle sets out that prices are subsidy free where they fall within the range of incremental cost and stand alone cost, as illustrated by the following equation.

*Incremental Cost ≤ Prices ≤ Stand Alone Cost*

We consider 'incremental cost' means the additional cost incurred in adding one more consumer to the network. This is likely to comprise the connection costs, any costs associated with reinforcing the network in relation to that consumer, as well as additional administration, operations and maintenance costs. As already discussed, Electra ensures its prices are greater than incremental connection asset costs outside of its distribution tariffs, as part of its network extensions policy. As part of this consumers typically must pay for connection assets, subject to a rebate. Accordingly, distribution prices will typically be in addition to incremental connection asset costs.

Any other incremental costs (e.g. operations and maintenance) resulting from a new connection will fall within our overall revenue requirement. As highlighted in the previous section, our cost of supply modelling exercise reveals that costs are being apportioned broadly consistent with implied cost allocations based on appropriate cost drivers. . As such, we would not expect prices to exceed incremental operating costs.

Electra considers 'stand alone cost' means the cost to provide similar distribution services to one sub-group of consumers, as if the other groups did not exist. In practice, it is quite difficult to estimate the costs associated with a hypothetical stand alone network that would be required to service one consumer group. This is partly because Electra's consumers are free to choose which tariff group they belong to and are generally uniformly spread across our meshed network.

However, at a conceptual level, we would expect to apply the same network configuration in order to supply each sub-group of consumers on a stand-alone basis. This is due to extensive meshing and spread of consumer types across the network. While it is possible that the engineered capacity of each stand alone network could be optimised in recognition of the smaller consumer sub-group, we would not expect this to

offset any loss of scale efficiencies that result. In addition, our preliminary cost allocation analysis (discussed in the previous section) use cost allocators which are derived from network cost driver relationships (i.e. CMD, ICPs). We would not expect prices to exceed stand alone cost where they align with such allocations.

It should also be noted that cost allocations between incremental and stand alone cost are likely to be distorted by regulations which affect prices. For example, Electra's choice of applying the low fixed charge requirement across all consumers (apart from the new Standard Industrial tariff) may mean that consumers using more than 8000KWh pay relatively more compared to smaller customers due to the averaging required to achieve standard variable prices for each tariff option. This is currently a pragmatic solution in response to a legislated requirement, and is consistent with achieving tariff simplicity and transparency for stakeholders (refer below). The move to a higher fixed charge for the new Standard Industrial tariff will go some way to resolve this.

*(ii) having regard, to the extent practicable, to the level of available service capacity*

Electra generally does not differentiate prices by service capacity as all consumers are treated equally and are provided the same tariff choices. This is reflective of the homogeneous nature of consumers supplied by Electra. Exceptions are made for street and community lighting, which reflects use of dedicated asset, and the Triple Saver and Standard Industrial tariffs which are to the needs of medium and large consumers who can more effectively manage their peak time usage.

Further, by offering differential prices for peak/off-peak loads, Electra rewards consumers (through lower prices) based on their ability to limit consumption during times of network congestion. Similarly, our controlled tariff option rewards consumers that offer up interruptible load. As discussed earlier, Electra believes that its current peak period prices are a reasonable proxy for capacity charges.

*(iii) and having regard to the extent practicable, the impact of additional usage on future investment costs*

Electra considers that its current variable pricing structure appropriately signals the impact of each extra unit on future investment costs, particularly when combined with

time of use and controlled load pricing options. It has always been Electra's objective to use its prices to signal the costs of meeting peak demands and to encourage consumers to consider the benefits of moving their usage away from peak periods by rewarding them with lower off-peak prices.

Higher variable charges at peak times are a clear signal to consumers of the benefits of being more energy efficient. The core of these signals is the controlled rate for hot water heating, and loads that are willing to trade lesser hours of supply at peak times for a lower price (e.g. at night). The night/day tariff options and peak rates are designed to reflect the extra investment required to meet demand on an ongoing basis.

(b) *Where prices based on "efficient" incremental costs would under recover allowed revenues, the shortfall is made up by prices being set in a manner that has regard to consumers' demand responsiveness, to the extent practicable.*

This principle permits pricing based on a consumers' willingness to pay. All consumers on Electra's network are offered exactly the same tariff options and consumers themselves select their pricing plan. We consider the provision of a range of tariff choices reflective of different usage profiles is perhaps one of the best ways of aligning prices to consumer willingness to pay.

(c) *Provided prices satisfy (a) (i), prices are responsive to the requirements and circumstances of consumers in order to –*

*(i) discourage uneconomic bypass*

Electra's current pricing methodology combined with the nature of its consumer base has not resulted in any uneconomic bypass of its network.

*(ii) allow negotiation to better reflect the economic value of services and enable consumers to make price/quality trade-offs or non standard arrangements for services*

Electra has no non-standard pricing arrangements for services. In reality, the nature of Electra's consumer base has not resulted in a demand for such an approach.

Requests for price/quality tradeoffs (e.g. the provision of dedicated equipment) are typically dealt with in our network extensions policy.

*(iii) where network economics warrant, and to the extent practicable, encourage investment in transmission and distribution alternatives (e.g. distributed generation or demand response) and technology innovation.*

Electra's managed tariff options and thrifty tariffs have provided incentives to consumers to invest in night store equipment and controllable hot water cylinders. This effectively provides for a consumer demand response that reduces usage during times of network congestion.

Distributed generation is not charged for distribution services (only for import meters). This encourages connection of distributed generation, consistent with Part 6 of the Electricity Industry Participation Code, and recognises the local benefits arising from the connection of such generation in terms of reduced peak load.

Electra has also entered into a joint venture in the Mangahao hydro scheme, which is notionally embedded in our network. As part of these arrangements, Electra is solely responsible for the Transpower Mangahao GXP connection costs. In return, our consumers share in any avoided transmission cost savings. This contractual arrangement is an example of a transmission alternative that acts to lower prices to consumers.

(d) *Development of prices is transparent, promotes price stability and certainty for consumers, and changes to prices have regard to the impact on stakeholders*

Electra's prices are published in the local newspapers and are available on its website. The nature of Electra's ownership ensures that the concerns of consumers (who are our owners) are taken into account when considering price changes.

In introducing the new Standard Industrial tariff we have adopted an approach in which consumers self-select this new tariff. This hopefully avoids price shock issues that can result from tariff change.

We have signalled in Section 12 of this document the potential impacts on consumers of our future pricing strategy.

(e) *Development of prices should have regard to the impact of transaction costs on retailers, consumers and other stakeholders and should be economically equivalent across retailers.*

Electra's relatively simple pricing structure ensures low transaction costs for all. All retailers operating on Electra's network pay the same prices, related to either the options their particular customers choose, or more particularly how they choose to pass through Electra's charges. We are unaware of any complaints being made by retailers regarding our pricing structures and most retailers pass on our prices to end consumers as we have set them. This suggests that retailers are comfortable with our pricing approach.

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# CERTIFICATION FOR YEAR-BEGINNING DISCLOSURE – PRICING METHODOLOGY

We, Patricia Frances McKelvey and Neil Francis Mackay, directors of Electra Limited certify that, having made all reasonable enquiries, to the best of our knowledge that:

a) the following attached information of Electra prepared for the purposes of clause 2.4.1 of the Electricity Distribution Information Disclosure Determination 2012 in all material respect complies with that determination.

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

Patricia Frances McKelvey – Director

27/02/2013
Date

Neil Francis Mackay - Director

27. 2. 2013
Date