



Pricing Methodology



1 April 2013

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Revision History

Version Number	Reviewed By	Review Date	Changes Made to Methodology	Adjustment to Distribution Prices (Domestic)	Adjustment to Transmission Prices (Domestic)
0	R Griffiths	April 2004	First issue	First issue	First issue
1	R Griffiths	April 2005	Nil	2.6%	5.0%
2	R Griffiths	April 2006	Nil	0.0%	16.6%
3	R Griffiths	April 2007	Nil	2.0%	(4.8%) Previous Transmission increases reversed
4	R Griffiths	April 2008	Nil	3.0%	0.0%
5	R Griffiths	April 2009	Nil	4.0%	0.0%
6	R Griffiths	April 2010	Nil	5.0%	0.0%
7	R Griffiths	April 2011	Nil	5.5%	4.6%
8	R Griffiths	April 2012	<u>Nil</u> but more description and clarity added to comply with the Guidelines	4.3%	0.0% Except for the 44 large industrial consumers where the increase was 4.7%
9	R Griffiths	April 2013	Nil	3.33%	35.58%

Glossary

AMD	Anytime Maximum Demand
CMD	Coincident Maximum Demand
CPI	Consumer Price Index
Grid	Transpower's National Transmission System
GXP	Grid Exit Point
ICP	Installation Control Points for each consumer
Kilowatt	Measurement of electricity demand at any time (volts x amps)
Kilowatt hour	Measurement of electrical energy delivered each hour
ODV	Optimised Depreciated Value
RCPD	Regional Coincident Peak Demand
TOU	Time of Use (measurements every half hour)

1 INTRODUCTION

Westpower owns and operates the electricity distribution assets throughout 18,017 sq kms of the West Coast of the South Island, comprising 2,085 kms of lines and cables supplying 13,000 consumers of electricity. Westpower is one of fourteen distribution companies in the South Island as shown in the cover page graphic.

This document explains the methodology that has been developed by Westpower to charge for its electricity delivery services to electricity retailers with whom all consumers hold supply contracts. Included is the information required by the Electricity Distribution (Information Disclosure) Requirements 2008 along with requirements 22 and 23 of the Electricity Information Disclosure Requirements issued 31 March 2004 (Original Requirements), which continue to apply.

Requirement 22 of the Original Requirements requires electricity distribution businesses (distributors) to publicly disclose the methodology used as at the beginning of each financial year to determine the line charges payable or to be payable by consumers connected to the distribution network.

It should be noted these charges are not transparent on consumer's invoices for electricity as electricity retailers re-bundle Westpower's charges to best meet their needs.

The tariff is based upon charges applied at each premise Installation Control Point (ICP) as measured by the electricity meters installed there.

For small and medium sized consumers, transmission charges are averaged and recovered in proportion to the consumer's use of electricity. On the other hand, it has been possible to pass transmission charges through to large electricity consumers in a direct and transparent fashion, which provides an economically efficient pricing signal these consumers can respond to.

Westpower's pricing methodology has been prepared in accordance with the Distribution Pricing Principles and Information Disclosure Guidelines published by the Electricity Commission in February 2010.

Comments and suggestions for improvement are welcome at any time addressed to:

The General Manager, Assets and Engineering Services, Westpower Limited, Greymouth.

2 PRICING PRINCIPLES and OBJECTIVES

Following consultation with the industry in February 2010, the Electricity Commission released the final Pricing Principles and Information Disclosure (Guidelines), which are intended to assist distributors to compile their disclosures. According to the Guidelines, distributors are required to prepare a statement of their pricing alignment with the principles, and disclose this by 31 March 2013. The Authority will then review these disclosures with a view to informing further work in this area.

Westpower sets its prices to recover sufficient revenue to cover all its costs, including the cost of capital, to operate its business and the cost of national transmission charges payable to Transpower. Westpower, like all line companies, is a monopoly business as it is not feasible to replicate the distribution network to provide realistic competition in prices.

To ensure monopoly practices do not occur in pricing, the Government imposes regulations on Westpower to ensure fair tariffs are produced for its services. Westpower complies with these regulations when setting prices.

The structure of the pricing reflects the economic costs of providing services which allows consumers to make efficient decisions about which forms of energy to use and when to use it. This contributes to the overall economic welfare of the community.

2.1 Regulatory Issues

Westpower is currently exempt from price regulation under Part 4 of the Commerce Act, but continues to apply the general principle that Transpower's transmission charges and levies paid by Westpower to fund the Commission and the Authority are passed through as directly as possible.

Furthermore, Westpower is required to provide particular tariff options to low use consumers, which effectively provides a subsidy to such consumers.

In addition, Westpower is also required to keep changes in rural charges consistent with those paid by urban consumers, reflecting a subsidy between urban and rural consumers. In part this is offset by the lower service level provided to rural consumers, as it takes longer to restore faults to remote locations, and such consumers do not benefit from the meshed network that is available in an urban environment.

2.2 Economic Considerations

To be economically efficient, Westpower must set its prices in such a manner that consumers can weigh up the value of the service compared to other similar alternatives and as a consequence, Westpower can invest in the network at an appropriate level to meet future needs.

Electricity distribution networks are a long term investment with asset lives commonly in excess of 60 years. Such assets require consideration of long term operational costs and if consumers elect to use our services based on pricing, the long term investment is economically efficient.

Westpower's pricing is therefore based on the long term marginal cost of operating the business. This means repairs and replacements required to maintain the existing services are completed to extend the life of the asset as long as practical, which is economically efficient over the long life of the asset but incurs slightly higher costs than the network demand requires in the year the work is completed.

2.3 Equitable Considerations

Westpower strives to treat all consumers equitably when setting prices. Where possible, assets are allocated to the connections that use them. It is recognised consumers all benefit from the utilisation of shared assets so prices are averaged over large groups of consumers with similar usage patterns. Price signals are applied to various tariffs to assist with maximising the efficient utilisation of the assets and pricing criteria are re-set on an annual basis to reflect changes in usage patterns of consumers.

2.4 Return on Investment

Westpower considers setting a fair return on capital for the business to be a responsible action. Westpower is exempt from the pricing regulations but generally aligns its pricing with the principles that would apply under those regulations. With prices effectively controlled and costs rising, a consistent return on capital helps drive efficiencies in the business.

3 PRICING METHODOLOGY

Westpower, like all other electricity distribution companies, has two distinct costs to recover:

- Transmission charges paid to Transpower for use of the national grid to get electricity from the electricity generators to consumers; and
- Distribution costs to maintain and operate the local distribution assets.

Both of these costs are basically fixed in value each year (with minor annual adjustments in response to pricing signals and inflationary increases). Telecom recover similar fixed costs by applying high fixed line rentals to customers but Government regulation prevents line companies from similar actions.

There are several options available to line companies when setting tariffs.

3.1 Tariff Options

The most common options for pricing are:

- 1) Pricing based on the demand placed on the network (in kilowatts)
- 2) Pricing based on consumer individual usage (in kilowatt hours)

Both options have variations. Kilowatts may be measured directly by meters or assigned by average group demand. Kilowatt hours can be measured by meters or derived from the electricity market using the information provided by electricity retailers.

Westpower uses demand kilowatt measurements for larger consumers where their use of distribution assets is easily defined. Kilowatt hour usage measurements are used for large groups of consumers whose usage within the group are similar.

Kilowatt hour measurements are based on readings from consumer's meters known as ICP pricing. Westpower reconciles kilowatt hours used by electricity retailers for the sale of electricity to quantities measured at the GXP but chooses not to use this method, known as GXP pricing, for calculating line charges as retailers are generally not readily receptive to this approach.

GXP pricing is the simplest and lowest cost method for calculating line charges and has the benefit of reducing loss factors that influence local electricity prices. However, with electricity retailers unwilling to accept this option most line companies, including Westpower, use ICP pricing.

3.2 Overview of Methodology

Westpower's charges relate directly to its costs of delivering electricity to consumers and they include:

- Transpower's transmission costs;
- The cost of operating capital including depreciation, taxation and return on investment;
- Operation and maintenance costs;
- Administration costs; and
- Payments to distributed generators.

These costs are allocated to consumers based on the consumer groups that identify consumers by their usage patterns; see section 3.3 for further details.

Transmission costs, including avoided transmission costs paid to distributed generators, are allocated to each group by Westpower's assessment of each group's use of the transmission system, based on coincident peak electricity demand.

Administration costs are allocated per connection and all other distribution costs are allocated by the use of the asset based on the regulatory value of the asset (re-valued optimised depreciated replacement cost).

The costs are recovered by a mixture of fixed and variable charges to consumers.

Fixed charges for domestic consumers are regulated by Government, see:

<http://www.legislation.govt.nz/regulation/public/2004/0272/latest/DLM283614.html>

Recovering all the remaining domestic costs by variable charges would result in unrealistically high variable charges.

The Government realises this and caps the increase in charges by further regulation, see:

<http://www.comcom.govt.nz/electricity-default-price-quality-path/>

While Westpower is exempt from this regulation by way of its Trust ownership, the Commerce Commission keeps a watching brief over exempt line companies to ensure prices are not too far out of line with expectations. The regulations allow the Commission to intervene if prices are considered unacceptable.

The result is Westpower under recovers all costs relating to domestic distribution and domestic charges are therefore subsidised by other consumers. The amount of subsidy is defined in the calculations below.

Charges are further complicated by the Government Policy Statement which expects any changes in rural domestic prices to be in line with urban domestic changes. The cost of supply to rural consumers is considerable higher than to urban consumers and charges do not currently reflect this cost difference. Urban consumers, therefore, subsidise rural consumers and this practice will continue under current legislation.

The variable charges use information collected from meters at consumer's premises. This is known as ICP pricing and is the method of calculation preferred by electricity retailers.

3.3 Consumer Groups

Historical consumer groupings have been retained to provide customers with a degree of stability. Consumers are allocated to groups on the basis of their expected load pattern.

Category 1	Consumers with load less than 15 kVA;	12,209 connections
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All domestic consumers and small non-domestic businesses fall into this category. The two are distinguished because each place different demands on the network and hence have different tariff structures.

The tariff is predominately based on consumer usage of electricity (variable charges)

Category 2 Greater than 15 kVA capacity but not Industrial; 814 connections

Medium size businesses fall into this category as they use less of the network than Category 1 consumers but place a higher demand on the assets they do use.

This high demand is responsible for higher costs and the tariff is therefore demand based with the margins collected by usage charges.

Category 2 TOU Greater than 100 kVA and less than 200 kVA; 18 connections

Large businesses with large electrical loads are usually sited not far from zone substations and use less of the network as a result. Their usage is monitored by meters measuring consumption every half hour so the actual demand placed on the network at any given time is easily measure. Specific charges can be applied to demand in consultation with the consumer.

Street Lighting Public utility lighting;

Westpower supplies a distribution network for public lighting and recovers costs as part of its community sponsorship through community ownership.

Bulk Greater than 200 kVA capacity; 21 connections

Tariffs are based on demand on the network and coincident demand at the source Grid Exit Point.

Large Bulk Greater than 2500 kVA capacity; 3 connections

Tariffs are based on demand on network and coincident demand at the source Grid Exit Point.

Otira Supply to the Otira Tunnel; 1 connection

Otira constitutes of an isolated GXP that is not interconnected with the rest of Westpower's network, and is dedicated almost solely to the supply of KiwiRail infrastructure. This area has been ring-fenced in terms of costs (both fixed and variable) that can rightly be attributed to the major consumer.

4 DISTRIBUTION COST STRUCTURE

4.1 Cost Drivers - General

All line companies in New Zealand have different cost drivers. Table 1 below is designed to provide an indication of relevant cost for various types of networks. The names provided are used as a guide only to indicate how costs vary for the conditions placed on each line company purely by their location and type of network.

The common cost driver for all line companies is the electricity demand on the network, known as the “Load Factor”. Most companies have very light night time loads. During the day time, some have relatively flat loads and some, like Westpower, have morning and evening peaks with a fall-off of load during the middle of the day.

The higher the load factor, the more efficient the use of the network and the more efficient the recovery of the cost. At 64%, Westpower’s load factor is slightly below the industry average, despite heavy use of load control and good pricing signals to move load from peak periods to off-peak periods. This means our network is slightly over-built to cope with the peak demands for short periods of time and hence our cost structure is slightly higher than companies with the average load factor.

Table 1 – Cost Variations due to Location

	Low Cost	Medium Cost	High Cost	Very High Cost
Urban	Nelson			
Urban/Rural		Orion		
Mainly Rural			Centralines	
Rural Remote				Westpower
Inland		Orion	Centralines	
Coastal	Nelson			Westpower
Predominantly Flat	Nelson	Orion	Centralines	
Rugged				Westpower
Square in Area	Nelson	Orion	Centralines	
Long and Skinny				Westpower
Overhead Construction		Orion	Centralines	Westpower
Underground Construction	Nelson			

4.2 Specific Cost Drivers

- **Transmission.** Westpower has one of the highest transmission charges in NZ due to its remote location from the central grid. It is almost twice the national average and constitutes 22% of Westpower’s line charges. The transmission charges are driven by the domestic evening load which is difficult to change with pricing signals.
- **Coastal Terrain.** Salt air corrosion on the West Coast is severe, so all the components require additional protection such as double dipped galvanising and marine grade stainless steel. These present higher costs than inland areas. Glass insulators are often used and these are more expensive than the traditional polymer insulators.
- **Rugged Terrain.** Rugged hills combined with high winds necessitate stronger structures than flat land so the strength and size of our components are determined by physical conditions rather than electrical load, with associated higher cost.
- **Long Narrow Coastal Strip of Land.** Westpower’s network comprises of one long line from North to South with meshed networks occurring only within the townships. The distance from end to end is similar to Wellington to Auckland and this necessitates subtransmission lines (66 kV and 33 kV) beyond what could be expected for the size of the electrical load. For example, Scanpower has no subtransmission lines for a similar load.

Subtransmission lines are more expensive than distribution lines and require very expensive zone substations to reduce voltage. Westpower has 338 kilometres of subtransmission line (15% of total lines) and 20 zone substations valued at about \$20M.

4.3 Total Operating Costs

Considering the cost drivers that influence costs, Westpower has forecast the following costs for the year ending 31 March 2014.

Total Costs		\$000
Transmission		
Interconnection Charges (fixed costs)		2,594
Avoided Transmission Charges		1,631
Otira Charges		162
Transmission Subtotal		4,388
Distribution Costs		
Administration Costs		3,324
Operation and Maintenance		5,264
Depreciation		3,803
Asset Value	119,829	
Return on Capital	2.0%	2,444
Taxation		473
Distribution Subtotal		15,308
Total Costs (Revenue Target)		19,695

It should be noted Westpower is required by its Use of System Agreements to notify electricity retailers sixty days in advance of new line function charges taking effect. 1 April changes are therefore notified to retailers by 1 February at which time, transmission charges are known but operating budgets are not approved by senior managers or the Board of Directors. For this reason, Westpower traditionally makes any changes to its line function charges as at 1 August each year, while transmission charges are reset on 1 April each year.

As the effects of any mid-year adjustments are unknown at the time this pricing methodology is disclosed, the target revenue above may differ from other end-of-year budget figures that may be disclosed in other documents.

5 ALLOCATION OF COSTS

The costs represented in section 4.3 are considered individually and allocated to consumer categories using the pricing principles set out in Section 2. Within each category, methods are applied that are economically efficient, equitable and practical.

Costs are allocated based on each category's use of the network so it is necessary to determine network use as a starting point.

5.1 Asset Allocation

Assets are allocated based on Westpower's assessment of the use of each asset segment by each category.

As most asset segments are used by most categories we allocate assets based on the Anytime Maximum Demand (AMD) as determined by consumer usage. Pricing schedules attempt to influence this demand as discussed later.

The asset allocation is based on the asset value as determined by the Commerce Commission principles for determining the Regulatory Asset Base (RAB). The current asset valuation is \$120M as at 31 March 2013 using the Consumer Price Index (CPI) year on year.

The result of asset allocation is:

Distribution Allocation	Lighting	Domestic	Non-Domestic	Commercial	TOU	Bulk	Large Bulk	Otira	Total
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
	Subtransmission	42	3,061	1,336	4,324	433	5,335	1,406	0
Substations	60	4,373	1,909	6,177	619	7,621	2,009	0	22,768
Distribution	200	14,676	6,407	20,730	2,076	3,837	337	867	49,130
Equipment	92	6,767	2,954	9,559	957	0	0	400	20,730
Low Voltage	0	3,301	1,441	4,662	467	0	0	195	10,066
Street Lighting	839	0	0	0	0	0	0	0	839
Land	1	69	30	98	10	120	32	0	359
Total	1,233	32,247	14,078	45,550	4,562	16,913	3,784	1,462	119,829

5.2 Anytime Maximum Demand (AMD)

Measurements of the maximum demand throughout the year are made at all connections with the exception of Category 1 connections; these being the residual of the total AMD less the measured categories.

The total Westpower maximum demand is 49,887 kilowatts and is allocated as below.

Anytime Maximum	Lighting	Domestic	Non-Domestic	Commercial	TOU	Bulk	Large Bulk	Otira	Total
	AMD	129	9,474	4,136	13,383	1,340	16,512	4,352	560

5.3 Coincident Maximum Demand (CMD)

The maximum demand at all connections is measured at the time of maximum demand on the transmission system. This occurs 12 times from May to September each year as per Transpower's pricing methodology. Transpower's maximum demand is measured as the sum of the demand of all the Upper South Island line companies and occurs at different times than the local demands; hence these demand amounts are different than Westpower's maximum demands.

The Coincident Maximum Demands from May to September 2012 total 20,614 kilowatts as below.

	Lighting	Domestic	Non-Domestic	Commercial	TOU	Bulk	Large Bulk	Total
CMD	39	5,676	1,416	4,180	902	6,138	2,263	20,614

5.4 Allocation of Transmission Costs

All the following transmission costs are allocated by the demand placed on the transmission system as measured by the Coincident Maximum Demand (CMD).

Transpower

Transpower costs are those paid directly to Transpower.

Avoided Transmission Costs

Avoided transmission costs are payments to distributed electricity generators connected to the Westpower network. These generators provide electricity demand to consumers at time when the demands that generate costs on the transmission system are calculated, thereby reducing the demand and hence the transmission cost. Without distributed generation, Westpower would otherwise pay this amount to Transpower; hence the term "avoided cost".

Otira

Otira charges are paid directly to Transpower but are separated here to allow allocation of this cost to a specific user, KiwiRail, as the sole user.

Transmission costs are allocated as below.

	Lighting	Domestic	Non-Domestic	Commercial	TOU	Bulk	Large Bulk	Otira	Total
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
Transpower Charges	5	714	178	526	114	772	285		2,594
Avoided Transmission	3	449	112	331	71	486	179		1,631
Otira Charges								162	162
Total	8	1,163	290	857	185	1,258	464	162	4,388

5.5 Allocation of Distribution Costs

Administration

Costs associated with administration and other overheads are not asset related and are allocated according to the number of connections in each category.

Operations and Maintenance

Operation and maintenance costs are asset related and allocated by asset use as determined by asset allocation above.

Cost of Capital

The cost of capital includes depreciation and return on capital and is allocated according to asset use as determined by the asset allocation.

Detail of the allocation of the above costs is given below.

5.6 Alignment of Allocated Cost to Revenue

Westpower attempts to be accurate in aligning costs with revenue but this cannot be exactly achieved due to practical constraints.

Westpower is mindful of the price control regulations and although currently exempt from the requirements, keeps its pricing principles aligned with the regulations.

Increases to prices are generally announced as an overall percentage increase to tariff rates that have been in existence for several years. Where usage patterns change considerably, Westpower may consider an individual change to a particular tariff but, in general, this occurs rarely.

Westpower takes this approach as it provides stability to its pricing and allows consumers to make decisions on long term options with some confidence.

Applying this principle means revenues will not be gathered in strict accordance with costs over a period of time.

Westpower accounts for this anomaly by providing adjustments to cost to balance the cost/revenue equation. These adjustments are neutral to revenue and are disclosed as adjustments to the return on asset value for each category.

Due to the regulatory restrictions placed on line companies for charges to domestic consumers, Westpower cannot fully recover its costs as allocated to domestic consumers. The variance is minor as shown by the return on assets from domestic consumers being 0.1% below the average requirement but is highlighted here to indicate that it is of no material effect.

Full revenue requirements based on cost allocation is provided in the table below.

**Cost
Allocation/
Revenue Requirements**

	Lighting \$000	Domestic \$000	Non- Domestic \$000	Commercial \$000	TOU \$000	Bulk \$000	Large Bulk \$000	Otira \$000	Total \$000
Transmission	8	1,163	290	857	185	1,258	464	162	4,388
Cost Adjustment	(0)	(28)	21	7	10	8	8	(26)	0
Target Revenue	8	1,135	311	864	195	1,266	472	136	4,388
Administration	21	2,625	461	206	5	5	1	0	3,324
Operation and Maintenance	54	1,417	618	2,001	200	743	166	64	5,264
Cost of Capital	64	1,681	734	2,375	238	882	197	76	6,247
Taxation	5	127	56	180	18	67	15	6	473
Cost Adjustment	1	(17)	2	4	6	0	2	2	(0)
Target Revenue	146	5,833	1,871	4,765	467	1,697	381	148	15,308
Total Target Revenue	154	6,968	2,182	5,629	662	2,963	853	285	19,695
Resulting Return on Asset Value	2.1%	1.9%	2.2%	2.1%	2.4%	2.1%	2.3%	0.4%	2.0%

6 PRICING STRUCTURE

Westpower has an economically efficient delivery pricing structure with three components:

- Fixed Charges;
- Variable Charges; and
- Peak Charges.

Economically efficient means a pricing basis that signals network costs.

To minimise the costs of charging, Westpower applies the prices to quantities that are readily available and meaningful. For the mass of general connections prices are applied to kilowatt hour quantities metered at each ICP, as recorded or reconciled per retailer. For the relatively small number of major customer connections, Westpower's prices are applied to Time of Use quantities, also measured at the individual connections.

6.1 Fixed Charges

Westpower provides electricity reticulation to all premises regardless of kilowatt hour consumption which, for the like of electric fences and holiday homes, can be very low and usage charges would not recover the full cost of supply. To overcome this problem, Westpower uses fixed charges to be assured of a minimum income regardless of use. Traditionally this charge has been significant but is now recognised, by the Government in particular, as not supporting energy efficiency. Regulation has therefore capped this charge at 15 cents per day for low consumption consumers. Westpower applies this regulated charge to all domestic consumers to avoid price segregation and be assured of some form of minimum income to recover costs.

6.2 Variable Charges

The remainder of the revenue requirement for each category is recovered by a usage or variable charge. This encourages energy efficiency as the more you use; the more you pay.

The variable charge is calculated using the data estimated for the coming year. For example, the Domestic Category as shown below uses a single tariff without pricing signals.

Category 1 - Loads less than 15kVA

Domestic		Chargeable Quantity	Distribution Price	Transmission Price	Distribution Revenue	Transmission Revenue	Total Revenue
		kWh	c/kWh	c/kWh	\$000	\$000	\$000
Fixed Charges	per year	10,386	\$54.72		568		568
Variable Charges		63,850,716	8.245	1.778	5,264	1,135	6,399
Total Revenue					5,833	1,135	6,968

Street lighting, for example, uses this simplified tariff.

Street Lighting	Chargeable Quantity	Distribution Price	Transmission Price	Distribution Revenue	Transmission Revenue	Total Revenue
				\$000	\$000	\$000
Fixed Charges	3,260	\$21.39		70		70
Variable Charges	1,446,842	5.287	0.543	76	8	84
Total Revenue				146	8	154

However, overall efficiency is further enhanced if variable charges within each category contain pricing signals designed to affect consumption patterns. Westpower incorporates a variety of tariffs, as described below, designed to signal the time zones that drive higher network costs.

- Load Control Tariffs.** Westpower's costs are greatly reduced if the peak demands on its network are minimised. For example, controlling the electrical heating of hot water at peak loading times goes unnoticed by consumers due to the storage capacity of hot water cylinders but greatly decreases the demand on the network. Westpower passes on these savings to consumers who have hot water control by separately metering the hot water supply and charging a low tariff for the reduced service (even though the lack of service is generally unnoticed).
- Day/Night Tariffs.** Night time network loads are light so Westpower encourages consumers to transfer load (such as dish and clothes washing and drying) to the night period and provides a low tariff for this service. Further encouragement for this night service is provided by slightly higher day time tariffs when this option is chosen.
- 24 hour Supply.** If load transfer tariffs do not suit consumers they have the choice of a 24 hour tariff. This tariff is slightly higher than average to cover network costs when usage occurs due the peak load time.

A balanced marketing approach must be taken when designing the above tariffs to produce pricing signals that are attractive to consumers and, at the same time, maintain revenue. The percentage variation between the tariffs presented is derived from years of experience operating in this market.

Using the previous example, the Category 1 tariffs are provided below.

Domestic		Chargeable Quantity	Distribution Price	Transmission Price	Distribution Revenue	Transmission Revenue	Total Revenue
		kWh	c/kWh	c/kWh	\$000	\$000	\$000
Fixed Charges	per year	10,386	\$54.72		568		568
Variable Charges							
	24hr	38,723,099	9.636	2.096	3,731	812	4,543
	Controlled	13,909,745	5.735	1.248	798	174	971
	Day	6,131,841	11.240	2.445	689	150	839
	Night	4,204,948	0.527		22		22
	Night only	881,083	2.730		24		24
Total Revenue		63,850,716			5,833	1,135	6,968

Non-Domestic

		Chargeable Quantity	Distribution Price	Transmission Price	Distribution Revenue	Transmission Revenue	Total Revenue
		kWh	c/kWh	c/kWh	\$000	\$000	\$000
Fixed Charges	per year	1,823	\$248.84		454		454
Variable Charges							
	24hr	11,867,256	9.508	2.096	1,128	249	1,377
	Controlled	927,747	5.659	1.248	53	12	64
	Day	2,068,206	11.091	2.445	229	51	280
	Night	1,051,069	0.520		5		5
	Night only	58,524	2.694		2		2
Total Revenue		15,972,802			1,871	311	2,182

6.3 Peak Charges

For Category 2 consumers, this charge partially recovers costs incurred on a connection basis, including costs for distribution substations and low voltage reticulation. As the cost is determined to a large extent by the capacity of equipment required to supply the consumer, this charge is based on the assessed capacity required for the coming year and remains fixed throughout the year.

Category2

		Chargeable Quantity	Distribution Price	Transmission Price	Distribution Revenue	Transmission Revenue	Total Revenue
		kWh	c/kWh	c/kWh	\$000	\$000	\$000
Fixed Charges	per year	33,335	\$28.07		936		936
Variable Charges							
	24hr	28,265,348	8.176	1.854	2,311	524	2,835
	Controlled	3,161,525	2.741	0.622	87	20	106
	Day	15,904,799	8.879	2.014	1,412	320	1,733
	Night	7,815,185	0.232		18		18
	Night only	121,351	1.031		1		1
Total Revenue		55,268,208			4,765	864	5,629

TOU

	Chargeable Quantity	Distribution Price	Transmission Price	Distribution Revenue	Transmission Revenue	Total Revenue
	kW			\$000	\$000	\$000
Fixed Charges	2,577	\$28.07		72		72
Variable Charges	1,962	\$201.05	\$99.44	394	195	590
Total Revenue				467	195	662

For Bulk and Large Bulk consumers, the Transpower Charge is recovered in a Coincident Peak Charge. Because these consumers all have half-hour Time of Use (TOU) metering, it is possible to calculate the exact contribution each consumer makes to the Transpower Charge. That is, the coincident peak kW demand for each customer at the time of the twelve highest GXP demands over the last twelve months is known and the contribution towards Westpower's costs can be allocated.

Bulk	Chargeable Quantity kW	Distribution Price	Transmission Price	Distribution Revenue \$000	Transmission Revenue \$000	Total Revenue \$000
Fixed Charges	20,101	\$46.38	\$23.05	932	463	1,396
Variable Charges	16,483	\$46.38		765		765
	8,072		\$99.44		803	803
Total Revenue				1,697	1,266	2,963

Large Bulk	Chargeable Quantity kW	Distribution Price	Transmission Price	Distribution Revenue \$000	Transmission Revenue \$000	Total Revenue \$000
Fixed Charges	5,962	\$34.79	\$23.05	207	137	345
Variable Charges	4,987	\$34.79		174		174
	3,366		\$99.44		335	335
Total Revenue				381	472	853

KiwiRail	Chargeable Quantity kW	Distribution Price	Transmission Price	Distribution Revenue \$000	Transmission Revenue \$000	Total Revenue \$000
Fixed Charges	516	\$247.00	\$231.44	127	119	247
Variable Charges	451	\$46.38		21		21
	170		\$99.44		17	17
Total Revenue				148	136	285

6.4 Revenue Summary

The table below summarises the total projected revenue from both transmission and distribution charges from all consumer categories.

Summary of Pricing Structure	Lighting	Domestic	Non-Domestic	Commercial	TOU	Bulk	Large Bulk	Otira	Total
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
No Consumers	85	10,386	1,823	814	18	21	3	1	13,151
AMD (kW)	129	9,474	4,136	13,383	1,340	16,512	4,352	560	49,887
CMD (kW) Consumption (GWh)	39	5,676	1,416	4,180	902	6,138	2,263	0	20,614
	1,447	63,851	15,973	55,268	13,411	72,588	63,286	1,457	287,281
Transmission	8	1,135	311	864	195	1,266	472	136	4,388
Distribution	146	5,833	1,871	4,765	467	1,697	381	148	15,308
Target Revenue	154	6,968	2,182	5,629	662	2,963	853	285	19,695

6.5 Results of Westpower's Pricing Methodology

The effects of Government regulation and the location of Westpower on the West Coast of the South Island (which drives higher costs) place Westpower's prices in the upper regions of prices throughout New Zealand as depicted by the Ministry of Economic Development's summary of national prices which uses an average consumption of 8,000kWhrs for its calculations.

The West Coast has mild summers and winters and much of the domestic hot water is heated by wood/coal fires so Westpower's average domestic annual consumption is 6,000kWhrs compared with the East Coast where the average load is 9,000kWhrs.

This shows up in the kilowatt hour usage figures for domestic consumers where 60% of the load is for 24 hour supply (no load control).

The average operational costs for Westpower are higher than Orion on the East Coast, and Westpower distributes less kilowatt hours over which to recover those costs. Hence the price per kilowatt hour is much higher to recovery the same relative revenue. See the figures below produced by the PriceWaterhouseCoopers Information Disclosure Compendium which show the cost per kilometre are similar but the cost per kilowatt hour is more than double.

	<u>East Coast</u>	<u>West Coast</u>
Cost per kilometre	\$2,237	\$2,591
Cost per kilowatt hour	1.1 c/kWh	2.5 c/kWh

A more accurate and meaningful comparison of prices is provided using the equivalent rate in c/kWh over the average consumption for each area. The table below illustrates this point which shows consumers on the West Coast pay less per household than those on the East Coast when maintenance costs on the West Coast are higher.

	<u>East Coast</u>			<u>West Coast</u>		
Fixed Charge	\$0.476/kW/day	365days	\$521	15c/day	365days	\$55
Variable Charge	7.536 c/kWh	9,000kWh	\$678	10.383c/day	6,000kWh	\$623
Total			<u>\$1,199</u>			<u>\$678</u>
Equivalent c/kWh			13.33c/kWh			12.65c/kWh

6.6 Interaction with Electricity Retailers

Westpower notifies all electricity retailers trading on the network sixty days in advance of prices and methodologies taking effect. Retailers are able to discuss any aspect of pricing that may be of concern but the terms and conditions of trading are set out in the Use of System Agreement between the two parties. If agreement cannot be reached between the parties on any particular matter, the contract allows for arbitration.

Westpower has not had objection from retailers about its tariff options. Retailers are always on the lookout for simpler forms of pricing options but this is more an industry matter rather than an individual line company issue.

Conformance to the Electricity Authority's Pricing Principles is the industry response to retailers concerns. Westpower conforms to these principles.

All retailers using the network repackage Westpower's delivery prices, hence the need for line companies to publically disclose their pricing in such a manner the delivery costs can be easily calculated from the retailer's electricity invoices to consumers.

7 CHANGES TO METHODOLOGY AND PRICES

Westpower has used the same pricing methodology for several years now and has applied increases to tariff rates to recover cost increases.

Prior to calculating the new prices, changes to chargeable quantities (kW and kWhs) are applied each year using the previous year's consumption as a guide and estimating the quantities for the coming year.

Westpower has applied an increase of 3.3% to all its variable distribution tariff rates over the previous year's prices.

Transpower charges will continue to be applied transparently to all bulk consumers in line with company policy.

Effectively this means that the same rates will be passed through without markup to bulk consumers and furthermore, any consumers that are able to avoid the RCPD periods will, in future years, reap the benefits of avoiding the related Interconnection Charges that are passed through in Westpower's tariff as a Coincident Peak Demand Charge (Tariff codes C3CP, C4CP and C5CP).

The alternative of decoupling the Westpower tariff from the Transpower charges would invite criticism from retailers and consumers alike and signal a major change in pricing principles.

The principles applied include:

- Otira should be ring-fenced as far as transmission charges are concerned and On Track is expected to provide full revenue recovery for this GXP as they are the predominant consumer in terms of consumption.
- The Interconnection Charge, including the methodology for applying it, is passed directly though to Category 3, 4 & 5 consumers in the Coincident Peak Charge based upon their demand at the time of the RCPD.
- The Interconnection Charge only is passed directly though to Category 2 Time of Use consumers in the Peak Charge based upon their anytime demand.

For bulk consumers with Time-of-Use metering, their contribution toward Interconnection Charges has been accurately calculated and these charges will be passed directly and transparently through to Category 3, 4 & 5 consumers in accordance with Westpower's Pricing Methodology. Therefore the Interconnection Charge rate for bulk consumers will increase from \$90.66 per kilowatt to \$99.44 per kilowatt.

Unfortunately, due to the above-mentioned factors, a significant increase is required to recover the additional transmission costs. The rates for smaller mass market customers (Category 1 & 2) are determined by the need to recover sufficient revenue to fund the cost of transmission and are set by simply dividing the total remaining transmission costs by the expected total consumption of these groups.

This has resulted in an across-the-board transmission rate increase of 35.58%, which for a standard domestic user increases the transmission charge from 1.546 cents per unit to 2.096 cents per unit, resulting in an overall line charge increase of 4.9%.

One mitigating factor to consider is that when the transmission pricing was reviewed last year, a combination of factors meant that no increase was levied on mass market consumers at that time. Unfortunately, this does little to soften the impact of the change required this year.

8 FUTURE PRICING

To the extent practical, this pricing methodology complies with the Electricity Authority's Pricing Principles and Westpower intends to use these principles for the foreseeable future.

Transmission charges will continue to be passed through at cost.

When and if "smart meters" are introduced to the Westpower network, we will take a circumspect approach to developing and implementing TOU tariffs.

9 ELECTRICITY AUTHORITY PRICING PRINCIPLES CONFORMANCE

In this section Westpower sets out how it considers it meets the Electricity Authority's pricing principles. Each principle is stated, followed by Westpower's commentary.

Signal economic costs

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

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

Westpower considers that, as far as reasonably practical, its prices are subsidy-free as it applies a cost allocation model to allocate costs across the consumer base to determine the revenue requirement, which is then used as a basis for establishing prices for each consumer group.

However, the uncoordinated application of the regulations means subsidies cannot be avoided. The application of low fixed charges means consumers must subsidise very low use connections; long distance rural consumers impose higher costs but they must pay no more than urban consumers; tariff increases kept within the CPI means costs above CPI (oil, copper, aluminium etc) cannot be recovered.

- ii. having regard, to the extent practicable, to the level of available service capacity; and*
- iii. Signalling, to the extent practicable, the impact of additional usage on future investment costs.*

Westpower's pricing structure is based on capacity-usage. Westpower relies on differentials between controlled and uncontrolled usage (domestic consumers), and its TOU charges to signal the value of consuming outside of peak periods (when capacity is less constrained). The impact of such price signals lessens the need to invest in additional network capacity.

As consumers increase their use of network capacity, where practicable they pay increased line charges:

- For Category 1 consumers there is emphasis on the variable tariff so as their volumes increase their use of network charges increases. Additionally, because Westpower offers different tariff rates for controlled and uncontrolled use, there are incentives for consumers to have controllable loads (e.g., water heating, which makes up a material proportion of consumers consumption, normally around 40% of their usage). In future, as smart meters become available, Westpower will enhance its tariff structures to further encourage consumers to shift discretionary loads outside of peak periods;
- For consumers in the commercial group, Westpower signals the costs of additional capacity usage through increasing fixed charges as consumers increase their nominated

capacity. For those consumers that have TOU metering, charges are based on on-peak demands, providing a direct price signal to reduce demands in peak periods;

- For large industrial consumers, where they require increases in capacity to serve their needs or additional equipment to meet their security of supply objectives, Westpower prices such requests individually. Therefore consumers face the costs of their additional requirements directly.

(b) Where prices on 'efficient' incremental costs would under-recover allowed revenues, the shortfall should be made up by setting prices in a manner that has regard to consumers' demand responsiveness, to the extent practicable.

Such pricing occurs in our domestic supply where efficient incremental costs exceed allowable revenue. This requirement appears to suggest the pricing structure be changed to signal the higher costs involved so, over time, the costs can be reduced to the level of the allowable revenue.

However, it is not practicable to assess domestic consumers demand responsiveness and set charges accordingly. Westpower, like all distributors, is forced to use tariff structures which use high proportions of variable charges to recover predominantly fixed charges as the only practical means of differentiating different consumers' elasticity or willingness to pay. If demand is reduced, the cost to maintain the existing infrastructure is not reduced accordingly.

(c) Provided that prices satisfy (a) above, prices should be responsive to the requirements and circumstances of stakeholders in order to:

- i. discourage uneconomic bypass;*
- ii. allow for negotiation to better reflect the economic value of services and enable stakeholders to make price/quality trade-offs or non standard arrangement for services; and*
- 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.*

Westpower's compliance under these guidelines is achieved as follows:

1. Uneconomic bypass is achieved through Westpower's cost allocation approach to setting tariffs, whereby (by the use of a proportional cost allocation approach) pricing is set below stand-alone costs.
2. Westpower sets specific charges for large industrial consumers to ensure that charges reflect the economic costs of service provision (thereby discouraging uneconomic bypass and allowing such consumers to negotiate their specific needs). Two years ago, Westpower installed a new zone sub-station at short-notice for a large industrial consumer, providing an enhanced security of supply for that consumer at an increased charge.

3. Westpower pays out avoided transmission charge benefits to embedded generators to encourage such generators to reliably generate during transmission peak periods. Westpower also allows smaller generators to connect to Westpower's network and utilise the distribution network for delivering their generation to other connections without incurring network charges. Connection costs are applicable, as per Westpower's distributed generation policy. For further details on connection of distributed generation and charges please refer to Westpower's public website.
4. Because of Westpower's peak/control-period prices, consumers have a clear value against which to assess network alternatives or behaviour changes. Many consumers, particularly major consumers, have the opportunity to turn on generators, reduce demand, or both in response to our pricing. Westpower's residential consumers heat their hot water through controlled meters in response to Westpower's very low controlled pricing rate.

Stability and transparency

(d) Development of prices should be transparent, promote price stability and certainty for stakeholders, and changes to prices should have regard to the impact on stakeholders.

Westpower's development of prices:

1. Is transparent:
 - (i) through this disclosure statement, Westpower provides information on the costs it allocates to different consumer groups;
 - (ii) in addition to this disclosure, Westpower publishes a pricing schedule which details the different charges between tariffs and price categories. Consumers can review charges and weigh up costs for changing capacity requirements or load profile and the resulting benefits. Every other year there is formal consultation between retailers and Westpower on pricing strategy, price category and tariff development.
2. Promotes price stability: Westpower updates its cost of service model annually. To ensure price stability to consumers, any price changes made attempt to limit price shocks to any particular consumer group to less than 10%. As distribution charges make up around 37% of a typical consumer's bill, this ensures no consumer would face significant price increase due to changes in distribution charges.
3. Promotes certainty: Westpower endeavours to maintain its tariff structures and differentials between tariffs, so that consumers who make investments (for example in controllable loads) due to the savings between controlled and uncontrolled rates are able to realise the savings expected when the original investment was made. With the introduction of smart meters, Westpower intends to take a circumspect approach to

developing and implementing TOU tariffs. This is so that consumers are not unduly disadvantaged by the introduction of smart meters. Consumers will have time to consider behavioural changes and investments to avoid adverse bill impacts.

Complexity

(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.

Westpower recognises the need to minimise undue complexity for retailers, subject to its legitimate business needs to signal costs to consumers and ensure equity between consumers. 99.68% of connections (and hence retailer invoices) have the same pricing structure and the remaining 0.32% have the same structure, thereby minimising cost for retailers.

All retailers are subject to the same tariff schedules from Westpower. Therefore, Westpower considers that its prices are economically equivalent across all retailers.

10 COMMERCE COMMISSION INFORMATION DISCLOSURE CONFORMANCE

In this section Westpower sets out how it considers it meets the Commerce Commission's Information Disclosure Requirements. Each disclosure requirement is stated, followed by Westpower's commentary.

The Electricity Authority and the Commerce Commission have very similar disclosure requirements so this section guides the reader to the relevant sections of this methodology to confirm the conformance requirements.

(a) Prices should be based on a well-defined, clearly explained and published methodology, with any material revisions to the methodology notified and clearly marked.

This pricing methodology is based on a well-defined methodology that is clearly explained and published on the company's website. There have been no material changes in methodology since the information disclosure requirements were founded in 2004 but this 2013 disclosure has expanded on its explanations and details to better inform the readers.

(b) The pricing methodology disclosed should demonstrate:

(i) How the methodology links to the pricing principles and any non-compliance;

See Section 9

(ii) The rationale for consumer groupings and the method for determining the allocation of consumers to the consumer groups;

See Section 3.3

(iii) Quantification of key components of costs and revenues;

See Section 4

(iv) An explanation of the cost allocation methodology and the rationale for the allocation to each consumer grouping;

See Section 5

(v) An explanation of the derivation of tariffs to be charged to each consumer group and the rationale for the tariff design;

See Section 6

(vi) Pricing arrangements that will be used to share the value of any deferral of investment in distribution and transmission assets, with the investors in alternatives such as distributed generation or load management, where alternatives are practicable and where network economics warrant.

See Sections 5.4 & 6.3

(c) *The pricing methodology should:*

(i) *Employ industry standard terminology, where possible;*

See Glossary

(ii) *Where a change to the previous pricing methodology is implemented, describe the impact on consumer classes and the transition arrangements implemented to introduce the new methodology.*

See Section 7

APPENDIX A Westpower Pricing Schedule

WESTPOWER LTD

DISTRIBUTION AND TRANSMISSION CHARGES

ALL CHARGES ARE EXCLUSIVE OF GST

APPLICABLE 01 APRIL 2013

CATEGORY 1 DOMESTIC

FIXED CHARGES:

DISTRIBUTION CHARGE- per 12 month period

UNIT CHARGES (VARIABLE):

Domestic 24hr
Controlled 17hr
Economy, day
Economy, night
Night only

CATEGORY 1 NON-DOMESTIC (For loads less than 15 kVA)

FIXED CHARGES:

DISTRIBUTION CHARGE - per 12 month period

UNIT CHARGES (VARIABLE):

24 HR
Controlled 17hr
Economy, day
Economy, night
Night only

STREET LIGHTING:

FIXED CHARGES:

DISTRIBUTION CHARGE per 12 month period per light

UNIT CHARGES (VARIABLE):

Public Lighting
Under Verandah Lighting

CATEGORY 2

FOR LOAD GREATER THAN 15 KVA and UP TO 200 KVA

FIXED CHARGES:

DISTRIBUTION CHARGE - per 12 month period per Notional Unit of Demand

UNIT CHARGES (VARIABLE):

Non Domestic 24hr
Non Domestic Controlled
Non Domestic Economy, day
Non Domestic Economy, night
Non Domestic Night

CODES		TARIFF APRIL 2013		
Tariff code	Westpower Distribution (cents per unit)	Trans Power Transmission (cents per unit)	Total Variable Line Charges (cents per unit)	
WP1D	\$54.72			
D	9.636	2.096	11.732	
DC	5.735	1.248	6.983	
DD	11.240	2.445	13.686	
DE	0.527	0.000	0.527	
DN	2.730	0.000	2.730	
WP1N	\$248.84			
N	9.508	2.096	11.604	
NC	5.659	1.248	6.906	
ND	11.091	2.445	13.537	
NE	0.520	0.000	0.520	
NN	2.694	0.000	2.694	
WPSL	\$21.39			
SL	5.287	0.543	5.830	
UV	5.287	0.543	5.830	
WP2N	\$28.07			
U1	8.176	1.854	10.030	
U2	2.741	0.622	3.363	
U3N	8.879	2.014	10.894	
U3L	0.232	0.000	0.232	
U5	1.031	0.000	1.031	

Appendix A - Continued

**CATEGORY 2 (TIME OF USE METERING)
FOR LOAD GREATER THAN 100 KVA and UP TO 200 KVA**

Fixed Annual Capacity Charge. (per kW per year)
Peak charge. (per kW per year)

CATEGORY 3

BULK (loads over 200kVA)

Fixed Annual Capacity Charge. (per kVA per year)
Peak charge. (per kW per year)
Transpower Coincident peak demand per kW per year

CATEGORY 4

Large Bulk (loads over 2500kVA)

Fixed Annual Capacity Charge:
Peak charge. (per kW per year)
Transpower Coincident peak demand per kW per year

CATEGORY 5

Kiwirail Otira

Fixed Annual Capacity Charge:
Peak charge. per kW per year:
Transpower Coincident peak demand per kW per year

Power Factor Charge

Annual charge per kVAR of assessed correction
required to bring PF up to 0.95

CODES Tariff code	TARIFF APRIL 2013		
	Westpower Distribution (cents per unit)	Trans Power Transmission (cents per unit)	Total Variable Line Charges (cents per unit)
C2F	\$28.07		\$28.07
C2P	\$201.05	\$99.44	\$300.49
C3F	\$46.38	\$23.05	\$69.43
C3P	\$46.38		\$46.38
C3CP		\$99.44	\$99.44
C4F	\$34.79	\$23.05	\$57.84
C4P	\$34.79		\$34.79
C4CP		\$99.44	\$99.44
C5F	\$247.00	\$231.44	\$478.44
C5P	\$46.38		\$46.38
C5CP		\$99.44	\$99.44
C2PF			
	\$112.29		