Pricing Methodology Disclosure

For Prices Applying from 1 April 2018

Pursuant to Electricity Distribution (Information Disclosure) Requirements 2012

and Distribution Pricing Principles and Information Disclosure Guidelines

Marlborough Lines

Contents

List of Figures

Glossary
Definitions and abbreviations

AMD	Anytime Maximum Demand.
ACOT	Avoided Cost of Transmission is a payment made to a distributed generator based on output during time periods used to set Transpower's interconnection charges. These times period are referred to as Regional Coincident Peak Demand, (RCPD) periods is highest.
Asset	Equipment or plant that is part of ML's electricity distribution network.
Bypass	If a consumer chooses to obtain its electricity supply from an alternative source to the distribution network.
Code	Electricity Industry Participation Code 2010.
Demand	The rate of expending electrical energy expressed in kilowatts (kW) or kilovolt amperes (kVA).
Commerce Commission (Commission)	Commerce Commission oversees the regulatory provisions of the Commerce Act 1986 which Electricity Distributors are subject to.
Consumer	An end-user who is supplied electricity.
Controllable Load	The load, mostly electrical water heating load, that ML is able to switch off during periods of high network demand.
Cost Allocation Model	A model that allocates the actual costs of owning and operating the distribution network to the consumer groups based on a cost allocation methodology.
Consumer Price Index (CPI)	A measure of the change in price of a basket of consumer goods and services.
Distributed Generation	Electricity generation that is connected directly to the distribution network. Also referred to as 'embedded generation'.
Distributor or Electricity Distribution Business (EDB)	A business responsible for delivering electricity from the national grid to homes and businesses. Also commonly referred to as an ELB (Electricity Lines Business).
Distribution Pricing Principles	Published by the Electricity Authority in February 2010. These principles set out economic concepts that should be reflected in Distributors' pricing methodologies. Also known as the "Pricing Principles".
Electricity Authority (Authority)	The Electricity Authority is an independent Crown entity responsible for regulating New Zealand's electricity market. Its objective is to promote competition in, reliable supply by, and the efficient operation of the electricity industry for the long-term benefit of consumers.
GXP	Grid Exit Point. The point where ML's network connects to Transpower's transmission network and where electricity flows from Transpower's network onto ML's network.

HV	High Voltage.
ICP	Installation Connection Point is where a consumer connects to ML's electricity distribution network.
kWh	Kilowatt hour is a measure of electricity consumption - this is the unit in which retail sales of electricity are measured.
kVA	Kilovolt Ampere.
Load Management	When ML controls the electrical water heating load (or other controllable load) by switching it off during periods of high demand or during faults or emergency situations.
LV	Low Voltage.
Network Peak Demand	When the network's consumption is at its highest.
Pricing Methodology Disclosure Guidelines	Published by the Electricity Authority on 1 March 2010. These guidelines specify the information that a distributor should make available so that a third party may determine if a pricing methodology is consistent with the pricing principles.
ToU	Means Time of Use, a metering set up that measures half hourly data allowing pricing that varies depending on time of day and measurement of peak demands.

1 Background

This section includes an introduction to ML, the regulatory context for this disclosure and an overview of the pricing process.

1.1 Overview of ML

ML Limited (ML) is a network owner/operator delivering electricity to approximately 25,000 consumers across the Marlborough region.

The area supplied includes the provincial centre of Blenheim and the smaller towns of Picton, Havelock, Seddon and Ward.

The network also extends to a number of very isolated areas (including the Marlborough Sounds), that pose unique challenges for electricity supply. Unlike many other regional networks the company has a single point of supply from the National Grid to the Grid Exit Point (GXP) in Blenheim. Relative to its size the Marlborough network has an extensive sub-transmission system. There are 16 zone substations on the Marlborough network with the most recent addition being Cloudy Bay completed in March 2013.

ML has an electrical contracting business in Marlborough that undertakes capital and maintenance work for the network and other local users. ML has approximately 140 staff based in Blenheim at a centrally located office and a depot for the Contracting activities.

Aside from the Marlborough electricity network the Company has uniquely diverse investments including a 50% share of Nelson Electricity and 86% of the Yealands Wine Group.

ML has an 'interposed' relationship with the Marlborough consumers i.e. the contractual relationship to deliver services is through the energy retailers on the network. Consequently, ML does not have a contractual relationship for the network services with the consumers on its network.

ML has a Use of System Agreement with all the retailers that operate on its network. Currently there are 19 energy retailers offering services in Marlborough. Some retailers have multiple brands. 92% of consumers are supplied by only seven retailers.

Lines charges are billed to the retailers monthly, based on consumption data provided to ML by consumers' Metering Equipment Providers (MEP), which are selected by a consumer's retailer.

ML is owned by the Marlborough Electric Power Trust (MEPT), which holds shares on behalf of the consumers of the day connected to the network in Marlborough. The MEPT has six elected trustees. Elections are held biannually with the last election for three trustees held in March 2018.

1.2 Regulatory status of ML – exempt from price control

ML meets the criteria specified for a consumer owned Electricity Distribution Business, EDB, under Part 4 of the Commerce Act and consequently has 'exempt' status. Electricity distributors that are exempt are not subject to the Default Price-quality Path (DPP) provisions. However, the company is still required to comply with a number of regulatory obligations including the Information Disclosure (ID) regime.

The Electricity Authority also has regulatory oversight of the Electricity industry and sets out a number of compliance obligations for EDBs.

1.3 Price changes for current year

New prices come into effect on 1 April 2018. Prices were last changed in November 2016.

In April 2018 fixed charges were increased by 3.5% for all consumers other than the large commercial and industrial consumers. For Low Fixed Charge plans the equivalent increase was made on the variable rates as the LFC Regulations prevented any increase on the fixed charge component.

A number of steps were taken to increase the level of alignment to Industry Standards e.g. the assessed capacity charges were changed to a $/kVA/day and the Industry Standard approach was adopted for power factor charges.

Prices are set to reflect the needs of the company, the Marlborough consumers and stakeholders, together with the wide ranging requirements provided by the comprehensive regulatory framework.

1.4 Overview of pricing methodology disclosure document

ML's Pricing Methodology Disclosure continues to evolve to address pertinent issues.

An important aspect of the Pricing Methodology Disclosure is an explanation on the allocation of network costs, including transmission costs, across consumers and the structure and quantum of charges set to recover those costs. Transmission costs include Transpower charges and Avoided Cost of Transmission, (ACOT), paid to embedded generators.

ML considers that this disclosure is consistent with the current regulatory framework. The document has been prepared in accordance with the Electricity Distribution Information Disclosure (ID) Requirements, published by the Commerce Commission and the Distribution Pricing Principles set out by the Electricity Authority.

Although the pricing principles are voluntary, the Electricity Authority encourages EDBs to carefully consider the pricing principles and to disclose the consistency or otherwise of the company's pricing methodology with these principles. These matters are discussed in section 6.

1.5 Discount policy

ML pays "posted" discount to consumers in March of each year. The Information Disclosure Requirements state revenue is to be expressed net of the payment of "posted" discounts.

ML has set the discount as a relatively equal proportion of each price category within its price schedule so each consumer is rewarded proportionately through the discount process regardless of their pattern of consumption.

The exceptions to the discount being an equal proportion of each price are:

- the regional peak demand charge that applies to the large commercial and industrial consumers group is set at a level to recover the transmission costs applicable to that group and therefore no discount applies to the price; and
- discounts are not paid to consumers in the areas demonstrably unprofitable, identified as remote on the ML remote areas map.

The discount is a credit for a portion of the lines charges paid for network services in the prior 12 month period. The calculation period runs from 1 February to 31 January each year to provide sufficient time to calculate each qualifying consumer's discount. Discounts are paid to a consumers' electricity retailer and the amount is then credited to their account.

Consistent with the Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004, (LFC Regulations), the costs faced by the typical residential user, as defined in the regulations, are equal on a pre and post-discount basis.

1.6 Target revenue and cost estimates

This Disclosure is required to outline the costs of the network business that are targeted to be recovered through charges for network services.

The estimated costs of operating the network business for the year from 1 April 2018 to 31 March 2019 have been grouped into the categories of system operation and maintenance, administration and overhead, transmission costs, depreciation, taxation and a return on assets used in the provision of network services. The numerical value of each of these cost components is clearly stated in section 3.2.

The revenue estimates included in this document are based on the prices applying at 1 April 2018 and estimated volume from 1 April 2018 to 31 March 2019.

1.7 Overview of consumer groups

Network consumers are grouped together into a number of consumer groups based on common characteristics. The four consumer groups referred to in the cost allocation model are; Residential, General (Small/Medium Commercial), Larger Commercial/Industrial and Irrigation users.

Section 3 outlines the rationale for the consumer groups, the allocation of consumers into their groups and the network statistics for each of group.

1.8 Overview of cost allocation methodology

An estimate of the total cost of providing network services for each consumer group is derived using a methodology which allocates the costs between consumers.

The majority of costs are allocated based on the proportion of assets used to supply the connections within each consumer group. This is because most costs incurred by the network relate to the assets required to provide a service. For example the return on capital, return of capital (depreciation), and the servicing/maintaining of assets. Generally the more assets required to service a connections the higher the costs are to provide network services.

The value of network assets, at replacement cost, is shared across all connections on the network based on whether an asset is used to service the connections. The value of the assets attributable are then summated for each connection and totalled for each consumer group.

There are a number of different cost allocators that could be used: The methodology utilised by ML is considered to be fair and equitable to the various consumer groups within practicable limits including regulatory requirements, metering limitations and consumer acceptance. The share of assets is the predominantly cost driver used, but ML also uses consumption, measured in kWh and number of ICPs to allocate overhead and administration costs. Revenue is used to allocate an estimate of the taxation expense.

1.9 Structure of the pricing plans for each group

The pricing structures vary across the consumer groups and the structures used support the recovery of revenue consistent with the pricing principles. Although most of the cost of operating an electricity network is fixed, revenue for network services is generally made up of fixed and variable pricing elements.

A description of the current methodology and the use of fixed, variable charges, demand and capacity charges is discussed in section 3.

1.10 General issues with cost allocation model

ML continues to utilise a cost allocation model to ensure prices are fair and equitable. It is also cognisant of the pricing principles published by the Authority.

However many network assets and other non-asset related costs are shared over a large number of consumers. Even with detailed half hourly data for our large consumers, assumptions and judgements are still required to share costs between consumers. In reality many costs have to be allocated rather than accurately attributed to defined consumer groups and consumers within the groups. There are a number of different and valid approaches to the allocation of network costs to groups of consumers.

1.11 Regulatory framework

ML is subject to the following key regulatory requirements:

- Part 4 of the Commerce Act which requires formal disclosure of a significant amount of company specific information in accord with the Electricity Distribution Information Disclosure requirements.
- The Electricity Industry Act which provides the Electricity Authority with particular responsibility for monitoring pricing structures and approaches to distributor pricing.
- The Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulation 2004, (the LFC Regulations), which require all EDBs to offer a low fixed charge option to domestic consumers using less than 8,000kWh or 9,000kWh per annum at their principal place of residence.
- Restrictions on pricing differentials between urban and rural consumers.
- A range of obligations set out in the Electricity Participation Code.

Appendix A provides a more detailed analysis of the regulatory requirements including the pricing principles and the Information Disclosure requirements which impact ML's pricing decisions and Disclosures.

2 Approach to setting prices

This section provides a rationale for each of the consumer groups and discusses some of the issues and considerations in using a cost allocation model to apportion network costs to consumer groups and the factors that influence specific charges for each consumer group.

The section also includes a description of the methodology used to assign assets and allocate shared assets, (and consequentially costs), between consumer groups.

ML considers that a number of factors need to be taken into account when network prices are determined and changes to network charges should be undertaken on a consistent and progressive basis. Prices have been shaped by consumer feedback, government policy and regulation over a period of many years.

The primary determinant in the company's charges for network services is to fairly recover costs whilst meeting the needs of the users of the network, consistent with the regulatory requirements and the principles of fairness and equality. ML conducts regular consumer research to inform the company's management and directors of consumer views.

A price structure should provide network users with the opportunity to respond to changes in price levels or charging structures, but equally structures are also required to provide pricing signals consistent with the pricing principles and specifically to address changes in technology. ML's consumer feedback is that consistency of pricing structure is important and any changes should provide consumers with the opportunity to respond.

Within the network there is cost sharing, both within consumer groups and between consumer groups. The company will continue to refine the estimates made of the costs of supply for all categories of network users. Changes in prices will be tempered with the need to satisfy regulatory requirements and meet the requirements of the network users overall, whilst ensuring that changes are consistent with the long-term interests of all stakeholders.

2.1 Pricing to provide adequate revenue recovery

ML targets revenue for lines services consistent with the company's network operations achieving a commercial rate of return. Pricing structures are also designed to manage revenue risk to ensure financial sustainability e.g. fixed components are related to fixed costs which are typically independent of delivered energy.

2.2 Payment of discounts

ML will continue to pay discounts for the 12 months ending 31 March 2019. The pre and post discount price is published and therefore the payment is considered to be a "posted" discount and the applicable revenue of the business net of the posted discount.

As in prior years the discount payment will be subject to consumer qualification criteria. More than 90% of consumers will receive a discount, however consumers in areas deemed "remote" do not receive a discount because these areas are uneconomic to service and are in effect subsidised by economic consumers. In addition an installation must be connected to the network and occupied on a qualification date, typically in mid-March of each year.

2.3 Consideration of the impact of changes on individual consumers

The changes made from 1 April 2018 increased the cost for a typical residential consumer by, 1.5%, $14.87 per annum excluding GST on a pre discount basis, (1.9%, $14.97 per annum on a post discount basis). Historically when changes have been made to the price structure the effects on individual consumers have been considered carefully, and our approach continues to avoid changes that produce a rate shock greater than 15% (of the delivery charge component) to any consumer.

There is regular liaison between company staff and the energy retailers who deal with the network charges for their customers, and ML consults with retailers prior to making changes in pricing structures. ML also consults directly with consumers particularly those in the major consumer category.

The issues of incorporating more cost-reflective pricing are further explored in Section 5.

2.4 Prices to be cost reflective subject to consumer considerations

Pricing aims to reflect the cost that a consumer or consumer group places upon the network. Particularly for residential and small business consumers there are clear trade-offs between pricing which is cost reflective and pricing that is relatively simple and easy to understand.

When determining what pricing structures are appropriate, ML has considered consumers' expectations and their understanding of concepts applicable to charges for distribution services. These vary across consumer groups, e.g. an industrial consumer is typically better placed to understand more complex price structures such as those based on consumer peak demand than a domestic consumer.

A consistent price structure is also considered to be important. Change creates transaction costs and if made frequently discourages consumers from responding to price signals that are provided.

2.5 Results of consumer research

Consumer satisfaction is monitored through an independent survey relative to a number of issues such as overall satisfaction, reliability of supply, company performance, ownership preferences and community involvement. Both residential and business consumers are included in the survey.

The key indicators have reflected high satisfaction over recent years. The most recent survey was completed in June 2017. Figure 1 outlines the level of consumer satisfaction in key areas.

	2013	2014	2015	2016	2017
Reliability	96%	96%	96%	96%	89%
Quality	95%	93%	94%	95%	88%
Faults Quantity	92%	91%	91%	92%	85%
Faults Service	92%	91%	88%	91%	84%
Faults Duration	89%	94%	83%	88%	83%

Figure 1: Consumer satisfaction survey results

In addition to the consumer satisfaction monitor further research was undertaken in 2014 and 2016 to address the revised ID requirements. Section 2.4.1.(3) of the ID directs EDBs to seek the views of consumers on price and quality matters and for the company to consider the views expressed by consumers in the pricing decisions made by the company.

The price quality research segmented consumers by predominant end use and geographic areas. The results of the research in 2016 show that the most important aspects of network performance for consumers is the information and availability of supply, followed by customer service and frequency, and duration of outages.

Consumers were also asked specifically about price and quality trade-offs. 91% of domestic consumers stated that "any increase would be too much" when asked if they would be prepared to pay for improvements to the quality of their power supply. 80% of all consumers did not want lower prices if this reduced the level of service.

The consumer research programme provides regular feedback which is incorporated in the Company's planning processes.

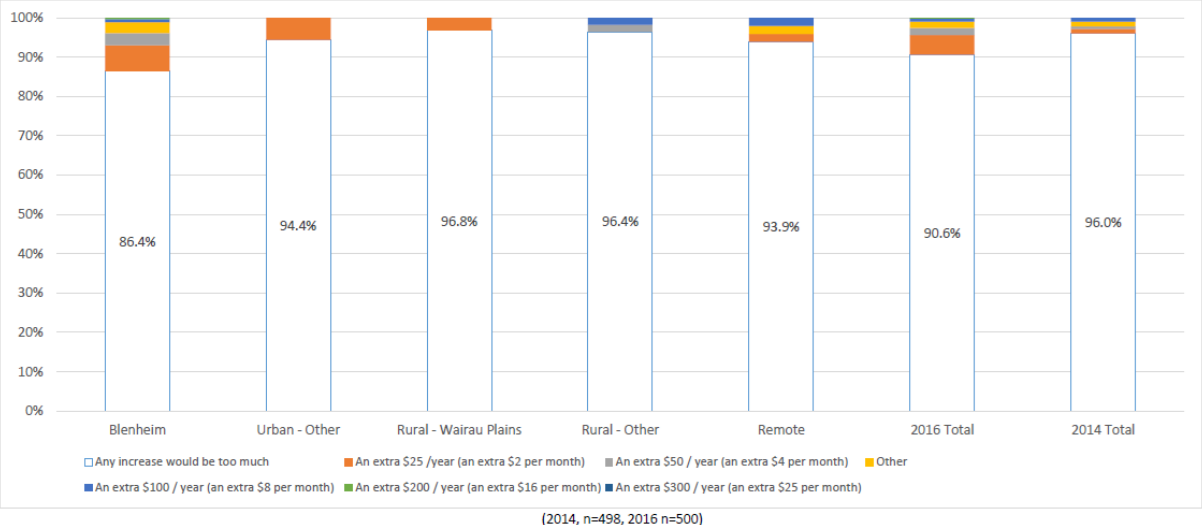

Figure 2: Price quality trade-off results – domestic consumers

3 Allocation of costs and derivation of tariffs

This section provides a detailed explanation of the pricing methodology and cost allocation between consumer groups.

The following section outlines;

- Derivation of total cost and target revenue;
- an explanation of consumer groups;
- the methodology to allocate the costs of owning and operating the network to consumer groups;
- rationale for the cost driver selected, and
- network statistics for each consumer group.

3.1 Assessment of costs - 1 April 2018 to 31 March 2019

The company aims to generate sufficient revenue to cover costs for the coming year, including a return on assets subject to constraints.

The Return on Investment is calculated by applying the cost of capital to an estimate of the Regulatory Investment Value (RIV) as at 31 March 2018.

The RIV disclosed as at 31 March 2017 is $219.137m. This value is adjusted for capital expenditure, annual revaluation and regulatory depreciation to derive an estimate as at 31 March 2018 of $221.833m.

The estimated RIV is multiplied by an estimate of post-tax WACC for the 67th percentile for the five year regulatory period to March 2020 of 5.97%. The WACC for the coming 12 month disclosure period to 31 March 2019 is published in April 2018. For the disclosure year to 31 March 2018 the range - 25th to 75th percentile - was 4.36% to 5.72% with a 67th percentile estimate of 5.48%.

Figure 3 sets out the calculation used to determine the estimated Return on Investment component of costs of $13.243m.

Calculation of Return on Investment		
Regulatory Investment Value (RIV) at 31 March 2017		219,137
Revaluation at 1.6% estimate		3,506
Estimate of Depn for FY18		10,200
CAPEX for FY18		9,390
Estimated Regulatory Investment Value 31 March 2018		**221,833**
Return on RIV - WACC post tax	5.97%	13,243

Figure 3: ML estimate of regulatory investment and return

Figure 4 outlines the company's current best estimate of costs for the network business for 1 April 2018 to 31 March 2019. Note ML changed its financial year to a 30 June year end in 2016.

$'000	2018/19 Estimates
Transmn. Interconnection & ACOT	6,603
Transmn. Investment & Connection	1,072
System Operations & Mtce	10,519
Admin & Overheads	5,152
Depreciation	10,192
Taxation Expense	1,451
Return on Investment	13,243
Total Costs Year to 31 March 2019	**48,233**
Misc. Revenue	2,107
Costs Net of Misc. Revenue	**46,126**

Figure 4: ML network cost estimate by category

In addition to revenue for lines services the network receives some miscellaneous revenue e.g. income from vested assets, capital contributions and sale of reusable or recyclable materials. The miscellaneous revenue received by the network is deducted from the estimate of total costs.

3.2 Classification of consumers into groups

All network connections are categorised into four broad consumer groups, based on the predominant end use of energy and the installed capacity of each connection.

Initially consumers are categorised as being residential or non-residential. The classification is based on their predominant end use and aligned with the commonly adopted statutory definition for a 'domestic consumer' and 'domestic premises' contained in section 5 of the Electricity Industry Act 2010.

Electricity Industry Act 2010

(1) (5) Interpretation

(2) In this Act, unless the context otherwise requires,—

domestic consumer *means a person who purchases or uses electricity in respect of* ***domestic*** premises

domestic premises *means premises that are used or intended for occupation by a person principally as a place of residence; but does not include premises that constitute any part of premises described in section 5(c) to (k) of the Residential Tenancies Act 1986 (which refers to places such as jails, hospitals, hostels, hotels, and other places providing temporary* accommodation)

Figure 5: Definitions of domestic consumer and premises - s5 Electricity Industry Act

The different characteristics of residential consumers, such as greater diversity in demand patterns, different consumption patterns, compared to businesses consumers make it logical to have a residential consumer group. Residential users also have a higher proportion of their total load associated with water and space heating which is generally able to be interrupted by the company's ripple control system. There are also regulatory constraints that apply only to residential consumers e.g. the LFC Regulations.

Residential consumers often have their peak demands occurring between 7.30 - 9.30am and 5.30 - 9.00pm. The utilisation of network capacity during these times is a key driver of the costs they place on the network. 85% of network connections are classified as Residential consumers.

The non-residential consumers are then further divided into three groups, one group for irrigation installations and two groups for commercial consumers, split based on whether the maximum capacity supplied to the installation is greater or less than 150 kVA.

The four consumer groups are therefore Group 1 – Residential (Domestic), Group 2 - Irrigation, Group 3 – General - Small and Medium Commercial, and Group 4 - Larger Commercial and Industrial.

Group 2 is the irrigation consumer group and includes both small and larger capacity connections. These consumers have a distinct usage pattern which lead to them being grouped separately from other commercial users. Their peak demand occurs during the summer months and their consumption in kWh is far more variable from season to season than other users. To qualify for the specific irrigation pricing plan an installation must be fitted with a relay to ensure the load is interruptible, which provides the network with the ability to restrict usage during periods of peak network demand if required.

The unique pattern of consumption drives the costs they the place on the network and is different than for other groups. These installations were generally not operating at times of network peak demand or during Regional Coincident Peak Demand (RCPD) periods

The third group are made up of predominantly small to medium commercial connections with a capacity requirement of less than 150kVA. Within this group there are a number of load groups with stepped fixed charges based on the capacity provided.

The fourth group is larger commercial industrial connections with a capacity requirement in excess of 150kVA. ML requires these consumers to have half hourly or Time of Use (ToU) metering installed. This group also includes a number of large consumers with 11kV supplies.

The grouping of non-residential consumers by capacity has been adopted as the capacity provided generally reflects the initial and ongoing investment required to be made by the network, the maintenance costs incurred, and is also an indication of their likely contribution to peak demands.

Figure 6 outlines the four consumer groups, the relevant fixed charge price codes and the estimated number of ICPs in each group for the year commencing 1 April 2018.

Group	Description	Fixed Charge Codes	No. of ICPS
1	Residential	DS,DSNL,DL,DT	21,642
2	Irrigation	PM,PH,PK	346
3	Small Med. Comml. <150 kVA	NS,NH,NT,US,UL,RT,RV,RX	3,360
4	Lge. Comml. & Industrial > 150kVA	BF,BHC,BHM	117
Total number of installations			**25,465**

Figure 6: Consumer groups – number of ICPs and price category codes

3.3 Cost allocation methodology

3.3.1 Network statistics

The relative use of the network is measured in a number of different ways and expressed as network statistics. These network statistics are the basis of the allocation of costs to each of the consumer groups. The table below summarises the network statistics for each consumer group and the network as a whole.

Consumer Group	No. of ICPS	GWH/Yr	Capacity BDMD MVA	Peak Demand ADMD MVA	Demand RCPD MW	Assets $m
1. Residential	21,642	146	352	23	25	202
2. Irrigation	346	20	30	1	2	25
3. Small Med Comml.	3,360	79	121	25	16	108
4. Lge. Comml. Industl	117	134	66	22	18	52
Total	**25,465**	**379**	**569**	**70**	**61**	**387**

Figure 7: Network statistics

The “Number of ICPs” connected and “Consumption” measured in kWh, for each ICP is readily available from the network’s billing system. Estimating these variables for the coming year is part of the company’s budgeting process.

The “Capacity” stated on a before diversity maximum demand basis, (BDMD) is for information purposes only. For consumer Groups 1, 2 and 3, the value is based on the fusing as most of these connections do not have half hourly metering. All Group 4 connections have half hourly metering and therefore the actual maximum demand of each connection is summed together for the group.

“Peak Demand” is the estimation of each connection group’s load during 100 highest half hour periods of network demand. This is measured if available through TOU meter data, or estimated on an after diversity maximum demand basis, (ADMD). Where half hourly metering is installed for larger consumers the actual data is available.

The proportion of network demand utilised by the larger commercial and industrial consumers at times of peak demand varies from year to year. For the most recent year is it 22MVA, which compares with 27MVA for the prior period.

The peaks periods for this assessment included some periods in April 2017 when the wine processing was underway and periods of high demand during the winter months of 2017.

Where half hourly data is generally not available for the other smaller consumers, estimates are based on the fuse size and consumer type.

The estimates of demand at peak times is supported by knowledge built up through periodic data logging performed at particular substations where load is primarily residential or primarily small/medium commercial.

The results indicate that irrigation demand is low at times of peak demand on the network. This is because irrigation is generally not operating during the time of network peak demands in April or the winter months.

The diversity factor is significantly higher for residential users than non-residential users. The difference in diversity factor between residential and businesses is increased further by the number of non-permanent residences connected to the Marlborough network.

3.3.2 Allocation of assets

The allocation of assets between consumer groups can be done in a number of ways depending on the availability and flexibility of the data and information systems. ML's approach is to assign a value of assets to each ICP then summate these to get a total of each consumer group.

As assets are frequently shared, after diversity maximum demand (ADMD) is used to allocate the value of the asset across all of the ICPs supplied by each asset. The major asset categories were allocated as follows:

- The service, and in some cases the transformer, were assigned to a single ICP.
- The transformer and associated sub-site assets values, if shared, were assigned to the ICPs they supply on the basis of their respective ADMDs.
- The value of the 11kV feeder assets were assigned in sections to all of the ICPs normally supplied by that feeder and using a particular section of the feeder on the basis of the ICP's ADMDs[1].
- The zone substation asset values were assigned to all of the ICPs supplied by that zone substation on the basis of the ICP's ADMDs.
- The 33kV network and global assets were assigned to ICPs on the basis of their use of the assets.

The Replacement Cost (RC) rather than the Depreciated Replacement Cost (DRC) was used. If DRC was used the allocation of operating and maintenance costs would have needed to reflect the respective asset age profiles.

[1] The division of each feeder into sections was done for the first time for the April 2016 disclosure. A new information system allowed the network data to be analysed in this way.

The Marlborough network also has a number of geographic areas that are uneconomic to service. The assets for these areas have been shared amongst the groups in the same proportion as the economic assets. The costs of providing a supply to areas in remote locations such as the Marlborough Sounds is therefore shared by all network consumers, rather than falling primarily on the residential consumer group.

3.3.3 Application of cost indicators to cost categories

The intention of the methodology is to ensure the cost allocator applied to each category of costs reflects a substantial relationship between the category of costs and the underlying activity driving those costs.

System operations and maintenance, depreciation, and return on investment are considered to be asset related. These costs have been allocated based on the assets required to service the consumers in each group.

Administration and overhead costs are related to the company's servicing of all consumers and other company obligations. These shared costs are not directly attributable to any particular consumer group. The number of ICPs and volume has been combined to form a cost allocator for the administration and overhead costs.

The taxation charge, which is relatively small, has been allocated based on the forecast of revenue from network services for each group.

The quantum of costs to be allocated and cost allocator selected are outlined in Figure 8.

$'000	2018/19 Costs	Misc Revenue	Net of Misc Revenue	Allocation to Group based on
Transmn. Interconnection & ACOT	6,603		6,603	Share of RCPD
Transmn. Investment & Connection	1,072		1,072	Share of Assets
System Operations & Mtce	10,519	546	9,973	Share of Assets
Admin & Overheads	5,152	268	4,884	MWH /ICPs
Depreciation	10,192	529	9,663	Share of Assets
Taxation Expense	1,451	75	1,376	Revenue
Return on Investment	13,243	688	12,555	Share of Assets
Total Costs for 2017/18	**48,233**	**2,107**	**46,126**	
Misc Revenue	2,107			
Costs Net of Misc Revenue	**46,126**			

Figure 8: Cost allocator

3.3.4 Allocation of transmission costs to groups

For Marlborough the majority of transmission charges are interconnection charges. Interconnection charges for the year from 1 April 2018 are based on the demand measured on the network during the 100 Regional Coincident Peak Demand (RCPD) periods in the 12 months from 1 September 2016 to 31 August 2017.

Figure 9 sets out annual transmission charges for ML.

		31 Mar 2014 Actual	31 Mar 2015 Actual	31 Mar 2016 Actual	31 Mar 2017 Actual	31 Mar 2018 Estimate	31 Mar 2019 Estimate
Interconnection rate	$/ kW	99.44	114.47	110.35	114.64	123.98	113.77
Peak Demand - MW	MW	62.7	59.0	59.7	59.7	57.7	61.1
Intcontn. + ACOT	$'000	**6,230**	**6,756**	**6,587**	**6,841**	**7,148**	**6,953**
Connection Chrgs.	$'000	617	604	607	601	613	629
New Investment Chrgs.	$'000	466	523	492	464	436	443
Loss Rentals Rebates	$'000	(379)	(274)	(422)	(382)	(515)	(350)
Total Transmission	$'000	**6,933**	**7,609**	**7,264**	**7,525**	**7,683**	**7,675**
Annual Change		*26.0%*	*9.8%*	*-4.5%*	*3.6%*	*2.1%*	*-0.1%*

Figure 9: Transmission charges

The majority of transmission costs are allocated based on the actual and estimated contribution of each consumer group to total network demand during the RCPD periods.

Interconnection charges paid to Transpower and ACOT are expected to be $6.953m less an estimated $0.350m of loss rental rebates for the period makes $6.603m to be allocated to groups based on their share of demand during the RCPD periods in the prior year.

The larger commercial/industrial consumer group contributed 18MW of the 61.1MW of network demand during the 100 RCPD periods. The balance is allocated between the other three consumer groups using an estimation of their demand during these RCPD periods.

There remains $1.072m of transmission costs relating to new investment and connection charges which are allocated based on the share of network assets allocated to each group as described above.

Figure 10 below summarises the variables used and results of the allocation of transmission charges between the consumer groups.

Consumer Group	Demand at RCPD	Transmn. Interconn.	Assets	Transmn. NIC	Total
	MW	$000	$m	$000	$000
1. Residential	25	2,737	202	444	3,181
2. Irrigation	2	177	25	29	206
3. Small Med Comml.	16	1,754	108	285	2,039
4. Lge. Comml. Industl	18	1,935	52	314	2,249
Total	**61**	**6,603**	**387**	**1,072**	**7,675**

Figure 10: Allocation of transmission costs to consumer groups

3.3.5 Results of cost allocation to consumer groups

Figure 11 below summarises the allocation of all costs net of miscellaneous revenue between the consumer groups.

$'000 Consumer Group	Transmissn.	System Opns & Mtce.	Admin & Overheads	Depreciation	Taxation	Return on Investment	Total Cost Allocated
1. Residential	3,181	5,206	3,015	5,044	619	6,555	23,620
2. Irrigation	206	653	164	633	54	822	2,532
3. Small Med Comml.	2,039	2,784	833	2,698	341	3,505	12,200
4. Lge. Comml. Industl	2,249	1,329	873	1,288	362	1,673	7,774
Total	**7,675**	**9,973**	**4,884**	**9,663**	**1,376**	**12,555**	**46,126**

Figure 11: Allocation of costs to consumer groups

3.3.6 Comparison of cost allocation and expected revenue

Figure 12 compares the estimated revenue for the 12 months from 1 April 2018 to 31 March 2019 with the allocation of the estimated costs for the same period. The estimate of revenue for the 12 months to 31 March 2019 is based on volume forecasts for each group.

The estimate of revenue from each consumer group for the 12 months from 1 April 2018 to 31 March 2019 is compared with the estimate of costs to serve each group. Although alignment of the costs and revenues may be achieved over time, in some cases this is inappropriate or difficult to achieve because of regulatory requirements.

The revenue is likely to be close to estimated levels unless there is a significant unforeseeable event. Although it may vary to some degree with the quantity of local product available for processing and unusual weather patterns.

Irrigation consumption is more variable from year to year than consumption by other consumer groups. Irrigation revenue is also more variable despite a significant portion of the revenue being fixed based on capacity provided. The estimates of revenue for the irrigation group are based on irrigation volumes achieved in an average year

Consumer Group	Revenue Estimated $'000	Cost Estimated $'000	Difference Revenue $'000	Revenue % of costs	Gross Revenue $'000	Difference Revenue $'000
1. Residential	16,439	23,620	(7,181)	70%	19,939	(3,681)
2. Irrigation	1,437	2,532	(1,095)	57%	1,728	(804)
3. Small Med Comml.	9,059	12,200	(3,141)	74%	11,027	(1,173)
4. Lge. Comml. Industl	9,621	7,774	1,847	124%	12,146	4,373
Total	**36,556**	**46,126**	**(9,570)**	**79%**	**44,841**	**(1,284)**

Gross Revenue is before the annual discount on lines charges is paid.

Figure 12: Revenues estimate by consumer groups and cost estimates

The company's overall expected revenue is $9.570m less than what is required to cover the expected costs and make a return on investment in line with the industry cost of capital benchmark for the current regulatory period.

However note that the revenue is stated net of the posted discount, on lines charges paid annually to consumers, (consistent with regulatory definitions). The estimate for the discount for the period is $8.285m. Once the discount is added back on there is a shortfall of $1.284m, 2.8 of the estimated costs.

The expected revenue from the residential consumer group is below the costs produced by the allocation model, as is the revenue of the small to medium businesses. In the case of the irrigation consumer group the expected gross revenue is close to two thirds of the costs allocated under the methodology. When specific pricing for irrigation consumers was introduced the pricing was set to encourage the use of network assets at off-peak times. The revenue expected from the larger commercial/industrial consumer group is above the estimate of costs.

However a cost allocation model can only ever be an estimate of network costs. From year to year there are differences in results. The results of the cost allocation model are one of the factors considered in pricing decisions. When prices were changed from 1 April 2018, increases were made in fixed charges for all consumers except those in Consumer Group 4, the large commercial and industrial consumers. A similar approach was taken when prices were changed from November 2016.

Progressively efforts have been made to rebalance the revenue from consumer segments and move towards a more cost reflective structure. Inherent in any simplification of pricing structure there is typically a greater level of cost sharing between consumers but in reality if pricing were to be truly cost reflective the components within the price structure should be increased. The pricing schedule has also been rationalised with the number of pricing plans reduced and changes made to increase the level of alignment with industry guidelines. A significant update in pricing plans for the larger commercial/industrial consumers was implemented from 1 April 2013 to address changing patterns in network consumption. However the network charges for lines services also includes historical elements.

3.4 Reason for changes in prices

ML increased prices from 1 April 2018 to reflect the anticipated increase in costs faced by the network business.

3.5 Fixed and variable proportions

The proportion of total line charges currently being charged is 46% fixed, 54% variable.

For large commercial and industrial consumers the capacity charges have been included as fixed and the regional peak demand charges have been categorised as variable charges. The following table looks at the proportion of fixed and variable charges for each consumer group.

Group	Revenue $'000	Fixed Revenue $'000	Fixed %
1. Residential	16,439	6,002	37%
2. Irrigation	1,437	781	54%
3. Small Medium Commercial	9,059	4,493	50%
4. Large Comml. & Industrial	9,621	5,495	57%
Total	**36,556**	**16,771**	**46%**

Figure 13: Proportion of fixed and variable charges by consumer groups

The consideration of other pricing structures for each group is discussed in the pricing derivation section.

In general, fixed charges are a lower proportion of total line charge revenue for lower capacity users in the residential group. The higher variable component in the charges for Group 1 reflects the patterns of consumption, lower investment costs for an incremental consumer, and a controllable portion of load for residential consumers. The movement of consumers to LFC plans continues to reduce the portion of fixed charges received from the residential group and further distort the principles of cost reflective pricing.

For Group 2, the irrigation consumers, over half the revenue is collected from fixed charges. This is because the kWh used is highly varied from year to year depending on the seasonal weather patterns, but the costs to service this group are incurred by the network regardless of variations occurring with a dry or wet season. Therefore a price structure with a higher fixed proportion is more cost reflective.

Fixed charges are an even greater proportion of charges for the Group 4 consumers. These consumers also understand the concept of capacity provided and peak demand and are encouraged to make decisions to ensure there is a reasonable utilisation of network assets where practicable. Variable charges provide a balance to the other components of lines charges for Group 4.

ML assesses that most of its costs outlined above are actually fixed. If ML were to recover its fixed proportion of costs in fixed charges, the fixed charges would need to increase. ML is limited in its ability to do this by the LFC Regulations. Offering variable charges to consumers may stimulate efforts to use energy efficiently but results in the costs of consumers with low consumption being shared by other ICPs.

The use of unit charges i.e. $/kWh, also aligns with what most consumers generally understand, particularly residential consumers who are unfamiliar with concepts such as peak demand. Variable charges are valued by consumers as they are responsive to their level of activity month to month.

3.6 The derivation of the prices to be charged to each consumer grouping

The pricing methodology is required to include sufficient information for an independent expert to assess compliance with the pricing principles and explain the derivation of the tariffs to be charged to each consumer grouping.

Since it is sometime since a completely new price structure was introduced individual prices for each consumer group now incorporate historical factors.

When assessing whether the current prices are reasonable ML considers the following questions: Do the current prices:

- encourage consumption outside of peak demand periods to enhance the efficient utilisation of the network;
- reflect the impact of consumers' demands on transmission charges;
- ensure the costs of assets are recovered;
- reflect the use of controllable supplies within peak demand periods; and
- ensure the company complies with all legislative and regulatory pricing considerations, including the LFC Regulations.

3.6.1 Consumer Group 1 - residential consumers - prices

ML utilises the industry standard residential consumer definition. Residential consumers are divided into two categories based on the capacity they require from the network. Larger capacity residential connections, >20kVA, pay a higher daily fixed price reflecting the initial and ongoing asset costs of providing a higher than normal level of capacity. The same price per unit of energy apply for both standard and large residential connections.

Fixed Daily charges are set on the basis of two capacity bands, with prices of $1.25 less $0.23 discount per day for installations with less than 20kVA capacity provided and $2.50 less $0.459 discount per day for installations with greater than 20kVA capacity provided. The relativities between the fixed charges and the variable unit rates and the capacity threshold for the fixed charges have remained consistent over recent years.

Different $/kWh prices apply depending on whether supply is available at all times or restricted either to specified time periods or subject to interruption when required to manage network requirements.

The price for uncontrolled energy is 8.46¢/kWh less 1.69¢/kWh discount, for controlled energy, 4.95¢/kWh less 0.99¢/kWh discount, and 2.14¢/kWh less 0.43¢/kWh discount for energy used by hard wired appliances only available from 11pm – 7am. Ideally the prices should incentivise consumers to use controlled energy which enable ML to manage the demands on the network during peak periods. But the delivered energy prices of retailers do not necessarily reflect these price differences and signals to consumers become blurred.

The methodology for allocating the transmission cost component for the residential group has been consistent with transmission costs recovered primarily through the revenue from uncontrolled units. 90% of transmission costs for Group 1 are divided by the estimated units to give a transmission component of 2.8¢/unit. The remaining 10% of the transmission costs are to be recovered through the controlled units, which is equal to 0.8¢/unit. The allocation to the controlled pricing component occurs as from time to time controlled load is required to be switched back on at times of RCPD to maintain consumer service levels. No transmission component is recovered from the night rate as the RCPD periods do not occur between the 11pm and 7am, the night rate period.

There is a differential between the distribution component of the uncontrolled energy rate and that of the controlled and a further differential in the unit night rate. The night rate is set at a level to recover minimal revenue, providing a strong signal that there is available network capacity at these times.

The level of prices and difference between controlled and uncontrolled prices is cross checked by calculating the revenue that will be received from the controlled units and comparing this with the revenue that would have been received if they were charged at an uncontrolled rate. The difference should be approximately equal to the reduction in transmission costs that is made by reducing load during the RCPD periods. This is the case, therefore the difference between the controlled and uncontrolled rates is in the correct order of magnitude.

ML has a range of small scale distributed generation (SSDG) connected to the network. Applications to connect distributed generation are treated in accordance with Part 6 of the Electricity Industry Participation Code (The Code).

From 1 April 2014 ML introduced a charge of 0.5¢/kWh on units injected from SSDG to the Marlborough network. This charge was designed to signal that distributed generation will have long term incremental costs impacts on the network. For example distributed generation has the potential to increase voltage beyond regulatory limits when SSDG is injecting generation rather than it being consumed within the installation.

3.6.2 Consumer Group 2 - irrigation - prices

Irrigation has a distinct pattern of energy consumption, demand is very seasonal and consumption varies from year to year depending upon the vagaries of the weather. The pricing structure which incorporates a capacity charge reduces the variability of costs and revenues for consumers and the network. This approach is more cost reflective as costs are driven by the provision of capacity rather than actual volume consumed from year to year.

The current charges for this group, including the threshold of 23kW, are based on historical patterns and relativities. The prices for the minimum fixed charge loads up to 23kW is $3.00/day less $0.549/day discount, which is equal to the cost based on the installed capacity rate of $0.13/kW/day less $0.023/kW/day discount, for a consumer with a 23kW pump.

The transmission component is recovered through the capacity charge by dividing the allocated transmission charges by the estimated chargeable capacity.

The seasonal rate has been set at 2.80c/kWh less 0.56c/kWh discount, a level between the night rate and the controlled rates that apply for the commercial consumers in Group 3. The non-seasonal rate is set at a level of 28.0c/kWh less 4.68c/kWh discount, which discourages use outside of the irrigation season, consistent with the assumptions made on the cost of providing a supply to these installations.

3.6.3 Consumer Group 3 – general (small/medium business) consumers – prices

This group has three load groups/thresholds within it; up to 45kVA, 46 to 70kVA and 71 to 150kVA. There are further subgroups with the price per installation per day varying with the capacity required, based on fusing. A limited number of connections within this group are metered with half hourly equipment for monitoring purposes only.

Fixed daily charges for this group increase with the capacity provided. For installations with capacity requirements less than 15kVA daily charges are higher than those for residential consumers. This higher price reflects the decreased diversity factor between the users within this group and the requirements for different service levels such as performing some maintenance tasks outside of standard working hours to avoid business interruption.

Uncontrolled energy prices decrease as an offset for the higher fixed charges. Two controlled energy rates are available to incentivise consumers to utilise controlled load options where applicable, however most of the volume is on uncontrolled pricing plans.

The prices for supplies on controlled rates and night only rates are the same for all consumers in this group. This approach has been taken to limit the number of prices.

As capacity requirements increase, the fixed charges become more significant. This reduces the variability of revenue from the larger consumers within this group. The higher fixed charges are more cost reflective as when a consumer's capacity requirement increases, individual consumers or several consumers together influence the asset requirements at certain points in the network.

Conversely the uncontrolled consumption charges become slightly lower with the higher capacity to reflect the economies in supplying the larger capacity connections.

The transmission component is recovered through the unit price on uncontrolled energy. The allocated transmission costs are divided by the estimated number of uncontrolled energy units consumed by the group.

The current charges for this group are based on historical tariff patterns and relativities. Pricing structures for this group may be reassessed in the future.

3.6.4 Consumer Group 4 – larger commercial/industrial > 150kva - prices

When a consumer has a capacity requirement greater than 150kVA at any time during the year, the company requires a half hourly meter to be installed. Half hourly metering allows for a more detailed pricing structure and greater signalling of network constraints. Group 4 pricing plans include; a fixed daily charge, a unit charge based on energy consumed, a capacity charge, and a regional peak demand charge. Power factor charges are also levied if the power factor is less than 0.95. The capacity based charges make up a large component of the overall charges for Group 4 consumers.

There are 117 consumers in this group. The forecast revenue for this group for the 12 months commencing 1 April 2018 is $9.62m, 26% of the total of all line charge revenue collected by ML. A significant proportion of these consumers have a dedicated transformer for their supply.[2]

[2] Where a transformer is shared between a number of consumers from more than one consumer group the transformer capacity has been allocated to each group based on an approximation of the peak load of all the connected consumers.

The pricing structure for the large commercial and industrial consumers is made up of four main components plus the additional power factor charges[3:]

- Fixed daily charge of $6.90/day less $1.81 discount per installation which collects 2.3% of the target revenue from this group.
- Day and night variable unit charges ¢/kWh. The differential between the day and night rate is significant at 1.9¢/kWh, and a useful pricing signal to consumers to utilise energy at off peak times. A day night variation is generally consistent with the retailers' energy unit cost signal[4], and therefore it is likely to be a potential influence on consumer behaviour. On this basis a night rate continues to be offered. Prior to 2013 there was a seasonal variation in the day unit rates but this was considered unnecessarily complex and removed. Variable unit charges will collect 21% of the target revenue from this group.
- A capacity charge of $0.3633/kVA/day is levied based on 'assessed capacity'. (Lower rates are applied to HV supplies consistent with the difference in metered volumes). The charge is levied in each month of the year on an estimate of the fixed capacity being provided to each consumer. In assessing the capacity provided to consumers, ML measures the maximum demand over the previous three years, and this, together with the size of the specific transformer drives the assessment of chargeable capacity. Capacity charges will collect approximately 55% of the target revenue from this group.
- A regional peak demand charge of $0.295/kVA/day for all months of the year will collect the majority of the transmission costs for this group. The chargeable kVA used for the Regional Peak Demand charge is the average of half hourly demands during peak periods for transmission charges of 7:30am – 10am and 4:30pm-7pm weekdays only, May through to September. With the recent change from 12 to 100 RCPD periods ML will monitor if these parameters continue to be a good proxy for the RCPD periods.
- The demands measured during peak periods for transmission charges drive the charges for the following year i.e. this charge works in a similar way to the interconnection portion of Transpower's charges to ML. The Regional Peak Demand charge will collect 21% of the revenue from this group.

The prices above are for the majority of consumers within Group 4 who have low voltage supply. In addition, power factor charges are applied to consumers, based on the difference between the power factor observed and the benchmark of a 0.95 power factor each month.

The regional peak charge is a price signal that reflects a component of the cost of supply and may encourage consumers to reduce load during RCPD periods. The methodology used ensures consumers in Group 4 will benefit from any reduction in transmission charges that occur.

[3] Power factor charges are estimated to collect less than 2% of the revenue from this group.
[4] Day/night periods offered by Retailers are generally 12-8am but there is sufficient overlap with the Distributors 11pm-7am.

18MW of the 61.1.7MW, 29% of the RCPD that is the basis of transmission charges for the year from 1 April 20187 is attributable to the consumers within Group 4.

A price signal to reduce load during RCPD periods could be achieved in different ways. The approach chosen to nominate a defined "measurement period" for the five half hours in the morning and evening when traditionally RCPD have occurred, was adopted for a number of reasons. No additional technology was required, and consumers who can move loads are certain to benefit.

For those consumers in Group 4 who own their own transformer and are responsible for their maintenance there is a reduction in the capacity price per kVA to reflect the differential cost to the network.

3.7 Proportion of revenue by price component

The proportion of revenue by price component is outlined in Figure 16 in Appendix B.

3.8 Non-standard contracts

There is currently only one non-standard contract on the network, which is for the Waihopai Power station embedded in the Marlborough network. The price is fixed under a contract put in place in 1999 when ML sold the generation assets to Trustpower. The price increases each year by CPI. The target revenue for the year from 1 April 2018 is $70,635.

3.9 Power factor charges

A charge for reactive energy, where power factor is below 0.95, is levied to encourage consumers to maintain a reasonable power factor at their installations. From 1 April 2018 the industry standard approach has been adopted[5].

For those installations with half hourly metering ML will calculate a chargeable quantity each month and apply a kVAr/day price to this quantity. The periods used in this calculation will be limited to periods 15-40 on weekdays including public holiday only.

Chargeable quantity = max((kVArh-kWh/3)*2,0)

Figure 14: Power Factor calculation

Where half hourly data and kWh and kVArh data is not available and the type of connection would commonly exhibit poor power factor, ML will require confirmation that power factor correction equipment has been installed. If no confirmation is provided an estimate will be made by ML. This is the current approach to small irrigation pumps connected to the network.

[5] The standard primary calculation methodology for power factor charges is detailed on pages 57-59 and 82 of the ENA Pricing Guidelines for Electricity Distributors.

3.10 ML pricing schedule

The current ML pricing schedule is available on the ML website.
http://www.marlboroughlines.co.nz/About-us/Disclosures/Pricing.aspx

3.11 Payments to embedded generators

There are three embedded generators on the network and one commercial SSDG that operates to supplement its own usage and uses the network for two way flows. These four generators receive monthly payments for avoided cost of transmission (ACOT). The ACOT payments are based on the average generation volume at the time of the 100 regional coincident peak demand periods multiplied by Transpower's interconnection rate. For the pricing year commencing 1 April 2018 the interconnection rate is $113.77/kW.

This methodology in effect passes through the full value of the theoretical saving in transmission charges of ML that has occurred as a result of embedded generators reducing the network's load, measured at the GXP, during the RCPD periods.

The payment of ACOT to embedded generators was recently reconsidered by the Authority and these payments will no longer be required to be made by distributors to embedded generators from October 2019.

4 Compliance with the pricing principles

The following section examines the Electricity Authority's Pricing Principles and considers the extent to which ML's current Pricing Methodology is consistent with these principles. Our approach in this section is to outline our interpretation of each principle, discuss the practical and commercial constraints that may exist and illustrate how we have complied.

ML certainly has had regard for these pricing principles in establishing and maintaining their current network pricing.

4.1 Pricing principle (a)(i) - subsidy free range

Pricing principle (a) (i) in the Pricing Principles and Disclosure Guidelines states that:

> ***"Prices are to signal the economic costs of service provision, by 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;"***

In previous methodology ML has referred to the existence of 'subsidies' within the network pricing. However the issue and appropriate definition of subsidy was clarified in the report to the Electricity Authority - Review of Electricity Distribution Businesses' 2013 Pricing Methodology[6].

In the current document we have limited our use of the word 'subsidy' to the definition set out in the pricing principle (a)(i), i.e. a subsidy occurs only when the revenue received is not between the bounds of incremental costs and standalone costs, defined as follows:

> *"Where incremental cost is the cost of operating and maintaining network assets to provide an additional unit of electricity to each consumer group. We interpret this as generally being a short run incremental cost measure. Standalone cost is the lowest cost alternative of serving each customer or customer group (at an equivalent or a higher level of service). In most cases, we would expect standalone cost to be set by a non-network solution (for example, a diesel generator or solar home system). These options are a more practical way for customers to bypass the network, rather than grouping together and moving to an entirely new network."*[7]

4.1.1 ML's interpretation

Our interpretation is that prices we set for each designated consumer group must generate revenue from that consumer group that falls within the subsidy free band. The lower limits of this band is the cost of connecting that consumer group to the network (incremental costs) if the other groups were already serviced by the network, and the upper level of the

[6] Castalia Strategic Advisors Report to the Electricity Authority, November 2013.

[7] Page 24 of the Castalia Strategic Advisors Report to the Electricity Authority – Review of Electricity Authority Distribution Businesses' 2013 Pricing Methodologies, November 2013.

band is the costs of serving that consumer group, as if they were the only consumer group (stand-alone costs).

The range provided by this definition is indeed quite wide as the nature of ML's electricity network means that there are extensive shared costs.

In some instances the extent of the 33kV and 11kV network utilised for a group of customers in a specific area may vary depending upon the configuration of the network at the time.

Throughout the network consumer groups are inter-mingled e.g. an identifiable 33kV portion of the network generally supplies all consumer groups. Other costs incurred by the network business relate to functions, e.g. billing processes that are also provided for all consumer groups, albeit in a slightly different form depending on the size of the consumer.

4.1.2 Compliance with principle (a)(i)

Our network prices are considered and compared with the cost allocation model described above. The costs allocated reflect the economies of scale present in operating the network and as each consumer group is only allocated a portion of these costs, the revenue received is less than the standalone costs of servicing them.

Principle (a)(i) also explicitly excludes the subsidies that arise from compliance with legislation and/or regulation. ML considers that the LFC Regulations impose a very significant subsidy between consumers but not necessarily consumer groups on our particular network. Going forward as the incidence of photovoltaic panels increase the number of those eligible for LFC will be greater with further subsidy from consumers not on a low fixed charge pricing plan. Accordingly it will be necessary to alter the price structure in the interests of fairness and equity.

The current government policy that requires the rate of price increase for rural and non-rural users to be equal also prevents ML from adequately recovering costs from individual consumers.

ML has addressed the issue of LFC Regulations for the network to some extent by obtaining an exemption from offering low fixed charge plans to approximately 10% of our consumers who are in the most distant and less populated areas of the network. The consumers within these areas of the network are deemed to be "remote"[8]. This reduces the potential for greater subsidy from centrally located consumers to other users who are already cost sharing. ML further reduced the provision of low fixed charge plans by obtaining an exemption which also excludes residential consumers with >15kVA and/or three phase supply.

[8] Refer to ML website – exemption notices and map of remote zones. http://www.marlboroughlines.co.nz/About-us/Disclosures/Pricing.aspx

Analysis of profitability of all network consumers on a geographic segment basis was undertaken to obtain the exemption for consumers in remote areas. A detailed allocation of assets to each geographical segment, is also undertaken to complete the allocation of costs to consumers outlined in this disclosure. The results continue to show that the requirement to offer low fixed charge pricing plans leads to significant cross subsidisation among consumers in different geographic areas. The analysis supports the company's approach to address this through the exemptions obtained and the discount qualification policy.

Figure 15 includes an estimate of the standalone and incremental costs and revenue for each consumer group. In all cases revenue is within the subsidy free zone.

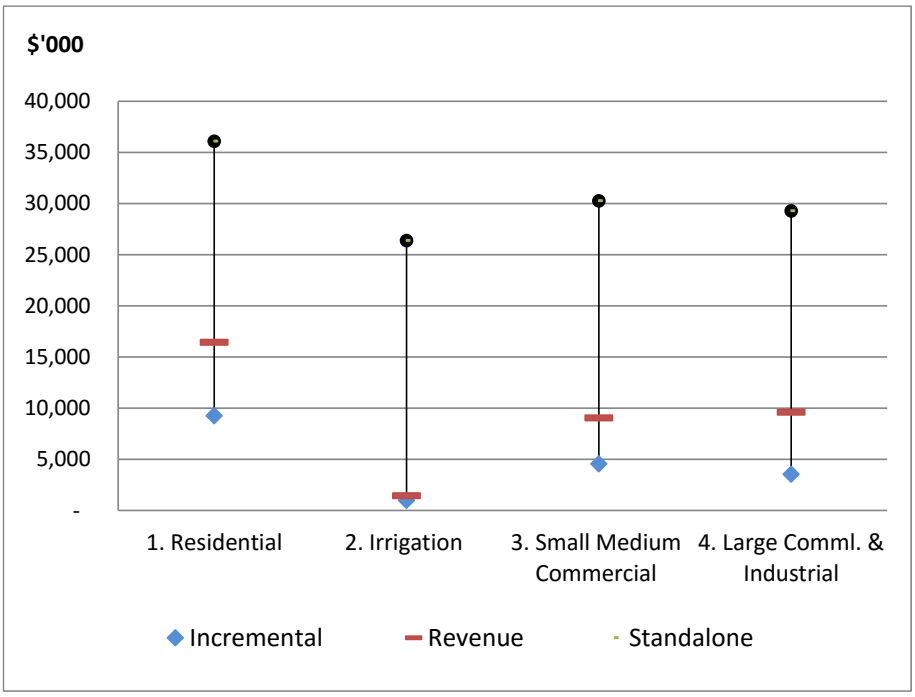

Figure 15: Analysis of revenue and standalone and incremental costs

4.2 Pricing principle (a) ii - level of available service capacity

> ***"Prices are to signal the economic costs of service provision, having regard to the extent practicable, to the level of available service capacity."***

The current structure of the New Zealand electricity market means that ML supplies end use consumers via energy retailers. The distributor's role in the supply chain provides an indirect relationship with the consumer which means any price signals provided by ML can potentially be repackaged or rebundled differently by retailers.

The impacts of price signals in network pricing can be diminished especially when the total distribution component is a small component of the consumers' total electricity costs, in the order of 30% of the overall cost of delivered energy.

4.2.1 ML's interpretation of principle (a)(ii)

ML's interpretation of this principle is that prices should distinguish between where additional capacity is readily available and where it is not available. On a practical level this will be achieved if the price structure encourages use when assets are underutilised.

Notwithstanding the repackaging and dilution effects on price signals offered, ML considers it meets the requirements of Principle (a)(ii) by:

- having an element of capacity based charges across all consumer segments
- differentiating between interruptible and non-interruptible load, and
- by having uncontrolled, controlled, night only rates or day/night rates available for most consumers.

ML's pricing structures reflect the principle that as capacity requirements increase, the costs to provide network services increase and users rightly pay higher charges for network services.

ML offers controlled load or limited availability prices to residential and commercial consumers, and irrigation installations. These prices reflect the network's ability to limit supply at a time when network demand is highest, or only supply at times when peak demands are very unlikely to occur, e.g. night rates are offered for supply between 11pm – 7am, and seasonal energy rates for irrigation are offered from October to May.

For residential consumers controlled load is generally offered for hot water cylinders that are then remotely switched off by the network during times of peak demand. Night rates are used to a lesser extent for heating appliances which utilise electricity supply only available at night.

For small commercial consumers controlled rates are also offered, however used less frequently as commercial consumers do not generally have a significant load which they are prepared to have interrupted.

Irrigation pricing is offered on the basis that irrigation loads are capable of being interrupted and have seasonal restrictions.

For larger commercial consumers a greater proportion of total line revenue is based on capacity charges consistent with the decreasing diversity of loads in this consumer group. A differential between the day/night unit tariffs is also provided to large consumers reflecting that network assets are utilised less at night. The signals provided by the network in this instance work in conjunction with the price signal provided by retailers where unit rates vary according to the time of day.

The network does not yet offer Time of Use rates for residential and general consumers. Although there has been an increase in advance metering infrastructure installed on the Marlborough network the coverage is still well below that of the national average.

The development of pricing to address evolving technologies will be a focus for the company in the coming year. Consultation with retailers and consumers will be undertaken to ensure the benefits of new pricing options are maximised. However, overall the cost/benefits of new options will need to be considered. Ultimately ML has to achieve sufficient revenue to meet its service and shareholder obligations regardless of how its pricing is packaged. With any pricing regime not all consumers will derive the same benefits.

There may be benefits if pricing reflected the additional capacity available in a particular location, however this would create different prices across the region and increase the multiplicity of rates which is generally not supported by retailers. ML's ability to introduce regional pricing within the network may also be constrained by the requirement that urban and rural prices change at the same rates.

4.3 Pricing principle (a)(iii) – additional usage on future investment costs

> ***"Prices are to signal the economic costs of service provision, by; signalling, to the extent practicable, the impact of additional usage on future investment costs."***

4.3.1 ML's interpretation of principle (a)(iii)

This principle is very similar to Principle (a)(ii) with a focus on the growth of the network rather than utilisation of the existing capacity.

4.3.2 ML's compliance with principle (a)(iii)

ML utilises a number of tools to signal the cost of additional usage on future investment costs. One of these is the capital contribution system that requires consumers to contribute to the marginal costs of providing capacity for a new installation or additional capacity for an existing installation. These charges signal the impact of demand on the investment required by setting a price that is related to the end users future demand on the network.

The controlled and interruptible load pricing tariffs offered to residential, small/medium commercial, and irrigation consumers meet the requirement of signalling the impact of additional usage on future investment costs. Variable charges may also signal the impact in an easy to understand and dynamic way.

For all consumer groups (residential, commercial, and irrigation) charges are stepped up as capacity provided is increased. For non half-hourly metered commercial consumers this is done in relatively narrow bands, for half-hourly metered consumers this is done in 5kVA increments. Irrigation installations are also charged on a capacity required basis but can be restricted from operating during the peak periods.

For the larger commercial consumers with half hourly metering, the daily and unit charge is greatly reduced with the majority of cost associated with capacity charges. In five of the last seven years the network peak has occurred during April, the month that wineries have their highest demands. The winter peak demand charges that operated until March 2013 reflected a situation historically where the network was constrained during periods of peak demand in the winter months. The winter peak charge did not reflecting future investment costs and was removed.

A regional peak charge was introduced, which reflects the impact that consumers' contribution to regional coincident peak demands have on transmission charges and therefore network costs more directly.

With network investment costs generally linked to consumer's capacity requirements, ML's capacity based price structure ensures compliance with this principle.

4.4 Pricing principle (b) – recovering allowed revenues

Pricing principle (b) states:

> ***"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."***

4.4.1 ML's interpretation of principle (b)

This principle appears to encourage the network to have a pricing structure that provides consumers with a high elasticity of demand, a lower price relative to other consumers.

4.4.2 ML's compliance with principle (b)

This is difficult for ML to apply as price elasticity is not able to be observed or measured for individual end use consumers. However, ML does consider that industrial consumers may respond to prices more readily than residential consumers especially if they are in an energy intensive industry.

Generally the industrial consumers with a higher load utilisation face a lower unit cost on the Marlborough network consistent with their potentially higher price elasticity.

It is worth noting that some residential consumers are targeting energy efficient initiatives to reduce their consumption perhaps demonstrating an elastic response to an increase in delivered energy prices that occurred in recent years.

4.5 Pricing principle (c)(i) – discourage uneconomic bypass

Pricing Principle (c)(i) states:

> ***"Provided that prices satisfy (a) above, prices should be responsive to the requirements and circumstances of stakeholders in order to discourage uneconomic bypass."***

4.5.1 ML's interpretation of principle (c)(i)

This principle deals with discouraging uneconomic bypass requiring the network not set prices so high that it encourages an alternative form of supply that would replicate the sunk assets of the original network supplier.

4.5.2 ML's compliance with principle (c)(i)

The use of a cost allocation model, which ensures a price is set below a stand-alone price and the cost of alternative supply such as diesel generation, promotes consistency with this principle.

However, ML will consider whether the further use of non-standard pricing is appropriate in some instances, subject to consideration of all other factors. It is possible that uneconomic bypass could occur when price signals are set for overall network conditions that do not apply in a particular location where a consumer has unusual requirements.

Typically the cost of an alternative supply of the same capacity and reliability of the grid supplied electricity is much greater than the cost of a delivered electricity supply.

4.6 Pricing principle (c) ii – price quality trade-offs

Pricing Principle (c)(ii) states:

> ***"Provided that prices satisfy (a) above, prices should be responsive to the requirements and circumstances of stakeholders in order to 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."***

In our view one way of ensuring pricing is responsive to the requirements and circumstances of particular stakeholders in the future is to continue to consider non-standard arrangements where appropriate.

ML has in the past met specific consumer needs by introducing new pricing options. For example, seasonal irrigation tariffs. In the future, developing non-standard arrangements may be appropriate, subject to overall pricing criteria.

Standard pricing options for large consumers respond to particular needs by offering alternatives for consumers to own their own transformers, utilise generation and/or connect at differing points in the network. With respect to a price/quality trade-off, the price quality research suggests that the consumers are generally satisfied with the current price quality trade-off.

This is especially so in remote rural areas where supply is already uneconomic and the costs of providing N-1 reliability are prohibitive. Equally it is not practical to provide a lesser quality of supply at lower cost to individual or small groups of consumers when they are part of a network.

4.7 Pricing principle (c) iii – encouraging investments in alternatives

> ***"Provided that prices satisfy (a) above, prices should be responsive to the requirements and circumstances of stakeholders in order to, 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."***

The distributed generation regulations provide that a distributor may only charge the incremental cost of connecting to their network. ML pays Avoided Cost of Transmission charges (ACOT) to distributed generators on the network which encourages generators to be operating during the transmission peak periods.

ML's charges 0.5c/kWh to distributed generation to feed into the network. This allows the SSDG to connect to and utilise the network to deliver their generation to other connections without incurring significant network charges.

With respect to transmission and distribution alternatives, some of ML's consumers have back up generation capacity where they have a need for reliability beyond that which the network can reasonably provide or that they have peak requirements greater than their installed capacity, e.g. wineries that have a peak processing period of two to three weeks only, and during this time an outage greater than a few hours could severely impact their operations.

4.8 Pricing principle (d) – transparency, stability and certainty

> ***"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."***

ML takes a number of steps to ensure our methodology is consistent with the above principle.

- ML consults with retailers on any planned changes to its pricing structure.
- Simplification and rationalisation of pricing structures has been progressively undertaken where differentials are no longer justified or the costs associated with pricing complexity outweigh the benefits. An example of this has been the removal of the seasonality component in the variable charge for Group 4 consumers.
- ML is committed to gradual transition of pricing changes to enable network users to respond accordingly. Any potential significant changes are carefully considered with a view to making adjustments over a period of time.

4.9 Pricing principle (e) – have regard to the impact on transaction costs and economic equivalence

> ***"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."***

As stated above, ML has progressively moved to simplify its pricing structure over recent years whilst maintaining pricing signals and appropriate relativities between prices. The changes made have reduced transaction costs to retailers, some consumers and the company. We have consulted with retailers on these proposed changes each year.

However it is relevant there is a trade-off between reducing the number of price categories or complexity of pricing and increasing cost sharing or not providing pricing to suit a specific category of consumer.

ML does not provide any discounts or special terms to end use consumers based on their choice of retailer. All retailers are subject to the same prices from ML. We therefore consider that prices are economically equivalent across all retailers. The principle of no special terms provided to any particular retailer is entrenched in our current Use of System Agreement.

Appendix A

1. Regulatory Framework

1.1 Regulatory Requirements

The following section provides an overview of the main regulatory requirements that impact ML's pricing decisions and disclosures.

ML is subject to the following key regulatory requirements:

- Part 4 of the Commerce Act which makes it subject to Electricity Distribution Information Disclosure requirements.
- The Electricity Industry Act which provides that the Electricity Authority has particular responsibility for monitoring tariff structures and approaches.
- The LFC Regulations which require all EDB's to offer a low fixed charge option to domestic consumers (subject to limitations such as for principal place of residence only).
- Restrictions on differing rates of increasing charges between urban and rural consumers.
- A range of obligations set out in the Electricity Participation Code.

1.2 Information Disclosure Requirements

ML is exempt from Price-Quality Regulation provided for under Part 4 of the Commerce Act.

Companies that are subject to price control are limited to increasing prices in line with inflation.

ML is still subject to the Information Disclosure (ID) regime which include requirements for specific disclosures on pricing matters:

Disclosure of pricing methodologies

2.4.1 Every EDB must publicly disclose, before the start of each disclosure year, a pricing methodology which –

(1) Describes the methodology, in accordance with clause 2.4.3 below, used to calculate the prices payable or to be payable;

(2) Describes any changes in prices and target revenues;

(3) Explains whether, and if so how, the EDB has sought the views of consumers, including their expectations in terms of price and quality, and reflected those views in calculating the prices payable or to be payable. If the EDB has not sought the views of consumers, the reasons for not doing so must be disclosed.

2.4.2 Any change in the pricing methodology or adoption of a different pricing methodology, must be publicly disclosed at least 20 working days before prices determined in accordance with the change or the different pricing methodology take effect.

2.4.3 Every disclosure under clause 2.4.1 above must: -

(1) Include sufficient information and commentary to enable interested persons to understand how prices were set for each consumer group, including the assumptions and statistics used to determine prices for each consumer group;

(2) Demonstrate the extent to which the pricing methodology is consistent with the pricing principles and explain the reasons for any inconsistency between the pricing methodology and the pricing principles;

(3) State the target revenue expected to be collected for the disclosure year to which the pricing methodology applies;

(4) Where applicable, identify the key components of target revenue required to cover the costs and return on investment associated with the EDB's provision of electricity lines services. Disclosure must include the numerical value of each of the components.

(5) State the consumer groups for which prices have been set, and describe –

(a) the rationale for grouping consumers in this way;

(b) the method and the criteria used by the EDB to allocate consumers to each of the consumer groups;

(6) If prices have changed from prices disclosed for the immediately preceding disclosure year, explain the reasons for changes, and quantify the difference in respect of each of those reasons;

(7) Where applicable, describe the method used by the EDB to allocate the target revenue among consumer groups, including the numerical values of the target revenue allocated to each consumer group, and the rational for allocating it in this way;

(8) State the proportion of target revenue (if applicable) that is collected through each price component as publicly disclosed under clause 2.4.18.

2.4.4 Every disclosure under clause 2.4.1 above must, if the EDB has a pricing strategy –

(1) Explain the pricing strategy for the next 5 disclosure years (or as close to 5 years as the pricing strategy allows), including the current disclosure year for which prices are set;

(2) Explain how and why prices for each consumer group are expected to change as a result of the pricing strategy;

(3) If the pricing strategy has changed from the proceeding disclosure year, identify the changes and explain the reasons for the changes.

2.4.5 Every disclosure under clause 2.4.1 above must–

Describe the approach to setting prices for non-standard contracts, including –

(a) the extent of non-standard contract use, including the number of ICPs represented by non-standard contracts and the value of target revenue expected to be collected from consumers subject to non-standard contracts;

(b) how the EDB determines whether to use a non-standard contract, including any criteria used;

(c) any specific criteria or methodology used to determine prices for consumers subject to non-standard contracts and the extent to which these criteria or that methodology are consistent with the pricing principles;

Describe the EDB's obligations and responsibilities (if any) to consumers subject to non-standard contracts in the event that the supply of electricity line services to the consumer is interrupted. This description must explain -

(a) the extent of the differences in the relevant terms between standard contracts and non-standard contracts;

(b) any implications of this approach for determining prices for consumers subject to non-standard contracts;

Describe the EDB's approach to developing prices for electricity distribution services provided to consumers that own distributed generation, including any payments made by the EDB to the owner of any distributed generation, and including the –

(a) prices; and

(b) value, structure and rationale for any payments to the owner of the distributed generation.

1.3 Electricity Authority Pricing Principles and Information Disclosure Guidelines

In February 2010 the Electricity Commission released the Pricing Principles and Information Disclosure Guidelines with a view that these would be progressively incorporated into Pricing Methodologies. The Electricity Authority adopted these Pricing Principles. However the Authority has signalled it will review the principles in 2018.

1.3.1 The Pricing Principles

(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.

(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.

(b) Where prices based 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.

(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.

(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.

(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.

Section 6 of this document discussed each of the principles in detail and demonstrates ML's compliance with these principles.

1.4 Electricity (Low Fixed Charge) Tariff Option for Domestic Consumers Regulations 2004 (LFC Regulations)

ML is also required to comply with the LFC Regulations. Section 14 and 15 of the LFC Regulations require distributors and energy retailers to offer low fixed charge pricing plans - distributors must make available a price with a fixed line charge component of no more than 15 cents per day, excluding GST, to domestic consumers provided that it is a principal place of residence, not a holiday home.

The total charges for the low fixed charge pricing plan, made up of the fixed and variable charges, must be equivalent to a standard price option for a typical domestic consumer, defined as a user of 8,000kWh per annum in most areas of New Zealand.

A distributor's marginal cost to supply a residential connection is generally higher than 15 cents per day, so if the usage on the connections is minimal, LFC Regulations effectively require ML to provide supply to a group of network users i.e. those residential consumers who use much less than the deemed typical consumer, funded in part from revenue collected from other consumers or collect less revenue than covers the full costs of operating the network.

It is the firm view of ML the purpose and merits of this Government policy need to be critically examined.

ML has obtained a renewal of its exemption from offering Low Fixed charge pricing plans to connections that are difficult to service and in sparsely populated areas of the network. These areas are referred to as "remote". 10% of the total network connections are within the "remote" areas. Typically installations within the "remote" areas do not cover their full costs of service. This situation prevails because of earlier regulatory requirements that meant uneconomic lines were built. The exemption ML has from the application of the Low Fixed Charge regime serves to limit the amount of the shortfall that is received from consumers within these geographic areas.

The remote classification is also utilised in ML's discount policy. The installations within the areas deemed "remote" do not qualify for network discounts on the basis that these connections are uneconomic to supply so there is no surplus revenue received.

ML also has a second exemption under the LFC Regulations. This exemption provides that if a residential installation has greater than 15kVA capacity supplied and/or has three phase supply, then low fixed charge plans do not need to be offered.

Both of these exemptions are displayed on the company website http://www.marlboroughlines.co.nz/About-us/Disclosures/Pricing.aspx

1.5 Rural and Non - Rural Pricing

Section 113 of the Electricity Industry Act 2010 provides for regulation to be introduced to limit prices increasing at a greater rate for rural consumers than for those in urban areas. At this time no such regulation has been put in place but it is understood that government policy is that there be equal rates of increases for urban and rural consumers.

Electricity distributors had previously been directed through a Government Policy Statement to limit the increase of rural prices to the rate of that for urban consumers.

The rural and remote rural areas are invariably supplied from a single source of supply via radial lines (longest 326km) and inherently the reliability of these lines is less than for meshed lines in other networks with alternative options for supply. Typically the costs of vegetation control, maintenance and restoration of supply are much greater in the rural, and particularly rural remote areas, than those in urban areas, especially on a per consumer basis.

As the cost of delivering the lines services to rural consumers is higher than to an equivalent consumer in an urban environment, this would suggest that networks may not be able to fully recover the cost of servicing these consumers through their charges for network services.

This is particularly so in the company's more remote areas where the lines can only be reached by helicopter, boat, or specialist off-road vehicles or sometimes only foot.

1.6 Electricity Industry Participation Code

1.6.1 Part 6 Distribution Generation

Part 6 of the Code specifies pricing for distributed generation. These regulations specify that only incremental costs can be charged to distributed generators.

Appendix B

Price Code	% of Revenue	Price Code	% of Revenue
10	14.27%	WM	0.65%
AL	11.01%	BF	0.55%
DS	8.91%	PFT	0.47%
11	8.60%	MDCFC	0.42%
23	6.58%	PM	0.39%
DSNL	5.33%	PFI	0.34%
NT	4.22%	97	0.29%
WL	3.96%	50	0.28%
51	3.71%	22	0.22%
40	3.08%	PH	0.21%
12	2.71%	Wai	0.19%
16	2.68%	17	0.15%
31	2.48%	18	0.13%
RT	2.27%	US	0.11%
AM	1.97%	62	0.10%
PK	1.54%	80	0.05%
NS	1.52%	BHC	0.03%
AH	1.45%	BHM	0.02%
61	1.34%	28	0.02%
DT	1.27%	PMFC	0.02%
RV	1.24%	UL	0.01%
96	1.23%	DG	0.01%
RX	1.19%	RNZFC	0.01%
NH	0.96%	20	0.01%
DL	0.92%	PSLT1/2	0.01%
WH	0.88%	30	0.00%

Figure 16: Proportion of revenue from each price component