



# **Electricity Distribution Network Pricing Methodology Disclosure**

**For prices effective 1 April 2013**

Pursuant to:  
Electricity Distribution (Information Disclosure) Requirements 2012  
and  
Distribution Pricing Principles and Information Disclosure Guidelines

# Table of Contents

Glossary – Terms and Definitions.....	4
1. Background.....	6
1.1 Overview of Marlborough Lines.....	6
1.2 Ownership structure of Marlborough Lines.....	6
1.3 Prices changes for current year.....	6
1.4 Regulatory status of Marlborough Lines.....	7
1.5 Background to Pricing Methodology Disclosure Document.....	7
1.6 Structure of Pricing Methodology Disclosure Document.....	7
1.7 Overview of the Pricing process for FY2013.....	8
1.7.1 Target Revenue and Cost Estimates.....	8
1.7.2 Overview of Customer Groups.....	8
1.7.3 Overview of Cost Allocation Methodology.....	8
1.7.4 Structure of the tariffs for each group.....	8
1.7.5 Comparison of annual revenue and allocated cost for each group.....	9
1.8 General Issues with Cost Allocation Model.....	9
1.9 Discount Policy.....	9
2. Regulatory Framework.....	10
2.1 Regulatory Requirements.....	10
2.2 Information Disclosure Requirements.....	10
2.3 Electricity Authority Pricing Principles and Information Disclosure Guidelines.....	12
2.3.1 The Pricing Principles.....	12
2.4 Low User Regulations.....	13
2.5 Rural and Non - Rural Pricing.....	14
2.6 Electricity Industry Participation Code.....	15
2.6.1 Part 6 Distribution Generation.....	15
2.6.2 Part 12A Distribution Use of System.....	15
3. MLL approach to setting prices.....	16
3.1 Introduction.....	16
3.2 Pricing to provide adequate revenue recovery.....	16
3.3 Continuation of payment of discounts.....	16
3.4 Consideration will be given to the impact of changes on individual consumers.....	16
3.5 Prices to be cost reflective subject to consumer considerations.....	17
3.6 Results of Consumer Research - Customer Satisfaction Survey.....	17
4. Allocation of costs and Derivation of Tariffs.....	19
4.1 Introduction.....	19
4.2 Treatment of discounts.....	19
4.3 Assessment of costs for the FY14 year.....	19

<b>4.4</b>	<b><i>Classification of Consumers into Groups</i></b> .....	<b>20</b>
<b>4.5</b>	<b><i>Cost Allocation Methodology</i></b> .....	<b>21</b>
<b>4.5.1</b>	<b>Network Statistics</b> .....	<b>21</b>
<b>4.5.2</b>	<b>Allocation of Assets</b> .....	<b>22</b>
<b>4.5.3</b>	<b>Application of cost indicators to cost categories</b> .....	<b>23</b>
<b>4.5.4</b>	<b>Calculation of required revenue</b> .....	<b>23</b>
<b>4.5.5</b>	<b>Comparison of cost allocation and expected revenue</b> .....	<b>24</b>
<b>4.6</b>	<b><i>Reason for Changes in Prices</i></b> .....	<b>25</b>
<b>4.7</b>	<b><i>Fixed and variable proportions</i></b> .....	<b>25</b>
<b>4.8</b>	<b><i>The derivation of the prices to be charged to each consumer grouping</i></b> .....	<b>26</b>
<b>4.8.1</b>	<b>Group 1 Prices – Residential Consumers</b> .....	<b>27</b>
<b>4.8.2</b>	<b>Group 2 Prices — Irrigation</b> .....	<b>27</b>
<b>4.8.3</b>	<b>Group 3 Prices – Non Residential Consumers – up to 140kVA</b> .....	<b>28</b>
<b>4.8.4</b>	<b>Group 4 Prices – Time of Use Connections &gt; 140kVA</b> .....	<b>28</b>
<b>4.9</b>	<b><i>Proportion of revenue by price component</i></b> .....	<b>30</b>
<b>4.10</b>	<b><i>Non Standard contracts</i></b> .....	<b>30</b>
<b>4.11</b>	<b><i>Power Factor Charges</i></b> .....	<b>30</b>
<b>4.12</b>	<b><i>MLL Pricing Schedule</i></b> .....	<b>31</b>
<b>4.13</b>	<b><i>Payments to Embedded Generators used solely for generation</i></b> .....	<b>31</b>
<b>4.14</b>	<b><i>Payments to Consumers who generate to reduce their consumption</i></b> .....	<b>31</b>
<b>4.15</b>	<b><i>Future Changes</i></b> .....	<b>31</b>
<b>5.</b>	<b>Compliance with the Pricing Principles</b> .....	<b>32</b>
<b>5.1</b>	<b><i>Pricing Principle (a)(i)- subsidy free range</i></b> .....	<b>32</b>
<b>5.1.1</b>	<b>MLL’s Interpretation</b> .....	<b>32</b>
<b>5.1.2</b>	<b>Compliance with Principle (a)(i)</b> .....	<b>32</b>
<b>5.2</b>	<b><i>Pricing Principle (a) ii - level of available service capacity</i></b> .....	<b>33</b>
<b>5.2.1</b>	<b>MLL’s interpretation of Principle (a)(ii)</b> .....	<b>33</b>
<b>5.3</b>	<b><i>Pricing Principle (a)( iii) – additional usage on future investment costs</i></b> .....	<b>34</b>
<b>5.3.1</b>	<b>MLL’s interpretation of Principle (a)(iii)</b> .....	<b>34</b>
<b>5.3.2</b>	<b>MLL’s compliance with Principle (a)(iii)</b> .....	<b>34</b>
<b>5.4</b>	<b><i>Pricing Principle (b) – recovering allowed revenues</i></b> .....	<b>35</b>
<b>5.4.1</b>	<b>MLL’s interpretation of Principle (b)</b> .....	<b>35</b>
<b>5.4.2</b>	<b>MLL’s compliance with Principle (b)</b> .....	<b>35</b>
<b>5.5</b>	<b><i>Pricing Principle (c)(i) – discourage uneconomic bypass</i></b> .....	<b>35</b>
<b>5.5.1</b>	<b>MLL’s interpretation of Principle (c)(i)</b> .....	<b>35</b>
<b>5.5.2</b>	<b>MLL’s compliance with Principle (c)(i)</b> .....	<b>36</b>
<b>5.6</b>	<b><i>Pricing Principle (c) ii – price quality trade-offs</i></b> .....	<b>36</b>
<b>5.7</b>	<b><i>Pricing Principle (c) iii – encouraging investments in alternatives</i></b> .....	<b>36</b>
<b>5.8</b>	<b><i>Pricing Principle (d) – transparency, stability and certainty</i></b> .....	<b>36</b>
<b>5.9</b>	<b><i>Pricing Principle (e) – have regard to the impact on transaction costs and economic equivalence</i></b> ...	<b>37</b>
	<b>Appendix A</b> .....	<b>38</b>

## Glossary – Terms and Definitions

<b>ACOT</b>	Avoided Cost of Transmission - MLL pays Avoided Cost of Transmission to a number of small scale generators that provide distributed generation services on MLL’s network.
<b>Asset</b>	Equipment or plant that is part of MLL’s electricity distribution network.
<b>By pass</b>	If a consumer chooses to obtain its electricity supply from an alternative source to the distribution network.
<b>Commerce Commission</b>	Electricity distributors are subject to regulatory provisions from the Commerce Commission under the Commerce Act 1986 which aims to provide the benefits of competition in markets where effective competition does not exist.
<b>Consumer</b>	An electricity user.
<b>Controllable Load</b>	The load, mostly electrical water heating load, that MLL is able to switch off during periods of high demand.
<b>Cost Allocation Model</b>	A model that allocates the actual costs of owning and operating the distribution network to the consumer groups based on cost allocation methodology.
<b>CPI</b>	The consumer price index is a measure of the change of a weighted average of prices in a basket of consumer goods and services.
<b>Distributed Generation</b>	Electricity generation that is connected directly to the distribution network. Also referred to as ‘embedded generation’.
<b>Electricity Authority</b>	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.
<b>Electricity Distribution Business (EDB)</b>	A business such as MLL that is responsible for delivering electricity from the national grid to homes and businesses.
<b>Distribution Pricing Principles</b>	Published by the Electricity Authority in February 2010. These principles outline the requirements of distributors pricing methodology. Also known as the “pricing principles”.
<b>GXP</b>	Grid Exit Point. The point where MLL’s network connects to Transpower’s transmission network and where electricity flows from Transpower’s network onto MLL’s network.
<b>HV</b>	The high voltage distribution network.

<b>ICP</b>	The installation point where a consumer connects to MLL’s electricity distribution network.
<b>kWh</b>	Kilowatt-hour. A measure of electricity consumption - this is the unit in which retail sales of electricity are measured.
<b>kVA</b>	Means kilovolt ampere and is a symbol of electrical load.
<b>Load management</b>	When MLL 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.
<b>LV</b>	The low voltage distribution network.
<b>Network peak demand</b>	When the network’s consumption is at its highest.
<b>Pricing Methodology Disclosure Guidelines</b>	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.
<b>TOU</b>	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

## 1.1 Overview of Marlborough Lines

Marlborough Lines Limited (MLL) is an electricity distribution business (EDB). The network has approximately 24,000 customers, which are homes and businesses across the Marlborough region. The area supplied includes the provincial centre of Blenheim and the smaller towns of Picton, Havelock, Seddon and Ward. The supply 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, GXP (in Blenheim), with an extensive sub-transmission system and zone substations.

MLL has an electrical contracting business in Marlborough that undertakes capital and maintenance work for the network and other local users. The Marlborough Lines Group also has investments in other related businesses including Nelson Electricity, OtagoNet, Otago Power Services and Horizon Energy.

Marlborough Lines has an ‘interposed’ relationship with the Marlborough consumers i.e. the contractual relationship to deliver services is through the energy retailers on the network. Marlborough Lines has a Use of System Agreement with all the retailers that operate on its network. Currently the energy retailers offering services in Marlborough are; Contact Energy, Genesis Energy, Just Energy (Pulse Utilities), Meridian Energy, Mercury Energy, Tiny Mighty Power <sup>1</sup> and TrustPower.

Lines charges are billed to the retailers on a monthly basis and for services based on consumption data provided to MLL by a consumer Metering Equipment Provider (MEP). In some instances the MEP is the same entity as the consumer’s retailer. Consequently, MLL has no contractual relations for the network service with the consumers on its network.

## 1.2 Ownership structure of Marlborough Lines

MLL is owned by the Marlborough Electric Power Trust (MEPT), which holds shares on behalf of the consumers connected to the network in Marlborough. The MEPT has six elected trustees. Elections are held biannually with the next election for three trustees to be held in March 2014.

## 1.3 Prices changes for current year

MLL has reviewed its prices for electricity distribution services and new prices were published to take effect from 1 April 2013. The prices set reflect the needs of the company, the Marlborough consumers, stakeholders, together with the wide ranging requirements provided by the comprehensive regulatory framework. The overall rate of increase over the prior year was 9.5%. The increase in prices result from a significant increase in transmission charges and the ongoing capital investment required to ensure reliability and continuity of supply for consumers.

The structure of prices for the majority of consumers remains unchanged. Some elements of the prices for the large commercial industrial consumers, (those with capacity provided greater than 140kVA) were amended and this is discussed in more detail in section 4.8.4.

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<sup>1</sup> Mercury Energy and Tiny Mighty Power are fully owned subsidiaries of Mighty River Power Limited.

## **1.4 Regulatory status of Marlborough Lines**

MLL meets the criteria specified for a consumer owned electricity distribution business under Part 4 of the Commerce Act and consequently has 'exempt' status. Electricity distributors that are deemed exempt are not required to comply with 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 Distribution sector and sets out a number of compliance obligations for EDBs such as Marlborough Lines.

## **1.5 Background to Pricing Methodology Disclosure Document**

This year's Pricing Methodology Disclosure is in a similar format to the methodology published last year, but has further detail included to address the new Electricity Distribution Information Disclosure requirements<sup>2</sup>.

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

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 and Disclosure Guidelines administered by the Electricity Authority.

Although the pricing principles are voluntary, the Electricity Authority encourages EDBs to carefully consider the principles and the associated guidelines in the process to set prices. A commentary on the consistency or otherwise of the company's pricing methodology with these pricing principles is also required to be disclosed. The Electricity Authority has indicated it will review the pricing methodology disclosed to assess compliance with the pricing principles.

## **1.6 Structure of Pricing Methodology Disclosure Document**

**Section 1.** - includes an introduction to Marlborough Lines, the regulatory context for this disclosure and overview of the process used to set prices to take effect from 1 April 2103.

**Section 2.** - details the regulatory framework for this year's Pricing Disclosure including the pricing principles confirmed by the Electricity Authority and the new ID requirement with respect to pricing.

**Section 3.** - outlines some guiding principles that were considered prior to the application of the detailed cost allocation model.

**Section 4.** - provides a detailed explanation of the methodology and cost allocation model applied to determine the prices for lines charges for customers on MLL's electricity network. This section includes the rationale for each of the consumer groups and a description of the methodology used to allocate assets to ICPs and therefore consumer groups.

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<sup>2</sup> Electricity Distribution Information Disclosure Determination 2012, Decision No. NZCC 22, Date of Decision 1 October 2012.

**Section 5.** - discusses each of the Pricing Principles and demonstrates the consistency of MLL's pricing methodology with the principles.

## **1.7 Overview of the Pricing process for FY2013**

### **1.7.1 Target Revenue and Cost Estimates**

As required, this document discusses the costs of the network business that are targeted to be recovered through charges for lines services. The level of target revenue is based on an estimate of costs for the coming year subject to the limitations on the rate of increases that can be reasonably made.

The total costs of operating the network business for the year from 1 April 2013 to 31 March 2014 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 network business. The numerical value of each of these cost components is clearly stated in section 4.3.

### **1.7.2 Overview of Customer Groups**

As required 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, Small & Medium Commercial, Large Commercial (Time of Use and >140kVA) and Irrigation users.

The document discusses the rationale for the grouping of consumers in this way and the methodology to determine which group each consumer falls into. The network statistics relating to each of the consumer groups is clearly stated in section 4.5.

### **1.7.3 Overview of Cost Allocation Methodology**

A cost allocation methodology is then required to allocate each of the costs to each installation and therefore get the total cost to serve for each consumer group. The cost allocation methodology is explained so it clearly shows how each category of the network costs is allocated between the consumer groups.

The methodology utilises cost allocators that reasonably apportion the costs to each of the consumer groups. The different cost allocators considered and ultimately used are discussed. The majority of costs are allocated based on the proportion of assets used to supply the ICPs within each consumer group. The usage in kWh and number of ICPs are used to allocate overhead and administration costs. Revenue is used to allocate taxation expense.

### **1.7.4 Structure of the tariffs for each group**

Once the target revenue for each group is identified the specific tariff structures for each group are examined and the rates set for each tariff. The tariff structures vary across the consumer groups to ensure that the revenue is recovered in a means consistent with the pricing principles. Although most of the cost of operating an electricity network is fixed, revenue for lines services is generally made up of fixed and variable tariffs. A description of the current methodology with respect to the proportion of fixed and variable charges is discussed in section 4.7.

### **1.7.5 Comparison of annual revenue and allocated cost for each group**

A comparison with target revenue and allocated cost for each group is made to ensure alignment between revenue to be received from each consumer group and the cost allocated to each group.

## **1.8 General Issues with Cost Allocation Model**

MLL recognises that the pricing principles published by the Authority encourage distributors to develop and use a cost allocation model. However, MLL also suggests there are a number of limitations to processes for allocating costs and that there are many different valid approaches to the allocation of network costs to groups of consumers. The difficulties result from most assets and other non-asset related costs being shared over a large number of consumers, which makes the allocation of costs to each of the consumer groups subject to assumptions and judgement. In essence costs have to be allocated rather than accurately attributed to a defined group of consumers. The application of the cost allocation model used by MLL is discussed in more detail in section 4.5.

## **1.9 Discount Policy**

MLL has for some time had a policy of paying discounts to qualifying consumers at the end of each financial year. The revenues stated in this report are before the payment of discounts and discounts are not included as a cost to be recovered. In most cases the discount offered is an equal proportion of each tariff on the price schedule. MLL has chosen to set the discount as a relatively equal proportion of each tariff<sup>3</sup>, and therefore each network consumer is rewarded proportionately through the discount process regardless of the mix of consumption across tariffs.

The exception is that the regional peak demand charge for larger customers is set at a level to recover the transmission costs associated with this consumer group and therefore no discount is paid on this portion of a consumer's line charges.

In most cases the structure of the discount means it acts as a credit for a portion of the lines charges paid for network services in the prior 12 month period<sup>4</sup>.

Consistent with the Low User Regulations, the cost faced by the typical residential user (as defined in the regulations) are equal on a pre and post discount basis. Discounts are paid via the consumers' electricity retailer as a credit on their account.

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<sup>3</sup> A small number of tariffs are excluded such as power factor charges and some charges for unmetered load to make the discount administration process more straightforward and therefore cost effective.

<sup>4</sup> The calculation period runs from 1 February to 31 January each year to provide sufficient time to calculate each qualifying consumer's discount which is paid via their retailer in March.

## 2. Regulatory Framework

### 2.1 Regulatory Requirements

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

MLL 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 "Low User Regulations" which require all EDB's to offer a low fixed charge option to domestic consumers (subject to limitations such as permanent residences only),
- Provisions in the Electricity Industry Act around pricing to rural consumers,
- A range of obligations set out in the Electricity Participation Code.

### 2.2 Information Disclosure Requirements

MLL is exempt from Price-Quality Regulation provided for under Part 4 of the Commerce Act. Companies that are subject to this regime, commonly referred to as the Default Price Path, (DPP), are limited to annual price increases (after providing for changes in volumes) equal to CPI, plus or minus an x factor (currently set at zero), plus any change in "pass through" and "recoverable" costs.

However MLL it still subject to the Information Disclosure (ID) regime. The ID requirements were significantly revised last year with revisions in many areas including pricing. The ID requirements with respect to pricing outlined in the determination published 1 October 2012 are as follows:

#### *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 rationale 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 preceding disclosure year, identify the changes and explain the reasons for the changes.*

2.4.5 Every disclosure under clause 2.4.1 above must–

- (1) *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 determining prices for consumers subject to non-standard contracts and the extent to which these criteria or that methodology are consistent with the pricing principles;*
- (2) *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;*
- (3) *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.*

## **2.3 Electricity Authority Pricing Principles and Information Disclosure Guidelines**

The predecessor to the current Electricity Authority, the Electricity Commission, had a work stream around the standardisation of distributor arrangements that included distributor pricing. This programme of work included consultation with distributors, retailers, end use consumers and consumer representatives.

In February 2010 the Electricity Commission released the *Pricing Principles and Information Disclosure Guidelines* with a view that these would be progressively incorporated into EDB pricing Methodologies from 31 March 2011 onwards. The Electricity Authority has ratified these Pricing Principles and the associated Information Disclosure Guidelines.

### **2.3.1 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.*



A distributor's fixed cost to supply a residential ICP is generally higher than 15 cents per day, so these regulations effectively require MLL to subsidise a particular group of network users i.e. those residential consumers who uses less than the deemed typical consumer, from revenue collected from other consumers or collect less than target revenue.

MLL has obtained an exemption from offering Low User tariffs to installations that are difficult to service and in sparsely populated areas of the network. These areas are referred to as "remote". Installations within the "remote" areas make up around 10% of the total network connections. Typically these installations have always been cross subsidised. This situation prevails because of earlier regulatory requirements which required uneconomic lines to be built. The exemption from the application of the Low User fixed charge regime serves to limit the level of cross subsidisation that would otherwise occur.

The remote classification is also utilised in the administration of MLL'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.

MLL also has a second exemption for the purpose of the Low User Regulations. This exemption provides that if a residential installation has greater than 15kVA capacity supplied and/or has three phase supply, then low user compliant tariffs 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>

## **2.5 Rural and Non - Rural Pricing**

Section 113 of the Electricity Industry Act 2010 provides for regulation to ensure that prices increase at an equal rate between rural and urban consumers. At this time no such regulation has been put in place but it is understood that a policy intent exists that there be equal rates of increases.

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, but this statement has been superseded by the Act.

As the cost of delivering the lines services to rural customers is higher than to an equivalent customer in an urban environment, this policy has a similar effect to the Low User Regulations and requires a distributor to subsidise one group of consumers from another.

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.

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. Hence the cost of supply in these areas is subsidised by consumer in other parts of the network.

## **2.6 Electricity Industry Participation Code**

### **2.6.1 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.

### **2.6.2 Part 12A Distribution Use of System**

A recent revision to the Code is Part 12A which will determine how MLL alters tariff codes from 1 April 2014.

## **3. MLL approach to setting prices**

### **3.1 Introduction**

The following section outlines the key guiding principles that were considered at a high level prior to the application of the detailed methodology that allocates costs and sets specific tariffs for each consumer group. MLL also conducts a comprehensive customer satisfaction survey each year. The results of the survey inform the company management and directors of consumer views that are ultimately one of a number of considerations that influence pricing decisions.

The primary determinant in the company's pricing is to meet the needs of the users of the network, consistent with the regulatory requirements and the principles of fairness and equality.

It is recognised that within the network there is cost sharing or cross subsidy, both within consumer groups and between groups. This is historic and has been shaped by community feedback, government policy and regulation over a period of years.

It is also recognised that overall a number of factors need to be taken into account when network prices are determined and that the implementation of a pricing regime totally based on the cost of supply would be detrimental to some groups of customers, particularly those on low user fixed charges and indeed would be contrary to good policy and regulatory requirements. It is also salient that in the interest of stability and to provide users of the network to respond, any changes to network pricing should be undertaken on a consistent and progressive basis. This approach is in accord with the requirements of the users of the network.

The company will continue over the next 5 years to identify and where practical refine the costs of supply for all categories of network users, but implementations will be tempered with the need to satisfy regulatory requirements, meet the requirements of the network users overall, and to ensure that any changes are consistent with the long-term interests of all stakeholders.

### **3.2 Pricing to provide adequate revenue recovery**

MLL sets an overall target revenue level consistent with the business achieving a commercial rate of return. Setting an appropriate level of target revenue and structuring tariffs to manage revenue risk are both important to ensure the financial sustainability of the company.

### **3.3 Continuation of payment of discounts**

MLL has decided to continue to pay discounts for the financial year ending 31 March 2014. The discount will continue to be in the form of a posted discount, which forms part of the company's price schedule, thereby published on the price schedule. It will be subject to qualification criteria as in prior years. More than 90% of consumers will receive a discount. The estimates of revenues and costs in this disclosure are prior to the payment of discounts to consumers.

### **3.4 Consideration will be given to the impact of changes on individual consumers**

Changes in the structure of price categories or relativities between prices can cause rate shock for individual consumers. Where such changes are required to be made, the effects on individual consumers will be considered. Prices will be set at levels to ensure any rate shock is generally limited to 15% (of the lines charge component) for any consumer.

### 3.5 Prices to be cost reflective subject to consumer considerations

Pricing for electricity network consumers can be complex, especially when pricing aims to reflect the cost that a consumer or consumer group places upon the network. The approach that has been adopted is to consider the expectation of the consumer and their level of expertise with respect to the energy sector i.e. an industrial consumer is typically better placed to understand the more complex price structure than a domestic consumer.

Retrospective pricing will be avoided. The pricing provided by MLL aims to be clear and understandable. For residential and small business customers pricing should be relatively simple and easy to understand. The level of complexity that is appropriate may increase where large and more sophisticated energy users are concerned.

More sophisticated pricing, as compared to a simple fixed tariff per day and unit charge per kWh allows pricing signals to be sent to consumers, which encourage responses that lower the costs to the network provider and to the consumer and/or consumer group. Where there are opportunities to drive desirable consumer behaviour the price structure should be designed to send pricing signals to consumers to achieve those objectives.

A consistent price structure is also desirable. Frequent change creates unnecessary transaction costs and discourages consumers from responding to the price signals provided.

### 3.6 Results of Consumer Research - Customer Satisfaction Survey

MLL regularly undertakes customer research relative to a number of parameters. The survey is conducted independently each year and covers a number of issues such as overall satisfaction, reliability of supply, company performance, ownership preferences, community involvement, and attitudes to regulation. The sampling process is structured to ensure that the views of both businesses and residential consumers are represented.

The most recent survey was completed in March 2013. The key indicator and overall satisfaction has been generally consistent over recent years.

A number of specific network performance measures are also surveyed and the table below outlines the level of customer satisfaction in these particular areas.

**Table 1: 2013 Customer Satisfaction results**

	2012	2013
Reliability	93%	96%
Quality	91%	95%
Faults	88%	92%
Fault Service	95%	92%
Restore Power	94%	89%

Consumer views on quality and reliability issues are therefore explicitly canvassed in the current survey.

From time to time company representatives do meet with individual consumer and consumer groups to discuss their future plans, required service levels, and pricing and quality/reliability issues are discussed.

Invariably the most important aspect to consumers is the reliability of the network and this requirement is a significant driver within the company's asset management plan.

The consumer research with the current survey format has been sufficient for the company's requirements in the past. Research requirement going forward will consider the revised ID requirements, in particular section 2.4.1.(3) which discusses seeking the views of consumers on price and quality matters and the consideration of the views expressed by consumers on the pricing decisions made by the company.

## 4. Allocation of costs and Derivation of Tariffs

### 4.1 Introduction

The following section outlines the methodology used to assess target revenue, define consumer groups and allocate costs to consumer groups. The choice of cost drivers to allocate costs to the defined consumer groups is explained and network statistics for each consumer group are stated. Once an estimate of the cost of serving each group is made the tariffs for each group are derived. The estimate of revenue from each consumer group is compared with the estimate of costs to serve each group with the view to aligning costs and revenues over time.

### 4.2 Treatment of discounts

MLL will continue to include discounts within its price schedule for the financial year ending 31 March 2014. The estimates of revenues and costs in this disclosure are prior to the payment of discounts to consumers.

### 4.3 Assessment of costs for the FY14 year

The company aims to set a price for network services at a level to generate sufficient revenue to cover costs for the coming year. These costs include an estimate of a return on the assets employed in the network business. Table 4.1 outlines the company's best estimate of costs for the network business unit for 1 April 2013 to 31 March 2014, at the time pricing decisions were made.

The Return on Investment is calculated by applying the cost of capital published for the current regulatory period to an estimate of the regulatory asset base (RAB) as at 31 March 2013. The estimate of the regulatory investment value as at 31 March 2013 is \$211.3m, made up of the closing regulatory investment value of \$204.2m disclosed as at 31 March 2012, updated with estimates of the capital expenditure and regulatory depreciation for the FY13 year. The value of this estimate of RAB is multiplied by the Commerce Commission's estimate of WACC for the 75<sup>th</sup> percentile and the current five year regulatory period of 7.60%<sup>6</sup>. Changes to the ID regime to incorporate the finalised Input Methodologies (IMs) mean the actual RAB value disclosed for FY13 will be different from that outlined above.

In addition to revenue for lines services the network receives some miscellaneous revenue e.g. sale of scrap material, and capital contributions. To calculate the required revenue for lines services the miscellaneous revenue received by the network business unit is deducted from the total costs.

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<sup>6</sup> Determination of the Cost of Capital Decision 718, Commerce Commission, 3 March 2011, Page 2

**Table 2: Marlborough Lines Network Cost Estimate by Category - FY14**

\$'000	FY14 Estimate Costs
Transmission Costs Incl. ACOT	6,935
System Operations & Maintenance	8,786
Administration & Overheads	4,563
Depreciation	8,292
Taxation Expense	1,455
Return on Investment	14,916
<b>Total Costs for FY14</b>	<b>44,948</b>
Misc Revenue	2,749
<b>Costs Net of Misc Revenue</b>	<b>42,199</b>

#### 4.4 Classification of Consumers into Groups

All network consumers are categorised into four broad consumer groups. The groups were determined by assessing the predominant end use of energy for each installation and the installed capacity of each connection.

Initially consumers are categorised as being residential or non-residential. The classification of a consumer into residential or non-residential is based upon their predominant end use. The different characteristics of residential consumers compared to businesses consumers make it logical to have a residential consumer group. Residential consumers have different consumption patterns from businesses and have a higher proportion of their total load associated with water and space heating. Water and space heating loads are generally able to be interrupted by the company's ripple control system. There are also different regulatory restrictions on domestic consumers e.g. the Low User Regulations.

The non-residential consumers are divided into three groups, with two groups for commercial consumers, depending on the maximum capacity supplied to the installation measured in kVA, and one group for irrigation installations.

Group 2 is the Irrigation consumer group which includes consumers with both small and larger capacity requirements. These users have a distinct pattern of consumption and have therefore been grouped separately from other commercial users. To qualify for an irrigation tariff an installation must be fitted with a relay to ensure the load is interruptible, and therefore restrictions on seasonal use may apply.

Group 3 are small to medium commercial consumers with a capacity requirement less than 140kVA. Within this group there are a number of subgroups with steps for fixed charges based on the capacity provided.

Group 4 is made up of customers that have capacity requirements in excess of 140kVA. MLL's network policy 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 demarcation level of 140kVA has been a consistent network requirement for many years.

The grouping of non-residential consumers by capacity is considered to be an appropriate way to distinguish between consumers. The capacity provided generally reflects the initial and ongoing investment made, the maintenance costs required, and is an indication of their contribution to peak demands.

The four consumer groups are therefore Group 1 - Residential, Group 2 - Irrigation, Group 3 - Small and Medium Commercial, and Group 4 - Large Commercial (Time of Use).

Table 3 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 2013.

**Table 3: Consumer Groups**

Group	Description	Fixed Charge Codes	No. of ICPS
1	Residential	DS,DL,DT	20,758
2	Irrigation	PM,PH,PK	336
3	Small Med. Commercial <140 kVA	NS,NH,NT,US,UL,RT,RV,RX	3,286
4	Lge. Commercial & Industrial > 140kVA	BF	115
<b>Total number of installations</b>			<b>24,495</b>

## 4.5 Cost Allocation Methodology

### 4.5.1 Network Statistics

This section outlines the key network statistics for each group. These statistics form the basis of how each category of costs is allocated to consumer groups and the required revenue level for each consumer group is consequently determined. The table below summarises the network statistics for each consumer group.

**Table 4: Network Statistics**

Consumer Group	No. of installations ICPS	Annual Consumption GWH	Capacity Provided BDMD MVA	Peak Capacity ADMD MVA	Contribution to RCPD MW	Assets for supply \$m
1. Residential	20,758	149	344	31	27	180
2. Irrigation	336	16	26	1	1	13
3. Small Medium Commercial	3,286	78	119	22	19	123
4. Large Comml. & Industrial	115	124	56	17	17	75
<b>Total</b>	<b>24,495</b>	<b>368</b>	<b>545</b>	<b>72</b>	<b>63</b>	<b>390</b>

The number of ICPS connected and consumption of units (kWh), for each ICPS is readily available from the metering information provided to the network for billing purposes each month.

The Capacity Provided is measured in kVA and stated on a before diversity maximum demand basis. This has been calculated using the fuse size for all non ToU installations and the maximum anytime demand for all the ToU installations.

Peak Capacity is the capacity required for each consumer group during periods of peak network demand. This is measured in kVA on an after diversity maximum demand (ADMD) basis. This is based on actual data at times of peak network demand where time of use metering is installed and estimated based on the fuse size and customer type for all other installations.

The proportion of network demand utilised by ToU customer at times of peak demand was calculated for current years and when compared with historical data is consistent over recent years.

For non ToU installations the actual data is not available and assumptions as to diversity are made. These assumptions are supported by periodic data logging at particular substations where load is typically solely residential or solely small/medium commercial.

The results in the table above indicate that the diversity factor is significantly higher for residential users, which is to be expected. The difference in diversity factor between residential and businesses are further influenced by the number of non-permanent residences connected to the Marlborough network.

#### **4.5.2 Allocation of Assets**

The calculations to allocate assets between consumer groups can be done in a number of ways. The range of techniques available depends on the data and flexibility of information systems that each network company has. The approach taken by MLL was that for each ICP, the value of assets assigned to the ICP was calculated and then used to derive the value of assets assigned to each customer group. In the frequent case when assets were shared the ADMD was used to allocate asset values across all of the ICPs supplied by those assets. For example the major asset categories were allocated as follows:

- the service, and in some cases the transformer, were assigned to a single ICP,
- the transformer, if shared, and associated sub-site assets values were assigned to the ICPs they supply on the basis of their respective ADMDs,
- the value of the 11kV feeder assets were assigned to all of the ICPs normally supplied by that feeder on the basis of the ICPs' ADMDs <sup>7</sup>.
- The zone substation assets values were assigned to all of the ICPs supplied by that zone substation on the basis of the ICPs' ADMDs.
- The 33kV network and global assets were assigned to all ICPs on the basis of the ICPs' ADMDs.

The Replacement Cost (RC) of assets was selected for the methodology. The use of Depreciated Replacement Cost (DRC) was considered, however this would have required a more complex treatment of allocating operating and maintenance costs to reflect different age profiles within the asset groups.

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 proportion of economic assets. Therefore the burden of supply obligations to areas such as remote locations in the Marlborough Sounds is borne by all network consumers.

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<sup>7</sup> Where the feeder lengths are long, all ICPs on the feeder share the total feeder value. Although this means that an individual ICP may share in a greater proportion of the feeder they utilise.

#### 4.5.3 Application of cost indicators to cost categories

The intention of the methodology is to establish a substantial relationship between the underlying activity driving each component of cost and the cost driver used.

In our view three of the six cost categories are essentially related to the asset value associated with servicing the group. These three categories are system operations and maintenance, depreciation, and return on investment.

Administration and overhead costs are related to the company's servicing of consumers and other company obligations. The share of ICPs and units used has been combined to form the cost allocator for the administration and overhead costs. The taxation charge, which is relatively small, has been allocated on the basis of revenue collected in the prior year less transmission charges.

For Marlborough the majority of transmission charges are interconnection charges. These charges are based on the demand measured on the network during the 12 half hour peak demand periods, Regional Coincident Peak Demand (RCPD), observed each year for the Upper South Island. As the 12 periods are known, the actual contribution to the peak load is able to be measured for our Group 4 – Time of Use customers. We have used the contribution to this total network demand to allocate the transmission charges, including ACOT to the Group 4 consumers. For the winter 2012 period which is the basis of transmission costs for FY14, 16.5MW of the 62.7MW of network demand during the 12 RCPD was attributable to the consumers within Group 4.

The allocation of transmission charges for the other three groups has been made by allocating the residual based on the estimated After Diversity Maximum Demand.

The costs to be allocated and cost allocator selected are summarised in the table below.

**Table 5: Cost allocator**

\$'000	FY14 Estimate Costs	Cost allocator
Transmission Costs Incl. ACOT	6,935	Share of RCPD
System Operations & Maintenance	8,786	Share of Assets
Administration & Overheads	4,563	MWH /ICPs
Depreciation	8,292	Share of Assets
Taxation Expense	1,455	Net Revenue
Return on Investment	14,916	Share of Assets
<b>Total Costs for FY14</b>	<b>44,948</b>	
Misc Revenue	2,749	
<b>Costs Net of Misc Revenue</b>	<b>42,199</b>	

#### 4.5.4 Calculation of required revenue

Table 6 below demonstrates how each cost has been allocated between the consumer groups and the total cost of each group. Note the total cost allocated is equal to the cost outline in tables 2 and 5, net of miscellaneous revenue.

**Table 6: Allocation of Costs to Consumer Groups**

\$ '000	Transmission	System	Administration	Depreciation	Taxation	Return on	Total
Consumer Group	Costs	Opns & Mtce.	& Overheads		Expense	Investment	Cost Allocated
1. Residential	2,948	3,761	2,652	3,550	613	6,385	19,908
2. Irrigation	55	265	123	250	48	450	1,193
3. Small Medium Commercial	2,107	2,560	734	2,416	324	4,345	12,485
4. Large Comml. & Industrial	1,825	1,565	723	1,477	365	2,657	8,612
<b>Total</b>	<b>6,935</b>	<b>8,151</b>	<b>4,233</b>	<b>7,693</b>	<b>1,349</b>	<b>13,838</b>	<b>42,198</b>

Having established overall revenue target for the year and allocated costs to each group, the rate of revenue increase for each group is set based on a comparison of estimated costs and revenues for the coming year.

The derivation of tariff to collect the level of revenue targeted for each group is discussed in detail in section 4.8

#### 4.5.5 Comparison of cost allocation and expected revenue

Table 7 compares the estimate of revenue for FY13, (based on the most recent information available at the time of setting prices for FY14), the rate of revenue increase and the estimated revenue to be received, by each consumer group. The estimate of revenue for FY14 is based on constant unit volumes for each group. The rate of price increase for the Group 4 consumers was 6.5% however the increase in capacity has led to an 8.2% increase in forecast revenue.

**Table 7: Rate of Increase and Revenues Estimate by Consumer Groups**

\$ '000	FY13	Rate of	FY14
Consumer Group	Revenue estimated	revenue increase %	Revenue estimated
1. Residential	16,953	9.7%	18,602
2. Irrigation	1,259	7.5%	1,353
3. Small Medium Commercial	8,902	11.9%	9,958
4. Large Comml. & Industrial	10,155	8.2%	10,987
<b>Total</b>	<b>37,269</b>	<b>9.7%</b>	<b>40,900</b>
Compared to a cost estimate of			<b>42,198</b>
Difference (shortfall)		-	1,298

Differential rates of increase for each consumer group have been applied for FY14. As Marlborough Lines need to increase its total line charge revenue, the approach taken is to increase revenue from consumer segments that appear to be under-recovering at a higher than average rate and increase revenue at a lesser rate from the other consumer segments. This approach reflects that the cost allocation model can only ever be an estimate of network costs and any rebalancing between groups will occur over a period of time.

The company's overall expected revenue is less than what is required currently to make a return on investment in line with the industry cost of capital benchmark. The overall shortfall between costs and revenues is \$1.298m, 3.2% of the estimated revenues.

The expected revenue from the residential consumer group is relatively lower than the cost allocation model would suggest is appropriate. However, the revenue available from the segment is impacted by the inherent subsidies required by the low user regulations.

In the case of the irrigation consumer group the expected revenue is \$0.16m above the costs allocated under this methodology. When tariffs were introduced for irrigation users the rates were set to encourage the use of network assets at off-peak times. The cost allocation model applies an asset allocation based on the estimated ADMD occurring at times of overall peak network demand. The relatively low cost allocated to this consumer group reflects that the irrigation users are generally utilising assets outside of peak times. However in some areas of the network the peak load occurs during the irrigation season. Therefore it is not inequitable that the irrigation group contributes more than the cost allocation methodology attributes to this group.

The current network line charges include historical elements and reflect a significant simplification of the tariff structure that has occurred over the past three years.

#### **4.6 Reason for Changes in Prices**

The estimated revenue for FY13 as per the pricing methodology disclosure was \$37.168m of which \$5.769m was forecast for transmission charges<sup>8</sup>. For FY14 the forecast of transmission charges increased 20.2% to \$6.935m. In order to maintain net revenue at a constant level, assuming constant volumes on the network<sup>9</sup> a price increase of 3.1% would be required. The remainder of the increase in target revenue, 6.6%, is a result of increase in network costs. Cost increases have occurred in a number of areas as a result of a comprehensive capital investment programme to improve reliability of supply.

#### **4.7 Fixed and variable proportions**

The proportion of total line charges currently being charged is 48% fixed, 52% variable.

The proportion of fixed charges versus variable charges for all consumer groups was reviewed as part of the process to derive tariffs for each group in the coming year. For Group 4 the capacity charges have been included as fixed and the regional peak charge has been classed as variable.

For Groups 1, 2 and 3 the mix of variable and fixed was largely the same as it had been in previous years. The consideration of the other option of fixed and variable charge within each group is discussed in the section below in tariff derivation. The elements of capacity and regional peak charge were changed for the Group 4 consumers. The changes are discussed in more detail in the section of tariff derivation.

It is important to note that for residential consumers the requirement to offer Low User compliant daily fixed charges for domestic consumers restricts the networks ability to accurately recover costs fairly from all consumers. It also impacts on the range of choices around the mix of fixed and

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<sup>8</sup> MLL – Electricity Distribution Network Pricing Methodology Disclosure 2012 pg 11.

<sup>9</sup> The assumption of constant volumes was used as volume growth has been flat after a number of years of growth

variable charges for the residential group. MLL has, to a limited extent, addressed the cross-subsidisation inherent in the Low User tariff by obtaining an exemption from offering the Low User fixed charge option to domestic consumers who are located in remote areas of the network, and those with three phase supply.

In general, variable charges are a higher proportion of total line charge revenue for lower capacity (kVA) users, including those in Groups 1 and 3. The higher variable component in the tariffs for Groups 1 and 3 reflect the patterns of supply with non half-hourly metering, lower investment costs for an incremental consumer, and a controllable portion of the load (water heating mostly for Group 1 consumers).

For Group 2, the irrigation consumers the majority of the revenue is collected is from fixed charges. This is because the usage is highly varied from year to year depending on the seasonal weather patterns.

Fixed charges are generally higher for the higher capacity (kVA) users in Groups 4. This is designed to reflect investment costs associated with peak demand, which is measured with half-hourly metering equipment.

Despite the allocation of significant proportions of costs in the above methodology to kilowatt hours, MLL assesses that most of its costs outlined above are actually fixed. If MLL were to recover its fixed proportion of costs in fixed charge tariffs, the fixed charge proportion would need to increase. However, offering variable charges to consumers stimulates efforts to use energy efficiently. The use of unit charges i.e. c/kWh, also align with what current consumers generally understand electricity services are being provided, particularly in the residential area where concepts such as peak demand are not well understood. The variable charges are also valued by consumers as they can be responsive to their level of activity month to month. Furthermore variable charges provide a useful offset to the other components of lines charges for Group 4, which are strongly capacity based. A further consideration is that by maintaining a variable charge for large commercial/industrial consumers the transitions between the small/ medium commercial consumers' plans will be easier to manage.

#### **4.8 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.

The process that MLL employs to establish tariffs for each consumer group considers a range of factors including:

- To encourage consumption outside of peak demand periods to enhance the efficient utilisation of the network,
- The impact of consumers' demands on transmission charges,
- To ensure the costs of assets are recovered,
- Use of controllable supplies within peak demand periods,
- Legislative and regulatory pricing considerations, including the Low User regulations,
- Restructuring of the tariffs needs to consider rate shocks for consumers and the long term interests of all stakeholders.

#### **4.8.1 Group 1 Prices – Residential Consumers**

Larger capacity residential connections pay a higher daily fixed charge equivalent to the additional available capacity provided which reflect initial and ongoing asset costs. The same energy unit rates apply for both standard and large residential connections, i.e. <20kVA and >20kVA.

Daily fixed charges are set on the basis of two capacity bands, with rates of \$1.10 per day for installations with less than 20kVA capacity provided and \$2.20 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 the same as in previous years.

Energy based scheduled rates are provided for uncontrolled energy, 13 hour controlled and 8 hour controlled energy. Energy rates are 8.14c/kWh for uncontrolled energy, 4.76 c/kWh for controlled load and 2.06 cents/kWh for uncontrolled load.

Tariff rate incentives are provided for controlled energy tariff codes to enable MLL to control energy consumption during peak periods of demand. Ripple controlled energy supplies are incentivised with lower energy consumption rates, in comparison to uncontrolled supplies.

The methodology for allocating the transmission cost component for the residential group has been revised. The transmission costs estimated of \$2.95m will be recovered primarily through the revenue from uncontrolled units. 95% of Group 1's transmission costs is divided by the estimated units to give a transmission component of 2.69c / unit. The remaining 5% of the transmission costs are to be recovered through the 13 hour controlled units, which is equal to 0.35c / unit. A component is allocated to the 13 hour controlled tariff as occasionally controlled load is required to be switched back on at times of "Transpower peak periods" (RCPD) to maintain consumer service levels. No transmission component is recovered from the night rate as the RCPD period does not occur between the 11pm and 7am night rate period.

There is a differential between the distribution component of the uncontrolled energy rate and that of the 13 hour 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 methodology outlined above is crossed 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 is equal to the reduction in transmission costs that is made by reducing load during the RCPD periods. This means that the difference between the controlled and uncontrolled rates is in the correct order of magnitude.

#### **4.8.2 Group 2 Prices — Irrigation**

Irrigation has a distinct pattern of energy consumption that is unique when compared with the other consumer groups. The charges in this area are predominately capacity based which removes the seasonal uncertainty and variability of cost/revenue for both the consumer and the network. The current charges for this group are based on historical tariff patterns and relativities.

The minimum fixed charge threshold of 23kW is historical and this level has been maintained. The cost based on the daily rate for loads up to 23kW of \$2.65/day is equal to the cost based on the installed capacity rate of \$0.115/kW/day, at 23kW

The transmission component (which is small as this group has minimal load at the time of the RCPD) has been recovered through the capacity charge by dividing the total transmission charge allocation by the estimation of chargeable capacity.

The seasonal rate has been set at 2.70c/kWh, a level between the night rate and the controlled rates that apply for the other group 3 commercial consumers. The non seasonal rate is set at a level of 22.5c/kWh to discourage use outside of the seasonal period.

#### **4.8.3 Group 3 Prices – Non Residential Consumers – up to 140kVA**

This group has three consumption thresholds within it; up to 45kVA, 46 to 70kVA and 71 to 140kVA. There are further subgroups for the fixed charges which are based on narrower capacity bands.

A limited number of connections within this group are metered with ToU equipment for monitoring purposes only.

Fixed daily charges for this group increase with the capacity provided. For capacity less than 15kVA daily charges are higher than those for residential consumers which reflects the decreased diversity factor between 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 tariff rates decrease as an off-set for the higher fixed charges. Three controlled energy tariff rates are available to incentivise consumers to utilise controlled tariffs where applicable.

13 hr controlled rates and night rates are the same for all capacity bands within this group.

As consumer capacity increases, the fixed charges become more significant. This reduces the variability of revenue from the large consumers within this group, reflecting that as the consumer size increases the cost of supplying them becomes more like a consumer within the Group 4 category (above 140kVA) where individual consumers 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 kVA connections.

The transmission component is recovered through the unit charge on uncontrolled energy being simply the transmission allocation divided by the estimated number of units.

The current charges for this group are based on historical tariff patterns and relativities. Options for refining the tariff structures for this group will continue to be evaluated in the future.

#### **4.8.4 Group 4 Prices – Time of Use Connections > 140kVA**

When a consumer has a capacity requirement greater than 140kVA at any time during the year, the company requires a ToU meter to be installed. ToU metering allows for a more detailed tariff structure and greater signalling of network constraints. Group 4 tariffs include; a fixed daily rate, a unit charge based on energy consumed, anytime assessed demand to reflect capacity provided to the site, and regional peak demand charges. Power factor charges are also levied if the power factor is less than 0.95 at time of the consumer peak demand. 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 FY14 is \$10.76m, 26% of the total of all line charge revenue collected by MLL. The total capacity provided to this group is 119 MVA<sup>10</sup>. A significant proportion of these consumers have a dedicated transformer for their supply.

The pricing structure for the large commercial and industrial consumers is made up of five components;

- Fixed daily charge of \$6.70/day per installation which collects 2.6% of the target revenue from this group.
- Day and night variable unit rates c/kWh. The differential between the day and night rate is of 1.6c/kWh, and a useful signal to send to consumers to utilise energy at off peak times. As it is consistent with the retailers energy unit cost signal, it is likely to be a potential influence on consumer behaviour. On this basis the night rate was maintained with the differential at the previous relative level. Up until 31 March 2013 there was a seasonal variation in the day units rates but this was removed as it was viewed as unnecessarily complex. Variable charges will collect 18% of the target revenue from this group.
- A capacity charge of \$11.05/kVA based on 'assessed capacity'. The charge is levied in each month of the year on capacity currently being provided to each consumer. In assessing the current capacity the size of the transformer if dedicated to the site, and consumer's measured maximum demand over the previous three years are considered. Capacity charges will collect 62% of the target revenue from this group.
- A Regional peak demand charge, of \$5.07/kVA for all months of the year will collect the transmission costs for this group. The chargeable kVA used for the charge is the average of the six highest half hour peaks measured in each winter month, May through to September between 7am to 10:30am and 4:30pm and 7pm each week day. The demands measured will be the basis of the charges for the following year i.e. this charge will work in a similar way to the interconnection portion of Transpower's charges to MLL.

All rates above are quoted 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 0.95kVAr and their power factor measured during their six highest peak periods each month.

Historically the winter peak charge that was disestablished on 31 March 2013 was a sharp price signal consistent with a network constrained during the winter months. Recent investment in the network meant winter peak demand was no longer such a distinct driver of network costs.

There were two major changes to the pricing structure for Group 4 consumers from 1 April 2014. The first was to smooth the consumer's cost during the year thereby eliminating the significant uplift in charges that had previously occurred over the winter months. (Some consumers had indicated that the increase in charges over the winter months was difficult to manage).

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<sup>10</sup> Where a transformer is shared between a number of customers 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 second change was to develop a pricing incentive to encourage consumers to reduce load during RCPD periods. This will ultimately reduce Marlborough Lines' costs, with consumers in Group 4 able to benefit from this reduction in transmission costs.

The winter peak charge was therefore amended into a regional peak charge. The impact of a single half hour was removed and six rather than one monthly peaks are to be considered during each winter month. (Consumer feedback indicated a strong dislike for the use of a single half hour peak period). The time period was also reduced from the whole daytime period 7am to 11pm to the ten half hours when the RCPD periods have generally occurred. The charge is also spread through the full 12 months of the year even though it relates to demands measured only during the winter months.

This price signal should stimulate behaviour that will drive down costs in the near and medium term. The opportunity existed for the network to encourage consumers to reduce the regional coincident peak demand. If this is achieved Transpower's interconnection charges will reduce with the benefit captured by the Group 4 consumers. 16.5MW of the 62.7MW, 26 % of the RCPD that is the basis of transmission charges for FY14 is attributable to the consumers within Group 4.

A price signal to reduce load during RCPD periods could be done in different ways. The approach chosen to nominate a defined "measurement period" for the five half hours in the morning and evening when traditionally MLL's peaks have occurred, was seen as a good first option. No additional technology was required, and consumers who can move loads are certain to benefit. The use of the actual 12 half hour periods when the RCPD occurs each year, was considered and this may be appropriate for a few larger customers, however it was thought that the volatility may be difficult for consumers to manage, and the lack of certainty around the benefit that can be achieved, may discourage some consumers from attempting to move load.

Some transitional provisions for the coming year are in place to avoid retrospective charges e.g. using the average of consumers' winter peak demands from the 2013 year to determine charges this year. In effect the RPD levels measured during the winter of 2014 will set charges in FY14 and FY15. An estimate for FY14 has been made based on 2013 data and a wash-up will take place in November 2014.

Some Group 4 connections have taken responsibility for the maintenance of transformers with the pricing tariff structure reflecting this differential cost to the network.

#### **4.9 Proportion of revenue by price component**

The proportion of revenue by price component is outlined in table 8 in Appendix A.

#### **4.10 Non Standard contracts**

There is 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 MLL sold the generation assets to TrustPower. The price increases each year by CPI. The target revenue for the FY14 year is \$65,678.

#### **4.11 Power Factor Charges**

A charge for reactive energy, where power factors are below 0.95, is levied to encourage investments in improving power factors.

#### **4.12 MLL Pricing Schedule**

The current MLL pricing schedule is available on the Marlborough Lines website.

<http://www.marlboroughlines.co.nz/About-us/Disclosures/Pricing.aspx>

#### **4.13 Payments to Embedded Generators used solely for generation**

There are three embedded generators on the network who generate solely for generation purposes rather than to reduce their own consumption. These generators are rewarded by MLL making monthly avoided transmission payments to them. These payments are based on their average generation volume at the time of the 12 regional coincident peak demand periods at the Transpower interconnection rate. For the year commencing 1 April 2013 this rate is \$99.44/kW. This methodology in effect passes through the full value of the saving in transmission costs that has occurred as a result of them reducing the network load during RCPD periods.

#### **4.14 Payments to Consumers who generate to reduce their consumption**

Consumers within Group 4 (Time of Use >140kVA), who generate to reduce their consumption will benefit by a reduction in their variable charges, and potentially their regional coincident peak charge and/or their capacity charges depending on the time they elect to use their generators.

#### **4.15 Future Changes**

MLL will continue to evaluate its price structure to ensure it meets the needs of consumers on the network. The current irrigation tariff will be further analysed this year to see if it can be extended to other seasonal loads. There is currently a step up in charges when a consumer reaches the 140kVA threshold. Options to mitigate this step will be evaluated in the future.

## 5. Compliance with the Pricing Principles

The following section examines the Electricity Authority's Pricing Principles and considers the extent to which Marlborough Lines' 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.

MLL considers that the current network pricing methodology does have regard for these principles. We examine each principle in turn.

### 5.1 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;”*

#### 5.1.1 MLL's Interpretation

Our interpretation is that prices we set for each designated consumer group are at a level so that within parameters the revenues from that consumer group fall within the subsidy free band. The lower limits of this band is the cost of connecting that consumer group to the network (incremental costs) and the upper level of the band 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 MLL's electricity network means that there are extensive shared costs. Throughout the network consumer groups are intermingled e.g. the easily 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 customer groups, albeit in a slightly different form depending on the size of the consumer.

#### 5.1.2 Compliance with Principle (a)(i)

Our network prices are based on a cost allocation model that allocates costs across consumer groups using a number of key indicators of costs. The costs allocated are our actual costs which reflect the economies of scale present in operating the network business. 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 regulation. MLL considers that the Low User Regulations impose a very significant subsidy between consumers in our particular network. In addition policy directives which require the rate of price increase for rural and non-rural users to be equal may also prevent us from adequately recovering costs from individual consumers.

We initially addressed this issue on our network to some extent by obtaining an exemption from offering Low User fixed charge compliant 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”<sup>11</sup>. This partially reduces the subsidy from centrally located customers to the other users. The extent of cross-subsidy was further reduced by an extension of the exclusion to residential customers with >15kVA and/or three phase supply.

The profitability of all network customers has been reviewed on a geographic segment basis. This analysis included a detailed allocation of assets to each geographical segment. The results reinforced our assessment of the significant cross subsidization that existed among consumers in different geographic areas and support the steps that have been taken to address this through the Low User exemption and discount policy.

We aim to further undertake a quantitative assessment of stand-alone costs for some large consumers this year. We will then be able to assess the relative position of these consumers within the spectrum of the subsidy range.

## **5.2 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 MLL supplies end use consumers via energy retailers. The distributor’s role in the supply chain provides an indirect relationship with the consumer which means that any price signals provided by MLL can potentially be re-packaged differently by retailers.

There are currently eight retailers with active customers on the Marlborough network.

### **5.2.1 MLL’s interpretation of Principle (a)(ii)**

MLL’s interpretation of this principle is that prices must 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 under utilised.

Some price signals sent by the network are ultimately diminished in value as the distribution component may be a small component of the consumers total electricity bill. E.g. MLL charges as at March 2012 (on a pre-discount basis) made up 23.8%<sup>12</sup> of the total \$2,422 charged for a ‘typical’ domestic consumer.

Notwithstanding the repackaging and dilution effects on price signals undertaken by the retailers, MLL meets the requirements of Principle (a)(ii) by having an element of capacity based charges across all customer segments, by differentiating between interruptible and non-interruptible load, and by having day/night rates available for most consumers.

MLL’s price structure is significantly capacity based. Prices for each group reflect the principle that as capacity requirements increase, the cost of service increases and therefore end users are required to pay higher charges.

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<sup>11</sup> Refer to Marlborough Lines website – exemption notices and map of remote zones.  
<http://www.marlboroughlines.co.nz/About-us/Disclosures/Pricing.aspx>

<sup>12</sup> Marlborough Lines Annual Report 2012, page 26.

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

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

The network does not yet offer time of use rates to residential consumers. Retailers have started to install meters capable of providing this data within our network but to date there has been a paucity of interest. We anticipate making available some appropriate pricing in the near future.

For small commercial consumers controlled rates are also offered. The uptake of utilisation of controllable load by small commercial consumers is much less as customers do not generally have a significant load that they only require on a limited basis.

The prices designed for irrigation installations are only available for loads capable of being interrupted and have additional seasonal restriction.

For larger commercial consumers a greater proportion of total line revenue is based on capacity charges. 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 works in conjunction with the price signal provided by retailers where unit rates vary accordingly with the time of day.

### **5.3 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.*

#### **5.3.1 MLL'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 utilization of the existing capacity.

#### **5.3.2 MLL's compliance with Principle (a)(iii)**

MLL utilises a number of tools to signal the cost of additional usage on future investment costs. One of these is the capital contribution system which requires consumers to contribute to the marginal cost of providing capacity for a new installation or additional capacity for an existing installation. In our view other than capacity contributions, the most effective pricing structure to signal the impact of demand on investment is where the price is related to the end users demand during the peak demand period 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 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 Time of Use (ToU) commercial consumers this is done in relatively narrow bands, for ToU consumers this is done in 5kVA increments. Irrigation installations are also

charged on a capacity basis linked to maximum possible capacity but restricted from operating during the peak periods.

For the larger commercial consumers with ToU metering the daily and unit charge is greatly reduced with the majority of cost associated with capacity charges. The winter peak demand charges previously reflected a situation where the network was constrained during periods of peak demand in the winter months. The winter peak charge has been amended to the regional peak charge, which reflects the impact that regional coincident peak demands have on transmission charge and therefore network costs.

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

#### **5.4 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”***

##### **5.4.1 MLL’s interpretation of Principle (b)**

MLL interprets this pricing principle as the incorporation of Ramsey-based pricing, whereby pricing at marginal cost is not appropriate for a natural monopoly as it would provide insufficient revenue to cover total cost. Ramsey pricing requires the utilisation of a tariff structure to recover average costs, with the additional costs over marginal cost, being targeted in line with consumers’ responsiveness to price. In theory if all consumers shared the same marginal costs, consumers with a high elasticity of demand should be offered a lower price relative to other consumers. However, price elasticity is not able to be observed or measured for end use consumers.

##### **5.4.2 MLL’s compliance with Principle (b)**

We believe the consumer segmentation inherent in the MLL pricing structure is consistent with this principle. The network utilises variable charges for all consumer groups and in particular for smaller end use consumers to recover charges that are largely fixed. This is a practical way of allowing consumers with differing willingness to pay, to respond to price signals in line with their elasticity of demand.

#### **5.5 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”***

##### **5.5.1 MLL’s interpretation of Principle (c)(i)**

This principle deals with discouraging uneconomic bypass and requirement that the network not set prices so high that it encourages an alternative form of network supply of the same capacity which would replicate the sunken assets of the original network supplier.

### 5.5.2 MLL’s compliance with Principle (c)(i)

The use of a cost allocation model, which ensures a price is set below a stand-alone price, ensures consistency with this principle for the majority of customers. Additionally, MLL will continue to consider whether the further use of non-standard pricing is most appropriate in some instances, subject to consideration of all other factors.

### 5.6 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.

MLL has in the past met specific consumer needs by introducing new tariff structures. For example, seasonal irrigation tariffs and 20 hour controlled tariffs for bakeries. 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.

### 5.7 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. MLL pays all distributed generators on the network Avoided Cost of Transmission charges (ACOT) which encourages generators to be operating during the transmission peak periods. MLL’s lines charges for the new distributed generation to feed into the network have been set at zero where the capacity has been readily available. This allows the smaller embedded generators to connect to and utilise the network to deliver their generation to other connections without incurring network charges.

With respect to transmission and distribution alternatives, a number of MLL’s consumers utilise generation capacity where they have a need for reliability beyond that which the network can reasonably provide and/or a short time of peak demand which the network cannot economically meet through installing additional capacity.

### 5.8 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”***

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

1. MLL consults with retailers on any planned changes to its pricing structure.
2. MLL has progressively simplified its pricing structure where differentials are no longer justified or the cost associated with the price schedule complexity outweighs the additional revenue collected. A recent example of this has been the removal of the seasonality component in the variable charge for Group 4 customers.
3. Simplification and rationalisation of the historical pricing structures has been undertaken. The confirmation of a principles based approach by the Authority has been helpful to reduce some regulatory uncertainty. Some tariffs applicable to our Group 4 customers have been amended, effective 1 April 2013, to promote more responsiveness to the transmission component of costs for this group.
4. MLL is committed to gradual transition of pricing changes to enable network users to respond accordingly. Significant changes are carefully considered with a view to making adjustments over a period of time.

#### **5.9 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, MLL has progressively moved to simplify its pricing structure over the last four years whilst maintaining pricing signals and appropriate relativities between tariffs. 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. An example of such change was the removal of an area distinction between those properties within the Marlborough District Council area and those within the Kaikoura District Council area. This simplification has resulted in the removal of around 22 tariffs, reducing the number of tariffs in the schedule by 30 percent.

All consumers, irrespective of which retailer they use are offered the same network prices. We do not provide any discounts or special terms to end use consumers based on their choice of retailer.

All retailers are subject to the same tariffs from MLL. 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

**Table 8: Proportion of Revenue from each Price Component**

Price Code	% of Revenue	Price Code	% of Revenue
10	17.67%	WH	0.55%
12	3.89%	DS	10.81%
18	0.20%	DSNL	4.61%
11	4.75%	DT	1.30%
16	1.55%	DL	0.59%
17	0.11%	NS	1.37%
23	6.93%	NH	0.86%
31	2.64%	NT	4.11%
40	3.07%	US	0.07%
20	0.03%	UL	0.02%
22	0.28%	RT	2.10%
28	0.04%	RV	1.18%
30	0.02%	RX	1.04%
96	1.05%	BF	0.69%
97	0.14%	PM	0.38%
51	3.39%	PFT	0.54%
52	0.25%	PK	1.32%
61	1.05%	PH	0.20%
62	0.08%	PFI	0.22%
80	0.06%	MDCFC	0.36%
AL	13.16%	PMFC	0.01%
AM	1.82%	RNZFC	0.01%
AH	1.44%	PSLT1	0.01%
WL	3.44%	Wai	0.16%
WM	0.48%		