Pricing methodology
Electricity distribution network

From 1 April 2014

Pursuant to:
The Electricity Distribution
Information Disclosure Determination 2012

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2. INTRODUCTION

2.1. This document describes Vector's Electricity Distribution Pricing Methodology (EDPM). It provides information for interested parties to understand how our electricity distribution prices are set and provides context about the development of our EDPM in a transparent manner.

2.2. Vector's line charges include a number of components including the distribution portion in respect of Vector's network, the transmission portion in respect of Transpower's national grid, and other costs that are outside our control and are allowed to be passed through or recovered under Commerce Commission price-quality regulation.

2.3. The distribution portion of Vector's prices are regulated and are not able to increase by more than inflation each year. On 1 April 2013 Vector reduced the distribution component of line charges by 10.1%[1] to meet regulatory requirements. From 1 April 2014, Vector has further reduced the distribution component of prices by 1.6%.

2.4. Over this same period pass through and recoverable costs have generally increased significantly above inflation. For example from 1 April 2014, pass-through and recoverable costs (including transmission charges) are forecast to increase by 15.4%. This includes forecast increases in local authority rates of 20%, transmission charges of 15.4%, Commerce Act levies of 13.5%, EGCC levies of 3.4% and Electricity Authority levies of 0.1%.

2.5. Our focus is to provide our customers with a cost efficient, high quality service and this document explains how we recover the cost of providing this service to our customers. However the impact of pass-through and recoverable cost and the subsequent re-bundling of our line charges by retailers clouds the trend in our delivered electricity charges.

3. ABOUT VECTOR

3.1. Vector is a leading New Zealand infrastructure group. We own and manage a unique portfolio of energy and fibre optic infrastructure networks in New Zealand. Our assets perform a key role in delivering energy and communication services to more than one million homes and businesses across New Zealand. We are a significant provider of:

a. Electricity distribution

b. Gas transmission and distribution

c. Electricity and gas metering installations and data management services

d. Natural gas and LPG, including 60.25% ownership of bulk LPG distributor Liquigas

e. Fibre optic networks in Auckland and Wellington, delivering high speed broadband services.

f. In addition to our energy and fibre optic businesses we own:

   i. A 50% share in Treescape, an arboriculture and vegetation management company

[1] Commerce Commission, 30 November 2012, Resetting the 2010-15 Default Price-Quality Paths for 16 Electricity Distributors,

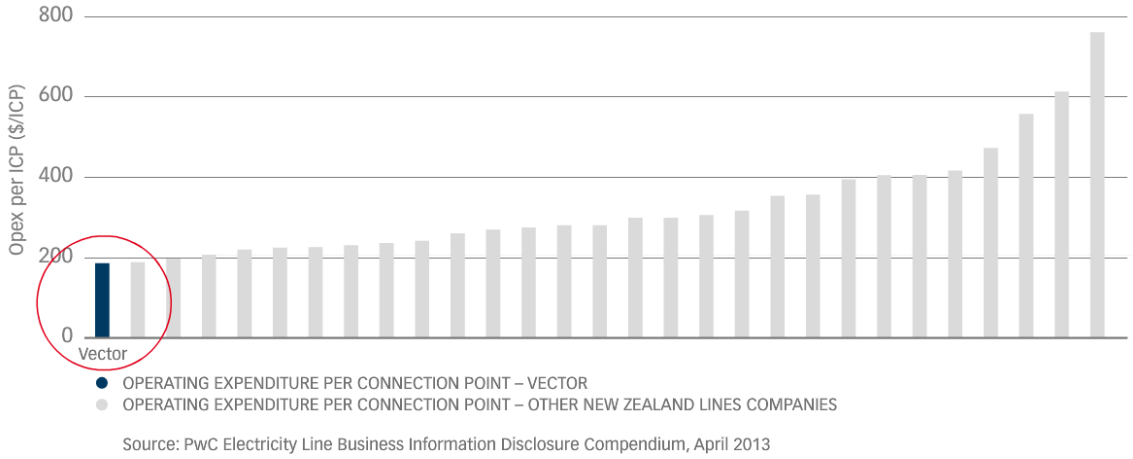
ii. A 22.11% share in NZ Windfarms, a power generation company.

3.2. Vector is listed on the New Zealand Stock Exchange. Our majority shareholder, with a shareholding of 75.1%, is the Auckland Energy Consumer Trust (AECT). The trust represents its beneficiaries, who are Vector's electricity customers in Auckland, Manukau and parts of the Papakura region. The balance of Vector's shares are held by individual and institutional shareholders.

3.3. Vector's electricity distribution network supplies more than 500,000 houses and businesses in the greater Auckland region. Our network extends from just north of Wellsford to Papakura in the south, covering the Auckland Central region, Waiheke Island, North Shore, Waitakere, Rodney, Manukau and parts of the Papakura region.

3.4. Vector remains among the lowest-cost energy infrastructure providers in the country, while still more than meeting our service quality requirements. On our electricity networks as illustrated in Figure 1, for instance, measures such as the average operating expenditure per customer Vector's electricity networks are among the best performers in the country.

Figure 1. NZ electricity distribution business operating costs



3.5. Part of our network (the Northern Network) was acquired from UnitedNetworks Limited in 2002. The remaining part of our network has historically been owned by Vector since the reforms to the electricity industry in the 1990's. Figure 2 shows a map of Vector's Auckland and Northern electricity distribution networks.

Figure 2. Auckland and Northern electricity distribution networks

4. OBJECTIVE FOR SETTING PRICES

4.1. Vector provides electricity lines services to consumers via its electricity distribution network. Vector generally recovers the cost of providing electricity lines services to existing consumers through electricity distribution prices, including published standard prices or (in a limited number of circumstances) non-standard prices.

4.2. A key feature of an electricity distribution system is that it is a network of interconnected assets. Many consumers on the network share assets and it is often difficult to identify precisely who benefits from which assets. While this means that the allocation of costs between consumers or groups of consumers is arbitrary, it also means that the cost of providing the network is shared widely and therefor the cost of network services is generally low for each consumer.

4.3. The way the network of assets has been built up over time is something that Vector now has limited ability to change, however Vector is able to influence present and future investment decisions in the electricity distribution network. Vector's distribution prices are designed, in line with pricing principles published by the Electricity Authority, to efficiently recover the cost of the existing electricity distribution network and send efficient signals to users when new investments are required.

4.4. The most significant cost element reflected in Vector's distribution prices relates to physical electricity distribution assets, for example the lines, wires, poles, transformers and cables. These assets are about half way through their useful life,

meaning their value is also about half that of equivalent new assets. This means that Vector's distribution prices are lower than they would be if the assets were new. To send the right signals to consumers to ensure new investments in the network are as efficient as possible, consumers need to be charged for the full or proportionate cost of those assets (new and existing) they will be using.

4.5. Vector has developed a high-level framework to guide the development of the EDPM. The overarching objectives for the EDPM include:

a. Cost recovery - ensuring Vector recovers its costs, including an appropriate return on and of investment. A key aspect of cost recovery is the predominantly sunk and fixed nature of the costs;

b. Meet regulatory obligations - including compliance with the weighted average price requirements and the pricing principles;

c. Clear pricing structure - by making it attractive to maintain connections and for new consumers to connect. Pricing should be simple and easily understood by consumers;

d. Coherent overall price structure – so that there are not incentives for consumers to switch service classes to take advantage of anomalies in the pricing structure;

e. Cost reflective pricing - to ensure that all consumers face prices that reflect the cost of providing them with service, that charges to all new consumers at least cover the incremental costs of connecting them to the network (including costs associated with upstream reinforcement) and charges to recover overhead costs and the cost of the shared network are allocated between consumers in a manner that is least likely to distort investment decisions;

f. Consumer centric outcomes – to take account of the economic value of the service to consumers, provide pricing stability and manage price shock effectively in the transition to new price structures; and

g. Incentivise efficient usage - in other words, encourage/discourage more utilisation of electricity assets to ensure that new investments are efficient and sunk investments are not inefficiently by-passed.

5. METHODOLOGY FOR SETTING PRICES

5.1. In this section we provide a high level description of Vector's pricing methodology for the electricity distribution networks. Vector's pricing methodology is developed to deliver Vector's pricing objectives as described in Section 4.

5.2. Vector's pricing methodology is based on defining service classes based on assets used (which are the primary source of costs to be recovered) and using a Cost of Service Model (COSM) to establish and allocate costs to those service classes.

5.3. Within the service classes, Vector has defined a number of capacity segments to reflect economies of scale in network augmentation. Prices in each of the capacity segments reflect these economies of scale. (i.e. charges increase, but at a decreasing rate as volumes/capacity requirements increase).

5.4. A high level view of the process for developing prices is shown in Figure 3 and described as follows:

a. Determine the target revenue required to cover the costs and return on investment of providing electricity lines services;

b. Develop consumer segments based on groups of consumers' usage of Vector's electricity distribution network assets;

c. Incorporate consumer segmentation into price structures;

d. Develop COSM to incorporate pricing principles and allocate the costs making up the target revenue to consumer segmentations;

e. Set prices so that target revenue is recovered from consumer segments in accordance with the COSM;

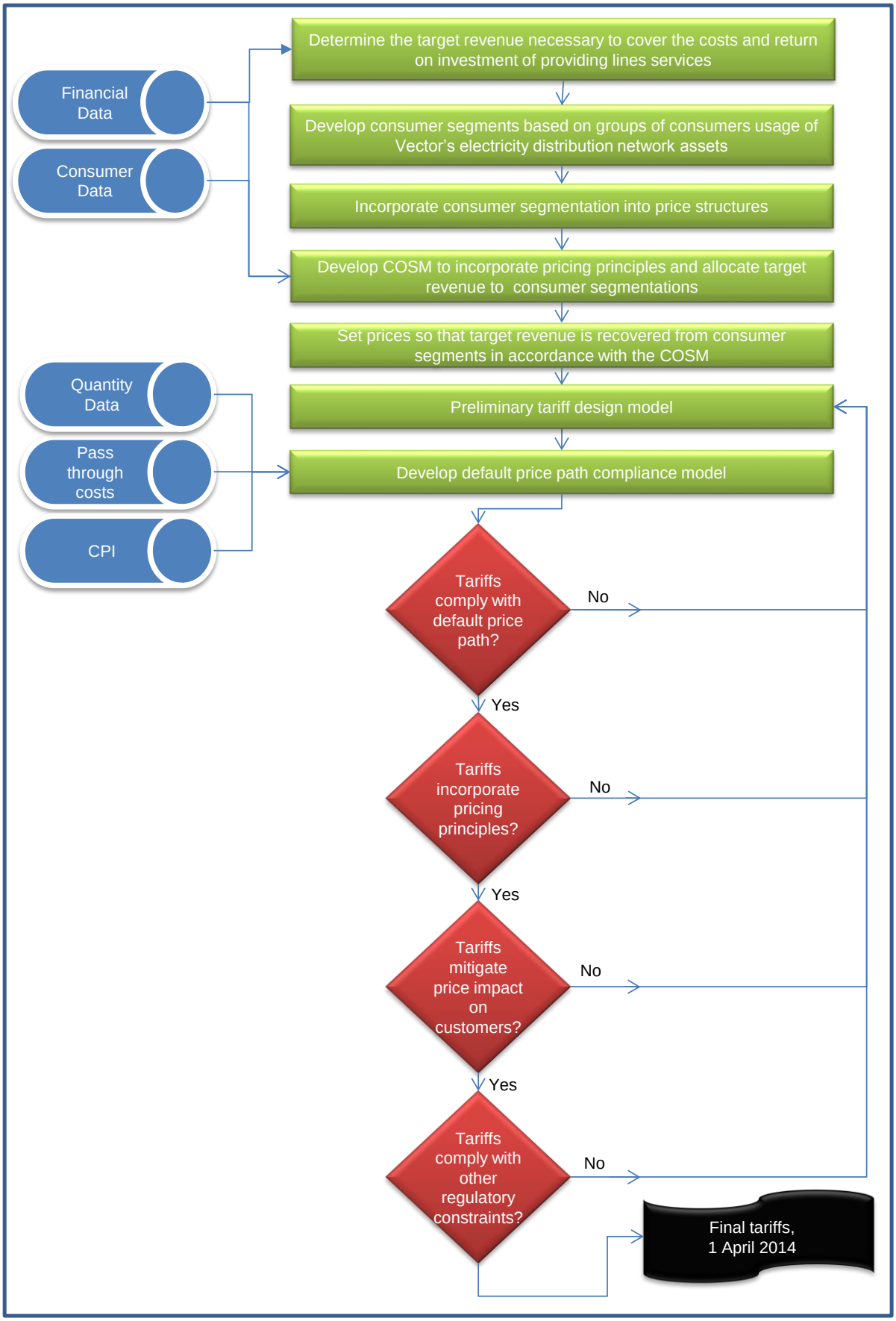
f. Ensure overall price changes are consistent with the pricing principles and provide for reasonable end consumer outcomes (e.g. mitigating rate shocks where indicated by the COSM) which includes;

   i. The development of a preliminary tariff design model;

   ii. The development of a price compliance model; and

   iii. An iterative process to ensure that prices comply with the Determination, incorporate regulated pricing principles, mitigate the price impact on consumers and meet other regulatory drivers.

Figure 3. Process used to set prices on 1 April 2014



5.5. The foundation of the development of the pricing methodology is based on an application of economic pricing principles, given practical, physical and commercial constraints. It is useful to have an understanding of these factors, as it assists in understanding various decisions Vector has reached in establishing the pricing methodology:

a. The majority of costs to be recovered are shared costs, which cannot be specifically attributed to particular service classes except at high levels of aggregation;

b. There are practical limits on the information available with which to set prices to improve efficiency, for example electricity time of use metering for small consumers has only recently been installed and commercial systems and processes to make relevant consumption information available are still being developed; and

c. Development of prices necessarily requires a high level of averaging due to the large number of customers and varying levels of consumption. There are practical considerations and administrative barriers in providing individual prices to individual customers.

6. DETERMINING TARGET REVENUES

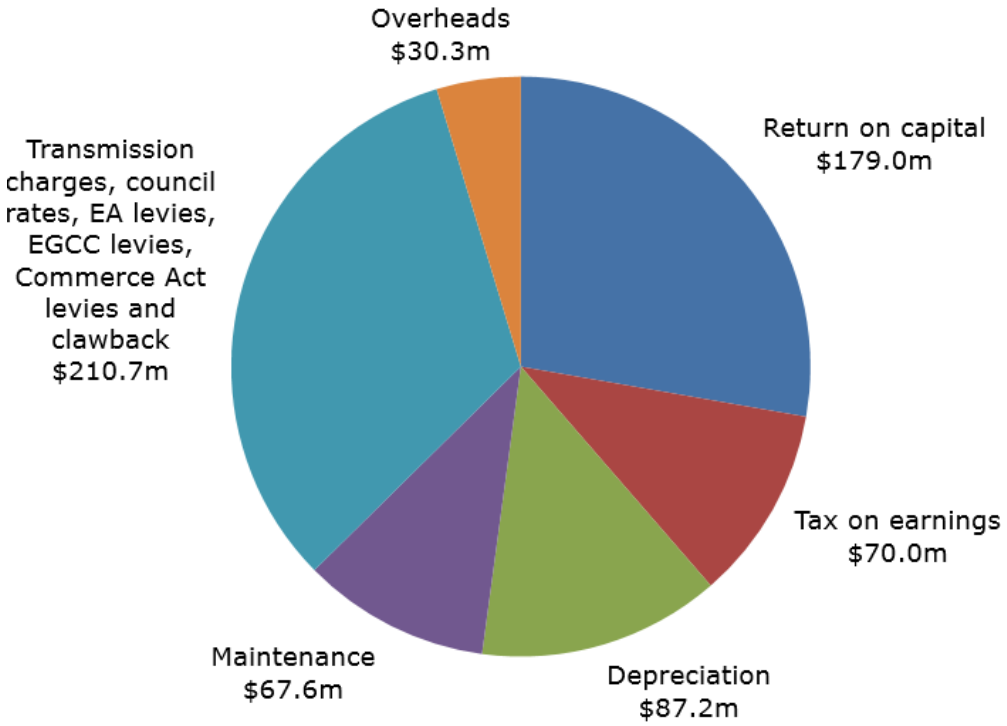
6.1. Vector's electricity distribution revenues are constrained by the requirements of the regulated price path, the actual number of consumers and electricity delivered over the distribution system. Price changes from year to year are capped by the permitted (CPI-based) increase in weighted average prices and increases in pass-through and recoverable costs.

6.2. Vector has some control over the costs for providing electricity lines services. With these forecast costs in mind, and the constraints of the price path, Vector is able to forecast the target revenue each year.

6.3. The target revenue that Vector expects to receive from the electricity distribution system between 1 April 2014 and 31 March 2015 is $644.8m. This assessed target revenue incorporates a component of both changes in quantities (growth) and changes in prices when compared with revenue from the previous year.

6.4. A breakdown of the target revenue into the key cost components is shown in Figure 4. The breakdown of target revenue into the key cost components in the forthcoming year has been determined based on historical percentages of actual cost components and revenue.

Figure 4. Breakdown of target revenue



7. HOW THE DISTRIBUTION SYSTEM IS SEGMENTED

7.1. Vector has segmented consumers based on the nature of the network service they receive. Due to the physical nature of distribution networks and the information that is available on consumer demand characteristics, the consumer segments are defined at a relatively high level. Examples of these considerations are:

a. A large proportion of the network's costs are fixed, which means that they should be allocated in a manner that causes the least distortion to other key economic signals;

b. There is a high degree of network meshing and interconnection of consumers. This means that multiple end consumers utilise many of the same assets. A large industrial consumer consuming large volumes of electricity per year is likely to be using some of the same network assets as a residential end consumer consuming only small amounts;

c. End consumers are not generally geographically segmented in their use of different network assets. For example, there are in general no purely "industrial zones" or "residential zones". A residential consumer is likely, in part at least, to use the same assets as an industrial consumer. A spatial representation of the location of different types of consumers across the Auckland networks is included as Appendix 2 and illustrates this point; and

d. There is a mix of consumers including a large number of consumers with relatively low individual consumption and a small number of consumers with relatively high individual consumption. For example 99% of end consumers with a capacity less than 69kVA use 55% of the energy transported, however the large size of the remaining 1% of end consumers use 45% of the energy transported over the distribution network.

7.2. Vector's customer segmentation reflects service and utilisation of the network. Costs are then allocated using the most appropriate drivers to ensure prices are as cost reflective as is practicable.

7.3. The starting point for determining prices is to directly attribute costs to customers/service-classes as far as possible. As a general proposition, this means that costs are allocated to customers who benefit from the use of certain assets or parts of the network; this is a "beneficiary pays" approach. Given the shared nature of the majority of network assets, it is then necessary to allocate the remaining common costs to develop prices such that the total costs of the network (directly attributable and shared) can be recovered.

7.4. In terms of direct attribution of costs, Vector has identified three service classes based on the nature of the connection to the electricity distribution network. Each of these connection types represents a group of end consumers that receive a homogenous but uniquely defined service from Vector. The service classes are defined corresponding to the following three different connection types:

a. Primary (P) connection type is where the end consumer is supplied directly from Vector's high voltage or sub-transmission (6.6kV or higher) network;

b. Secondary (S) connection type is where the end consumer is supplied from a transformer(s) owned by Vector and which supplies the consumer's low voltage (400V three phase or 230V single and two phase) network; and

c. Tertiary (T) connection type is where the end consumer is supplied from Vector's low voltage (400V three phase or 230V single and two phase) network.

8. ALLOCATING TARGET REVENUES TO SEGMENTS

8.1. The following section explains how Vector uses a Cost of Service Model (COSM) to allocate the actual costs of owning and operating the distribution network into the consumer segments and how cost allocation is used to determine how much revenue we need to recover from each consumer segment each year.

8.2. Based on the service definition and connection types described above, we have identified three distinct classes of assets that are used to different extents by end consumers in each connection type:

a. A asset types are all high voltage lines and cables, zone substation and sub-transmission assets;

b. B asset types are platforms (distribution substations) that have no Vector owned low voltage lines or cables leaving, excluding platforms that supply only Tertiary end consumers; and

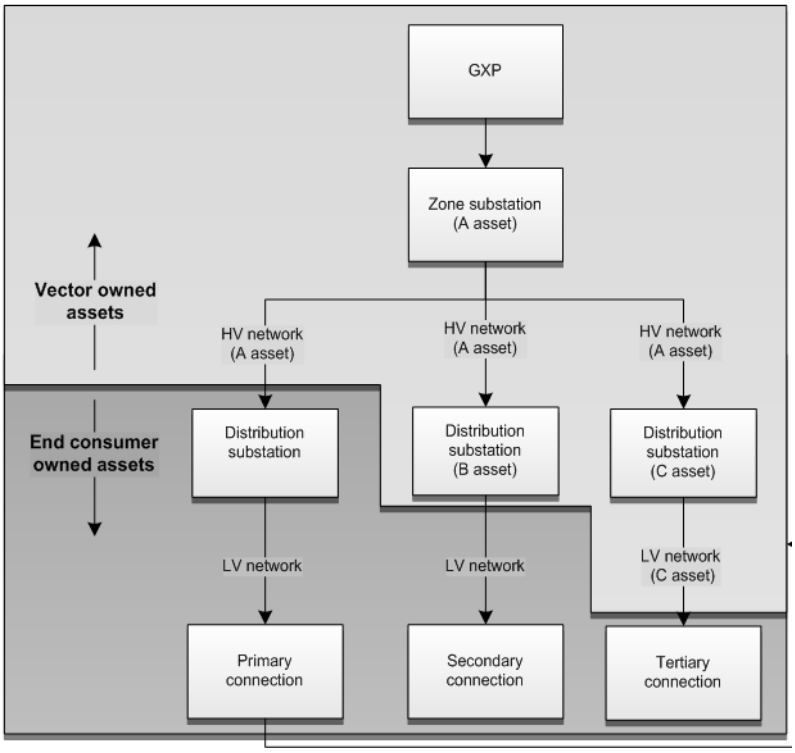
c. C asset types are all low voltage assets. Platforms (distribution substations) that have Vector owned low voltage lines or Vector platforms that supply multiple end consumers connected at low voltage.

8.3. Vector selected these asset types to reflect the costs associated with connecting consumers to various points on the distribution network. The use of voltage (high versus low) to segment assets provides a direct link between our asset segmentation (asset type) and our consumer segmentation (connection type.

8.4. As a large proportion of our costs are driven by assets, this provides a strong basis for the allocation of cost to consumer segments. This means under Vector's COSM

used for the cost allocation process, low voltage assets are not allocated to high voltage end consumers. This is illustrated diagrammatically in Figure 5.

Figure 5. Electricity network diagram



8.5. The key output of the COSM is to determine the revenues recoverable from each consumer segment based on the costs allocated or attributed to each consumer segment. The COSM apportions the costs of owning and operating Vector's electricity distribution business into Primary, Secondary and Tertiary consumer segments using specified allocators.

8.6. Many of the allocators used within the COSM are influenced by end consumer behaviour. Each year the weighting of the allocators is subject to change as they reflect changes in end consumer consumption decisions. As this is not necessarily appropriate for sunk and/or fixed costs Vector is investigating ways to smooth this natural volatility, for example by using moving average allocation quantities over time. We believe the COSM and cost allocation process should provide for a high degree of pricing stability for end consumers over time. In the absence of a stable set of allocators available at this stage, Vector has adopted a static set of allocators whilst we progress the development of alternatives.

8.7. The COSM uses data from a number of sources. In general the data set used within the COSM uses the same information as that used to produce Vector's disclosure statements under the Determination, albeit in some instances the information used in the COSM is at a more disaggregated level than is required for information disclosures. Data sources used in COSM are described in Table 1.

Table 1. Data sources used in COSM

Information	Source
Financials	Vector's financial accounts and information disclosure
ICP	Vector's billing systems and pricing models
kWh	Vector's billing systems and pricing models
kW	Vector's billing systems and pricing models
Revenue	Vector's billing systems and pricing models
Distance	Vector's geographical information system
Asset values	Vector's regulatory valuation system

8.8. The process of allocating shared or common costs to consumer segments requires the adoption of suitable allocators. The complex nature of electricity distribution networks, data limitations and the range of consumer consumption decisions mean that the choice of the most appropriate allocator is subjective.

8.9. Vector has exercised its discretion when making these judgments in order to best comply with the pricing principles. The descriptions in Table 2 reflect the allocators Vector has adopted in its COSM to set prices from 1 April 2014. These allocators are applied separately for the Northern and Auckland networks. Table 3 shows the numerical information in respect of each network.

Table 2. Description of allocators used in COSM

Allocator	Description	Formula
ICP	Ratio of the number of end consumers within each connection type.	$ICP_{CT}\% = ICP_{CT}/ICP_{Total}$
kWh	Percentage of the volume of electricity consumed by end consumers within each connection type.	$kWh_{CT}\% = kWh_{CT}/kWh_{Total}$
kW	Ratio of the total electricity demand of end consumers within each connection type at the time of system peaks.	$kW_{CT}\% = kW_{CT}/kW_{Total}$
kWh & ICP	Weighted average of ICP and kWh allocators. A 100/0 weighting has arbitrarily been adopted reflecting the subjective nature of these allocators.	$kWhICP_{CT}\% = ICP_{CT}\% * WF + kWh_{CT} * (1 - WF)$ where $WF = Weighting\ Factor$
kW * DIST	Ratio of the electricity demand multiplied by the average network length used by end consumers within each connection type.	$kWDist_{CT}\% = \frac{kW_{CT} * km_{CT}}{kW_P * km_P + kW_T * km_T + kW_S * km_S}$
Asset values	Ratio of the value of network assets used by end consumers within each connection type. Three asset types are defined in the Vector regulatory valuation i.e. A, B and C types. A type assets are shared by all three connection types and are allocated by means of the "kW*DIST" allocator to each connection type. B type assets	$Assets_P = kWDist_P\% * AssetValue_A$ $Assets_S = kWDist_S\% * AssetValue_A + AssetValue_B$ $Assets_T = kWDist_T\% * AssetValue_A + AssetValue_C$

Allocator	Description	Formula
	are solely used by the "secondary" connection type and C type assets are solely used by the "tertiary" connection type.	
Subscript: CT = Connection type, P = Primary, S = Secondary, T = Tertiary, A = A asset types, B = B asset types, C = C asset types		

8.10. The allocation weightings are shown in a percentage format in Table 3, Table 4 and Table 5. These percentages can be applied to group totals to obtain the connection type values for each cost category.

Table 3. Allocation between networks

Allocator	Auckland	Northern
kW	61.7%	38.3%
kWh & ICP	65.0%	35.0%
Assets	68.6%	31.4%

Table 4. Auckland allocation methods and weightings by connection-type

Allocator	Primary	Secondary	Tertiary
ICP	0.05%	0.3%	99.7%
kWh	19%	18%	64%
kW	16%	16%	68%
kWh & ICP	9%	9%	82%
kW * DIST	15%	15%	70%
Assets	10%	13%	78%
EBIT	5%	10%	85%

Table 5. Northern allocation methods and weightings by connection-type

Allocator	Primary	Secondary	Tertiary
ICP	0.01%	0.2%	99.8%
kWh	6%	15%	79%
kW	3%	10%	87%
kWh & ICP	3%	8%	89%
kW * DIST	3%	8%	89%
Assets	2%	6%	92%
EBIT	1%	3%	96%

8.11. Table 6 outlines each COSM cost category and the allocator Vector has used to allocate that cost into each connection type, and the rationale for choosing that allocator. Generally the allocator most appropriate to each cost category has been selected; for example with the strongest relationship to cost causation. Only the material costs have been shown in this table. Appendix 3, Appendix 4 and Appendix 5 show prices and target revenues, respectively, for each price plan.

Table 6. Method of cost allocation

COSM Cost Category	Allocator Used in COSM	Rationale
A assets	kW * DIST	A assets have been apportioned based on end consumer demand and distance. These inputs have been used as they determine the size and length of distribution cable or line to install.
B assets	Directly attributed	These costs are able to be directly attributed to the connection type
C assets	Directly attributed	These costs are able to be directly attributed to the connection type
Return on investment (cost of capital)	Asset values	The return on investment has been apportioned relative to assets as the assets represent the significant investment that Vector is seeking to recover the cost of.
Depreciation – System Fixed Assets	Asset values	The depreciation of system fixed assets will be approximately in proportion to the asset value for each connection type.
Non system fixed asset cost and depreciation on non-system fixed assets.	kWh & ICP	Non system fixed assets are those assets employed to assist staff to perform their jobs, and are very difficult to be attributed to any particular connection type. Common examples of non-system fixed assets are vehicles and office furniture. The basis for allocating these costs is subjective. Vector has chosen a kWh and ICP weighting.
Maintenance and system management and operations	Asset values	The predominant costs here relate to asset maintenance. To reflect the relationship between maintenance costs and the value of network assets Vector has adopted asset value to allocate these costs.
Indirect & Other Costs	kWh & ICP	Indirect costs tend to be items such as personnel costs, professional expenses, computer, administrative and property expenses. Similar to non-system fixed assets these costs are difficult to attribute to individual or groups of end consumers. A kWh and ICP weighting was chosen to reflect the subjective nature of these costs.
Pass through Costs	kW	Pass through costs are predominantly transmission costs (levied by Transpower) and governmental and regulatory levies. Transmission costs are predominantly levied based on regional peaks, and hence peak demand was used as an allocator.
Capital Expenditure	Asset values	Capital expenditure is most commonly associated with the extension or replacement of network assets. We have assumed extensions of the network are most likely to occur in line with the current proportions of asset values.
Regulatory Tax	Asset Values	Tax is directly related to profit, which in turn is primarily related to the Return on Capital earned on assets and the difference between accounting depreciation and tax depreciation. Accordingly, Vector has allocated regulatory tax on the basis of asset values.

9. CONSISTENCY WITH PRICING PRINCIPLES

9.1. The Electricity Authority's pricing principles (the Principles) provide a principle-based approach to developing pricing methodologies for electricity distribution

services. This section demonstrates the extent to which the EDPM is consistent with the Principles.

9.2. Pricing principle (a) of the Principles states that:

> (a) Prices are to signal the economic costs of service provision, by:
>
> i. being subsidy free (equal to or greater than incremental costs, and less than or equal to standalone costs), except where subsidies arise from compliance with legislation and/or other regulation;
>
> ii. having regard, to the extent practicable, to the level of available service capacity; and
>
> iii. signalling, to the extent practicable, the impact of additional usage on future investment costs.

9.3. The electricity distribution system, by its very nature, consists of assets with significant capacity. When building the system, economies of scale exist such that the cost of installing an asset larger than that which is immediately required does not add significantly to the cost of network build. As a consequence many parts of the extant distribution system are characterised by having spare capacity. In most cases, due to the availability of spare capacity, the short run cost of the next unit of capacity is nil. To illustrate this point, Appendix 6 shows the utilisation[2] of zone substations and feeders in the Auckland and Northern networks from Vector's 2013 Asset Management Plan.

9.4. Appendix 6 illustrates, in some cases, areas of the network have high utilisation. Where the system requires expansion, for example in order to connect a new user to the distribution system, then Vector generally funds this expansion through capital contributions and/or non-standard prices which ensure recovery of the incremental capital investment. Vector's approach to recovering these costs is outlined in the electricity distribution capital contribution policy. With respect to principle 1(a), the EDPM generally recovers the short run incremental costs specific to a new connection from the connecting party.

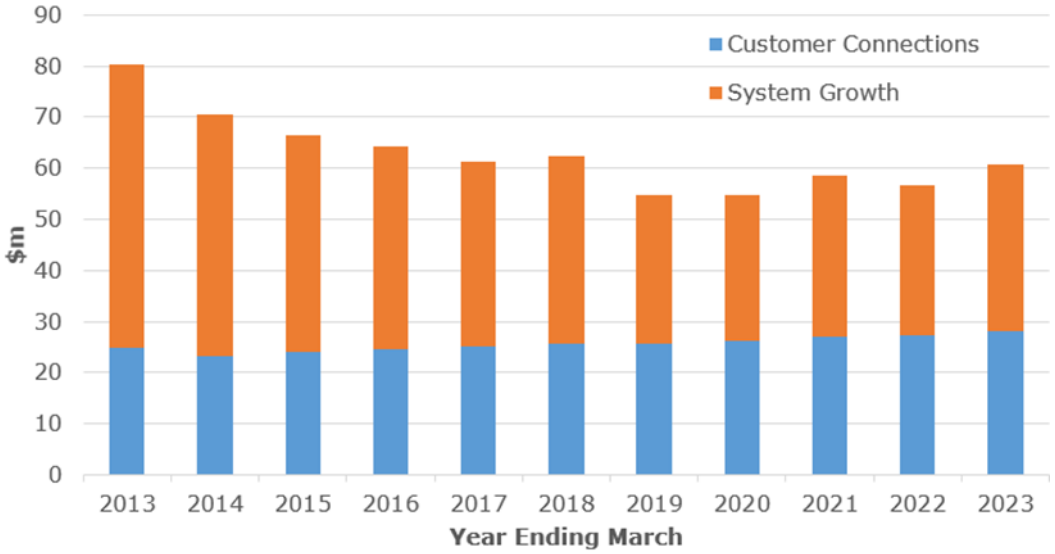
9.5. The incremental cost test can be applied both for individual customers and for groups of customers. The incremental cost for an individual customer is just the cost of connecting that customer to the network, and therefore excludes the cost of shared assets. The incremental cost for a group of customers is the cost of connecting that group of customers to the network, and includes the cost of assets shared by that group. Applying the incremental cost test at the group level is more stringent because it includes shared costs, and revenues for the group must be higher than just the sum of the incremental cost for each individual consumer. The allocation of B and C type assets directly to the Secondary and Tertiary customer classes ensures that these customer classes, in aggregate, pay at least the incremental cost of connecting those customer classes to the network. In recognition that these customer classes also require capacity on the A type assets, an allocation of A type assets is also made.

9.6. Figure 6 below shows Vector's forecast expenditure to meet future demand from Vector's 2013 Asset Management Plan. Customer connections allow for the costs

[2] Asset utilisation in a distribution network is defined as the ratio between the peak demand conveyed by an asset (such as a feeder or a zone substation) and the capacity of the asset. It is a measure of what an asset is actually delivering against what it is capable of delivering.

of connecting new customers and reticulating new subdivisions, while system growth relates to expansion of the network to provide the capacity to meet the electricity needs of these new connections.

Figure 6. Forecast Capital Expenditure to Meet Future Demand



9.7. Vector signals the level of available capacity over different time periods by signalling network congestion through the use of TOU prices and controlled load prices. TOU prices are used to signal congestion to consumers by applying higher prices at times of typical peak network demand. This provides incentives to end consumers to shift demand away from these peak periods and therefore reduce the need for future investment costs.

9.8. At this stage we have generally only applied congestion pricing in a very coarse manner and at a very high level. As technology improves and the uptake of time of use meters becomes more prevalent, we expect inter-temporal capacity price signals to become more effective. Vector offers controlled load prices to residential end consumers for the ability to remotely switch off the electricity supply of end consumers' hot water cylinders. This pricing approach signals the benefits to consumers, of allowing Vector to control their hot water load and manage network congestion during peak periods, through lower price options.

9.9. Vector's prices, however, are not fully dynamic. We acknowledge that this is an area for development and are currently considering mechanisms to ensure our approach to congestion charging facilitates efficient outcomes.

9.10. While we monitor the cost of alternative options for consumers, it can be difficult to apply these on a consumer specific basis. In some instances, the economic value of the service, including where that is set by the cost of an alternative form of supply, may be notified to us by the consumer. In these situations this pricing principle is delivered through the operation of pricing principle (c), detailed below.

9.11. Pricing principles (b) and (c) of the Principles state that:

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

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

i. discourage uneconomic bypass;

ii. allow for negotiation to better reflect the economic value of services and enable stakeholders to make price/quality trade-offs or non-standard arrangements for services; and

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

9.12. Pricing based on incremental costs would almost certainly under-recover allowed revenues. The majority of Vector's costs are fixed and do not vary with the next unit of consumption. Our costs are also sunk and do not reduce if consumption reduces. Accordingly the pricing methodology recovers allowed target revenues in a manner that is as least distortionary as possible to investment decisions. The approach that Vector has adopted has had regard to consumers' demand responsiveness by differentiating charges in the following ways:

a. With respect to connection size, with the daily fixed fee rising with the size of connection, and the rate of the variable charge decreasing. Vector considers connection size is a reasonable proxy for a consumer's likely responsiveness to the level of the fixed charge.

b. Established rules and criteria for non-standard pricing arrangements to take into account the requirements of individual consumers.

9.13. The pricing methodology takes account of general consumer responsiveness in the structure of the charges and in the relative weightings and levels of fixed and variable charges across consumer groups. Consumers will bypass if the cost of alternatives, whether through a competing network or alternative fuel, are lower than the cost of the distributed electricity. Bypass may be either economic or uneconomic. Economic bypass occurs when the incremental costs of the alternative are lower than the incremental costs of distributed electricity. Uneconomic bypass occurs when the incremental costs of the alternative are higher than the incremental costs of the alternative, but relative prices nevertheless provide the incentive for the customer to switch to the alternative. All else being equal, high variable charges for electricity distribution will increase the likelihood of uneconomic bypass.

9.14. In most instances bypass of electricity distribution will only be partial, i.e. the consumer will continue to have a connection to the electricity distribution network and will use electricity for lighting and appliances. In such instances the most efficient pricing option is likely to be a declining block price, with a relatively high fixed charge and relatively high price for the first "block" of electricity, with lower rates for successive blocks reflecting the relatively low cost of using additional electricity. It is important to note, however, that for residential consumers this option is effectively prohibited by the Low Fixed Charge Regulations, and those Regulations effectively encourage uneconomic bypass. Vector continues to lobby for regulatory change to address these economic shortcomings of the Low Fixed Charge Regulations.

9.15. Charges for business and industrial customers are better able to be structured to reflect actual costs, with fixed daily charges, capacity charges, and demand charges all being levied for different Pricing Plans. Prices are then structured

within capacity bands so that charges increase, but at a decreasing rate as volumes/capacity requirements increase. This is effectively a declining block structure.

9.16. Economically rational consumers will cease to consume if the cost of distributed electricity is more than the economic value of the electricity to them. Where the economic value the consumer ascribes to the service is less than the incremental cost of providing the service then Vector would cease to provide this service.

9.17. The pricing methodology also provides for non-standard contractual arrangements, with such arrangements being able to address changes to the structure or level of charges (e.g. for atypical load patterns, or to address particular by-pass or fuel substitute situations), or differing service levels where possible (e.g. a higher level of redundancy, or priority response if an outage occurs). The pricing methodology obliges Vector to take account of the issues described above when considering the design of a non-standard contract.

9.18. Pricing principle (d) of the Principles states that:

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

9.19. The existing pricing methodology for the electricity distribution system is transparent in that it is documented and is available to consumers and other stakeholders from Vector's website and is provided to them on request.

9.20. We have promoted price stability and have had regard to the impact on stakeholders by ensuring that, where practicable, changes to prices have been limited for most consumption patterns to be no more than 10% each year. Where possible we have signalled expected future increases in prices ahead of time so that consumers are able to factor such increases into their budgets. Vector has consulted with stakeholders in the development of this pricing methodology and continues to consult as appropriate when applying it and future methodologies.

9.21. Vector is investigating ways to engage more meaningfully with consumers on their expectations on price and quality and how to include those views in prices. However, prices relate to long life assets deployed to provide distribution services to consumers and any change in these services (and prices) could only be implemented over time. Vector consults with retailers on an annual basis as part of its electricity distribution price setting process.

9.22. Pricing principle (e) of the Principles states that:

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

9.23. In recent years Vector has taken active steps in simplifying its distribution price structure so that the transaction costs on retailers, end consumers, and Vector itself are minimised.

9.24. Vector offers retailers the opportunity to comment on its proposed price structures for each pricing year. This provides an opportunity for all retailers to identify any proposals that would increase transaction costs, and provides Vector the opportunity the address any concerns retailers may have.

9.25. Vector offers the same network pricing to all end consumers irrespective of which retailer they use i.e. Vector does not provide any discounts or special terms to end consumers who are supplied by a particular retailer. The non-differentiation of network charges is enshrined in the use of systems agreements that Vector has with retailers operating on Vector network.

10. IMPACT OF THE PRINCIPLES ON PRICES / PRICE DESIGN

10.1. For the purpose of cost allocation, Vector has allocated costs at the connection type level. For the purposes of determining prices, Vector has disaggregated the Tertiary connection type into 3 smaller 'pricing type' consumer segments. The rationale for adopting a greater level of granularity for the LV connection type is to:

a. Disaggregate the significant number of end consumers in this group into smaller pricing groups. This allows a more specific level of averaging when determining prices than would otherwise have been possible by connection type. This allows for more meaningful price structures more appropriate to individual consumer circumstances; and

b. Create a consumer segment that allows the tailoring of prices to comply with the Low Fixed Charge Regulations which apply to residential end consumers only.

10.2. The pricing type segments are as follows:

a. High voltage (HV) pricing type is where the end consumer is not a residential end consumer, has a metered connection greater than 69kVA and receives a supply directly from Vector's high voltage network. HV end consumers are primary connection types;

b. Transformer (TX) pricing type is where the end consumer is not a residential end consumer, has a metered connection greater than 69kVA and the end consumer's low voltage network is supplied directly from transformers owned by Vector. TX end consumers are secondary connection types;

c. Low voltage (LV) pricing type is where the end consumer is not a residential end consumer, has a metered connection greater than 69kVA and is connected to Vector's low voltage network. LV end consumers are tertiary connection types;

d. Business (Bus) pricing type is where the end consumer is not a residential end consumer and has a capacity less than or equal to 69kVA. Business end consumers include unmetered connections. Business end consumers are tertiary connection types; and

e. Residential (Res) pricing type is where the end consumer's connection is for a private dwelling, not normally used for any business activity. Residential end consumers are tertiary connection types.

10.3. Each pricing type segment is mutually exclusive, i.e. an end consumer can logically only fit within one segment. Vector determines which of the five pricing type segments an individual consumer is in based on the physical point of connection to the network, their capacity, metering type and end usage. Table 7 shows the mapping between pricing type and connection type:

Table 7. Relationship between connection type and pricing type segments

Size	Large >69kVA			Medium ≤69kVA	Small (Residential)
Pricing type	HV	TX	LV	Business	Residential
Connection type	P	S	T		

10.4. There are some instances where the mapping described in Table 7 does not describe the actual relationship between pricing type and connection type. These exceptions are extremely infrequent. For example it is possible (although unlikely) for a large residential consumer to have an HV connection to Vector's network. In this instance, residential pricing would apply.

11. DERIVATION OF STANDARD PRICES

11.1. Vector's prices for a given pricing type are designed to recover the costs and target revenue allocated to that pricing type through the COSM.

11.2. The prices for Vector's Northern Network were inherited when Vector purchased this network from UnitedNetworks in 2002. Almost all aspects of the pricing approach for the Northern Network differed from the extant Auckland network. Since 2002, Vector has been working to align the distribution prices on its Auckland and Northern networks and to simplify and reduce the number of prices while keeping price increases to consumers to generally less than 10%. However in years where there have been large increases in pass-through costs (particularly transmission charges), we have chosen not to undertake any further rationalisation of prices, having regard to the potential impact of price changes on consumers. As a result, the process of alignment and consolidation between the Auckland and Northern networks is not yet complete.

11.3. Since 2012, Vector has been increasing the fixed proportion of revenues to better align revenues with our costs which are largely fixed and sunk. Vector has also been seeking to ensure that the recovery of largely fixed pass through and recoverable costs outside of our control are not subject to volume recovery risk. Whilst we have explored commercial arrangements for delivering these outcomes in our prices from 1 April 2014, we are instead investigating the underlying regulatory framework that gives rise to the pass through and recoverable cost recovery risks we face.

11.4. Vector has set its prices for 2014/15 to ensure that its requirements under the Electricity Distribution Services Default Price-Quality Path Determination 2012 (the DPP) are met. The DPP specifies the allowable amount of notional revenue that Vector is able to recover through prices. Accordingly, each year Vector sets prices, so that on a forecast basis notional revenue does not exceed allowable notional revenue under the DPP.

11.5. From 1 April 2014, Vector has reduced the distribution component of prices by 1.6%. In addition to the reduction to the distribution component of Vector's prices, Vector is able to change prices to reflect changes in pass through and recoverable costs outside of our control. Pass-through and recoverable costs (including transmission charges) are forecast to increase by 15.4%. This includes forecast increases in local authority rates of 20%, transmission charges of 15.4%, Commerce Act levies of 13.5%, EGCC levies of 3.4% and Electricity Authority levies of 0.1%.

11.6. Forecast pass-through and recoverable costs make up approximately 37% of Vector's notional revenue for the 2014/15 pricing year. Vector's distribution

charges make up the residual 63% of the notional revenue recovered by our line charges. The combination of increases in pass-through and recoverable costs with the application of the reduction to the distribution component of Vector's prices results in an overall weighted average price increase of 3.6%.

11.7. Vector has applied this overall price increase to prices in conjunction with price rebalances between individual consumer groups to ensure the revenue from each consumer group determined by the COSM is delivered. We have generally limited the extent of these price increases so that consumers generally face distribution price increases of no more than 10%.

11.8. Changes to individual prices may vary from the weighted average price increase. This follows a number of structural changes to prices to:

a. Adhere to regulatory pricing principles;

b. Make transmission charges more transparent;

c. Remove closed and outdated pricing options;

d. Ensure consumers face incentives to manage power factor; and

e. Adhere with Low Fixed Charge Regulations.

11.9. As part of our pricing consultation, Vector had explored unbundling the transmission component of prices from Vector's line charges and passing these costs through to energy retailers on a wholesale basis. This proposal was intended to make the transmission charges more transparent and address shortcomings in the way transmission costs are able to be recovered by distributors under price-quality regulation. Vector consulted with retailers on this initiative and received strong opposition. As a result our final prices now include separate and identifiable transmission components, however we have continued to pass these charges to retailers on an individual consumer basis (rather than wholesale and in aggregate) more or less in the same manner as we had in the past. This will allow Vector to pursue regulatory solutions to address the underlying regulatory issues.

11.10. Vector has separated the transmission component of line charges from Vector's prices and now display distribution, transmission and total charges. Vector has determined the transmission portion of prices so that the revenue from those prices recovers the allocated transmission costs to each consumer group. This has given the following transmission component of line charges:

a. 2.82c/kWh for residential and business plans;

b. 3.72c/kWh for non TOU LV, TX and HV plans; and

c. 0.6c/kWh and 20.94c/kVA for TOU LV, TX and HV plans.

11.11. For LV, TX and HV consumers on Vector's Northern Network, Vector has:

a. Removed a number of grandfathered and closed price plans on the Northern network. These price options have been intended for removal for a number of years and have gradually been transitioned towards our standard price options. Consumers who were previously on these price plans will now move to one of Vector's standard distribution price options available to all consumers. This will affect approximately 300 consumers. This has included the removal of the closed WLVC price plan and transfer of the consumers on this plan to the WLVN plan and removal of the closed WTXC price plan and transfer of the consumers on this plan to the WTXN plan.

b. Increased the WLVN fixed charge from $5.00 per day to $5.50 per day (10% increase) and reduced the WLVN variable charge by 19%. This results in an average decrease to consumers on this plan of 11%. The purpose of this change is to better facilitate the removal of the closed price options without unduly impacting on consumers, and for prices to better reflect underlying costs.

11.12. From 1 April 2012 Vector introduced power factor charges to all half-hourly metered end-consumers greater than 69kVA. The power factor charges created financial incentives for these consumers to maintain a power factor of 0.95 or above in accordance with the requirements of Vector's distribution code. At that time, the power factor charges were set sufficiently low ($0.0011/kVAr/day) to signal the new charges but allow consumers sufficient time to install power factor correction equipment without incurring financial hardship. Vector signalled the power factor price would increase in subsequent price changes to create stronger financial incentives for the installation of power factor correction.

11.13. From 1 April 2014 Vector has increased the power factor charge from $0.0685/kVAr/day to $0.2917/kVAr/day.

11.14. Currently, Vector has approximately 2,500 customers paying power factor charges. The increased power factor prices will only affect consumers that take no action to correct their power factor.

11.15. Vector's residential price plans were updated from 1 April 2014. The most significant change to our residential price options was to restructure the time of use metering options to better enable retailers to meet their requirements under the Low Fixed Charge Regulations.

11.16. Vector previously offered two residential time of use price options, one each for controlled and uncontrolled consumers respectively. Vector did not offer time of use metering options with a low fixed charge. We complied with the requirements of the Low Fixed Charge Regulations by ensuring the normal (non-time of use) low fixed charge options we offered had a cross over point with the time of use options less than 8,000kWh per annum and had a fixed charge of 15c/day.

11.17. The requirements for retailers under the Low Fixed Charge Regulations differ to the requirements for distributors. Retailers must offer a low fixed charge option for 'each delivered electricity package' that a retailer supplies. Vector has elected to restructure the time of use options from 1 April 2014 to better facilitate retailers to meet their obligations under the Low Fixed Charge Regulations and encourage uptake of the time of use price options. This has resulted in consolidation of the current controlled and uncontrolled time of use options into a single time of use option and the introduction of a new residential time of use option with a low fixed charge.

11.18. In addition to the changes described above, Vector has made the following further price changes:

a. Increased residential standard user fixed charges from 80c to 85c per day to better reflect the fixed cost of supply;

b. Applied an average overall increase of 3.9% to unmetered business prices through a combination of increases to fixed and variable prices.

c. Rebalanced kWh prices for LV, TX and HV TOU plans on Vector's Auckland Network. We have increased winter night, summer day and summer night prices while reducing winter day charges to be equal to the corresponding summer day charges. In effect this has removed the summer/winter

differential. In future Vector intends on further removal of the day/night kWh differential as we believe the demand based price incentives reflect underlying network characteristics and create appropriate consumption incentives.

d. Rebalanced between consumption prices and demand prices for LV, TX and HV TOU plans, with weighted average consumption prices decreasing by 6.2% and demand prices increasing by 13.0%. The demand based price incentives reflect underlying network characteristics and create appropriate consumption incentives.

11.19. Appendix 3 and Appendix 4 show the prices for the Auckland and Northern networks effective from 1 April 2014.

11.20. When setting prices for 2014/15, the fixed portion of Vector's prices have remained largely unchanged due to Vector pursuing the unbundling of transmission charges from Vector's distribution charges.

Table 8. Impact of weighted average price changes on pricing types

Size	Large (>69kVA)*			Medium (≤69kVA)	Small (Residential)
Pricing type	HV	TX	LV	Business	Residential
Auckland Network	5.0%	4.3%	3.7%	2.9%	3.2%
Northern Network	5.3%	5.9%	-3.4%	0.7%	1.4%
Total	5.0%	4.6%	2.2%	2.1%	2.4%

*does not include the impact of power factor charges

12. NON-STANDARD PRICING

12.1. In certain circumstances Vector's published standard prices may not adequately reflect the actual costs of supplying a consumer, reflect the economic value of the service to the consumer or address the commercial risks associated with supplying that consumer. In addition to standard published prices, the EDPM also includes non-standard agreements.

12.2. Non-standard contracts allow tailored or specific prices and non-standard Network Connection and Services Agreement (NCSA) commercial arrangements to be applied to individual points on the distribution system.

12.3. Of the allowable target revenue for 1 April 2014 to 31 March 2015 of $644.8m, approximately 5% is recovered from 47 non-standard consumers.

12.4. Vector has established assessment criteria to determine whether to apply non-standard pricing. Consumers may be assessed for non-standard terms or pricing if they meet one of the following criteria:

a. The capacity of the consumer's point of connection is greater than or equal to 1.5 MVA; or

b. The consumer's maximum or forecast maximum demand (twice the maximum kVAh half hourly reading) is greater than or equal to 1.5 MVA; or

c. The ratio of the consumer's maximum or forecast maximum demand over their average or forecast average demand in any year is greater than 4; or

d. Vector incurs capital expenditure greater than $250k augmenting its electricity distribution network in order to provide electricity lines services to the consumer.

12.5. Vector assesses whether to apply non-standard pricing and the corresponding contractual arrangements to new consumers on a case by case basis. Generally if a consumer does not meet at least one of the assessment criteria, they will be subject to published standard distribution prices. Meeting one or more of the assessment criteria does not mean that a non-standard arrangement will apply, merely that the consumer may be further reviewed to determine whether standard pricing and standard contractual terms are suitable given the consumer's individual circumstances.

12.6. For new investments that qualify for non-standard pricing, Vector uses actual costs and or allocated costs derived from an allocation model to determine prices. This allocation model is consistent with the allocation model used to determine standard pricing. The description provided under Section 9 to show consistency with the pricing principles therefore applies to the allocation model used for non-standard pricing.

12.7. For new non-standard investments, Vector applies a capital contributions policy. Vector's policy for determining capital contributions on Vector's electricity distribution networks is available here:

http://www.vector.co.nz/corporate/disclosures/electricity/electricity-capital-contributions.

12.8. Vector's obligations and responsibilities to non-standard consumers on Vector's networks in the event that the supply of electricity lines services to the consumer is interrupted are as follows:

a. Where Vector plans to undertake maintenance on the network that requires an interruption to the supply of electricity to any Point of Connection, Vector will notify the Customer either directly or via the Customer's retailer in writing to that effect, so that the Customer will receive at least 4 working days' notice prior to interruption.

b. In the event of an unexpected interruption to the supply of electricity Vector plans its resources in order to restore supply to most customers within 3 hours; however events outside Vector's control may influence this time frame and Vector accepts no liability for failure to restore supply within such time frame. Where restoration takes more than three hours Vector will provide the Customer with a written explanation for the extended restoration time frame if requested by the Customer.

12.9. Vector's obligations and responsibilities to consumers subject to non-standard contracts on Vector's networks in the event that the supply of electricity lines services to the consumer is interrupted are provided in Appendix 8.

12.10. By comparison with the non-standard contract terms outlined above, Vector's standard contracts have the following terms:

a. Northern network: Vector is required to notify retailers within 10 working days of planned outages. Vector is also subject to service levels to restore supply within 3 hours of notification of an urban fault and within 6 hours of notification for a rural fault.

b. Auckland network: Vector is required to give consumers 4 days notice of any planned interruption and to notify retailers at the same time as it gives customers notice. Vector is also required to use reasonable endeavours to inform the retailer within 15 minutes of becoming aware of an unplanned interruption.

c. Vector is required to give consumers 4 days notice of any planned interruption and to notify retailers at the same time as it gives customers notice. Vector is also required to use reasonable endeavours to inform the retailer within 15 minutes of becoming aware of an unplanned interruption

d. Vector also has published the following published service standards:

i. Fault restoration for large commercial/industrial consumers (>69kVA): CBD or Industrial: 2 hours, urban: 2.5 hours; rural: 3 hours

ii. Fault restoration for all other consumers: urban 2.5 hours; rural 3 hours

iii. Number of interruptions for large commercial/industrial consumers(>69kVA): CBD 3 per annum; industrial, urban, rural: 4 per annum

iv. Number of interruptions for all other consumers: urban 4 per annum; rural 14 per annum:

12.11. For this pricing year Vector's obligations and responsibilities to consumers in the event that the supply of electricity lines services to them is interrupted have no implications for determining prices.

13. APPROACH TO PRICING DISTRIBUTED GENERATION

13.1. Vector's policies and procedures for the application for, installation and connection of distributed generation are in accordance with the requirements of Part 6 (Connection of distributed generation) of the Electricity Industry Participation Code 2010 (the Code).

13.2. The Electricity Authority has recently consulted on Avoided Cost of Transmission (ACOT) payments for Distributed Generation (DG). The EA's own analysis of aspects of the Code identified circumstances, where in complying with the Code, transmission charges plus avoided transmission payments made by distributors to DG can exceed the transmission charges consumers would incur absent any distributed generation.

13.3. Vector has submitted to the Commission, how in our opinion the ACOT issues are exacerbated by the distributed generation pricing principles. These provide for distributed generators to receive 100% of the ACOT benefits (avoided transmission and distribution) of distributed generation without any sharing with consumers. Even if distributed generation improves efficiency, consumers can be made worse off under the current pricing principles.

13.4. The current DG pricing principles provide that consumers should bear all fixed and common costs while distributed generators should not be required to contribute to any of these costs. Vector does not believe there is sound reason for these requirements and cannot see how this is to the long-term benefit of consumers. We believe the requirements of the Code exaggerates the incentives to install DG and increases the likelihood that uneconomic bypass may occur. We have, and continue to lobby the EA on these issues.

13.5. Notwithstanding the issues identified above, in order to comply with the requirements of the Code, Vector charges each distributed generator only the incremental cost of connection prior to them connecting to the network.

APPENDIX 1. PRICING PRINCIPLES

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

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

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

(iii) signalling, to the extent practicable, the impact of additional usage on future investment costs.

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

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

(i) discourage uneconomic bypass;

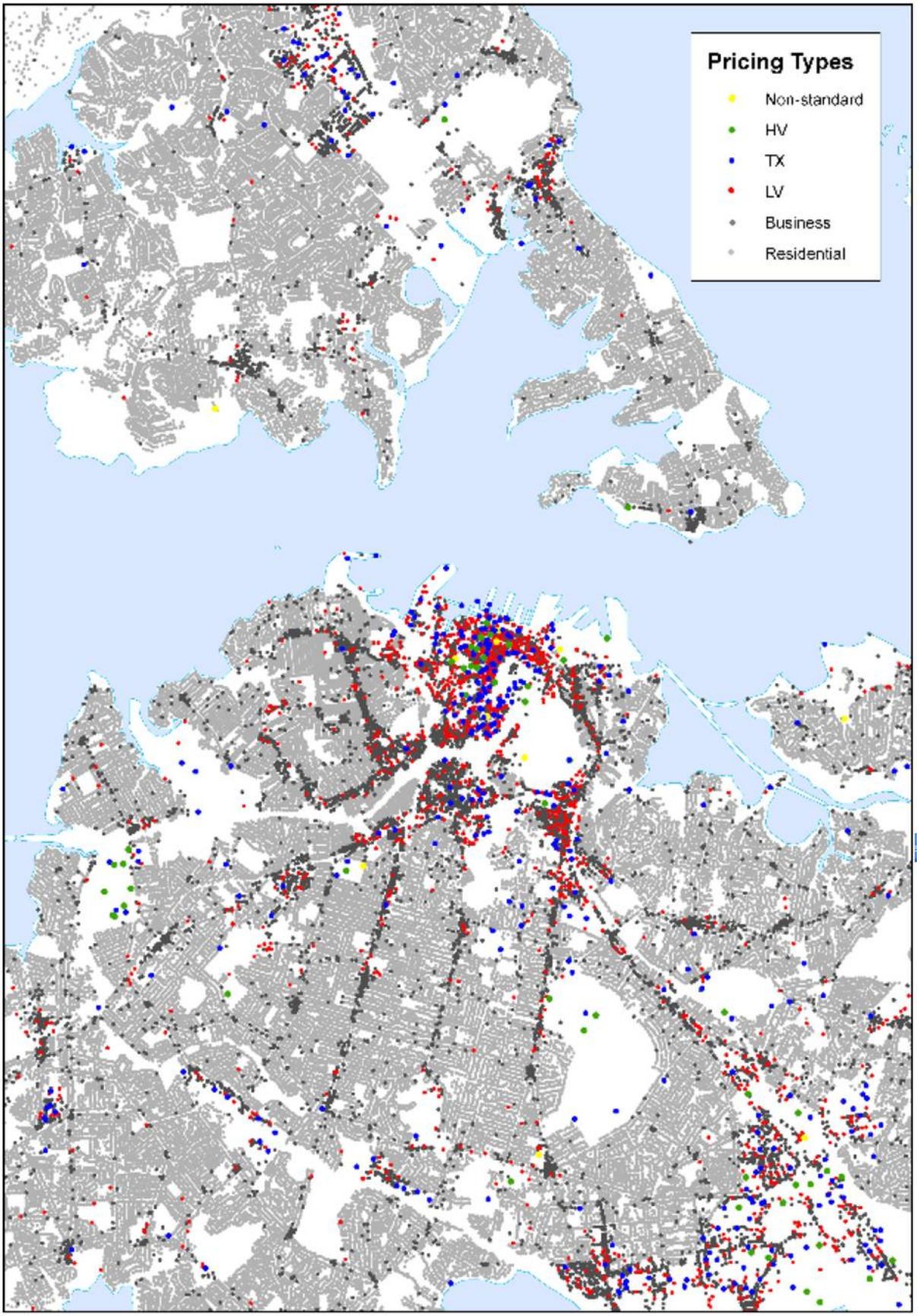
(ii) allow for negotiation to better reflect the economic value of services and enable stakeholders to make price/quality trade-offs or non-standard arrangements for services; and

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

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

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

APPENDIX 2. SPATIAL ILLUSTRATION OF PRICING TYPES



APPENDIX 3. AUCKLAND PRICES BY SEGMENT AND PRICE PLAN

Vector's prices on the Auckland network from 1 April 2014 expressed post 10% prompt payment discount

Price plan	Code	Description	Units	Dist	Trans	Total
RESIDENTIAL						
ARCL	ARCL-FIXD	Fixed	$/day	0.1500		0.1500
ARCL	ARCL-AICO	Variable, controlled	$/kWh	0.0629	0.0282	0.0911
ARUL	ARUL-FIXD	Fixed	$/day	0.1500		0.1500
ARUL	ARUL-24UC	Variable, uncontrolled	$/kWh	0.0720	0.0282	0.1002
ARHL	ARHL-FIXD	Fixed	$/day	0.1500		0.1500
ARHL	ARHL-OFPK	Variable, off-peak	$/kWh	0.0520	0.0282	0.0802
ARHL	ARHL-SHLD	Variable, shoulder	$/kWh	0.0720	0.0282	0.1002
ARHL	ARHL-PEAK	Variable, peak	$/kWh	0.1054	0.0282	0.1336
ARCS	ARCS-FIXD	Fixed	$/day	0.8500		0.8500
ARCS	ARCS-AICO	Variable, controlled	$/kWh	0.0310	0.0282	0.0592
ARUS	ARUS-FIXD	Fixed	$/day	0.8500		0.8500
ARUS	ARUS-24UC	Variable, uncontrolled	$/kWh	0.0401	0.0282	0.0683
ARHS	ARHS-FIXD	Fixed	$/day	0.8500		0.8500
ARHS	ARHS-OFPK	Variable, off-peak	$/kWh	0.0264	0.0282	0.0546
ARHS	ARHS-SHLD	Variable, shoulder	$/kWh	0.0401	0.0282	0.0683
ARHS	ARHS-PEAK	Variable, peak	$/kWh	0.0629	0.0282	0.0911
BUSINESS						
ABSU	ABSU-FIXD	Fixed	$/day	0.1400		0.1400
ABSU	ABSU-24UC	Variable	$/kWh	0.0470	0.0282	0.0752
ABSN	ABSN-FIXD	Fixed	$/day	0.8500		0.8500
ABSN	ABSN-24UC	Variable	$/kWh	0.0401	0.0282	0.0683
LOW VOLTAGE						
ALVN	ALVN-FIXD	Fixed	$/day	1.5600		1.5600
ALVN	ALVN-24UC	Variable	$/kWh	0.0289	0.0372	0.0661
ALVN	ALVN-CAPY	Capacity	$/kVA/day	0.0332		0.0332
ALVN	ALVN-PWRF	Power factor	$/kVAr/day	0.2917		0.2917
ALVH	ALVH-SMDY	Variable, summer day	$/kWh	0.0153	0.0060	0.0213
ALVH	ALVH-SMNT	Variable, summer night	$/kWh	0.0024	0.0060	0.0084
ALVH	ALVH-WNDY	Variable, winter day	$/kWh	0.0153	0.0060	0.0213
ALVH	ALVH-WNNT	Variable, winter night	$/kWh	0.0024	0.0060	0.0084
ALVH	ALVH-CAPY	Capacity	$/kVA/day	0.0332		0.0332
ALVH	ALVH-DAMD	Demand	$/kVA/day	0.0969	0.2094	0.3063
ALVH	ALVH-PWRF	Power factor	$/kVAr/day	0.2917		0.2917
ALVN	ALVN-FIXD	Fixed	$/day	1.5600		1.5600
TRANSFORMER						
ATXN	ATXN-FIXD	Fixed	$/day	1.5100		1.5100
ATXN	ATXN-24UC	Variable	$/kWh	0.0269	0.0372	0.0641
ATXN	ATXN-CAPY	Capacity	$/kVA/day	0.0322		0.0322
ATXN	ATXN-PWRF	Power factor	$/kVAr/day	0.2917		0.2917
ATXH	ATXH-SMDY	Variable, summer day	$/kWh	0.0148	0.0060	0.0208
ATXH	ATXH-SMNT	Variable, summer night	$/kWh	0.0023	0.0060	0.0083
ATXH	ATXH-WNDY	Variable, winter day	$/kWh	0.0148	0.0060	0.0208
ATXH	ATXH-WNNT	Variable, winter night	$/kWh	0.0023	0.0060	0.0083
ATXH	ATXH-CAPY	Capacity	$/kVA/day	0.0322		0.0322
ATXH	ATXH-DAMD	Demand	$/kVA/day	0.0884	0.2094	0.2978
ATXH	ATXH-PWRF	Power factor	$/kVAr/day	0.2917		0.2917
HIGH VOLTAGE						
AHVN	AHVN-FIXD	Fixed	$/day	1.4600		1.4600
AHVN	AHVN-24UC	Variable	$/kWh	0.0250	0.0372	0.0622
AHVN	AHVN-CAPY	Capacity	$/kVA/day	0.0312		0.0312
AHVN	AHVN-PWRF	Power factor	$/kVAr/day	0.2917		0.2917
AHVH	AHVH-SMDY	Variable, summer day	$/kWh	0.0144	0.0060	0.0204
AHVH	AHVH-SMNT	Variable, summer night	$/kWh	0.0022	0.0060	0.0082
AHVH	AHVH-WNDY	Variable, winter day	$/kWh	0.0144	0.0060	0.0204
AHVH	AHVH-WNNT	Variable, winter night	$/kWh	0.0022	0.0060	0.0082
AHVH	AHVH-CAPY	Capacity	$/kVA/day	0.0312		0.0312
AHVH	AHVH-DAMD	Demand	$/kVA/day	0.0802	0.2094	0.2896
AHVH	AHVH-DEXA	Excess demand	$/kVA/day	0.6633		0.6633
AHVH	AHVH-PWRF	Power factor	$/kVAr/day	0.2917		0.2917

APPENDIX 4. NORTHERN PRICES BY SEGMENT AND PRICE PLAN

Vector's prices on the Northern network from 1 April 2014

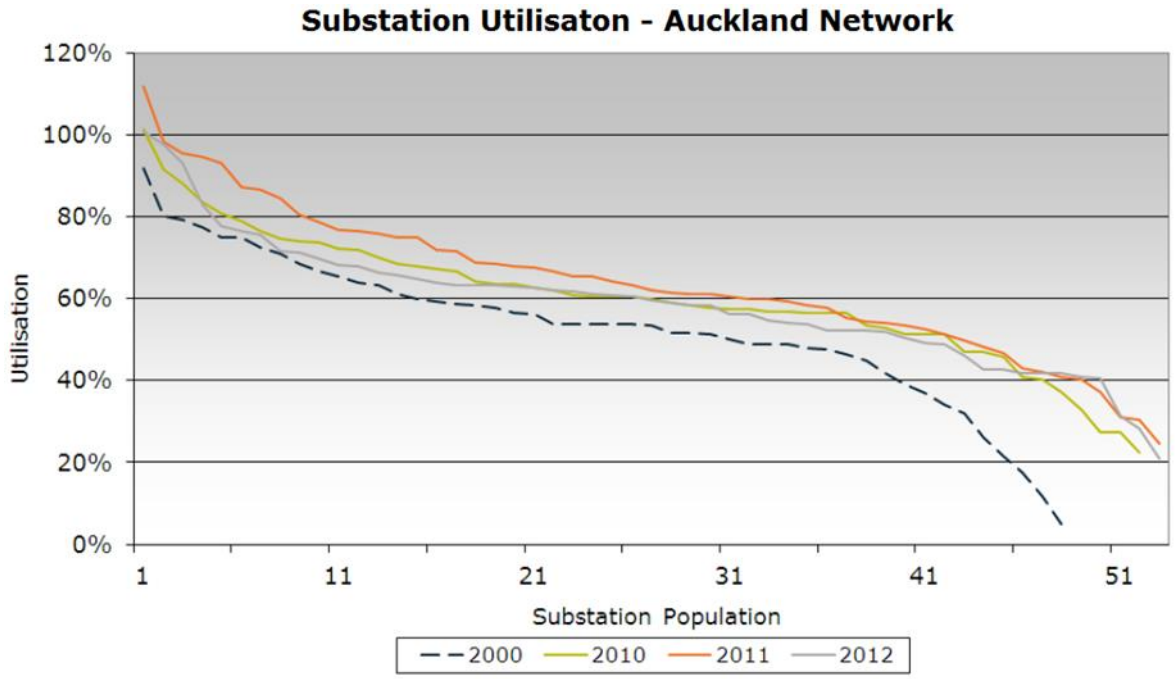
Price plan	Code	Description	Units	Dist	Trans	Total
RESIDENTIAL						
WRCL	WRCL-FIXD	Fixed	$/day	0.1500		0.1500
WRCL	WRCL-AICO	Variable, controlled	$/kWh	0.0648	0.0282	0.0930
WRUL	WRUL-FIXD	Fixed	$/day	0.1500		0.1500
WRUL	WRUL-24UC	Variable, uncontrolled	$/kWh	0.0740	0.0282	0.1022
WRHL	WRHL-FIXD	Fixed	$/day	0.1500		0.1500
WRHL	WRHL-OFPK	Variable, off-peak	$/kWh	0.0536	0.0282	0.0818
WRHL	WRHL-SHLD	Variable, shoulder	$/kWh	0.0740	0.0282	0.1022
WRHL	WRHL-PEAK	Variable, peak	$/kWh	0.1081	0.0282	0.1363
WRCS	WRCS-FIXD	Fixed	$/day	0.8500		0.8500
WRCS	WRCS-AICO	Variable, controlled	$/kWh	0.0329	0.0282	0.0611
WRUS	WRUS-FIXD	Fixed	$/day	0.8500		0.8500
WRUS	WRUS-24UC	Variable, uncontrolled	$/kWh	0.0421	0.0282	0.0703
WRHS	WRHS-FIXD	Fixed	$/day	0.8500		0.8500
WRHS	WRHS-OFPK	Variable, off-peak	$/kWh	0.0280	0.0282	0.0562
WRHS	WRHS-SHLD	Variable, shoulder	$/kWh	0.0421	0.0282	0.0703
WRHS	WRHS-PEAK	Variable, peak	$/kWh	0.0655	0.0282	0.0937
BUSINESS						
WBSU	WBSU-FIXD	Fixed	$/day	0.1400		0.1400
WBSU	WBSU-24UC	Variable	$/kWh	0.0553	0.0282	0.0835
WBSN	WBSN-FIXD	Fixed	$/day	0.8500		0.8500
WBSN	WBSN-24UC	Variable	$/kWh	0.0421	0.0282	0.0703
LOW VOLTAGE						
WLVN	WLVN-FIXD	Fixed	$/day	5.5000		5.5000
WLVN	WLVN-24UC	Variable	$/kWh	0.0092	0.0372	0.0464
WLVN	WLVN-CAPY	Capacity	$/kVA/day	0.0190		0.0190
WLVN	WLVN-PWRF	Power factor	$/kVAr/day	0.2917		0.2917
WLVH	WLVH-FIXD	Fixed	$/day	10.3800		10.3800
WLVH	WLVH-24UC	Variable	$/kWh		0.0060	0.0060
WLVH	WLVH-CAPY	Capacity	$/kVA/day	0.0190		0.0190
WLVH	WLVH-DAMD	Demand	$/kVA/day	0.0725	0.2094	0.2819
WLVH	WLVH-PWRF	Power factor	$/kVAr/day	0.2917		0.2917
TRANSFORMER						
WTXN	WTXN-FIXD	Fixed	$/day	4.9500		4.9500
WTXN	WTXN-24UC	Variable	$/kWh	0.0046	0.0372	0.0418
WTXN	WTXN-CAPY	Capacity	$/kVA/day	0.0171		0.0171
WTXN	WTXN-PWRF	Power factor	$/kVAr/day	0.2917		0.2917
WTXH	WTXH-FIXD	Fixed	$/day	9.3400		9.3400
WTXH	WTXH-24UC	Variable	$/kWh		0.0060	0.0060
WTXH	WTXH-CAPY	Capacity	$/kVA/day	0.0171		0.0171
WTXH	WTXH-DAMD	Demand	$/kVA/day	0.0640	0.2094	0.2734
WTXH	WTXH-PWRF	Power factor	$/kVAr/day	0.2917		0.2917
HIGH VOLTAGE						
WHVN	WHVN-FIXD	Fixed	$/day	4.8000		4.8000
WHVN	WHVN-24UC	Variable	$/kWh	0.0033	0.0372	0.0405
WHVN	WHVN-CAPY	Capacity	$/kVA/day	0.0166		0.0166
WHVN	WHVN-PWRF	Power factor	$/kVAr/day	0.2917		0.2917
WHVH	WHVH-FIXD	Fixed	$/day	9.0600		9.0600
WHVH	WHVH-24UC	Variable	$/kWh		0.0060	0.0060
WHVH	WHVH-CAPY	Capacity	$/kVA/day	0.0166		0.0166
WHVH	WHVH-DAMD	Demand	$/kVA/day	0.0558	0.2094	0.2652
WHVH	WHVH-DEXA	Excess demand	$/kVA/day	0.6633		0.6633
WHVH	WHVH-PWRF	Power factor	$/kVAr/day	0.2917		0.2917

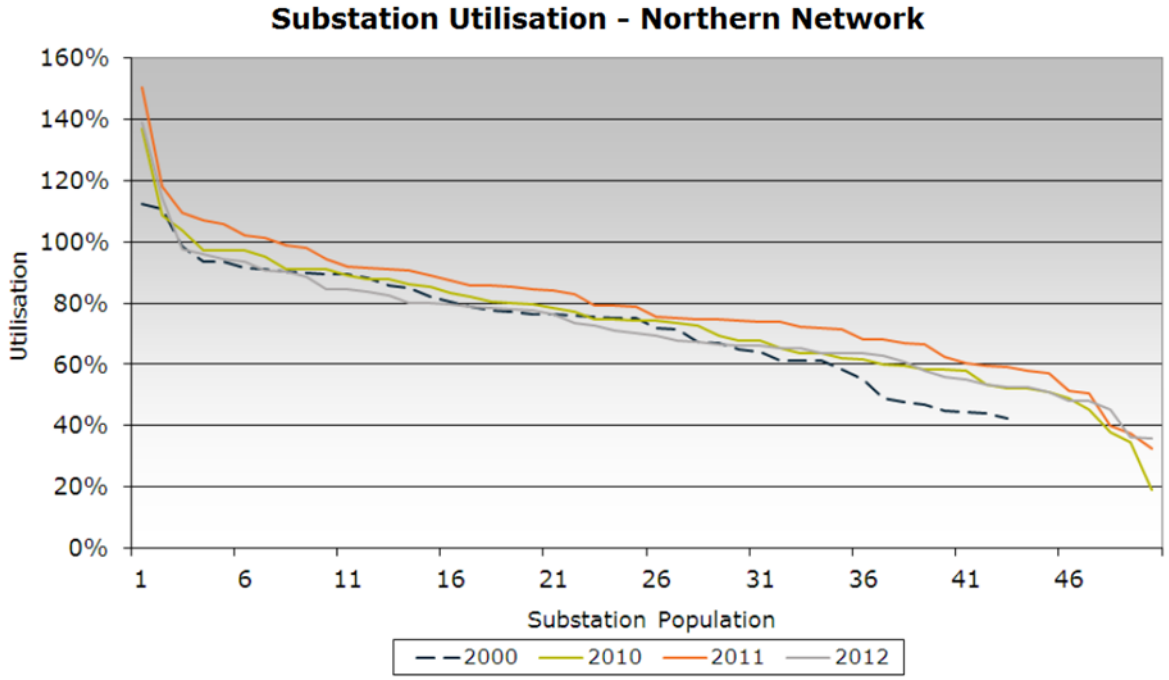
APPENDIX 5. TARGET REVENUE BY SEGMENT

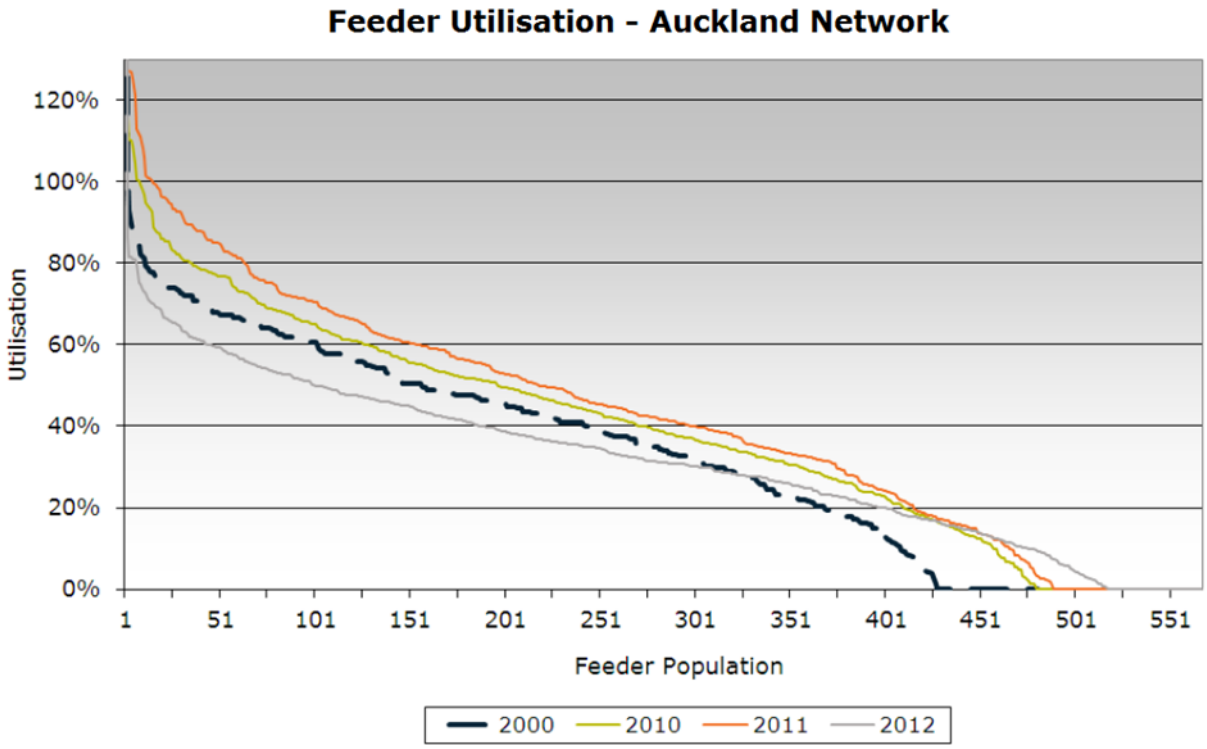
Auckland network					
Load Group	Description	Number of Customers	Fixed Revenue	Variable Revenue	Target Revenue
ARCL	Residential, low fixed charge, controlled	101,500	$8,175,023	$69,029,558	$77,204,581
ARUL	Residential, low fixed charge, uncontrolled	30,700	$2,475,897	$18,141,893	$20,617,790
ARHL	Residential, low fixed charge, time of use	-	-	-	-
ARCS	Residential, , controlled	119,600	$26,171,158	$57,389,689	$83,560,847
ARUS	Residential, , uncontrolled	26,400	$4,104,224	$11,444,624	$15,548,848
ARHS	Residential, time of use	-	-	-	-
ABSU	Business, unmetered	1,800	$3,224,697	$2,769,522	$5,994,219
ABSN	Business, metered	34,500	$11,342,689	$55,949,342	$67,292,031
ALVN	Low voltage, non-time of use	1,900	$1,014,796	$18,153,514	$19,168,310
ALVH	Low voltage, time of use	1,500	-	$35,257,087	$35,257,087
ATXN	Transformer, non-time of use	140	$78,139	$1,571,827	$1,649,966
ATXH	Transformer, time of use	820	-	$54,123,636	$54,123,636
AHVN	High voltage, non-time of use	10	$1,906	$41,268	$43,175
AHVH	High voltage, time of use	110	-	$19,398,318	$19,398,318
Non Standard		50			$28,080,663
Total					$427,939,471

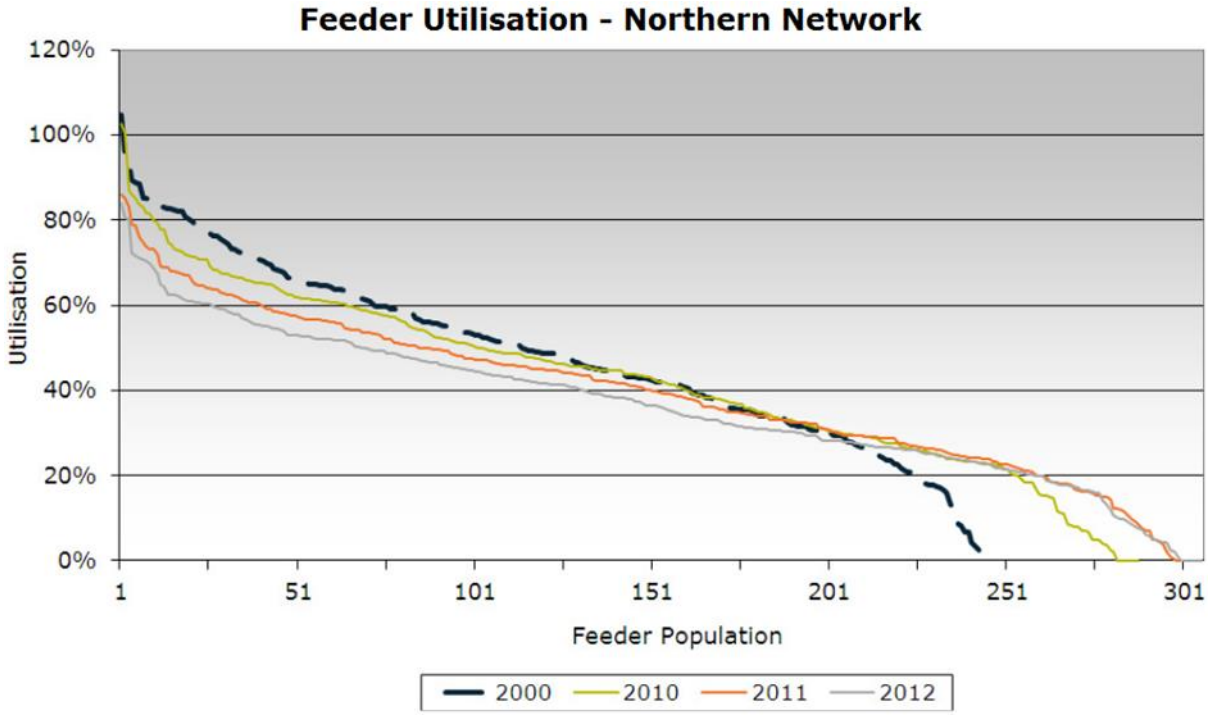
Northern network					
Load Group	Description	Number of Customers	Fixed Revenue	Variable Revenue	Target Revenue
WRCL	Residential, low fixed charge, controlled	73,800	$5,965,289	$51,743,673	$57,708,962
WRUL	Residential, low fixed charge, uncontrolled	11,100	$917,342	$8,073,681	$8,991,023
WRHL	Residential, low fixed charge, time of use	-	-	-	-
WRCS	Residential, controlled	93,000	$20,799,764	$47,680,366	$68,480,130
WRUS	Residential, uncontrolled	14,400	$2,377,159	$6,696,124	$9,073,283
WRHS	Residential, time of use	-	-	-	-
WBSU	Business, unmetered	250	$1,880,996	$1,665,344	$3,546,340
WBSN	Business, metered	21,600	$6,973,583	$29,214,673	$36,188,256
WLVN	Low voltage, non-time of use	780	$1,678,280	$8,444,250	$10,122,531
WLVH	Low voltage, time of use	160	$472,403	$2,583,416	$3,055,819
WTXN	Transformer, non-time of use	50	$324,125	$2,930,256	$3,254,381
WTXH	Transformer, time of use	310	$715,004	$11,131,440	$11,846,443
WHVN	High voltage, non-time of use	-	-	-	-
WHVH	High voltage, time of use	20	$48,683	$2,396,605	$2,445,288
Non Standard	Non-standard customers	10			$2,114,058
Total					$216,826,513

APPENDIX 6. UTILISATION OF VECTOR'S ASSETS






Feeder Utilisation - Auckland Network
120%
100%
80%
60%
40%
20%
0%
Utilisation
1
51
101
151
201
251
301
351
401
451
501
551
Feeder Population
2000
2010
2011
2012


Feeder Utilisation - Northern Network
120%
100%
80%
60%
40%
20%
0%
Utilisation
1
51
101
151
201
251
301
Feeder Population
2000
2010
2011
2012

APPENDIX 7. DISTRIBUTION OF PRICE IMPACT ON CONSUMERS

Figure 7. Percentage change in annual charge – residential consumers

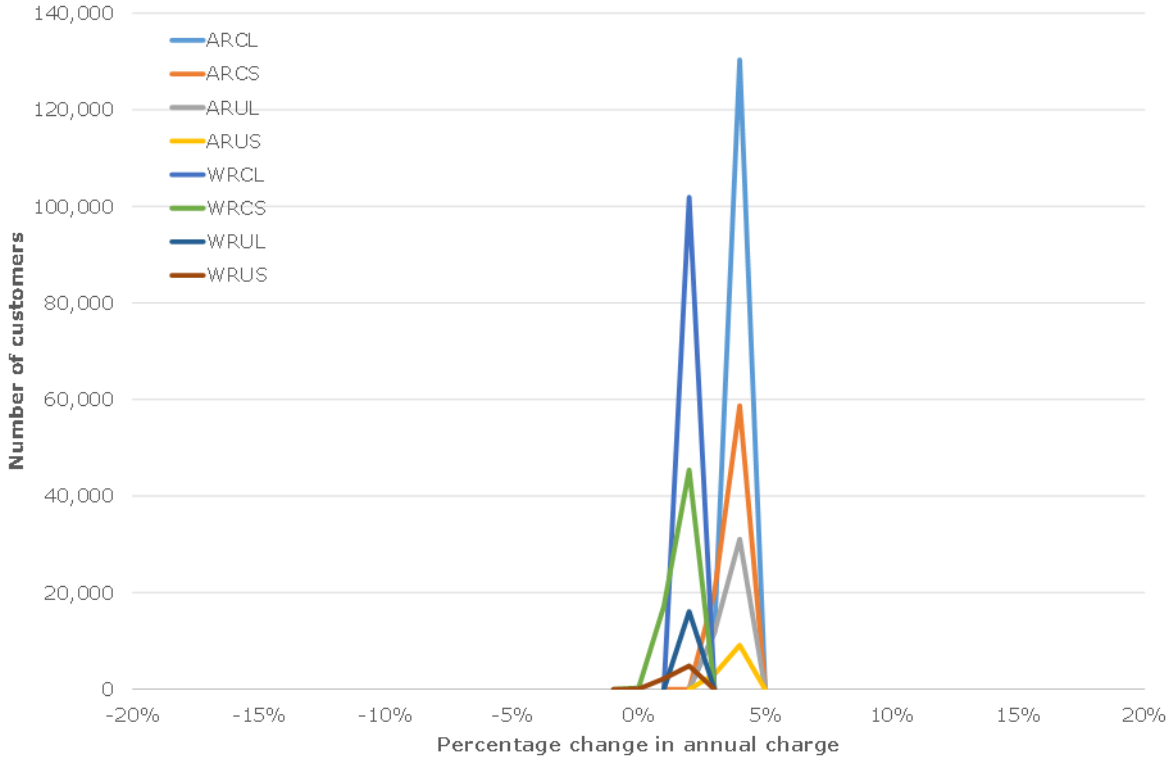


Figure 8. Percentage change in annual charge – business consumers

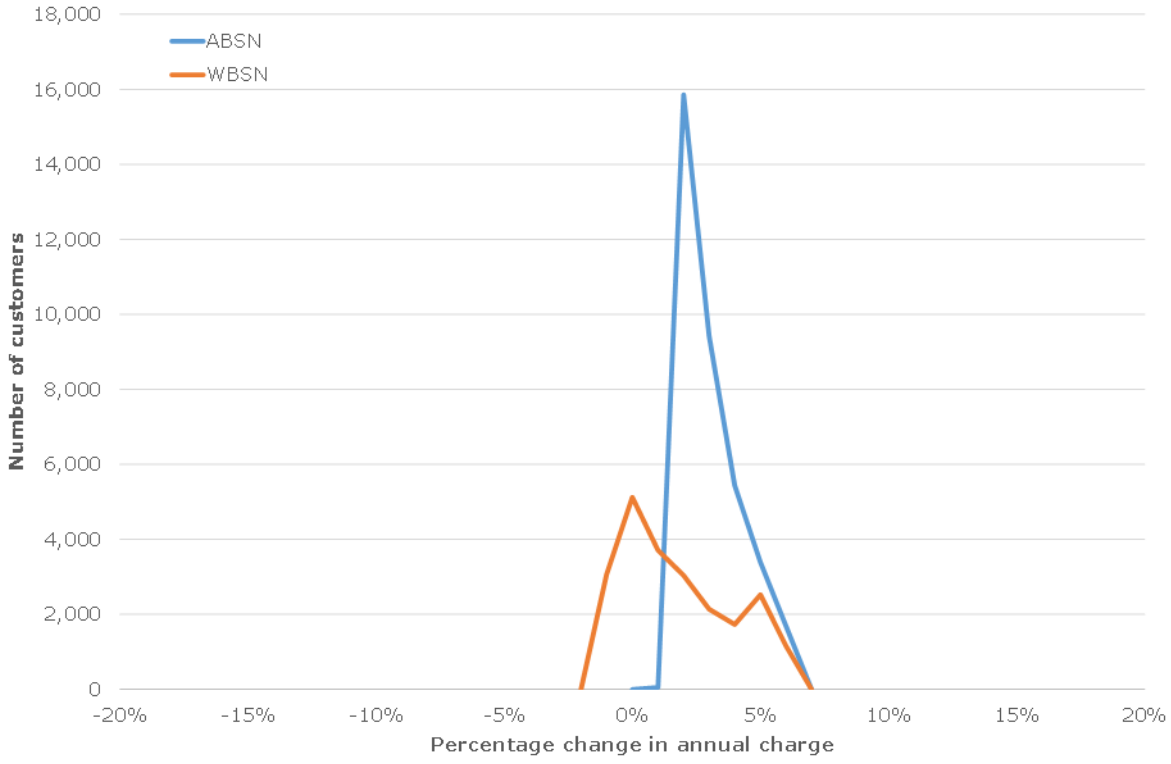
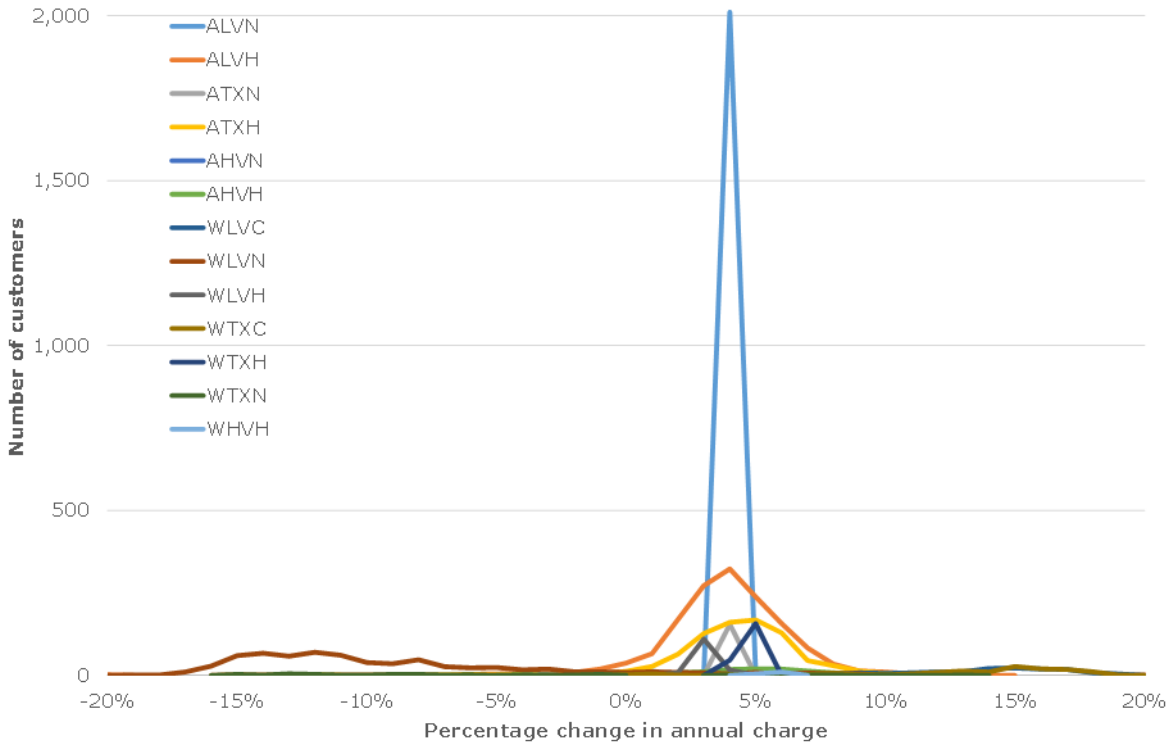


Figure 9. Percentage change in annual charge – I&C consumers



APPENDIX 8. OBLIGATIONS TO NON-STANDARD CONSUMERS IN THE EVENT OF INTERRUPTIONS

Vector's obligations and responsibilities to consumers subject to non-standard contracts on Vector's networks in the event that the supply of electricity lines services to the consumer is interrupted are as follows:

a. Vector is required to consult with 3 consumers on a non-standard contract, prior to 1 June each year during the term, in good faith with a view to agreeing by that date, a schedule of maintenance for the substation for the year following that date, provided however that such maintenance schedule may be amended by the retailer from time to time with the agreement of the consumer (such agreement is not unreasonably withheld)."

b. Vector is required to give 1 consumer on a non-standard contract 10 days prior notice of an outage and if requested by the customer following receipt of advance warning of the interruption from Vector, Vector will take into account the hours of operation of the customer.

c. Vector is required for 1 consumer to effect all planned outages in accordance with the Current Planned Maintenance Schedule (if any) or, if there is no Current Planned Maintenance Schedule or if that Schedule does not deal with maintenance involving planned outages, shall be planned and implemented by Vector, subject to the consent of the consumer (such consent not reasonably withheld). Where Vector notifies the consumer that a planned outage (one those being that is not covered by a Current Planned Maintenance schedule) is reasonably required for essential maintenance in order to protect the New Network Assets or the supply of electricity to the Connection Point. Notwithstanding any contrary provision in any Current Planned Maintenance Schedule, planned maintenance to the New Network Assets shall not be undertaken by Vector more than one circuit at any time, except where Vector has demonstrated, to the consumers reasonable satisfaction, that the maintenance is required and there is no alternative safe method by which that maintenance is reasonably able to be undertaken. Vector shall, in any event, ensure that the maximum period of outage of one 33kV Cable Circuit and its associated 33/11 kV Transformer or one Primary 11kV Cable Circuit (as the result of a planned outage in the New Network Assets) shall be 8 hours in any period of 12 consecutive months. In respect of all planned outages, the parties shall consult and co-operate in order to minimize the duration of such outages.

d. Vector is required for 1 consumer to agree and plan all planned outages with the consumer and Vector (such agreement not to be unreasonably withheld)

e. Vector is required for 1 consumer, prior to April 1 of each year, to consult with the customer in good faith with a view to agreeing by April 1, a programme of proposed maintenance on the distribution network for the following 12 months, consistent with good industry practice, if and to the extent to which such maintenance will or might be reasonably expected to affect the customers operations at the customers premises. Any such maintenance that requires an interruption to the supply of electricity to the customer in the following 12 months will be clearly identified in this programme. Vector and the customer will endeavor to agree upon the planned maintenance programme after considering, in good faith, each others comments. However, if by 1 April each year a maintenance schedule has not been agreed then Vector (acting reasonably) will determine the maintenance programme for the following 12 months. Where Vector plans to undertake maintenance on the Distribution Network that requires an interruption to the supply of electricity to any Point of connection, Vector will: (a) notify the customer in writing to

that effect, at least 10 working days prior to the interruption (if possible in the circumstances); and (b) use its reasonable endeavors to avoid such interruption occurring at any time other than between the hours 10pm and 6am.

f. Vector is required for 1 consumer, prior to April 1 of each year, to consult with the customer in good faith with a view to agreeing by April 1, a programme of proposed maintenance on the distribution network for the following 12 months, consistent with good industry practice, if and to the extent to which such maintenance will or might be reasonably expected to affect the customers operations at the customers premises. Any such maintenance that requires an interruption to the supply of electricity to the customer in the following 12 months will be clearly identified in this programme. Vector and the customer will endeavor to agree upon the planned maintenance programme after considering, in good faith, each others comments. However, if by 1 April each year a maintenance schedule has not been agreed then Vector (acting reasonably) will determine the maintenance programme for the following 12 months. Where Vector plans to undertake maintenance on the Distribution Network that requires an interruption to the supply of electricity to any Point of connection, Vector will: (a) notify the customer in writing to that effect, at least 10 working days prior to the interruption (if possible in the circumstances); and (b) use its reasonable endeavors to avoid such interruption occurring at any time other than between the hours 12pm and 6am.

g. Vector is required for 1 consumer, at all times during the Term, to ensure that all maintenance of, and all outages and faults in, the New Network Assets are dealt with in the following manner: Planned Maintenance: (a) The parties shall, in each year of the term, consult in good faith and use their reasonable endeavors to agree in writing, prior to 1 November of that year, on a schedule of planned maintenance to be carried out on the New Network Assets during the 12 month period following that date (based on a draft schedule to be delivered by Vector to the customer by 1 October in the same year). Such agreement shall not be unreasonably withheld by either party, provided that nothing in this clause shall require the Customer to agree to any provision of a schedule of planned maintenance, the effect of which will be (if that provision were to be implemented) that the supply of electricity would be interrupted. Vector shall, in any such 12 month period, carry out all maintenance on the New Network Assets in accordance with the current schedule (if any) agreed to the extent to which it is reasonably able to do so."

h. Vector is required for 1 consumer, where Vector plans to do maintenance on the Distribution Network that requires an interruption to the supply of electricity to or from the Customer it will notify the Customer of the Points of Connection affected 7 working days prior to the interruption. For this customer, there will be no more than 3 planned interruptions to any Customers Point of Connection in any 12 month period.

i. Vector is required for 1 consumer, where Vector plans to do maintenance on the Distribution Network that requires an interruption to the supply of electricity to the Customer it will notify the Customer that the Point of Connection will be affected not less than 30 working days prior to the interruption, where reasonably practicable Vector will consult with the Customer in relation to the timing for planned maintenance and will use reasonable endeavors to plan maintenance at a time which is suitable for the Customer (without limiting its right to undertake planned maintenance on not less than 30 working days notice.)

j. Vector is required for 1 consumer, prior to 1 April each year, to consult with the Customer in good faith with a view to agreeing, by April 1, a schedule of

proposed maintenance on the Distribution network for the following 12 months, addressing Vectors maintenance requirements on the Distribution Network consistent with Good Industry Practice and taking into account the Customers operation at the Connection Address. Any maintenance that is requires an interruption to the supply of electricity to the Customers Connection Points in the following 12 months will be clearly identified in this schedule. Vector and the Customer will endeavor to agree upon a planned maintenance schedule after considering good faith each other's comments. However, if by 1 April each year a maintenance schedule has not been agreed then Vector will determine the maintenance schedule for the next 12 months. Notwithstanding the above, where Vector plans to do maintenance on the Distribution Network that requires an interruption to any Point of Connection, Vector will (a) l notify the Customer in writing to that effect, at least 10 working days prior to interruption (if possible): and (b) use reasonable endeavours to avoid such interruption occurring at any time other than between the hours of 10pm and 6 am.

k. Vector is required for 1 consumer, prior to 1 April each year, to consult with the customer in good faith with a view to agreeing, by April 1, a schedule of proposed maintenance on the Distribution network for the following 12 months, addressing Vectors maintenance requirements on the Distribution Network consistent with Good Industry Practice and taking into account the customers operation at the Connecting Address. Any maintenance that is requires an interruption to the supply of electricity to the customers Connection Points in the following 12 months will be clearly identified in this schedule. Vector and the customer will endeavour to agree upon a planned maintenance schedule after considering in good faith each other's comments. However, if by 1 April each year a maintenance schedule has not been agreed then Vector will determine the maintenance schedule for the next 12 months. Notwithstanding the above, where Vector plans to do maintenance on the Distribution Network that requires an interruption to the supply of electricity to the customer it will notify the customer that the Connection Point will be affected 10 working days prior to interruption.

Schedule 17 Certification for Year-beginning Disclosures

Clause 2.9.1 of section 2.9

We, Michael Stransky and Alison Paterson, being directors of Vector Limited certify that, having made all reasonable enquiry, to the best of our knowledge -

(a) The following attached information of Vector Limited prepared for the purposes of clause 2.4.1 of the Electricity Distribution Information Disclosure Determination 2012 in all material respects complies with that determination.

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

Director

Director

20 February 2014

Date