



Commerce Act (Electricity Distribution Default Price-Quality Path) Determination 2010

# **Annual Compliance Statement**

**12 July 2011**

Assessment as at 31 March 2011

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## 1. INTRODUCTION

### 1.1. Background

- 1.1.1 This Annual Compliance Statement ("the Statement") is submitted by Vector Limited ("Vector") pursuant to *clause 11* of the Commerce Act (Electricity Distribution Default Price-Quality Path) Determination 2010 Decision 685 ("the Determination"). The Statement has been prepared on 12 July 2011. In the Statement, references to Vector relate only to Vector's electricity distribution business.
- 1.1.2 The Determination relates to the performance of electricity lines businesses as part of the Commerce Commission's ("the Commission's") development and operation of a regulatory regime for such businesses, pursuant to Part 4 of the Commerce Act 1986.
- 1.1.3 The Determination requires lines businesses to provide information to the Commission relevant to the assessment of their performance against the price path and quality standards:
- 1.1.4 Under the price path, *clause 8* of the Determination, a lines business' notional revenue must not exceed the allowable notional revenue during the current assessment period; and
- 1.1.5 Under the quality standards, *clause 9* of the Determination, a lines business' assessed reliability values must not exceed the reliability limits for the current assessment period or for the two immediately preceding extant assessment periods, of which there are none as this is the first assessment period.

### 1.2. Statement of compliance

- 1.2.1 As required by *clause 11.1(a)* of the Determination, the Statement:
- a) confirms Vector's compliance with the price path in *clause 8* and the quality standards in *clause 9* in respect of the Assessment Period ending on 31 March 2011; and
  - b) includes sufficient information as outlined in *clause 11.1(b)* of the Determination to support the Statement.

### **1.3. Disclaimer**

- 1.3.1 The information contained in this Statement has been prepared for the express purpose of complying with the requirements of *clause 11* of the Determination. This statement has not been prepared for any other purpose. Vector expressly disclaims any liability to any other party who may rely on this statement for any other purpose.
- 1.3.2 For presentation purposes some numbers in this document have been rounded. In most cases calculations are based on more detailed numbers. This may cause small discrepancies or rounding inconsistencies when aggregating some of the information presented in this document. These discrepancies do not affect the overall compliance calculations which are based on the more detailed information.

## 2. PRICE PATH

### 2.1. Introduction

2.1.1 In this section Vector demonstrates that it has complied with the price path requirements (*clause 8*) of the Determination. Vector has provided information to support the statement of compliance including: the amount of allowable notional revenue, the amount of notional revenue, prices, quantities, units of measurement associated with all numeric data, the amount of pass through costs, the amount of forecast pass through costs used when setting prices, an explanation of variances between forecast and actual pass through costs and a description of the alternative approach used to demonstrate compliance with the price path following the restructure of prices.

### 2.2. Price path (clause 8 of the Determination)

2.2.1 As required by *clause 8* of the Determination, in order to demonstrate compliance with the price path, lines businesses must demonstrate that their notional revenue during the assessment period has not exceeded the allowable notional revenue for the assessment period. The current assessment period covers the 12 months to 31 March 2011.

2.2.2 As outlined in the calculation below, Vector complies with the price path:

$$NR_t \leq R_t$$

$$NR_{2011} \leq R_{2011}$$

$$\$398,433,089 \leq \$399,226,494$$

2.2.3 Notional revenue for the 2011 assessment period:

$$NR_t = \sum P_{i,t} Q_{i,t-2} - K_t$$

$$NR_{2011} = \sum P_{i,2011} Q_{i,2009} - K_{2011}$$

$$NR_{2011} = \$534,732,958 - \$136,299,869$$

$$NR_{2011} = \$398,433,089$$

a) Details of  $\sum P_{i,2011} Q_{i,2009}$  are included in Appendices 1 to 5

b) Details of  $K_{2011}$  are included in the pass through cost section below

2.2.4 Allowable notional revenue for the 2011 assessment period (the first assessment period):

$$R_{2011} = (\sum P_{i,2010} Q_{i,2009} - K_{2010}) \times ((1 + \Delta CPI_{2011}) \times (1 - X))$$

$$R_{2011} = (\$522,808,996 - \$133,186,841) \times ((1 + 0.02465) \times (1 - 0))$$

$$R_{2011} = \$399,226,494$$

- a) Details of  $\sum P_{i,2010} Q_{i,2009}$  are included in Appendices 6-10
- b) Details of  $K_{2010}$  are included in the pass through cost section below
- c) Details of  $\Delta CPI_{2011}$  are included in Appendix 11

## 2.3. Restructuring of prices

- 2.3.1 *Clause 8.6(a)* of the Determination requires lines businesses to demonstrate whether the restructure of itself increased allowable notional revenue above that which would have applied if the restructuring had not occurred. Where it is not possible to demonstrate the effects of the restructure on allowable notional revenue, then *clause 8.6(b)* requires lines businesses to demonstrate whether the restructure of itself increased revenue above that which would have applied if the restructuring had not occurred.
- 2.3.2 Vector has restructured the prices that apply during the assessment period. Consequently Vector has considered how it may comply with the requirements of *clause 8.6(a)* or *clause 8.6(b)* of the Determination following the restructure of tariffs.
- 2.3.3 It is not clear in the wording of the Determination how the Commission intended *clause 8.6(a)* to work. This clause considers the effect tariff restructures during the assessment period had on allowable notional revenue compared to what would otherwise have occurred in the event there was no tariff restructure.
- 2.3.4 Allowable notional revenue is determined based on tariffs in the year  $t-1$ ; i.e. the tariffs that applied prior to the restructure. It is not apparent under what circumstances *clause 8.6(a)* could be applied. A more workable approach would be if *clause 8.6(a)* made reference to notional revenue rather than allowable notional revenue.
- 2.3.5 In any event, Vector has determined it cannot reasonably meet the requirements of *clause 8.6(a)* or *clause 8.6(b)*. This arises as it is not possible to determine what tariffs would have been if the restructure had not occurred. If such an approach was undertaken as part of the compliance process, then

with the benefit of hindsight, tariffs would almost certainly be calculated in such a way as to comply with the requirements of the price path.

2.3.6 Consistent with *clause 8.7* and to better demonstrate compliance with the intended outcomes of *clause 8.4*, Vector has used an alternative approach to demonstrate compliance with the price path following the restructure of prices.

2.3.7 Vector's approach includes; where practicable mapping billed quantities  $Q_{i,2009}$  to  $P_{i,2010}$  or to  $P_{i,2011}$  as appropriate, or where an appropriate tariff mapping between billed quantities  $Q_{i,2009}$  to  $P_{i,2010}$  or  $P_{i,2011}$  was not practicable, then report actual revenues from Vector's billing system for  $P_{i,2010}$  or  $P_{i,2011}$ . This approach is consistent with *clause 8.6* of the Determination.

2.3.8 In most cases, Vector's tariff restructure has consisted of consolidating multiple price plans under  $P_{i,2010}$  to fewer price plans under  $P_{i,2011}$ . This has typically resulted in aggregating  $Q_{i,2009}$  with respect to  $P_{i,2011}$ . More information on Vector's tariff restructures including a mapping between 2010 prices to 2011 prices can be found at:

<http://www.vector.co.nz/corporate/disclosures/electricity/electricity-pricing>

2.3.9 Vector has included in the Statement information relating to prices prior to the restructure and following the restructure including all relevant prices, quantities and units of measurement.

## 2.4. Pass through costs

2.4.1 Table 1 below provides the breakdown of pass-through costs for the 2011 assessment period.

**Table 1 Summary of  $K_{2010}$  and  $K_{2011}$  pass through costs for the 2011 assessment period**

	$K_{2010}$	$K_{2011}$
<b>Sum</b>	<b>\$ 133,186,841</b>	<b>\$ 136,299,869</b>
<b>Pass through cost</b>		
Description	$K_{2010}$	$K_{2011}$
Transmission charges	\$ 128,385,661	\$ 129,530,649
Rates	\$ 3,750,008	\$ 4,107,534
Electricity Commission levies	\$ 1,051,172	\$ 1,156,608
Commerce Act levies	\$ -	\$ 1,505,078

2.4.2 Transmission charges for the 2010 period vary to those previously disclosed under the Commerce Act (Electricity Distribution thresholds) Notice 2004. This arises due to the exclusion of a portion of previously disclosed avoided transmission charges. The treatment of these pass through costs has been updated consistent with new definitions relevant to the Determination, in particular those relating to regulated goods and services. This change in

treatment has been applied to both allowable notional revenue and notional revenue.

2.4.3 Table 2 below provides a comparison between the forecast pass-through costs when prices were determined in December 2009 ( $K_{2011,forecast}$ ) and actual pass-through costs ( $K_{2011}$ ) for the 2011 assessment period.

**Table 2 Summary of  $K_{2011}$  forecast and  $K_{2011}$  actual pass through costs for the 2011 assessment period**

	$K_{2011,forecast}$	$K_{2011}$
<b>Sum</b>	<b>\$ 136,069,766</b>	<b>\$ 136,299,869</b>
<b>Pass through cost</b>		
Description	$K_{2011,forecast}$	$K_{2011}$
Transmission charges	\$ 129,571,258	\$ 129,530,649
Rates	\$ 3,904,022	\$ 4,107,534
Electricity Commission levies	\$ 1,169,659	\$ 1,156,608
Commerce Act levies	\$ 1,424,828	\$ 1,505,078

2.4.4 Commerce Act levies for the year ending 31 March 2010 have been included in  $K_{2011}$  consistent with *clause 8.8* of the Determination. The full amount of the Commerce Act levies for the year ending 31 March 2010 is \$1,407,633 however only 1/5 of this amount, equal to \$281,527 has been recovered during the current assessment period.

2.4.5 Variances in transmission charges between  $K_{2011,forecast}$  used to set prices and  $K_{2011}$  measured at the end of the assessment period arise primarily as a result of changes to charges in New Investment Contracts (NIC). Vector has a number of NICs with a pricing anniversary date in July each year. Changes to pricing apply from the anniversary date based on changes to Transpower's risk free rate. This is currently calculated based on the market yields of Government 10 year bonds as observed 20 working days up to and including 31 March and 20 working days after 31 March. At the time of setting distribution prices in December (the year prior to the NIC anniversary) the amount of the price change that will take effect from the following July is unknown and must be forecast.

2.4.6 Variances in rates between the  $K_{2011,forecast}$  used to set prices and  $K_{2011}$  measured at the end of the assessment period arise due to the timing difference between the rating year used by the majority of Councils that Vector's electricity distribution network covers and the assessment period. When setting prices Vector must forecast rate increases that occur during the assessment period. Vector engages with Councils on the likely magnitude of rate increases, however typically does not have detailed information on the exact nature of these increases. Differences in rate pass through costs arise



due to variances between the forecast rate price escalation estimated by Vector and the actual rate price escalation applied by Councils.

2.4.7 Variances in Electricity Commission levies between the  $K_{2011,forecast}$  used to set prices and  $K_{2011}$  measured at the end of the assessment period arise due to the need to forecast both the Electricity Commission unit rates and the quantities these rates are applied to (number of ICPs and MWh) in order to determine invoice totals for the assessment period. When prices are set these amounts are typically forecast based on information from October the year prior to the assessment period.

2.4.8 Variances in Commerce Act levies between the  $K_{2011,forecast}$  used to set prices and  $K_{2011}$  measured at the end of the assessment period arise due to the need to forecast the Commerce Act levies for the assessment period.

## 3. QUALITY STANDARDS

### 3.1. Introduction

3.1.1 In this section Vector demonstrates that it has complied with the quality standards, *clause 9* of the Determination. Vector has provided information to support the statement of compliance including: assessed values and reliability limits for the assessment period, relevant SAIDI and SAIFI statistics and calculations, and a description of the policies and procedures for recording SAIDI and SAIFI statistics for the assessment period.

### 3.2. Quality standards (clause 9 of the Determination)

3.2.1 As required by *clause 9* of the Determination, in order to demonstrate compliance with the quality standards in respect of each assessment period other than the first assessment period, lines businesses must demonstrate that their quality standards either

- a) Comply with the annual reliability assessment specified in *clause 9.2* for that assessment period; or
- b) Have complied with those annual reliability assessments for the two immediately preceding extant assessment periods.

3.2.2 As outlined in the calculations below, Vector complies with the quality standards by complying with the annual reliability assessment specified in *clause 9.2* of the Determination.

3.2.3 SAIDI quality standard:

$$SAIDI_{ASSESS,t} \leq SAIDI_{LIMIT}$$

$$SAIDI_{ASSESS,2011} \leq SAIDI_{LIMIT}$$

$$113.76 \leq 127.35$$

3.2.4 SAIFI quality standard:

$$SAIFI_{ASSESS,t} \leq SAIFI_{LIMIT}$$

$$SAIFI_{ASSESS,2011} \leq SAIFI_{LIMIT}$$

$$1.240 \leq 1.860$$

### 3.3. Reliability limits and assessed values - SAIDI

3.3.1 For the purposes of assessing compliance with the quality standards, Vector has calculated reliability limits and assessed values for SAIDI consistent with the process set out in *Schedule 3* of the Determination.

3.3.2 Vector's boundary values were calculated in accordance with the following formula:

$$B_{SAIDI} = e^{(\alpha SAIDI + 2.5\beta SAIDI)}$$

$$B_{SAIDI} = e^{(-2.15 + 4.34)}$$

$$B_{SAIDI} = 8.91$$

3.3.3 Vector's reliability limits were calculated in accordance with the following formula:

$$SAIDI_{LIMIT} = \mu_{SAIDI} + \sigma_{SAIDI}$$

$$SAIDI_{LIMIT} = 114.00 + 13.35$$

$$SAIDI_{LIMIT} = 127.35$$

3.3.4  $\mu_{SAIDI}$  was calculated in accordance with the following formula:

$$\mu_{SAIDI} = \Sigma \text{normalised daily SAIDI in reference data set} / 5$$

$$\mu_{SAIDI} = 570.01 / 5$$

$$\mu_{SAIDI} = 114.00$$

3.3.5  $\sigma_{SAIDI}$  was calculated in accordance with the following formula:

$$\sigma_{SAIDI} = \text{standard deviation of daily SAIDI in reference data set} \times \sqrt{365}$$

$$\sigma_{SAIDI} = 0.70 \times 19.10$$

$$\sigma_{SAIDI} = 13.35$$

3.3.6 During the assessment period, Vector's network experienced one instance of a major event where the SAIDI exceeded the boundary value. This occurred during a storm period covering three consecutive days from 17 to 19 September 2010 inclusive. The storm's reliability impact is summarised in Table 3 below and described in more detail in Appendix 12:

**Table 3 Daily impact of the September storm on SAIDI**

Date	SAIDI
17 Sep 2010	15.96
18 Sep 2010	1.72
19 Sep 2010	0.62
Total SAIDI	18.30

3.3.7 Vector normalised the assessment dataset by replacing the combined daily SAIDI associated with the storm between 17 and 19 September 2010 with  $B_{SAIDI}$ . This has had the impact of reducing Vector's overall SAIDI by 9.4 minutes.

### 3.4. Reliability limits and assessed values - SAIFI

3.4.1 For the purposes of assessing compliance with the quality standards, Vector has calculated reliability limits and assessed values for SAIFI consistent with the process set out in *Schedule 3* of the Determination.

3.4.2 Vector's boundary values were calculated in accordance with the following formula:

$$B_{SAIFI} = e^{(\alpha SAIFI + 2.5\beta SAIFI)}$$

$$B_{SAIFI} = e^{(-6.50 + 4.80)}$$

$$B_{SAIFI} = 0.181$$

3.4.3 Vector's reliability limits were calculated in accordance with the following formula:

$$SAIFI_{LIMIT} = \mu_{SAIFI} + \sigma_{SAIFI}$$

$$SAIFI_{LIMIT} = 1.657 + 0.203$$

$$SAIFI_{LIMIT} = 1.860$$

3.4.4  $\mu_{SAIFI}$  was calculated in accordance with the following formula:

$$\mu_{SAIFI} = \Sigma \text{normalised daily SAIFI in reference data set} / 5$$

$$\mu_{SAIFI} = 8.283 / 5$$

$$\mu_{SAIFI} = 1.657$$

3.4.5  $\sigma_{SAIFI}$  was calculated in accordance with the following formula:

$$\sigma_{SAIFI} = \text{standard deviation of daily SAIFI in reference data set} \times \sqrt{365}$$

$$\sigma_{SAIFI} = 0.0106 \times 19.10$$

$$\sigma_{SAIFI} = 0.203$$

- 3.4.6 No normalisation of the SAIFI assessment data set was required as no instances of daily SAIFI exceeded  $B_{SAIFI}$ .

### **3.5. Reliability limits for preceding assessment periods**

- 3.5.1 As this is the first assessment period under the Determination, Vector has not undertaken any annual reliability assessments for any immediately preceding extant assessment periods. Accordingly Vector has not included any information on preceding annual reliability assessments.

### **3.6. Policies and procedures for recording SAIDI and SAIFI**

- 3.6.1 Vector's Network Operations Centre (NOC) is responsible for managing the electricity network, in accordance with Vector's standard for operational control of the network.
- 3.6.2 The majority of medium voltage and high voltage interruptions are monitored and controlled in real-time through Vector's SCADA system. Where equipment is involved that is not SCADA enabled, it is operated by Vector's service providers, with communication to the NOC by radio. All interruptions are logged and tracked in Vector's Customer Management System by Vector's customer services team.
- 3.6.3 Vector maintains a bespoke system for recording interruptions, HVEEvents, which holds a replica of Vector's high voltage and medium voltage network structure, including customer numbers. The NOC engineers record details of all network interruptions, in accordance with an established HVEEvents data entry process. For each interruption, the event type, location, duration and number of customers affected is identified. HVEEvents is also used to prioritise network reconfiguration and restoration after an event.
- 3.6.4 SAIDI and SAIFI are calculated in HVEEvents for each interruption, and the data retained in a database for reporting and analysis.
- More detailed information on Vector's quality systems, policies and procedures can be found in Section 4 of Vector's 2011 AMP.

<http://www.vector.co.nz/sites/vector.co.nz/files/Electricity%20Disclosure%20AMP%202011-12.pdf>

## 4. APPENDICES

### Appendix 1: Summary of $P_{i,2011}Q_{i,2009}$ for the 2011 assessment period

	$P_{i,2011}Q_{i,2009}$
<b>Sum</b>	<b>\$ 534,732,958</b>
<b>Residential</b>	
Northern published charges between 1 April 2010 to 31 March 2011	\$ 190,149,096
Auckland published charges between 1 April 2010 to 31 March 2011	\$ 326,231,792
Northern non-standard charges between 1 April 2010 to 31 March 2011	\$ 1,871,332
Auckland non-standard charges between 1 April 2010 to 31 March 2011	\$ 16,480,738

## Appendix 2: Northern published charges between 1 April 2010 and 31 March 2011

<b>Sum</b>	<b><math>P_{i,2011}</math> <math>Q_{i,2009}</math></b>
	<b>\$ 190,149,096</b>

### Residential

Price plan	Code	Description	Units	$P_{i,2011}$	$Q_{i,2009}$	$P_{i,2011}$ $Q_{i,2009}$
W100	W100-FIXD	Fixed	\$/day	0.1500	6,126,571	\$ 918,986
W100	W100-24UC	Variable, uncontrolled	\$/kWh	0.1095	123,222,088	\$ 13,492,819
W100	W100-NITE	Variable, night	\$/kWh	0.0207	145,489	\$ 3,012
W102	W102-FIXD	Fixed	\$/day	0.1500	60,605,721	\$ 9,090,858
W102	W102-AICO	Variable, all inclusive	\$/kWh	0.0886	1,276,028,681	\$ 113,056,141
W102	W102-NITE	Variable, night	\$/kWh	0.0207	3,854,722	\$ 79,793

### Business

Price plan	Code	Description	Units	$P_{i,2011}$	$Q_{i,2009}$	$P_{i,2011}$ $Q_{i,2009}$
WU01	WU01-24UC	Variable	\$/kWh	0.1727	18,137,403	\$ 3,132,329
WB02	WB02-FIXD	Fixed	\$/day	0.6100	3,725,413	\$ 2,272,502
WB02	WB02-24UC	Variable	\$/kWh	0.0610	73,143,074	\$ 4,461,728
WB07	WB07-FIXD	Fixed	\$/day	0.9700	3,836,750	\$ 3,721,648
WB07	WB07-24UC	Variable	\$/kWh	0.0563	321,209,835	\$ 18,084,114

### Low voltage

Price plan	Code	Description	Units	$P_{i,2011}$	$Q_{i,2009}$	$P_{i,2011}$ $Q_{i,2009}$
WLVC	WLVC-FIXD	Fixed	\$/day	5.0000	53,489	\$ 267,445
WLVC	WLVC-CAPY	Capacity	\$/kVA/day	0.0150	11,813,938	\$ 177,209
WLVC	WLVC-24UC	Variable	\$/kWh	0.0256	53,351,916	\$ 1,365,809
WLVN	WLVN-FIXD	Fixed	\$/day	4.0000	229,804	\$ 919,216
WLVN	WLVN-CAPY	Capacity	\$/kVA/day	0.0150	27,797,122	\$ 416,957
WLVN	WLVN-24UC	Variable	\$/kWh	0.0529	110,549,993	\$ 5,848,095
WLVH	WLVH-FIXD	Fixed	\$/day	16.5200	14,367	\$ 237,343
WLVH	WLVH-CAPY	Capacity	\$/kVA/day	0.0137	6,718,846	\$ 92,048
WLVH	WLVH-24UC	Variable	\$/kWh	0.0057	42,067,835	\$ 239,787
WLVH	WLVH-DAMD	Demand	\$/kVA/day	0.1922	3,496,172	\$ 671,964

### Transformer

Price plan	Code	Description	Units	$P_{i,2011}$	$Q_{i,2009}$	$P_{i,2011}$ $Q_{i,2009}$
WTXC	WTXC-FIXD	Fixed	\$/day	4.5000	53,814	\$ 242,163
WTXC	WTXC-CAPY	Capacity	\$/kVA/day	0.0135	13,898,456	\$ 187,629
WTXC	WTXC-24UC	Variable	\$/kWh	0.0230	60,259,267	\$ 1,385,963
WTXN	WTXN-FIXD	Fixed	\$/day	3.6000	3,591	\$ 12,928
WTXN	WTXN-CAPY	Capacity	\$/kVA/day	0.0135	484,720	\$ 6,544
WTXN	WTXN-24UC	Variable	\$/kWh	0.0476	1,656,404	\$ 78,845
WTXH	WTXH-FIXD	Fixed	\$/day	14.8700	65,747	\$ 977,658
WTXH	WTXH-CAPY	Capacity	\$/kVA/day	0.0123	61,017,247	\$ 750,512
WTXH	WTXH-24UC	Variable	\$/kWh	0.0051	313,321,058	\$ 1,597,937
WTXH	WTXH-DAMD	Demand	\$/kVA/day	0.1730	27,397,620	\$ 4,739,788

### High voltage

Price plan	Code	Description	Units	$P_{i,2011}$	$Q_{i,2009}$	$P_{i,2011}$ $Q_{i,2009}$
WHVN	WHVN-FIXD	Fixed	\$/day	3.2400	-	\$ -
WHVN	WHVN-CAPY	Capacity	\$/kVA/day	0.0122	-	\$ -
WHVN	WHVN-24UC	Variable	\$/kWh	0.0428	-	\$ -
WHVH	WHVH-FIXD	Fixed	\$/day	14.7200	4,468	\$ 65,769
WHVH	WHVH-CAPY	Capacity	\$/kVA/day	0.0122	10,715,850	\$ 130,733
WHVH	WHVH-24UC	Variable	\$/kWh	0.0050	82,455,124	\$ 412,276
WHVH	WHVH-DAMD	Demand	\$/kVA/day	0.1713	5,867,298	\$ 1,005,068
WHVH	WHVH-DEXA	Excess demand	\$/kVA/day	0.4851	11,302	\$ 5,482

## Appendix 3: Auckland published charges between 1 April 2010 and 31 March 2011

	<i>P<sub>i,2011</sub> Q<sub>i,2009</sub></i>
<b>Sum</b>	<b>\$ 326,231,792</b>

### Residential

Price plan	Code	Description	Units	<i>P<sub>i,2011</sub></i>	<i>Q<sub>i,2009</sub></i>	<i>P<sub>i,2011</sub> Q<sub>i,2009</sub></i>
A100	A100-FIXD	Fixed	\$/day	0.1500	18,629,052	\$ 2,794,358
A100	A100-24UC	Variable, uncontrolled	\$/kWh	0.0942	295,773,306	\$ 27,861,845
A100	A100-NITE	Variable, night	\$/kWh	0.0207	590,963	\$ 12,233
A102	A102-FIXD	Fixed	\$/day	0.1500	84,897,739	\$ 12,734,661
A102	A102-AICO	Variable, all inclusive	\$/kWh	0.0787	1,667,657,637	\$ 131,244,656
A102	A102-NITE	Variable, night	\$/kWh	0.0207	1,564,815	\$ 32,392

### Business

Price plan	Code	Description	Units	<i>P<sub>i,2011</sub></i>	<i>Q<sub>i,2009</sub></i>	<i>P<sub>i,2011</sub> Q<sub>i,2009</sub></i>
A003	A003-FIXD	Fixed	\$/day	0.1940	465,669	\$ 90,340
A110	A110-FIXD	Fixed	\$/day	0.3800	5,667,976	\$ 2,153,831
A110	A110-24UC	Variable	\$/kWh	0.0685	151,539,448	\$ 10,380,452
A120	A120-FIXD	Fixed	\$/day	0.6000	7,526,540	\$ 4,515,924
A120	A120-24UC	Variable	\$/kWh	0.0660	646,360,048	\$ 42,659,763

### Low voltage

Price plan	Code	Description	Units	<i>P<sub>i,2011</sub></i>	<i>Q<sub>i,2009</sub></i>	<i>P<sub>i,2011</sub> Q<sub>i,2009</sub></i>
ALVC	ALVC-CAPY	Capacity	\$/kVA/day	0.0265	39,696,424	\$ 1,051,955
ALVC	ALVC-24UC	Variable	\$/kWh	0.0546	58,664,094	\$ 3,203,060
ALVN	ALVN-FIXD	Fixed	\$/day	0.9000	511,648	\$ 460,483
ALVN	ALVN-CAPY	Capacity	\$/kVA/day	0.0265	59,012,271	\$ 1,563,825
ALVN	ALVN-24UC	Variable	\$/kWh	0.0621	106,269,031	\$ 6,599,307
ALVH	ALVH-CAPY	Capacity	\$/kVA/day	0.0265	116,323,072	\$ 3,082,561
ALVH	ALVH-SMDY	Variable, summer day	\$/kWh	0.0111	237,413,006	\$ 2,635,284
ALVH	ALVH-SMNT	Variable, summer night	\$/kWh	0.0018	83,778,194	\$ 150,801
ALVH	ALVH-WNDY	Variable, winter day	\$/kWh	0.0306	174,420,431	\$ 5,337,265
ALVH	ALVH-WNNT	Variable, winter night	\$/kWh	0.0018	62,973,202	\$ 113,352
ALVH	ALVH-DAMD	Demand	\$/kVA/day	0.2143	51,250,204	\$ 10,982,919

### Transformer

Price plan	Code	Description	Units	<i>P<sub>i,2011</sub></i>	<i>Q<sub>i,2009</sub></i>	<i>P<sub>i,2011</sub> Q<sub>i,2009</sub></i>
ATXN	ATXN-FIXD	Fixed	\$/day	0.8900	60,550	\$ 53,890
ATXN	ATXN-CAPY	Capacity	\$/kVA/day	0.0262	15,624,710	\$ 409,367
ATXN	ATXN-24UC	Variable	\$/kWh	0.0614	19,764,256	\$ 1,213,525
ATXH	ATXH-CAPY	Capacity	\$/kVA/day	0.0262	174,277,939	\$ 4,566,082
ATXH	ATXH-SMDY	Variable, summer day	\$/kWh	0.0110	421,644,046	\$ 4,638,085
ATXH	ATXH-SMNT	Variable, summer night	\$/kWh	0.0018	174,068,714	\$ 313,324
ATXH	ATXH-WNDY	Variable, winter day	\$/kWh	0.0302	306,986,003	\$ 9,270,977
ATXH	ATXH-WNNT	Variable, winter night	\$/kWh	0.0018	126,325,664	\$ 227,386
ATXH	ATXH-DAMD	Demand	\$/kVA/day	0.2117	82,950,184	\$ 17,560,554

### High voltage

Price plan	Code	Description	Units	<i>P<sub>i,2011</sub></i>	<i>Q<sub>i,2009</sub></i>	<i>P<sub>i,2011</sub> Q<sub>i,2009</sub></i>
AHVN	AHVN-FIXD	Fixed	\$/day	0.8800	-	\$ -
AHVN	AHVN-CAPY	Capacity	\$/kVA/day	0.0259	-	\$ -
AHVN	AHVN-24UC	Variable	\$/kWh	0.0608	-	\$ -
AHVN	AHVN-CAPY	Capacity	\$/kVA/day	0.0259	60,967,298	\$ 1,579,053
AHVN	AHVN-SMDY	Variable, summer day	\$/kWh	0.0109	224,664,527	\$ 2,448,843
AHVN	AHVN-SMNT	Variable, summer night	\$/kWh	0.0018	105,581,548	\$ 190,047
AHVN	AHVN-WNDY	Variable, winter day	\$/kWh	0.0299	161,249,426	\$ 4,821,358
AHVN	AHVN-WNNT	Variable, winter night	\$/kWh	0.0018	76,289,655	\$ 137,321
AHVN	AHVN-DAMD	Demand	\$/kVA/day	0.2096	41,786,417	\$ 8,758,433
AHVN	AHVN-DEXA	Excess demand	\$/kVA/day	0.4851	788,043	\$ 382,280



## Appendix 4: Northern non-standard charges between 1 April 2010 and 31 March 2011

	<i>P<sub>i,2011</sub></i>	<i>Q<sub>i,2009</sub></i>
<b>Sum</b>	<b>\$ 1,871,332</b>	

### Non-standard

Price plan	Code	Description	Units	<i>P<sub>i,2011</sub></i>	<i>Q<sub>i,2009</sub></i>	<i>P<sub>i,2011</sub></i>	<i>Q<sub>i,2009</sub></i>
WTAF			\$/month	-	12	\$	-
WN01			\$/year	338,428.6100	1	\$	338,429
WN02			\$/year	-	1	\$	-
WN03			\$/year	91,680.0000	1	\$	91,680
WN04			\$/year	164,518.7000	1	\$	164,519
WN05			\$/year	-	1	\$	-
WN06			\$/year	-	1	\$	-
WN07			\$/year	158,193.6800	1	\$	158,194
WN08			\$/year	92.0400	1	\$	92
WN09			\$/year	-	1	\$	-
WN10			\$/year	-	1	\$	-
WN11			\$/year	-	1	\$	-
WN12			\$/year	-	1	\$	-
WN13			\$/year	21,925.9700	1	\$	21,926
WN14			\$/year	244,495.8300	1	\$	244,496
WN15			\$/year	579,341.4200	1	\$	579,341
WN16			\$/year	14,899.4400	1	\$	14,899
WN17			\$/year	-	1	\$	-
WN18			\$/year	257,756.2300	1	\$	257,756

## Appendix 5: Auckland non-standard charges between 1 April 2010 and 31 March 2011

					<i>P<sub>i,2011</sub> Q<sub>i,2009</sub></i>	
<b>Sum</b>					<b>\$ 16,480,738</b>	
<b>Non-standard</b>						
Price plan	Code	Description	Units	<i>P<sub>i,2011</sub></i>	<i>Q<sub>i,2009</sub></i>	<i>P<sub>i,2011</sub> Q<sub>i,2009</sub></i>
AN01			\$/year	158,661.0900	1	\$ 158,661
AN02			\$/year	-	1	\$ -
AN03			\$/year	131,045.6800	1	\$ 131,046
AN04			\$/year	1,089,104.0400	1	\$ 1,089,104
AN05			\$/year	89,186.8500	1	\$ 89,187
AN06			\$/year	64,800.0000	1	\$ 64,800
AN07			\$/year	974,408.4100	1	\$ 974,408
AN08			\$/year	-	1	\$ -
AN09			\$/year	31,773.2400	1	\$ 31,773
AN10			\$/year	567,232.0900	1	\$ 567,232
AN11			\$/year	-	1	\$ -
AN12			\$/year	226,121.1700	1	\$ 226,121
AN13			\$/year	820,290.7300	1	\$ 820,291
AN14			\$/year	852,480.2700	1	\$ 852,480
AN15			\$/year	3,587,303.3900	1	\$ 3,587,303
AN16			\$/year	-	1	\$ -
AN17			\$/year	346,172.5500	1	\$ 346,173
AN18			\$/year	475,862.6500	1	\$ 475,863
AN19			\$/year	163,259.1600	1	\$ 163,259
AN20			\$/year	230,033.4800	1	\$ 230,033
AN21			\$/year	-	1	\$ -
AN22			\$/year	-	1	\$ -
AN23			\$/year	625,906.4400	1	\$ 625,906
AN24			\$/year	1,966,967.2800	1	\$ 1,966,967
AN25			\$/year	723,894.5800	1	\$ 723,895
AN26			\$/year	-	1	\$ -
AN27			\$/year	239,830.2200	1	\$ 239,830
AN28			\$/year	-	1	\$ -
AN29			\$/year	323,232.9400	1	\$ 323,233
ASL1			\$/year	1,615,794.6336	1	\$ 1,615,795
ASL2			\$/year	1,177,376.9342	1	\$ 1,177,377

## Appendix 6: Summary of $P_{i,2010}Q_{i,2009}$ for the 2011 assessment period

	<i>P<sub>i,2010</sub>Q<sub>i,2009</sub></i>
<b>Sum</b>	<b>\$ 522,808,996</b>

	<i>P<sub>i,2010</sub>Q<sub>i,2009</sub></i>
Northern published charges between 1 April 2010 to 31 March 2011	\$ 185,617,525
Auckland published charges between 1 April 2010 to 31 March 2011	\$ 318,579,507
Northern non-standard charges between 1 April 2010 to 31 March 2011	\$ 2,001,919
Auckland non-standard charges between 1 April 2010 to 31 March 2011	\$ 16,610,046

## Appendix 7: Northern published charges as at 31 March 2010

<b>Sum</b>	<i>P<sub>1,2010</sub> Q<sub>1,2009</sub></i> <b>\$ 185,617,525</b>
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### Un-metered

Price plan	Code	Description	Units	<i>P<sub>1,2010</sub></i>	<i>Q<sub>1,2009</sub></i>	<i>P<sub>1,2010</sub> Q<sub>1,2009</sub></i>
W001	W001-24UC	Unmetered	\$/kWh	0.1685	796,245	\$ 134,167
W002	W002-24UC	Unmetered	\$/kWh	0.1685	17,341,158	\$ 2,921,985

### Residential

Price plan	Code	Description	Units	<i>P<sub>1,2010</sub></i>	<i>Q<sub>1,2009</sub></i>	<i>P<sub>1,2010</sub> Q<sub>1,2009</sub></i>
W100	W100-FIXD	Fixed	\$/day	0.1500	5,921,565	\$ 888,235
W100	W100-24UC	Variable, uncontrolled	\$/kWh	0.1106	114,005,461	\$ 12,609,004
W100	W100-NITE	Variable, night	\$/kWh	0.0198	145,489	\$ 2,881
W101	W101-FIXD	Fixed	\$/day	0.1500	77,931	\$ 11,690
W101	W101-24UC	Variable, uncontrolled	\$/kWh	0.1106	1,566,134	\$ 173,214
W101	W101-CTRL	Variable, controlled	\$/kWh	0.0468	226,971	\$ 10,622
W101	W101-NITE	Variable, night	\$/kWh	0.0198	2,628	\$ 52
W102	W102-FIXD	Fixed	\$/day	0.1500	60,527,790	\$ 9,079,169
W102	W102-AICO	Variable, all inclusive	\$/kWh	0.0850	1,274,235,576	\$ 108,310,024
W102	W102-NITE	Variable, night	\$/kWh	0.0198	3,852,094	\$ 76,271
W103	W103-FIXD	Fixed	\$/day	0.1500	205,006	\$ 30,751
W103	W103-24UC	Variable, all inclusive	\$/kWh	0.1246	9,216,627	\$ 1,148,392

### Low voltage connection type

Price plan	Code	Description	Units	<i>P<sub>1,2010</sub></i>	<i>Q<sub>1,2009</sub></i>	<i>P<sub>1,2010</sub> Q<sub>1,2009</sub></i>
WV02	WV02-FIXD	Fixed	\$/day	0.4800	3,725,413	\$ 1,788,198
WV02	WV02-24UC	Variable	\$/kWh	0.0610	73,143,074	\$ 4,461,728
WV07	WV07-FIXD	Fixed	\$/day	1.2800	3,834,739	\$ 4,908,466
WV07	WV07-24UC	Variable	\$/kWh	0.0503	320,794,313	\$ 16,135,954
WV14	WV14-FIXD	Fixed	\$/day	5.6400	229,804	\$ 1,296,095
WV14	WV14-24UC	Variable	\$/kWh	0.0491	110,549,993	\$ 5,428,005
WV30	WV30-FIXD	Fixed	\$/day	10.4800	53,489	\$ 560,565
WV30	WV30-24UC	Variable	\$/kWh	0.0213	53,351,916	\$ 1,136,396
WV99	WV99-FIXD	Fixed	\$/day	15.0200	14,698	\$ 220,764
WV99	WV99-24UC	Variable	\$/kWh	0.0052	43,197,247	\$ 224,626
WV99	WV99-CAPY	Capacity	\$/kVA/day	0.0125	6,697,303	\$ 83,716
WV99	WV99-DAMD	Demand	\$/kVA	5.3161	116,662	\$ 620,185

### Transformer connection type

Price plan	Code	Description	Units	<i>P<sub>1,2010</sub></i>	<i>Q<sub>1,2009</sub></i>	<i>P<sub>1,2010</sub> Q<sub>1,2009</sub></i>
WX02	WX02-FIXD	Fixed	\$/day	0.4400	-	\$ -
WX02	WX02-24UC	Variable	\$/kWh	0.0555	-	\$ -
WX07	WX07-FIXD	Fixed	\$/day	1.1600	2,011	\$ 2,333
WX07	WX07-24UC	Variable	\$/kWh	0.0457	415,522	\$ 18,989
WX14	WX14-FIXD	Fixed	\$/day	5.1300	3,591	\$ 18,422
WX14	WX14-24UC	Variable	\$/kWh	0.0447	1,656,404	\$ 74,041
WX30	WX30-FIXD	Fixed	\$/day	9.5300	53,814	\$ 512,847
WX30	WX30-24UC	Variable	\$/kWh	0.0194	60,259,267	\$ 1,169,030
WX99	WX99-FIXD	Fixed	\$/day	13.6500	59,548	\$ 812,830
WX99	WX99-24UC	Variable	\$/kWh	0.0048	179,888,670	\$ 863,466
WX99	WX99-CAPY	Capacity	\$/kVA/day	0.0114	41,396,829	\$ 471,924
WX99	WX99-DAMD	Demand	\$/kVA	4.8327	575,522	\$ 2,781,324

### Industrial

Price plan	Code	Description	Units	<i>P<sub>1,2010</sub></i>	<i>Q<sub>1,2009</sub></i>	<i>P<sub>1,2010</sub> Q<sub>1,2009</sub></i>
WC60	WC60-24UC	Variable	\$/kWh	0.0013	121,642,537	\$ 158,135
WC60	WC60-CAPY	Capacity	\$/kVA/day	0.0304	17,136,600	\$ 520,953
WC60	WC60-DOPC	Demand	\$/kW	10.4239	271,253	\$ 2,827,517
WC60	WC60-PWRF	Power factor	\$/kVAr	7.0000	8,106	\$ 56,740
WU60	WU60-24UC	Variable	\$/kWh	0.0013	65,048,149	\$ 84,563
WU60	WU60-CAPY	Capacity	\$/kVA/day	0.0304	9,946,250	\$ 302,366
WU60	WU60-DOPC	Demand	\$/kW	10.8338	155,374	\$ 1,683,286
WU60	WU60-PWRF	Power factor	\$/kVAr	7.0000	7,681	\$ 53,764
WR60	WR60-24UC	Variable	\$/kWh	0.0013	27,968,611	\$ 36,359
WR60	WR60-CAPY	Capacity	\$/kVA/day	0.0304	3,230,250	\$ 98,200
WR60	WR60-DOPC	Demand	\$/kW	12.9211	60,171	\$ 777,473
WR60	WR60-PWRF	Power factor	\$/kVAr	7.0000	4,545	\$ 31,812

## Appendix 8: Auckland published charges as at 31 March 2010

<b>Sum</b>	<b><math>P_{i,2010} Q_{i,2009}</math></b>
	<b>\$ 318,579,507</b>

### Un-metered

Price plan	Code	Description	Units	$P_{i,2010}$	$Q_{i,2009}$	$P_{i,2010} Q_{i,2009}$
A003	A003-FIXD	Unmetered	\$/day	0.1894	465,669	\$ 88,198

### Residential

Price plan	Code	Description	Units	$P_{i,2010}$	$Q_{i,2009}$	$P_{i,2010} Q_{i,2009}$
A100	A100-FIXD	Fixed	\$/day	0.1500	18,513,136	\$ 2,776,970
A100	A100-24UC	Variable, uncontrolled	\$/kWh	0.0897	289,620,391	\$ 25,978,949
A100	A100-NITE	Variable, night	\$/kWh	0.0198	590,963	\$ 11,701
A101	A101-FIXD	Fixed	\$/day	0.1500	4,664	\$ 700
A101	A101-24UC	Variable, uncontrolled	\$/kWh	0.0897	75,284	\$ 6,753
A101	A101-CTRL	Variable, controlled	\$/kWh	0.0573	34,602	\$ 1,983
A101	A101-NITE	Variable, night	\$/kWh	0.0198	1,684	\$ 33
A102	A102-FIXD	Fixed	\$/day	0.1500	84,893,075	\$ 12,733,961
A102	A102-AICO	Variable, all inclusive	\$/kWh	0.0768	1,667,547,751	\$ 128,067,667
A102	A102-NITE	Variable, night	\$/kWh	0.0198	1,563,131	\$ 30,950
A103	A103-FIXD	Fixed	\$/day	0.1500	115,916	\$ 17,387
A103	A103-AICO	Variable, all inclusive	\$/kWh	0.0912	6,152,915	\$ 561,146

### Business

Price plan	Code	Description	Units	$P_{i,2010}$	$Q_{i,2009}$	$P_{i,2010} Q_{i,2009}$
A110	A110-FIXD	Fixed	\$/day	0.2500	5,667,976	\$ 1,416,994
A110	A110-24UC	Variable	\$/kWh	0.0710	151,539,448	\$ 10,759,301
A120	A120-FIXD	Fixed	\$/day	0.7800	7,526,540	\$ 5,870,701
A120	A120-24UC	Variable	\$/kWh	0.0623	646,360,048	\$ 40,268,231

### Low voltage connection type

Price plan	Code	Description	Units	$P_{i,2010}$	$Q_{i,2009}$	$P_{i,2010} Q_{i,2009}$
AV14	AV14-CAPY	Capacity	\$/kVA/day	0.0318	59,012,271	\$ 1,876,590
AV14	AV14-24UC	Variable	\$/kWh	0.0653	106,269,031	\$ 6,939,368
AV30	AV30-CAPY	Capacity	\$/kVA/day	0.0231	39,696,424	\$ 916,987
AV30	AV30-24UC	Variable	\$/kWh	0.0475	58,664,094	\$ 2,786,544
AV99	AV99-CAPY	Capacity	\$/kVA/day	0.0241	116,343,649	\$ 2,803,882
AV99	AV99-SMDY	Variable, summer day	\$/kWh	0.0101	236,796,377	\$ 2,391,643
AV99	AV99-SMNT	Variable, summer night	\$/kWh	0.0017	83,541,947	\$ 142,021
AV99	AV99-WNDY	Variable, winter day	\$/kWh	0.0279	174,572,391	\$ 4,870,570
AV99	AV99-WNNT	Variable, winter night	\$/kWh	0.0017	62,978,817	\$ 107,064
AV99	AV99-DAMD	Demand	\$/kVA/day	0.1949	51,339,858	\$ 10,006,138

### Transformer connection type

Price plan	Code	Description	Units	$P_{i,2010}$	$Q_{i,2009}$	$P_{i,2010} Q_{i,2009}$
AX14	AX14-FIXD	Fixed	\$/day	2.6600	14,849	\$ 39,498
AX14	AX14-CAPY	Capacity	\$/kVA/day	0.0267	1,946,862	\$ 51,981
AX14	AX14-24UC	Variable	\$/kWh	0.0569	3,054,440	\$ 173,798
AX30	AX30-FIXD	Fixed	\$/day	3.3500	45,701	\$ 153,098
AX30	AX30-CAPY	Capacity	\$/kVA/day	0.0210	13,677,849	\$ 287,235
AX30	AX30-24UC	Variable	\$/kWh	0.0645	16,709,816	\$ 1,077,783
AX99	AX99-FIXD	Fixed	\$/day	2.4800	263,803	\$ 654,231
AX99	AX99-CAPY	Capacity	\$/kVA/day	0.0199	173,960,864	\$ 3,461,821
AX99	AX99-SMDY	Variable, summer day	\$/kWh	0.0101	420,268,962	\$ 4,244,717
AX99	AX99-SMNT	Variable, summer night	\$/kWh	0.0017	173,670,598	\$ 295,240
AX99	AX99-WNDY	Variable, winter day	\$/kWh	0.0279	305,690,347	\$ 8,528,761
AX99	AX99-WNNT	Variable, winter night	\$/kWh	0.0017	126,056,400	\$ 214,296
AX99	AX99-DAMD	Demand	\$/kVA/day	0.1949	82,903,242	\$ 16,157,842

### High voltage connection type

Price plan	Code	Description	Units	$P_{i,2010}$	$Q_{i,2009}$	$P_{i,2010} Q_{i,2009}$
AC60	AC60-CAPY	Capacity	\$/kVA/day	0.0284	47,200,298	\$ 1,340,488
AC60	AC60-24UC	Variable	\$/kWh	0.0015	468,941,302	\$ 703,412
AC60	AC60-DOPC	Demand	\$/kW	14.5704	1,008,126	\$ 14,688,802
AC60	AC60-PWRF	Power Factor	\$/kVA	7.0000	79,084	\$ 553,588
AC60	AC60-DEXA	Excess demand	\$/kVA/day	0.4218	297,190	\$ 125,355
AU60	AU60-CAPY	Capacity	\$/kVA/day	0.0284	13,599,550	\$ 386,227
AU60	AU60-24UC	Variable	\$/kWh	0.0015	97,503,231	\$ 146,255
AU60	AU60-DOPC	Demand	\$/kW	15.1002	237,364	\$ 3,584,240
AU60	AU60-PWRF	Power Factor	\$/kVA	7.0000	15,064	\$ 105,450
AU60	AU60-DEXA	Excess demand	\$/kVA/day	0.4218	224,571	\$ 94,724
AR60	AR60-CAPY	Capacity	\$/kVA/day	0.0284	182,500	\$ 5,183
AR60	AR60-24UC	Variable	\$/kWh	0.0015	1,422,405	\$ 2,134
AR60	AR60-DOPC	Demand	\$/kW	18.4117	3,628	\$ 66,798
AR60	AR60-PWRF	Power Factor	\$/kVA	7.0000	588	\$ 4,116
AR60	AR60-DEXA	Excess demand	\$/kVA/day	0.4218	-	\$ -

## Appendix 9: Northern non-standard charges as at 31 March 2010

				<i>P<sub>i,2010</sub> Q<sub>i,2009</sub></i>		
<b>Sum</b>				<b>\$ 2,001,919</b>		
<b>Non-standard</b>						
Price plan	Code	Description	Units	<i>P<sub>i,2010</sub></i>	<i>Q<sub>i,2009</sub></i>	<i>P<sub>i,2010</sub> Q<sub>i,2009</sub></i>
WTAF			\$/month	13,875.0000	12	\$ 166,500
WN01			\$/year	313,008.9800	1	\$ 313,009
WN02			\$/year	-	1	\$ -
WN03			\$/year	91,680.0000	1	\$ 91,680
WN04			\$/year	173,464.0700	1	\$ 173,464
WN05			\$/year	-	1	\$ -
WN06			\$/year	-	1	\$ -
WN07			\$/year	164,777.3300	1	\$ 164,777
WN08			\$/year	183.5700	1	\$ 184
WN09			\$/year	-	1	\$ -
WN10			\$/year	-	1	\$ -
WN11			\$/year	-	1	\$ -
WN12			\$/year	-	1	\$ -
WN13			\$/year	21,916.0400	1	\$ 21,916
WN14			\$/year	264,320.4400	1	\$ 264,320
WN15			\$/year	580,148.5400	1	\$ 580,149
WN16			\$/year	11,866.1500	1	\$ 11,866
WN17			\$/year	-	1	\$ -
WN18			\$/year	214,054.0600	1	\$ 214,054

## Appendix 10: Auckland non-standard charges as at 31 March 2010

	<i>P<sub>i,2010</sub> Q<sub>i,2009</sub></i>
<b>Sum</b>	<b>\$ 16,610,046</b>

### Non-standard

Price plan	Code	Description	Units	<i>P<sub>i,2010</sub></i>	<i>Q<sub>i,2009</sub></i>	<i>P<sub>i,2010</sub> Q<sub>i,2009</sub></i>
AN01			\$/year	168,161.0300	1	\$ 168,161
AN02			\$/year	-	1	\$ -
AN03			\$/year	227,036.9000	1	\$ 227,037
AN04			\$/year	1,089,104.0400	1	\$ 1,089,104
AN05			\$/year	185,527.4700	1	\$ 185,527
AN06			\$/year	64,800.0000	1	\$ 64,800
AN07			\$/year	992,400.2600	1	\$ 992,400
AN08			\$/year	-	1	\$ -
AN09			\$/year	31,773.2400	1	\$ 31,773
AN10			\$/year	598,946.9600	1	\$ 598,947
AN11			\$/year	-	1	\$ -
AN12			\$/year	233,080.6000	1	\$ 233,081
AN13			\$/year	830,897.4300	1	\$ 830,897
AN14			\$/year	766,151.5100	1	\$ 766,152
AN15			\$/year	3,627,959.3000	1	\$ 3,627,959
AN16			\$/year	-	1	\$ -
AN17			\$/year	362,096.8500	1	\$ 362,097
AN18			\$/year	422,143.6300	1	\$ 422,144
AN19			\$/year	163,259.1600	1	\$ 163,259
AN20			\$/year	231,631.5200	1	\$ 231,632
AN21			\$/year	-	1	\$ -
AN22			\$/year	-	1	\$ -
AN23			\$/year	511,633.5600	1	\$ 511,634
AN24			\$/year	1,967,039.2300	1	\$ 1,967,039
AN25			\$/year	686,807.7400	1	\$ 686,808
AN26			\$/year	-	1	\$ -
AN27			\$/year	200,737.7100	1	\$ 200,738
AN28			\$/year	-	1	\$ -
AN29			\$/year	519,928.2000	1	\$ 519,928
ASL1			\$/year	1,578,631.6800	1	\$ 1,578,632
ASL2			\$/year	1,150,297.5000	1	\$ 1,150,298

## Appendix 11: Consumer price index

### Consumers Price Index

Tradables, non-tradables and all groups – index numbers and percentage changes <sup>(1)/(2)</sup>

Base: June 2006 quarter (=1000)

	Tradables <sup>(3/4)</sup>			Non-tradables <sup>(5)</sup>			All groups <sup>(3)</sup>			
	Index	Percentage change		Index	Percentage change		Index	Percentage change		
		From previous quarter	From same quarter of previous year		From previous quarter	From same quarter of previous year		From previous quarter	From same quarter of previous year	
Series ref: CPIQ	SE9NS6000			SE9NS6500			SE9A			
<b>Quarter</b>										
2001	Sep	957	0.5	3.6	828	0.7	1.5	881	0.6	2.4
	Dec	960	0.3	2.1	834	0.7	1.5	886	0.6	1.8
2002	Mar	958	-0.2	2.1	844	1.2	2.9	891	0.6	2.6
	Jun	973	1.6	2.2	849	0.6	3.2	900	1.0	2.8
	Sep	970	-0.3	1.4	857	1.0	3.5	904	0.5	2.6
	Dec	975	0.5	1.6	865	0.9	3.8	910	0.6	2.7
2003	Mar	972	-0.3	1.5	872	0.8	3.4	913	0.4	2.5
	Jun	962	-1.0	-1.1	880	0.8	3.6	913	0.0	1.5
	Sep	956	-0.7	-1.5	890	1.2	3.8	918	0.5	1.5
	Dec	955	-0.1	-2.0	902	1.3	4.2	924	0.7	1.6
2004	Mar	950	-0.6	-2.3	912	1.1	4.5	928	0.4	1.5
	Jun	956	0.7	-0.7	920	0.9	4.7	935	0.8	2.4
	Sep	956	0.0	0.0	930	1.0	4.5	941	0.6	2.5
	Dec	962	0.7	0.7	940	1.1	4.3	949	0.9	2.7
2005	Mar	958	-0.5	0.8	950	1.1	4.2	953	0.4	2.8
	Jun	963	0.6	0.7	961	1.1	4.4	962	0.9	2.8
	Sep	974	1.1	1.9	971	1.1	4.4	973	1.1	3.4
	Dec	979	0.5	1.7	980	1.0	4.3	979	0.7	3.2
2006	Mar	978	-0.1	2.1	990	1.0	4.1	985	0.6	3.3
	Jun	1000	2.3	3.8	1000	1.0	4.1	1000	1.5	4.0
	Sep	1003	0.3	3.0	1010	1.0	4.0	1007	0.7	3.5
	Dec	990	-1.3	1.2	1018	0.8	3.8	1005	-0.2	2.6
2007	Mar	986	-0.4	0.9	1030	1.2	4.1	1010	0.5	2.5
	Jun	995	0.9	-0.5	1041	1.1	4.1	1020	1.0	2.0
	Sep	1000	0.5	-0.3	1047	0.6	3.7	1025	0.5	1.8
	Dec	1018	1.8	2.8	1054	0.7	3.5	1037	1.2	3.2
2008	Mar	1020	0.2	3.4	1066	1.1	3.5	1044	0.7	3.4
	Jun	1043	2.3	4.8	1076	0.9	3.4	1061	1.6	4.0
	Sep	1063	1.9	6.3	1090	1.3	4.1	1077	1.5	5.1
	Dec	1041	-2.1	2.3	1099	0.8	4.3	1072	-0.5	3.4
2009	Mar	1037	-0.4	1.7	1107	0.7	3.8	1075	0.3	3.0
	Jun	1045	0.8	0.2	1112	0.5	3.3	1081	0.6	1.9
	Sep	1062	1.6	-0.1	1123	1.0	3.0	1095	1.3	1.7

(1) Percentage changes are calculated from index numbers that are not rounded until the June 2006 quarter.

(2) Five decimal places have been retained prior to the June 2006 quarter to preserve percentage changes that were originally published on earlier expression bases.

(3) From the September 2006 quarter, prices for fresh fruit and vegetables are not seasonally adjusted. They were seasonally adjusted until the June 2006 quarter.

(4) Tradables are goods and services that are imported or that are in competition with foreign goods and services either in domestic or foreign markets.

(5) Non-tradables are goods and services that do not face foreign competition.

$$\Delta CPI_{2011} = \frac{CPI_{Dec,2008} + CPI_{Mar,2009} + CPI_{Jun,2009} + CPI_{Sep,2009}}{CPI_{Dec,2007} + CPI_{Mar,2008} + CPI_{Jun,2008} + CPI_{Sep,2008}} - 1$$

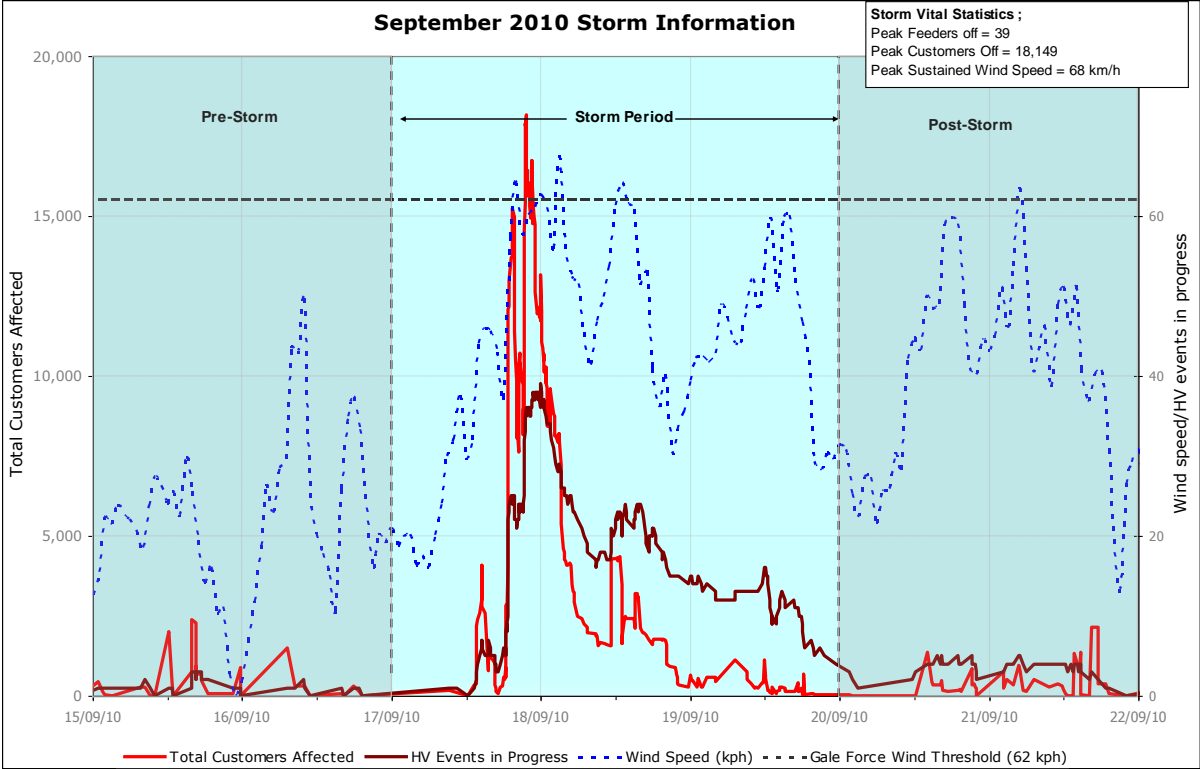
$$\Delta CPI_{2011} = \frac{1072 + 1075 + 1081 + 1095}{1037 + 1044 + 1061 + 1077} - 1$$

$$\Delta CPI_{2011} = 2.465\%$$



### Appendix 12: Analysis of September 2010 storm

During the assessment period, Vector’s network experienced one instance of a major event where the SAIDI exceeded the boundary value. This occurred during a storm period covering three consecutive days from 17 to 19 September 2010 inclusive. The following chart plots the number of customers affected and number of outage events in progress against peak sustained wind speeds experienced during the storm.



There were around 100 separate high voltage faults on Vector’s network during the period 17-19 September 2010. This was the most significant event on Vector’s network since the storm of July 2008. The impact of the storm on Vector’s network was typical of earlier extreme events: after an initial rapid peak in the number of outages, and the number of customers affected, related outages continued to occur over a period of days before normal operational performance was able to be resumed.

Whilst the storm and its immediate aftermath pose a significant operational challenge, the continuing high winds hampered efforts at restoration of supplies: pole-climbing was hazardous or not possible and fault location very difficult (in part, this is because during storms, faults on the network’s more exposed overhead lines predominate: lines clash in the wind, trees contact overhead lines, and in many cases it is not possible to identify the cause).

This combination of circumstances severely impairs Vector's ability to execute repairs; in some cases, while temporary repairs may be possible, these then require further outages to make permanent.

Practically all planned work on the overhead network had to be curtailed during the storm period and for some days afterwards.