



**EDB Information Disclosure Requirements  
Information Templates  
for  
Schedules 11a–13**

<b>Company Name</b>	<input type="text" value="Vector Limited"/>
<b>Disclosure Date</b>	<input type="text" value="31 March 2014"/>
<b>AMP Planning Period Start Date (first day)</b>	<input type="text" value="1 April 2014"/>

Templates for Schedules 11a–13 (Asset Management Plan)  
Template Version 3.0. Prepared 13 December 2013

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### Schedule Description

#### *Asset Management Plan Schedule Templates*

- 11a [Report on Forecast Capital Expenditure](#)
- 11b [Report on Forecast Operational Expenditure](#)
- 12a [Report on Asset Condition](#)
- 12b [Report on Forecast Capacity](#)
- 12c [Report on Forecast Demand](#)
- 12d [Report on Forecast Interruptions and Duration](#)
- 13 [Report on Asset Management Maturity](#)

### **Disclosure Template Guidelines for Information Entry**

These templates have been prepared for use by EDBs when making disclosures under subclauses 2.6.1(4), 2.6.1(5) and 2.6.5(5) of the Electricity Distribution Information Disclosure Determination 2012. Disclosures made under subclauses 2.6.1(4) and 2.6.1(5) must be made before the start of each disclosure year. Disclosures made under subclauses 2.6.5(5) must be made within 5 months after the start of the disclosure year. The information disclosed under 2.6.5(5) should be identical to that disclosed under 2.6.1(4) and 2.6.1(5).

Under clause 2.6.3, EDBs can elect to complete and publicly disclose before the start of the disclosure year, an **AMP update**.

EDBs can elect to complete and publicly disclose an AMP update instead of a full AMP in the following years:

- 31 March 2014
- 31 March 2015

If electing to complete an AMP update, EDBs can choose to not complete and disclose Schedule 13: Report on Asset Management Maturity Table. Schedule 13 sheet should be removed if not completed.

If disclosing a Full AMP, EDBs must complete and disclose Schedule 13.

### **Company Name and Dates**

To prepare the templates for disclosure, the supplier's company name should be entered in cell C8, the date of the first day of the 10 year planning period should be entered in cell C12, and the date on which the information is disclosed should be entered in cell C10 of the CoverSheet worksheet.

The cell C12 entry (planning period start date) is used to calculate disclosure years in the column headings that show above some of the tables. It is also used to calculate the AMP planning period dates in the template title blocks (the title blocks are the light green shaded areas at the top of each template).

The cell C8 entry (company name) is used in the template title blocks.

Dates should be entered in day/month/year order (Example -"1 April 2013").

### **Data Entry Cells and Calculated Cells**

Data entered into this workbook may be entered only into the data entry cells. Data entry cells are the bordered, unshaded areas (white cells) in each template. Under no circumstances should data be entered into the workbook outside a data entry cell.

In some cases, where the information for disclosure is able to be ascertained from disclosures elsewhere in the workbook, such information is disclosed in a calculated cell. Under no circumstances should the formulas in a calculated cell be overwritten.

### **Validation Settings on Data Entry Cells**

To maintain a consistency of format and to guard against errors in data entry, some data entry cells test entries for validity and accept only a limited range of values. For example, entries may be limited to a list of category names or to values between 0% and 100%. Where this occurs, a validation message will appear when data is being entered.

### **Conditional Formatting Settings on Data Entry Cells**

Schedule 12a columns G to K contains conditional formatting. The cells will change colour if the row totals do not add to 100%.

### **Inserting Additional Rows**

The templates for schedules 11a, 12b and 12c may require additional rows to be inserted in tables marked 'include additional rows if needed'.

Additional rows must not be inserted directly above the first row or below the last row of a table. This is to ensure that entries made in the new row are included in the totals.

For schedule 12b the formula for column J (Utilisation of Installed Firm Capacity %) will need to be copied into the inserted row(s).

### **Schedule 11a & 11b**

Schedule 11a requires Capital and Operational Expenditure to be expressed in both nominal and constant prices.

The differences between the nominal and constant prices should reflect EDB expectations of the impact of changes in the costs of its labour, materials and other inputs (ie, inflationary pressures).

### **Schedule 12b(ii)**

The purpose of schedule 12b(ii) is to disclose transformer capacity as at the end of the current year. As the information may not be available in time for disclosures made under subclause 2.6.1(4), but available for disclosures made under 2.6.5(5), EDBs can choose not to disclose transformer capacity under schedule 12b(ii). EDBs who do not disclose transformer capacity under schedule 12b(ii) must disclose the information in schedule 9e(iii). Accordingly, the Excel template has been modified to allow the value "N/A" to be entered into these input cells.

### **Schedule 12d Report Forecast Interruptions and Duration sub-network disclosures**

If the supplier has sub-networks, schedule 12d must be completed for the network and for each sub-network. A copy of the schedule 12d worksheet must be made for each sub-network.

***Schedule 13 Report on Asset Management Maturity***

The name of the standard applied (eg, 'PAS55') must be entered in cell K4.

Company Name	<b>Vector Limited</b>
AMP Planning Period	<b>1 April 2014 – 31 March 2024</b>

**SCHEDULE 11a: REPORT ON FORECAST CAPITAL EXPENDITURE**

This schedule requires a breakdown of forecast expenditure on assets for the current disclosure year and a 10 year planning period. The forecasts should be consistent with the supporting information set out in the AMP. The forecast is to be expressed in both constant price and nominal dollar terms. Also required is a forecast of the value of commissioned assets (i.e., the value of RAB additions)  
 EDBs must provide explanatory comment on the difference between constant price and nominal dollar forecasts of expenditure on assets in Schedule 14a (Mandatory Explanatory Notes).  
 This information is not part of audited disclosure information.

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	Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5	CY+6	CY+7	CY+8	CY+9	CY+10
	for year ended 31 Mar 14	31 Mar 15	31 Mar 16	31 Mar 17	31 Mar 18	31 Mar 19	31 Mar 20	31 Mar 21	31 Mar 22	31 Mar 23	31 Mar 24
<b>11a(i): Expenditure on Assets Forecast</b>	<b>\$000 (in nominal dollars)</b>										
Consumer connection	29,918	32,004	38,702	44,875	44,279	41,232	41,413	42,670	43,049	44,167	45,536
System growth	49,901	45,751	41,938	44,423	43,702	51,997	49,159	52,120	61,325	60,878	57,782
Asset replacement and renewal	59,983	63,684	63,002	68,496	72,219	73,188	68,649	64,207	61,366	65,642	64,202
Asset relocations	22,449	20,641	21,982	22,512	20,577	20,294	20,802	21,322	21,855	22,401	22,961
Reliability, safety and environment:											
Quality of supply	3,812	3,434	3,494	3,274	3,739	6,733	8,930	9,866	10,525	11,806	12,407
Legislative and regulatory	2,204	2,386	1,940	1,212	245	-	-	-	-	-	-
Other reliability, safety and environment	3,280	7,371	9,885	10,296	11,374	12,031	13,150	13,750	14,894	15,558	15,955
<b>Total reliability, safety and environment</b>	<b>9,296</b>	<b>13,191</b>	<b>15,319</b>	<b>14,782</b>	<b>15,358</b>	<b>18,764</b>	<b>22,080</b>	<b>23,616</b>	<b>25,419</b>	<b>27,364</b>	<b>28,362</b>
<b>Expenditure on network assets</b>	<b>171,547</b>	<b>175,271</b>	<b>180,943</b>	<b>195,088</b>	<b>196,135</b>	<b>205,475</b>	<b>202,103</b>	<b>203,935</b>	<b>213,014</b>	<b>220,452</b>	<b>218,843</b>
Non-network assets	11,899	11,774	13,262	10,837	14,053	9,396	10,114	9,335	8,740	8,230	7,544
<b>Expenditure on assets</b>	<b>183,446</b>	<b>187,045</b>	<b>194,205</b>	<b>205,925</b>	<b>210,188</b>	<b>214,871</b>	<b>212,217</b>	<b>213,270</b>	<b>221,754</b>	<b>228,682</b>	<b>226,387</b>
<i>plus</i> Cost of financing	3,570	3,885	4,100	4,350	4,441	4,726	4,750	4,888	5,253	5,397	5,357
<i>less</i> Value of capital contributions	29,599	28,458	34,546	39,042	37,812	35,191	35,658	37,125	37,442	38,346	39,536
<i>plus</i> Value of vested assets	-	-	-	-	-	-	-	-	-	-	-
<b>Capital expenditure forecast</b>	<b>157,417</b>	<b>162,472</b>	<b>163,759</b>	<b>171,233</b>	<b>176,817</b>	<b>184,406</b>	<b>181,309</b>	<b>181,033</b>	<b>189,565</b>	<b>195,733</b>	<b>192,208</b>
Value of commissioned assets	143,870	196,633	165,346	180,012	170,903	188,427	186,363	185,249	183,565	198,026	199,906
	Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5	CY+6	CY+7	CY+8	CY+9	CY+10
	for year ended 31 Mar 14	31 Mar 15	31 Mar 16	31 Mar 17	31 Mar 18	31 Mar 19	31 Mar 20	31 Mar 21	31 Mar 22	31 Mar 23	31 Mar 24
	<b>\$000 (in constant prices)</b>										
Consumer connection	29,918	31,412	36,895	41,627	39,809	36,084	35,339	35,524	34,970	34,998	35,203
System growth	49,901	44,989	40,030	41,218	39,286	45,438	41,986	43,372	49,778	48,262	44,687
Asset replacement and renewal	59,983	62,537	60,131	63,544	64,889	64,022	58,614	53,476	49,860	51,999	49,655
Asset relocations	22,449	20,275	20,967	20,898	18,508	17,751	17,751	17,751	17,751	17,751	17,751
Reliability, safety and environment:											
Quality of supply	3,812	3,369	3,335	3,041	3,357	5,875	7,614	8,212	8,547	9,351	9,592
Legislative and regulatory	2,204	2,351	1,852	1,130	226	-	-	-	-	-	-
Other reliability, safety and environment	3,280	7,201	9,430	9,558	10,214	10,523	11,218	11,447	12,094	12,328	12,335
<b>Total reliability, safety and environment</b>	<b>9,296</b>	<b>12,921</b>	<b>14,617</b>	<b>13,729</b>	<b>13,797</b>	<b>16,398</b>	<b>18,832</b>	<b>19,659</b>	<b>20,641</b>	<b>21,679</b>	<b>21,927</b>
<b>Expenditure on network assets</b>	<b>171,547</b>	<b>172,134</b>	<b>172,640</b>	<b>181,016</b>	<b>176,289</b>	<b>179,693</b>	<b>172,522</b>	<b>169,782</b>	<b>173,000</b>	<b>174,689</b>	<b>169,223</b>
Non-network assets	11,899	11,487	12,561	9,985	12,523	8,169	8,578	7,725	7,056	6,482	5,797
<b>Expenditure on assets</b>	<b>183,446</b>	<b>183,621</b>	<b>185,201</b>	<b>191,001</b>	<b>188,812</b>	<b>187,862</b>	<b>181,100</b>	<b>177,507</b>	<b>180,056</b>	<b>181,171</b>	<b>175,020</b>
<b>Subcomponents of expenditure on assets (where known)</b>											
Energy efficiency and demand side management, reduction of energy losses	3,811	3,079	3,046	2,741	3,067	5,661	7,453	8,069	8,341	9,145	9,393
Overhead to underground conversion	13,882	13,428	13,428	13,428	13,428	13,428	13,428	13,428	13,428	13,428	13,428
Research and development	426	1,892	1,892	1,892	1,892	1,892	1,892	1,892	1,892	1,892	1,892

Company Name	Vector Limited
AMP Planning Period	1 April 2014 – 31 March 2024

**SCHEDULE 11a: REPORT ON FORECAST CAPITAL EXPENDITURE**

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	Current Year CY for year ended 31 Mar 14	CY+1 31 Mar 15	CY+2 31 Mar 16	CY+3 31 Mar 17	CY+4 31 Mar 18	CY+5 31 Mar 19	CY+6 31 Mar 20	CY+7 31 Mar 21	CY+8 31 Mar 22	CY+9 31 Mar 23	CY+10 31 Mar 24
<b>Difference between nominal and constant price forecasts</b>	<b>\$000</b>										
Consumer connection	-	592	1,807	3,248	4,470	5,148	6,074	7,146	8,079	9,169	10,333
System growth	-	762	1,908	3,205	4,416	6,559	7,173	8,748	11,547	12,616	13,095
Asset replacement and renewal	-	1,147	2,871	4,952	7,330	9,166	10,035	10,731	11,506	13,643	14,547
Asset relocations	-	366	1,015	1,614	2,069	2,543	3,051	3,571	4,104	4,650	5,210
Reliability, safety and environment:											
Quality of supply	-	65	159	233	382	858	1,316	1,654	1,978	2,455	2,815
Legislative and regulatory	-	35	88	82	19	-	-	-	-	-	-
Other reliability, safety and environment	-	170	455	738	1,160	1,508	1,932	2,303	2,800	3,230	3,620
<b>Total reliability, safety and environment</b>	-	270	702	1,053	1,561	2,366	3,248	3,957	4,778	5,685	6,435
<b>Expenditure on network assets</b>	-	3,137	8,303	14,072	19,846	25,782	29,581	34,153	40,014	45,763	49,620
Non-network assets	-	287	701	852	1,530	1,227	1,536	1,610	1,684	1,748	1,747
<b>Expenditure on assets</b>	-	3,424	9,004	14,924	21,376	27,009	31,117	35,763	41,698	47,511	51,367

	Current Year CY for year ended 31 Mar 14	CY+1 31 Mar 15	CY+2 31 Mar 16	CY+3 31 Mar 17	CY+4 31 Mar 18	CY+5 31 Mar 19
<b>11a(ii): Consumer Connection</b>	<b>\$000 (in constant prices)</b>					
<i>Consumer types defined by EDB*</i>						
Service connection	8,254	11,009	13,767	15,793	16,674	15,001
Customer substations	5,535	5,957	6,111	6,111	6,111	6,111
Business subdivisions	1,144	1,564	1,816	1,909	1,947	1,455
Residential subdivisions	11,511	9,775	12,235	14,848	12,111	10,551
Capacity change	2,401	2,430	2,384	2,384	2,384	2,384
Street lighting	1,016	-	-	-	-	-
Easement costs	57	677	582	582	582	582
<i>*include additional rows if needed</i>						
<b>Consumer connection expenditure</b>	29,918	31,412	36,895	41,627	39,809	36,084
less Capital contributions funding consumer connection	19,939	23,528	27,564	30,904	30,381	27,717
<b>Consumer connection less capital contributions</b>	9,979	7,884	9,331	10,723	9,428	8,367

<b>11a(iii): System Growth</b>						
Subtransmission	4,804	4,893	3,311	3,596	7,946	12,141
Zone substations	23,074	14,539	16,535	22,719	15,409	10,990
Distribution and LV lines	1,234	-	-	-	-	-
Distribution and LV cables	11,722	17,672	13,347	8,202	9,181	12,322
Distribution substations and transformers	1,178	838	824	855	846	844
Distribution switchgear	1,886	503	495	513	507	506
Other network assets	6,003	6,544	5,518	5,333	5,397	8,635
<b>System growth expenditure</b>	49,901	44,989	40,030	41,218	39,286	45,438
less Capital contributions funding system growth	3,235	-	-	-	-	-
<b>System growth less capital contributions</b>	46,666	44,989	40,030	41,218	39,286	45,438

**SCHEDULE 11a: REPORT ON FORECAST CAPITAL EXPENDITURE**

This schedule requires a breakdown of forecast expenditure on assets for the current disclosure year and a 10 year planning period. The forecasts should be consistent with the supporting information set out in the AMP. The forecast is to be expressed in both constant price and nominal dollar terms. Also required is a forecast of the value of commissioned assets (i.e., the value of RAB additions)  
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	Current Year CY for year ended 31 Mar 14	CY+1 31 Mar 15	CY+2 31 Mar 16	CY+3 31 Mar 17	CY+4 31 Mar 18	CY+5 31 Mar 19
<b>11a(iv): Asset Replacement and Renewal</b>	<b>\$000 (in constant prices)</b>					
Subtransmission	1,774	6,769	4,966	6,563	7,492	6,423
Zone substations	17,428	20,879	20,737	22,789	23,682	23,894
Distribution and LV lines	17,538	16,025	15,910	15,866	15,849	15,859
Distribution and LV cables	5,368	4,545	4,512	4,500	4,495	4,498
Distribution substations and transformers	5,413	4,111	4,031	4,067	4,011	4,001
Distribution switchgear	5,760	4,236	4,188	4,193	4,171	4,169
Other network assets	6,702	5,972	5,787	5,566	5,189	5,178
<b>Asset replacement and renewal expenditure</b>	<b>59,983</b>	<b>62,537</b>	<b>60,131</b>	<b>63,544</b>	<b>64,889</b>	<b>64,022</b>
less Capital contributions funding asset replacement and renewal	-	-	-	-	-	-
<b>Asset replacement and renewal less capital contributions</b>	<b>59,983</b>	<b>62,537</b>	<b>60,131</b>	<b>63,544</b>	<b>64,889</b>	<b>64,022</b>
<b>11a(v): Asset Relocations</b>	<b>\$000 (in constant prices)</b>					
<i>Project or programme*</i>						
TP Penrose-33kV outdoor to indoor	226	467	1,135	340	-	-
TP Hepburn-33kV outdoor to indoor	-	93	587	1,294	370	-
TP Henderson-33kV outdoor to indoor	-	93	540	1,195	342	-
TP Albany-33kV outdoor to indoor	-	-	139	649	1,192	330
Overhead improvement programme	13,882	13,428	13,428	13,428	13,428	13,428
<i>*include additional rows if needed</i>						
All other asset relocations projects or programmes	8,341	6,194	5,138	3,992	3,176	3,993
<b>Asset relocations expenditure</b>	<b>22,449</b>	<b>20,275</b>	<b>20,967</b>	<b>20,898</b>	<b>18,508</b>	<b>17,751</b>
less Capital contributions funding asset relocations	6,426	4,399	5,368	5,318	3,616	3,079
<b>Asset relocations less capital contributions</b>	<b>16,023</b>	<b>15,876</b>	<b>15,599</b>	<b>15,580</b>	<b>14,892</b>	<b>14,672</b>
<b>11a(vi): Quality of Supply</b>	<b>\$000 (in constant prices)</b>					
<i>Project or programme*</i>						
Solar PV and Battery programme (Southern & Northern regions)	3,812	2,990	2,956	2,662	2,978	5,496
All other quality of supply projects or programmes	-	379	379	379	379	379
<b>Quality of supply expenditure</b>	<b>3,812</b>	<b>3,369</b>	<b>3,335</b>	<b>3,041</b>	<b>3,357</b>	<b>5,875</b>
less Capital contributions funding quality of supply	-	-	-	-	-	-
<b>Quality of supply less capital contributions</b>	<b>3,812</b>	<b>3,369</b>	<b>3,335</b>	<b>3,041</b>	<b>3,357</b>	<b>5,875</b>
<b>11a(vii): Legislative and Regulatory</b>	<b>\$000 (in constant prices)</b>					
<i>Project or programme*</i>						
Seismic strengthen programme (Southern & Northern regions)	1,697	1,356	1,130	904	226	-
All other legislative and regulatory projects or programmes	507	995	722	226	-	-
<b>Legislative and regulatory expenditure</b>	<b>2,204</b>	<b>2,351</b>	<b>1,852</b>	<b>1,130</b>	<b>226</b>	<b>-</b>
less Capital contributions funding legislative and regulatory	-	-	-	-	-	-
<b>Legislative and regulatory less capital contributions</b>	<b>2,204</b>	<b>2,351</b>	<b>1,852</b>	<b>1,130</b>	<b>226</b>	<b>-</b>

**SCHEDULE 11a: REPORT ON FORECAST CAPITAL EXPENDITURE**

This schedule requires a breakdown of forecast expenditure on assets for the current disclosure year and a 10 year planning period. The forecasts should be consistent with the supporting information set out in the AMP. The forecast is to be expressed in both constant price and nominal dollar terms. Also required is a forecast of the value of commissioned assets (i.e., the value of RAB additions)  
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	Current Year CY for year ended	CY+1 31 Mar 15	CY+2 31 Mar 16	CY+3 31 Mar 17	CY+4 31 Mar 18	CY+5 31 Mar 19
<b>162</b>						
<b>163</b>	<b>11a(viii): Other Reliability, Safety and Environment</b>					
<b>164</b>	<i>Project or programme*</i>					
<b>165</b>	<b>\$000 (in constant prices)</b>					
<b>166</b>	Andelect switchgear replacement (Southern & Northern regions)	1,923	2,989	3,201	3,847	4,091
<b>167</b>	ROW assets (Southern & Northern regions)	2,564	3,416	3,414	3,418	3,450
<b>168</b>		-	-	-	-	-
<b>169</b>		-	-	-	-	-
<b>170</b>	<i>*include additional rows if needed</i>					
<b>171</b>	All other reliability, safety and environment projects or programmes	3,280	2,714	3,025	2,943	2,982
<b>172</b>	<b>Other reliability, safety and environment expenditure</b>	<b>3,280</b>	<b>7,201</b>	<b>9,430</b>	<b>10,214</b>	<b>10,523</b>
<b>173</b>	less Capital contributions funding other reliability, safety and environment	-	-	-	-	-
<b>174</b>	<b>Other reliability, safety and environment less capital contributions</b>	<b>3,280</b>	<b>7,201</b>	<b>9,430</b>	<b>10,214</b>	<b>10,523</b>
<b>175</b>						
<b>176</b>						
<b>177</b>						
<b>178</b>	<b>11a(ix): Non-Network Assets</b>					
<b>179</b>	<b>Routine expenditure</b>					
<b>180</b>	<i>Project or programme*</i>					
<b>181</b>	IT Programme 2015 onwards	10,934	12,119	9,766	12,366	8,012
<b>182</b>		-	-	-	-	-
<b>183</b>		-	-	-	-	-
<b>184</b>		-	-	-	-	-
<b>185</b>		-	-	-	-	-
<b>186</b>	<i>*include additional rows if needed</i>					
<b>187</b>	All other routine expenditure projects or programmes	11,899	553	442	219	157
<b>188</b>	<b>Routine expenditure</b>	<b>11,899</b>	<b>11,487</b>	<b>12,561</b>	<b>9,985</b>	<b>8,169</b>
<b>189</b>	<b>Atypical expenditure</b>					
<b>190</b>	<i>Project or programme*</i>					
<b>191</b>		-	-	-	-	-
<b>192</b>		-	-	-	-	-
<b>193</b>		-	-	-	-	-
<b>194</b>		-	-	-	-	-
<b>195</b>		-	-	-	-	-
<b>196</b>	<i>*include additional rows if needed</i>					
<b>197</b>	All other atypical projects or programmes	-	-	-	-	-
<b>198</b>	<b>Atypical expenditure</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>199</b>						
<b>200</b>	<b>Non-network assets expenditure</b>	<b>11,899</b>	<b>11,487</b>	<b>12,561</b>	<b>9,985</b>	<b>8,169</b>



Company Name	<b>Vector Limited</b>
AMP Planning Period	<b>1 April 2014 – 31 March 2024</b>

**SCHEDULE 11b: REPORT ON FORECAST OPERATIONAL EXPENDITURE**

This schedule requires a breakdown of forecast operational expenditure for the disclosure year and a 10 year planning period. The forecasts should be consistent with the supporting information set out in the AMP. The forecast is to be expressed in both constant price and nominal dollar terms. EDBs must provide explanatory comment on the difference between constant price and nominal dollar operational expenditure forecasts in Schedule 14a (Mandatory Explanatory Notes). This information is not part of audited disclosure information.

sch ref

	Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5	CY+6	CY+7	CY+8	CY+9	CY+10
	for year ended 31 Mar 14	31 Mar 15	31 Mar 16	31 Mar 17	31 Mar 18	31 Mar 19	31 Mar 20	31 Mar 21	31 Mar 22	31 Mar 23	31 Mar 24
<b>Operational Expenditure Forecast</b>											
	<b>\$000 (in nominal dollars)</b>										
Service interruptions and emergencies	6,429	7,744	7,674	7,904	8,165	8,387	8,597	8,812	9,032	9,258	9,490
Vegetation management	3,971	4,902	4,943	4,973	5,030	5,040	5,049	5,054	5,056	5,056	5,052
Routine and corrective maintenance and inspection	12,058	14,980	15,292	15,272	15,361	15,763	16,219	16,713	17,203	17,734	18,250
Asset replacement and renewal	13,990	14,322	13,112	11,399	11,243	11,549	11,837	12,133	12,437	12,748	13,066
<b>Network Opex</b>	<b>36,448</b>	<b>41,948</b>	<b>41,021</b>	<b>39,548</b>	<b>39,799</b>	<b>40,739</b>	<b>41,702</b>	<b>42,712</b>	<b>43,728</b>	<b>44,796</b>	<b>45,858</b>
System operations and network support	46,544	44,422	45,755	47,036	48,635	49,851	51,097	52,375	53,684	55,026	56,402
Business support	31,062	31,707	32,659	33,573	34,714	35,582	36,472	37,384	38,318	39,276	40,258
<b>Non-network opex</b>	<b>77,606</b>	<b>76,129</b>	<b>78,414</b>	<b>80,609</b>	<b>83,349</b>	<b>85,433</b>	<b>87,569</b>	<b>89,759</b>	<b>92,002</b>	<b>94,302</b>	<b>96,660</b>
<b>Operational expenditure</b>	<b>114,054</b>	<b>118,077</b>	<b>119,435</b>	<b>120,157</b>	<b>123,148</b>	<b>126,172</b>	<b>129,271</b>	<b>132,471</b>	<b>135,730</b>	<b>139,098</b>	<b>142,518</b>

	Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5	CY+6	CY+7	CY+8	CY+9	CY+10
	for year ended 31 Mar 14	31 Mar 15	31 Mar 16	31 Mar 17	31 Mar 18	31 Mar 19	31 Mar 20	31 Mar 21	31 Mar 22	31 Mar 23	31 Mar 24
<b>\$000 (in constant prices)</b>											
Service interruptions and emergencies	6,429	7,514	7,322	7,322	7,322	7,322	7,322	7,322	7,322	7,322	7,322
Vegetation management	3,971	4,782	4,682	4,582	4,482	4,382	4,282	4,182	4,082	3,982	3,882
Routine and corrective maintenance and inspection	12,058	14,547	14,593	14,149	13,777	13,761	13,814	13,887	13,945	14,025	14,082
Asset replacement and renewal	13,990	13,904	12,521	10,570	10,082	10,082	10,082	10,082	10,082	10,082	10,082
<b>Network Opex</b>	<b>36,448</b>	<b>40,747</b>	<b>39,118</b>	<b>36,623</b>	<b>35,663</b>	<b>35,547</b>	<b>35,500</b>	<b>35,473</b>	<b>35,431</b>	<b>35,411</b>	<b>35,368</b>
System operations and network support	46,544	43,338	43,338	43,338	43,338	43,338	43,338	43,338	43,338	43,338	43,338
Business support	31,062	30,934	30,934	30,934	30,934	30,934	30,934	30,934	30,934	30,934	30,934
<b>Non-network opex</b>	<b>77,606</b>	<b>74,272</b>	<b>74,272</b>	<b>74,272</b>	<b>74,272</b>	<b>74,272</b>	<b>74,272</b>	<b>74,272</b>	<b>74,272</b>	<b>74,272</b>	<b>74,272</b>
<b>Operational expenditure</b>	<b>114,054</b>	<b>115,019</b>	<b>113,390</b>	<b>110,895</b>	<b>109,935</b>	<b>109,819</b>	<b>109,772</b>	<b>109,745</b>	<b>109,703</b>	<b>109,683</b>	<b>109,640</b>

**Subcomponents of operational expenditure (where known)**

Energy efficiency and demand side management, reduction of energy losses	-	-	-	-	-	-	-	-	-	-	-
Direct billing*	-	-	-	-	-	-	-	-	-	-	-
Research and Development	-	-	-	-	-	-	-	-	-	-	-
Insurance	2,951	2,915	2,915	2,915	2,915	2,915	2,915	2,915	2,915	2,915	2,915

\* Direct billing expenditure by suppliers that direct bill the majority of their consumers

	Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5	CY+6	CY+7	CY+8	CY+9	CY+10
	for year ended 31 Mar 14	31 Mar 15	31 Mar 16	31 Mar 17	31 Mar 18	31 Mar 19	31 Mar 20	31 Mar 21	31 Mar 22	31 Mar 23	31 Mar 24
<b>Difference between nominal and real forecasts</b>											
	<b>\$000</b>										
Service interruptions and emergencies	-	230	352	582	843	1,065	1,275	1,490	1,710	1,936	2,168
Vegetation management	-	120	261	391	548	658	767	872	974	1,074	1,170
Routine and corrective maintenance and inspection	-	433	699	1,123	1,584	2,002	2,405	2,826	3,258	3,709	4,168
Asset replacement and renewal	-	418	591	829	1,161	1,467	1,755	2,051	2,355	2,666	2,984
<b>Network Opex</b>	<b>-</b>	<b>1,201</b>	<b>1,903</b>	<b>2,925</b>	<b>4,136</b>	<b>5,192</b>	<b>6,202</b>	<b>7,239</b>	<b>8,297</b>	<b>9,385</b>	<b>10,490</b>
System operations and network support	-	1,084	2,417	3,698	5,297	6,513	7,759	9,037	10,346	11,688	13,064
Business support	-	773	1,725	2,639	3,780	4,648	5,538	6,450	7,384	8,342	9,324
<b>Non-network opex</b>	<b>-</b>	<b>1,857</b>	<b>4,142</b>	<b>6,337</b>	<b>9,077</b>	<b>11,161</b>	<b>13,297</b>	<b>15,487</b>	<b>17,730</b>	<b>20,030</b>	<b>22,388</b>
<b>Operational expenditure</b>	<b>-</b>	<b>3,058</b>	<b>6,045</b>	<b>9,262</b>	<b>13,213</b>	<b>16,353</b>	<b>19,499</b>	<b>22,726</b>	<b>26,027</b>	<b>29,415</b>	<b>32,878</b>

Company Name	<b>Vector Limited</b>
AMP Planning Period	<b>1 April 2014 – 31 March 2024</b>

**SCHEDULE 12a: REPORT ON ASSET CONDITION**

This schedule requires a breakdown of asset condition by asset class as at the start of the forecast year. The data accuracy assessment relates to the percentage values disclosed in the asset condition columns. Also required is a forecast of the percentage of units to be replaced in the next 5 years. All information should be consistent with the information provided in the AMP and the expenditure on assets forecast in Schedule 11a. All units relating to cable and line assets, that are expressed in km, refer to circuit lengths.

sch ref

Asset condition at start of planning period (percentage of units by grade)												
	Voltage	Asset category	Asset class	Units	Grade 1	Grade 2	Grade 3	Grade 4	Grade unknown	Data accuracy (1-4)	% of asset forecast to be replaced in next 5 years	
7												
8												
9												
10	All	Overhead Line	Concrete poles / steel structure	No.	0.0%	0.4%	61.5%	38.1%	0.0%	4	6.1%	
11	All	Overhead Line	Wood poles	No.	0.1%	1.7%	73.5%	24.7%	0.0%	4	9.7%	
12	All	Overhead Line	Other pole types	No.	0.0%	0.0%	0.0%	100.0%	0.0%	4	0.0%	
13	HV	Subtransmission Line	Subtransmission OH up to 66kV conductor	km	0.0%	0.0%	83.2%	16.8%	0.0%	3	0.0%	
14	HV	Subtransmission Line	Subtransmission OH 110kV+ conductor	km	0.0%	0.0%	98.3%	1.7%	0.0%	3	0.0%	
15	HV	Subtransmission Cable	Subtransmission UG up to 66kV (XLPE)	km	0.0%	0.0%	11.4%	88.6%	0.0%	2	0.1%	
16	HV	Subtransmission Cable	Subtransmission UG up to 66kV (Oil pressurised)	km	0.0%	5.0%	73.9%	21.1%	0.0%	2	5.3%	
17	HV	Subtransmission Cable	Subtransmission UG up to 66kV (Gas pressurised)	km	0.0%	44.5%	55.5%	0.0%	0.0%	2	100.0%	
18	HV	Subtransmission Cable	Subtransmission UG up to 66kV (PILC)	km	0.0%	6.1%	87.4%	6.5%	0.0%	2	36.6%	
19	HV	Subtransmission Cable	Subtransmission UG 110kV+ (XLPE)	km	0.0%	0.0%	0.0%	100.0%	0.0%	2	0.0%	
20	HV	Subtransmission Cable	Subtransmission UG 110kV+ (Oil pressurised)	km	0.0%	0.0%	73.0%	27.0%	0.0%	2	0.0%	
21	HV	Subtransmission Cable	Subtransmission UG 110kV+ (Gas Pressurised)	km	0.0%	0.0%	0.0%	0.0%	0.0%	N/A	0.0%	
22	HV	Subtransmission Cable	Subtransmission UG 110kV+ (PILC)	km	0.0%	0.0%	0.0%	0.0%	0.0%	N/A	0.0%	
23	HV	Subtransmission Cable	Subtransmission submarine cable	km	0.0%	11.8%	42.7%	45.5%	0.0%	2	11.4%	
24	HV	Zone substation Buildings	Zone substations up to 66kV	No.	0.0%	4.1%	22.5%	73.4%	0.0%	3	5.1%	
25	HV	Zone substation Buildings	Zone substations 110kV+	No.	0.0%	0.0%	28.6%	71.4%	0.0%	3	0.0%	
26	HV	Zone substation switchgear	22/33kV CB (Indoor)	No.	0.0%	8.5%	12.4%	79.1%	0.0%	4	8.5%	
27	HV	Zone substation switchgear	22/33kV CB (Outdoor)	No.	0.0%	14.8%	50.0%	35.2%	0.0%	4	15.3%	
28	HV	Zone substation switchgear	33kV Switch (Ground Mounted)	No.	0.0%	0.0%	0.0%	0.0%	0.0%	N/A	0.0%	
29	HV	Zone substation switchgear	33kV Switch (Pole Mounted)	No.	0.0%	23.3%	73.3%	3.4%	0.0%	4	23.3%	
30	HV	Zone substation switchgear	33kV RMU	No.	0.0%	0.0%	0.0%	100.0%	0.0%	4	0.0%	
31	HV	Zone substation switchgear	50/66/110kV CB (Indoor)	No.	0.0%	0.0%	0.0%	100.0%	0.0%	4	0.0%	
32	HV	Zone substation switchgear	50/66/110kV CB (Outdoor)	No.	0.0%	0.0%	0.0%	100.0%	0.0%	4	0.0%	
33	HV	Zone substation switchgear	3.3/6.6/11/22kV CB (ground mounted)	No.	0.0%	14.9%	37.5%	47.6%	0.0%	4	25.0%	
34	HV	Zone substation switchgear	3.3/6.6/11/22kV CB (pole mounted)	No.	0.0%	0.0%	0.0%	0.0%	0.0%	N/A	0.0%	

Company Name	<b>Vector Limited</b>
AMP Planning Period	<b>1 April 2014 – 31 March 2024</b>

**SCHEDULE 12a: REPORT ON ASSET CONDITION**

This schedule requires a breakdown of asset condition by asset class as at the start of the forecast year. The data accuracy assessment relates to the percentage values disclosed in the asset condition columns. Also required is a forecast of the percentage of units to be replaced in the next 5 years. All information should be consistent with the information provided in the AMP and the expenditure on assets forecast in Schedule 11a. All units relating to cable and line assets, that are expressed in km, refer to circuit lengths.

sch ref

		Asset condition at start of planning period (percentage of units by grade)									
Voltage	Asset category	Asset class	Units	Grade 1	Grade 2	Grade 3	Grade 4	Grade unknown	Data accuracy (1-4)	% of asset forecast to be replaced in next 5 years	
42											
43											
44											
45	HV	Zone Substation Transformer	Zone Substation Transformers	No.	1.0%	3.4%	47.6%	48.1%	0.0%	4	7.3%
46	HV	Distribution Line	Distribution OH Open Wire Conductor	km	0.0%	0.0%	60.5%	39.5%	0.0%	3	0.3%
47	HV	Distribution Line	Distribution OH Aerial Cable Conductor	km	0.0%	0.0%	0.0%	0.0%	0.0%	N/A	0.0%
48	HV	Distribution Line	SWER conductor	km	0.0%	0.0%	0.0%	0.0%	0.0%	N/A	0.0%
49	HV	Distribution Cable	Distribution UG XLPE or PVC	km	0.0%	0.1%	6.2%	93.8%	0.0%	2	1.1%
50	HV	Distribution Cable	Distribution UG PILC	km	0.0%	0.4%	39.7%	59.9%	0.0%	2	0.8%
51	HV	Distribution Cable	Distribution Submarine Cable	km	0.0%	0.0%	86.2%	13.8%	0.0%	2	0.0%
52	HV	Distribution switchgear	3.3/6.6/11/22kV CB (pole mounted) - reclosers and sectionalisers	No.	0.6%	0.6%	0.6%	98.3%	0.0%	4	11.4%
53	HV	Distribution switchgear	3.3/6.6/11/22kV CB (Indoor)	No.	0.0%	0.0%	40.0%	60.0%	0.0%	4	0.0%
54	HV	Distribution switchgear	3.3/6.6/11/22kV Switches and fuses (pole mounted)	No.	4.0%	1.8%	53.4%	40.8%	0.0%	4	9.1%
55	HV	Distribution switchgear	3.3/6.6/11/22kV Switch (ground mounted) - except RMU	No.	0.3%	0.1%	67.2%	32.4%	0.0%	3	8.0%
56	HV	Distribution switchgear	3.3/6.6/11/22kV RMU	No.	0.3%	0.1%	55.3%	44.3%	0.0%	3	3.9%
57	HV	Distribution Transformer	Pole Mounted Transformer	No.	3.5%	0.7%	20.7%	75.1%	0.0%	3	8.1%
58	HV	Distribution Transformer	Ground Mounted Transformer	No.	1.0%	0.7%	28.0%	70.3%	0.0%	3	4.2%
59	HV	Distribution Transformer	Voltage regulators	No.	0.0%	0.0%	0.0%	100.0%	0.0%	4	0.0%
60	HV	Distribution Substations	Ground Mounted Substation Housing	No.	1.5%	1.3%	75.8%	21.4%	0.0%	4	2.8%
61	LV	LV Line	LV OH Conductor	km	0.0%	0.0%	66.6%	33.4%	0.0%	3	0.2%
62	LV	LV Cable	LV UG Cable	km	0.0%	0.3%	35.5%	64.3%	0.0%	2	0.1%
63	LV	LV Streetlighting	LV OH/UG Streetlight circuit	km	0.0%	0.0%	0.0%	0.0%	100.0%	1	0.1%
64	LV	Connections	OH/UG consumer service connections	No.	0.0%	0.0%	0.0%	0.0%	100.0%	1	0.0%
65	All	Protection	Protection relays (electromechanical, solid state and numeric)	No.	0.0%	10.8%	40.3%	49.0%	0.0%	3	17.2%
66	All	SCADA and communications	SCADA and communications equipment operating as a single system	Lot	2.2%	6.9%	0.0%	90.9%	0.0%	4	15.2%
67	All	Capacitor Banks	Capacitors including controls	No.	0.0%	0.0%	85.7%	14.3%	0.0%	3	0.0%
68	All	Load Control	Centralised plant	Lot	0.0%	0.0%	100.0%	0.0%	0.0%	4	0.0%
69	All	Load Control	Relays	No.	0.0%	0.0%	0.0%	0.0%	0.0%	N/A	0.0%
70	All	Civils	Cable Tunnels	km	0.0%	0.0%	8.6%	91.4%	0.0%	4	0.0%

Company Name	<b>Vector Limited</b>
AMP Planning Period	<b>1 April 2014 – 31 March 2024</b>

**SCHEDULE 12b: REPORT ON FORECAST CAPACITY**

This schedule requires a breakdown of current and forecast capacity and utilisation for each zone substation and current distribution transformer capacity. The data provided should be consistent with the information provided in the AMP. Information provided in this table should relate to the operation of the network in its normal steady state configuration.

sch ref

**12b(i): System Growth - Zone Substations**

	Existing Zone Substations	Current Peak Load (MVA)	Installed Firm Capacity (MVA)	Security of Supply Classification (type)	Transfer Capacity (MVA)	Utilisation of Installed Firm Capacity %	Installed Firm Capacity +5 years (MVA)	Utilisation of Installed Firm Capacity + 5yrs %	Installed Firm Capacity Constraint +5 years (cause)	Explanation
9	Atkinson Road	18.5	24.0	N-1	20.5	77%	24.0	80%	No constraint within +5 years	Meets Vector security criteria
10	Auckland Airport	16.0	25.0	N-1	0.0	64%	25.0	100%	Other	Meets Customer security criteria, any upgrade is initiated by customer
11	Avondale	28.2	24.0	N-1 switched	22.0	118%	24.0	120%	No constraint within +5 years	Meets Vector security criteria
12	Bairds	23.0	24.0	N-1	23.7	96%	24.0	100%	No constraint within +5 years	Meets Vector security criteria
13	Balmain	7.9	0.0	N-1 switched	13.4	-	0.0		No constraint within +5 years	Meets Vector security criteria
14	Balmoral	17.5	14.3	N-1 switched	12.5	122%	24.0	90%	No constraint within +5 years	Meets Vector security criteria
15	Belmont	13.0	14.0	N-1	10.5	93%	14.0	90%	No constraint within +5 years	Meets Vector security criteria
16	Birkdale	22.9	16.0	N-1 switched	18.7	143%	24.0	100%	No constraint within +5 years	Meets Vector security criteria - Transformer upgrade planned within 5 years
17	Brickworks	10.0	0.0	N-1 switched	12.8	-	18.0	60%	No constraint within +5 years	Meets Vector security criteria - Second transformer installation planned within 5 years
18	Browns Bay	16.7	14.0	N-1 switched	20.0	119%	14.0	130%	No constraint within +5 years	Meets Vector security criteria - Planned Glenvar substation will reduce the load at Browns Bay
19	Bush Road	23.2	24.0	N-1	13.2	97%	24.0	110%	No constraint within +5 years	Meets Vector security criteria
20	Carbine	17.1	18.9	N-1	14.7	90%	18.9	100%	No constraint within +5 years	Meets Vector security criteria
21	Chevalier	20.0	17.1	N-1 switched	16.9	117%	17.1	120%	No constraint within +5 years	Meets Vector security criteria
22	Clendon	21.6	24.0	N-1	22.9	90%	24.0	90%	No constraint within +5 years	Meets Vector security criteria
23	Clevedon	2.8	0.0	N-1 switched	3.2	-	0.0		No constraint within +5 years	Meets Vector security criteria
24	Coatesville	9.7	0.0	N-1 switched	10.1	-	12.5	90%	No constraint within +5 years	Meets Vector security criteria - Second transformer installation planned within 5 years
25	Drive	24.6	24.0	N-1 switched	25.6	103%	24.0	120%	No constraint within +5 years	Meets Vector security criteria
26	East Coast Road	17.4	0.0	N	14.6	-	0.0		No constraint within +5 years	Planned Rosedale substation will reduce the load at East Coast Rd
27	East Tamaki	17.8	24.0	N-1	9.5	74%	24.0	80%	No constraint within +5 years	Meets Vector security criteria
28	Forrest Hill	17.4	16.0	N-1 switched	17.7	109%	16.0	120%	No constraint within +5 years	Meets Vector security criteria
	Freemans Bay	19.7	21.6	N-1	19.5	91%	21.6	100%	No constraint within +5 years	Meets Vector security criteria
	Glen Innes	11.0	12.2	N-1	14.1	90%	24.0	50%	No constraint within +5 years	Meets Vector security criteria
	Greenhithe	13.2	0.0	N-1 switched	13.7	-	24.0	60%	No constraint within +5 years	Meets Vector security criteria - Second transformer installation planned after 5 years
	Greenmount	38.9	48.0	N-1	31.4	81%	48.0	90%	No constraint within +5 years	Meets Vector security criteria
	Gulf Harbour	6.8	0.0	N-1 switched	13.3	-	0.0		No constraint within +5 years	Meets Vector security criteria
	Hans	24.6	24.0	N-1 switched	11.0	103%	24.0	110%	No constraint within +5 years	Meets Vector security criteria
	Hauraki	8.7	0.0	N-1 switched	11.2	-	0.0		No constraint within +5 years	Meets Vector security criteria
	Helensville	13.7	9.0	N-1 switched	10.1	152%	9.0	170%	No constraint within +5 years	Meets Vector security criteria
	Henderson Valley	14.7	16.0	N-1	15.4	92%	16.0	100%	No constraint within +5 years	Meets Vector security criteria
	Highbrook	5.5	19.4	N-1	0.0	28%	19.4	30%	No constraint within +5 years	Switching Station
	Highbury	13.2	0.0	N-1 switched	16.5	-	16.0	90%	No constraint within +5 years	Meets Vector security criteria - Second transformer installation planned within 5 years
	Hillcrest	22.7	21.1	N-1 switched	22.9	108%	21.1	120%	No constraint within +5 years	Meets Vector security criteria
	Hillsborough	16.6	24.0	N-1	21.1	69%	24.0	70%	No constraint within +5 years	Meets Vector security criteria
	Hobson 110/11kV	25.9	27.5	N-1	11.9	94%	27.5	90%	No constraint within +5 years	Meets Vector security criteria
	Hobson 22/11kV	18.9	16.5	N-1 switched	15.4	115%	16.5	130%	No constraint within +5 years	Meets Vector security criteria
	Hobson 22kV	45.1	40.0	N-1 switched	34.4	113%	80.0	70%	No constraint within +5 years	Meets Vector security criteria - third transformer installation planned within 5 years
	Hobsonville	21.4	16.0	N-1 switched	13.9	134%	16.0	280%	No constraint within +5 years	Hobsonville Point and Westgate substations planned to reduce Hobsonville load

Company Name	<b>Vector Limited</b>
AMP Planning Period	<b>1 April 2014 – 31 March 2024</b>

**SCHEDULE 12b: REPORT ON FORECAST CAPACITY**

This schedule requires a breakdown of current and forecast capacity and utilisation for each zone substation and current distribution transformer capacity. The data provided should be consistent with the information provided in the AMP. Information provided in this table should relate to the operation of the network in its normal steady state configuration.

sch ref	Zone	Current Capacity (MW)	Forecast Capacity (MW)	Current Utilisation (%)	Forecast Utilisation (%)	Current Transformer Capacity (MW)	Forecast Transformer Capacity (MW)	Current Transformer Utilisation (%)	Forecast Transformer Utilisation (%)	Notes
	Howick	39.0	46.0	N-1	14.2	85%	46.0	90%	No constraint within +5 years	Meets Vector security criteria
	James Street	17.8	16.0	N-1 switched	17.4	111%	16.0	120%	No constraint within +5 years	Meets Vector security criteria
	Keeling Road	14.2	0.0	N-1 switched	23.3	-	24.0	80%	No constraint within +5 years	Meets Vector security criteria - Second transformer installation planned within 5 years
	Kingsland	23.0	24.0	N-1	29.2	96%	24.0	140%	No constraint within +5 years	Meets Vector security criteria
	Laingholm	9.1	9.0	N-1 switched	10.3	101%	9.0	110%	No constraint within +5 years	Meets Vector security criteria
	Liverpool	42.9	44.0	N-1	25.8	98%	44.0	100%	No constraint within +5 years	Meets Vector security criteria
	Liverpool 22kV	95.5	135.0	N-1	60.6	71%	135.0	80%	No constraint within +5 years	Meets Vector security criteria
	Mangere Central	25.5	24.0	N-1 switched	12.2	106%	48.0	60%	No constraint within +5 years	Meets Vector security criteria
	Mangere East	24.9	24.0	N-1 switched	25.4	104%	24.0	120%	No constraint within +5 years	Meets Vector security criteria
	Mangere West	19.7	36.0	N-1	6.8	55%	36.0	60%	No constraint within +5 years	Meets Vector security criteria
	Manly	19.0	14.0	N-1 switched	15.5	136%	14.0	140%	No constraint within +5 years	Meets Vector security criteria
	Manukau	35.4	48.0	N-1	28.9	74%	48.0	80%	No constraint within +5 years	Meets Vector security criteria
	Manurewa	50.2	46.9	N-1 switched	27.0	107%	46.9	110%	No constraint within +5 years	Meets Vector security criteria
	Maraetai	6.2	18.0	N-1	3.3	34%	18.0	40%	No constraint within +5 years	Meets Vector security criteria
	Mckinnon	21.4	24.0	N-1	17.6	89%	24.0	110%	No constraint within +5 years	Meets Vector security criteria
	Mcleod Road	11.6	0.0	N-1 switched	12.8	-	0.0	-	No constraint within +5 years	Meets Vector security criteria
	McNab	45.0	48.0	N-1	29.2	94%	48.0	110%	No constraint within +5 years	Meets Vector security criteria
	Millford	7.6	0.0	N-1 switched	8.1	-	0.0	-	No constraint within +5 years	Meets Vector security criteria
	Mt Albert	7.2	0.0	N-1 switched	8.7	-	0.0	-	No constraint within +5 years	Meets Vector security criteria
	Mt Wellington	16.6	24.0	N-1	21.0	69%	24.0	70%	No constraint within +5 years	Meets Vector security criteria
	New Lynn	13.8	14.0	N-1	15.0	99%	14.0	110%	No constraint within +5 years	Meets Vector security criteria
	Newmarket	35.1	48.0	N-1	36.7	73%	48.0	110%	No constraint within +5 years	Meets Vector security criteria
	Newton	18.0	19.2	N-1	17.4	94%	19.2	110%	No constraint within +5 years	Meets Vector security criteria
	Ngataranga Bay	7.8	0.0	N-1 switched	9.5	-	0.0	-	No constraint within +5 years	Meets Vector security criteria
	Northcote	9.3	0.0	N-1 switched	11.0	-	0.0	-	No constraint within +5 years	Meets Vector security criteria
	Onehunga	13.0	14.8	N-1	13.1	88%	24.0	60%	No constraint within +5 years	Meets Vector security criteria
	Orakei	22.8	21.6	N-1 switched	17.0	106%	21.6	120%	No constraint within +5 years	Meets Vector security criteria
	Oratia	5.3	0.0	N-1 switched	6.4	-	0.0	-	No constraint within +5 years	Meets Vector security criteria
	Orewa	15.2	24.0	N-1	15.6	63%	24.0	90%	No constraint within +5 years	Meets Vector security criteria
	Otara	32.8	30.8	N-1 switched	25.5	106%	30.8	120%	No constraint within +5 years	Meets Vector security criteria - Planned Flat Bush substation will reduce the load at Otara within 5 years
	Pacific Steel	55.8							Other	Meets Customer security criteria, any upgrade is initiated by customer
	Pakuranga	22.7	24.0	N-1	9.4	95%	24.0	110%	No constraint within +5 years	Meets Vector security criteria
	Papakura	25.3	24.0	N-1 switched	10.4	105%	24.0	120%	No constraint within +5 years	Meets Vector security criteria
	Parnell	10.9	14.6	N-1	16.4	75%	24.0	60%	No constraint within +5 years	Meets Vector security criteria
	Ponsonby	15.9	14.4	N-1 switched	10.4	110%	14.4	120%	No constraint within +5 years	Meets Vector security criteria
	Quay	23.1	22.0	N-1 switched	25.4	105%	22.0	140%	No constraint within +5 years	Meets Vector security criteria
	Quay 22kV	38.5	60.0	N-1	33.5	64%	60.0	80%	No constraint within +5 years	Meets Vector security criteria
	Ranui	10.9	0.0	N-1 switched	15.5	-	0.0	-	No constraint within +5 years	Meets Vector security criteria
	Red Beach	14.1	0.0	N-1 switched	16.2	-	24.0	90%	No constraint within +5 years	Meets Vector security criteria - Second transformer installation planned within 5 years
	Remuera	25.5	24.0	N-1 switched	17.2	106%	24.0	140%	No constraint within +5 years	Meets Vector security criteria
	Riverhead	8.4	9.0	N-1	14.7	93%	9.0	120%	No constraint within +5 years	Meets Vector security criteria
	Rockfield	22.7	24.0	N-1	26.6	95%	24.0	100%	No constraint within +5 years	Meets Vector security criteria
	Rosebank	20.9	25.8	N-1	22.2	81%	25.8	80%	No constraint within +5 years	Meets Vector security criteria
	Sabulite Road	20.8	14.0	N-1 switched	21.5	149%	14.0	150%	No constraint within +5 years	Meets Vector security criteria
	Sandringham	22.4	24.0	N-1	24.1	93%	24.0	100%	No constraint within +5 years	Meets Vector security criteria
	Simpson Road	5.9	0.0	N-1 switched	6.3	-	0.0	-	No constraint within +5 years	Meets Vector security criteria

Company Name	<b>Vector Limited</b>
AMP Planning Period	<b>1 April 2014 – 31 March 2024</b>

**SCHEDULE 12b: REPORT ON FORECAST CAPACITY**

This schedule requires a breakdown of current and forecast capacity and utilisation for each zone substation and current distribution transformer capacity. The data provided should be consistent with the information provided in the AMP. Information provided in this table should relate to the operation of the network in its normal steady state configuration.

sch ref	Zone	Current Capacity (MVA)	Forecast Capacity (MVA)	Forecast Utilisation (%)	Current Capacity (MVA)	Forecast Capacity (MVA)	Forecast Utilisation (%)	Notes	
	Snells Beach	6.3	0.0	N-1 switched	7.3	-	0.0	No constraint within +5 years Meets Vector security criteria - Planned Sandspit substation will reduce the load at Snells Beach and increase the transfer capacity at this substation	
	South Howick	28.3	24.0	N-1 switched	17.2	118%	24.0	120%	No constraint within +5 years Meets Vector security criteria
	Spur Road	10.5	0.0	N-1 switched	19.5	-	0.0	No constraint within +5 years Meets Vector security criteria	
	St Heliers	22.4	21.0	N-1 switched	17.8	107%	21.0	110%	No constraint within +5 years Meets Vector security criteria
	St Johns	16.7	24.0	N-1	26.9	70%	24.0	100%	No constraint within +5 years Meets Vector security criteria
	Sunset Road	17.4	14.0	N-1 switched	16.2	124%	14.0	140%	No constraint within +5 years Meets Vector security criteria
	Swanson	10.5	0.0	N-1 switched	14.2	-	0.0	No constraint within +5 years Meets Vector security criteria	
	Sylvia Park	17.6	20.2	N-1	5.4	87%	20.2	90%	No constraint within +5 years Meets Vector security criteria
	Takanini	13.9	18.0	N-1	13.2	77%	18.0	90%	No constraint within +5 years Meets Vector security criteria
	Takapuna	10.0	0.0	N-1 switched	11.8	-	0.0	No constraint within +5 years Meets Vector security criteria	
	Te Atatu	18.6	14.0	N-1 switched	10.0	133%	24.0	90%	No constraint within +5 years Meets Vector security criteria - Transformer upgrade planned within 5 years
	Te Papapa	23.1	24.0	N-1	11.9	96%	24.0	100%	No constraint within +5 years Meets Vector security criteria
	Torbay	7.2	0.0	N-1 switched	9.1	-	0.0	No constraint within +5 years Meets Vector security criteria - Planned Glenvar substation will reduce the load at Torbay and increase transfer capacity at this substation	
	Triangle Road	16.6	12.0	N-1 switched	21.1	138%	24.0	80%	No constraint within +5 years Meets Vector security criteria - Transformer upgrade planned within 5 years
	Victoria	24.4	20.4	N-1 switched	24.4	120%	20.4	130%	No constraint within +5 years Meets Vector security criteria
	Waiake	8.1	0.0	N-1 switched	9.7	-	0.0	No constraint within +5 years Meets Vector security criteria	
	Waiheke	10.1	15.0	N-1	3.3	67%	15.0	80%	No constraint within +5 years Meets Vector security criteria
	Waikaukau	9.3	0.0	N-1 switched	9.4	-	0.0	No constraint within +5 years Meets Vector security criteria	
	Waimauku	5.7	0.0	N-1 switched	6.7	-	18.0	40%	No constraint within +5 years Meets Vector security criteria
	Wairau Road	17.0	16.0	N-1 switched	20.0	106%	16.0	110%	No constraint within +5 years Meets Vector security criteria
	Warkworth	18.9	18.0	N-1 switched	14.1	105%	18.0	110%	No constraint within +5 years Meets Vector security criteria
	Wellsford	7.7	9.0	N-1	6.1	86%	9.0	100%	No constraint within +5 years Meets Vector security criteria
	Westfield	26.0	22.0	N-1 switched	16.2	118%	22.0	160%	No constraint within +5 years Meets Vector security criteria
	White Swan	30.4	34.7	N-1	19.9	88%	34.7	90%	No constraint within +5 years Meets Vector security criteria
	Wiri	38.0	48.0	N-1	17.7	79%	48.0	90%	No constraint within +5 years Meets Vector security criteria
	Woodford	11.7	0.0	N-1 switched	11.8	-	12.5	100%	No constraint within +5 years Meets Vector security criteria

<sup>1</sup> Extend forecast capacity table as necessary to disclose all capacity by each zone substation

29

**12b(ii): Transformer Capacity**

30

31

32

33

34

35

36

	(MVA)
Distribution transformer capacity (EDB owned)	
Distribution transformer capacity (Non-EDB owned)	
<b>Total distribution transformer capacity</b>	
<b>Zone substation transformer capacity</b>	

Company Name	<b>Vector Limited</b>
AMP Planning Period	<b>1 April 2014 – 31 March 2024</b>

### SCHEDULE 12C: REPORT ON FORECAST NETWORK DEMAND

This schedule requires a forecast of new connections (by consumer type), peak demand and energy volumes for the disclosure year and a 5 year planning period. The forecasts should be consistent with the supporting information set out in the AMP as well as the assumptions used in developing the expenditure forecasts in Schedule 11a and Schedule 11b and the capacity and utilisation forecasts in Schedule 12b.

sch ref

7 <b>12c(i): Consumer Connections</b>		Number of connections					
		Current Year CY for year ended 31 Mar 14	CY+1 31 Mar 15	CY+2 31 Mar 16	CY+3 31 Mar 17	CY+4 31 Mar 18	CY+5 31 Mar 19
8	Number of ICPs connected in year by consumer type						
11	Consumer types defined by EDB*						
12	Residential & Small Medium Enterprise (SME)	5,729	7,267	9,143	11,140	12,433	10,694
13	Industrial & Commercial (I & C)	170	159	159	159	159	159
14		-	-	-	-	-	-
15		-	-	-	-	-	-
16		-	-	-	-	-	-
17	<b>Connections total</b>	<b>5,899</b>	<b>7,426</b>	<b>9,302</b>	<b>11,299</b>	<b>12,592</b>	<b>10,853</b>
18	*include additional rows if needed						
19	<b>Distributed generation</b>						
20	Number of connections	1,052	2,228	6,926	10,450	10,450	10,450
21	Installed connection capacity of distributed generation (MVA)	3	9	23	34	34	34
22	<b>12c(ii) System Demand</b>						
24	<b>Maximum coincident system demand (MW)</b>						
25	GXP demand	1,736	1,738	1,788	1,827	1,853	1,891
26	plus Distributed generation output at HV and above	10	10	12	14	16	18
27	<b>Maximum coincident system demand</b>	<b>1,746</b>	<b>1,748</b>	<b>1,800</b>	<b>1,841</b>	<b>1,869</b>	<b>1,909</b>
28	less Net transfers to (from) other EDBs at HV and above	-	-	-	-	-	-
29	<b>Demand on system for supply to consumers' connection points</b>	<b>1,746</b>	<b>1,748</b>	<b>1,800</b>	<b>1,841</b>	<b>1,869</b>	<b>1,909</b>
30	<b>Electricity volumes carried (GWh)</b>						
31	Electricity supplied from GXPs	8,546	8,535	8,554	8,580	8,612	8,650
32	less Electricity exports to GXPs	-	-	-	-	-	-
33	plus Electricity supplied from distributed generation	101	103	107	114	125	125
34	less Net electricity supplied to (from) other EDBs	-	-	-	-	-	-
35	<b>Electricity entering system for supply to ICPs</b>	<b>8,647</b>	<b>8,638</b>	<b>8,661</b>	<b>8,694</b>	<b>8,737</b>	<b>8,775</b>
36	less Total energy delivered to ICPs	8,287	8,279	8,299	8,331	8,372	8,408
37	<b>Losses</b>	<b>360</b>	<b>359</b>	<b>362</b>	<b>363</b>	<b>365</b>	<b>367</b>
38							
39	<b>Load factor</b>	<b>57%</b>	<b>56%</b>	<b>55%</b>	<b>54%</b>	<b>53%</b>	<b>52%</b>
40	<b>Loss ratio</b>	<b>4.2%</b>	<b>4.2%</b>	<b>4.2%</b>	<b>4.2%</b>	<b>4.2%</b>	<b>4.2%</b>

Company Name	Vector Limited
AMP Planning Period	1 April 2014 – 31 March 2024
Network / Sub-network Name	Vector Limited

**SCHEDULE 12d: REPORT FORECAST INTERRUPTIONS AND DURATION**

This schedule requires a forecast of SAIFI and SAIDI for disclosure and a 5 year planning period. The forecasts should be consistent with the supporting information set out in the AMP as well as the assumed impact of planned and unplanned SAIFI and SAIDI on the expenditures forecast provided in Schedule 11a and Schedule 11b.

<i>sch ref</i>			<i>Current Year CY</i>	<i>CY+1</i>	<i>CY+2</i>	<i>CY+3</i>	<i>CY+4</i>	<i>CY+5</i>
		for year ended	<b>31 Mar 14</b>	<b>31 Mar 15</b>	<b>31 Mar 16</b>	<b>31 Mar 17</b>	<b>31 Mar 18</b>	<b>31 Mar 19</b>
8								
9								
10		<b>SAIDI</b>						
11		Class B (planned interruptions on the network)	21.0	19.6	19.6	19.6	19.6	19.6
12		Class C (unplanned interruptions on the network)	125.5	122.8	122.8	122.8	122.8	122.8
13		<b>SAIFI</b>						
14		Class B (planned interruptions on the network)	0.1	0.1	0.1	0.1	0.1	0.1
15		Class C (unplanned interruptions on the network)	1.3	1.4	1.4	1.4	1.4	1.4



Company Name	Vector Limited
AMP Planning Period	1 April 2014 – 31 March 2024
Network / Sub-network Name	Southern Region

**SCHEDULE 12d: REPORT FORECAST INTERRUPTIONS AND DURATION**

This schedule requires a forecast of SAIFI and SAIDI for disclosure and a 5 year planning period. The forecasts should be consistent with the supporting information set out in the AMP as well as the assumed impact of planned and unplanned SAIFI and SAIDI on the expenditures forecast provided in Schedule 11a and Schedule 11b.

sch ref

		Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5
	for year ended	31 Mar 14	31 Mar 15	31 Mar 16	31 Mar 17	31 Mar 18	31 Mar 19
8							
9							
10	<b>SAIDI</b>						
11	Class B (planned interruptions on the network)	4.0	6.3	6.3	6.3	6.3	6.3
12	Class C (unplanned interruptions on the network)	63.4	70.4	70.4	70.4	70.4	70.4
13	<b>SAIFI</b>						
14	Class B (planned interruptions on the network)	0.1	0.1	0.1	0.1	0.1	0.1
15	Class C (unplanned interruptions on the network)	0.8	0.9	0.9	0.9	0.9	0.9

Company Name	Vector Limited
AMP Planning Period	1 April 2014 – 31 March 2024
Network / Sub-network Name	Northern Region

**SCHEDULE 12d: REPORT FORECAST INTERRUPTIONS AND DURATION**

This schedule requires a forecast of SAIFI and SAIDI for disclosure and a 5 year planning period. The forecasts should be consistent with the supporting information set out in the AMP as well as the assumed impact of planned and unplanned SAIFI and SAIDI on the expenditures forecast provided in Schedule 11a and Schedule 11b.

sch ref

		Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5
	for year ended	31 Mar 14	31 Mar 15	31 Mar 16	31 Mar 17	31 Mar 18	31 Mar 19
8							
9							
10	<b>SAIDI</b>						
11	Class B (planned interruptions on the network)	46.9	39.8	39.8	39.8	39.8	39.8
12	Class C (unplanned interruptions on the network)	219.6	202.3	202.3	202.3	202.3	202.3
13	<b>SAIFI</b>						
14	Class B (planned interruptions on the network)	0.2	0.2	0.2	0.2	0.2	0.2
15	Class C (unplanned interruptions on the network)	2.1	2.1	2.1	2.1	2.1	2.1