

Company Name	EA Networks
For Year Ended	31 March 2014

## **Schedule 14      Mandatory Explanatory Notes**

*(In this Schedule, clause references are to the Electricity Distribution Information Disclosure Determination 2012)*

1. This Schedule requires EDBs to provide explanatory notes to information provided in accordance with clauses 2.3.1, 2.4.21, 2.4.22, and 2.5.2.
2. This Schedule is mandatory—EDBs must provide the explanatory comment specified below, in accordance with clause 2.7.1. Information provided in boxes 1 to 12 of this schedule is part of the audited disclosure information, and so is subject to the assurance requirements specified in section 2.8.
3. Schedule 15 (Voluntary Explanatory Notes to Schedules) provides for EDBs to give additional explanation of disclosed information should they elect to do so.

### *Return on Investment (Schedule 2)*

4. In the box below, comment on return on investment as disclosed in Schedule 2. This comment must include information on reclassified items in accordance with clause 2.7.1(2).

**Box 1: Explanatory comment on return on investment**

The increase in ROI – compared to a post-tax WACC from 2013 to 2014 reflects the uplift in distribution revenue as a result of increases allowed under the default price path.

No adjustment was made in the 2013 disclosure year for revaluation in the regulatory tax calculation. This has the effect of overstate the return on ROI. The 2013 regulatory tax calculation has been recalculated to take into account the revaluation and the movement in ROI is shown below.

2(i): Return on Investment	As shown in the 2013 disclosure		After correction to add back revaluation into the regulatory tax calculation	
	2012	2013	2012	2013
ROI—comparable to a post tax WACC	5.25%	5.03%	5.71%	5.28%
Mid-point estimate of post tax WACC	6.40%	5.85%	6.40%	5.85%
25th percentile estimate	5.68%	5.13%	5.68%	5.13%
75th percentile estimate	7.11%	6.56%	7.11%	6.56%
ROI—comparable to a vanilla WACC	5.54%	5.81%	6.53%	6.06%
Mid-point estimate of vanilla WACC	7.22%	6.62%	7.22%	6.62%
25th percentile estimate	6.51%	5.91%	6.51%	5.91%
75th percentile estimate	7.94%	7.34%	7.94%	7.34%

EA ROI-comparable to a vanilla WACC is above the 75<sup>th</sup> percentile estimate. The reason for this is in 2013-2014 year EA Networks found an error on the registry that resulted in the recovery of \$436K revenue from a retailer which related to a prior year. Additional EA Networks had load growth of 5.05% between the 2013 and 2014 year.

**Section 4. Return on investment**

No items were reclassified in accordance with clause 2.7.1(2)

*Regulatory Profit (Schedule 3)*

5. In the box below, comment on regulatory profit for the disclosure year as disclosed in Schedule 3. This comment must include-
  - 5.1 a description of material items included in 'other regulatory line income' other than gains and losses on asset sales, as disclosed in 3(i) of Schedule 3
  - 5.2 information on reclassified items in accordance with clause 2.7.1(2).

**Box 2: Explanatory comment on regulatory profit**

***Section 5.1 Material Items included in other income***

The Material items which make up 'other regulatory income' for 2014 is \$422k connection fees, Loss rental rebates \$117k and \$83k proceeds from the sale of scrap

***Section 5.2 Reclassified items***

**Information reclassified items in accordance with clause 2.7.1(2)**

No items have been reclassified in accordance with clause 2.7.1(2)

*Merger and acquisition expenses (3(iv) of Schedule 3)*

6. If the EDB incurred merger and acquisitions expenditure during the disclosure year, provide the following information in the box below-
  - 6.1 information on reclassified items in accordance with clause 2.7.1(2)
  - 6.2 any other commentary on the benefits of the merger and acquisition expenditure to the EDB.

**Box 3: Explanatory comment on merger and acquisition expenditure**

No merger or acquisition activities occurred in the year.

*Value of the Regulatory Asset Base (Schedule 4)*

7. In the box below, comment on the value of the regulatory asset base (rolled forward) in Schedule 4. This comment must include information on reclassified items in accordance with clause 2.7.1(2).

**Box 4: Explanatory comment on the value of the regulatory asset based (rolled forward)**

All items have been rolled forward in accordance with the requirements.

No items have been reclassified in the 2014 year.

**4(vii) Disclosure of asset category**

An error in the reported 2013 weighted average expected total asset life for zone substations and distribution switchgear has been found. The correct weighted average expected total asset life for 2013 are:

Zone substations 44.1

Distribution switchgear 38.8

**Summary of items scrapped from the RAB in the current year**

<b>Summary of Items scrapped from the RAB by class</b>	
Transformers	197,695
Magnefixs	45,312
Switches	-
HV Fuses	88,241
Breakers	-
Lighting arrestors	14,095
Substation	76,681
Cables	308,504
Ancillary	-
Lines	720,708
Network Land	-
Critical Spares	128,521
Non-Network assets (from non-sytem assets 2014 RAB)	33,948
<b>Total</b>	<b>1,613,704</b>

*Regulatory tax allowance: disclosure of permanent differences (5a(i) of Schedule 5a)*

8. In the box below, provide descriptions and workings of the following items, as recorded in the asterisked categories in 5a(i) of Schedule 5a-
- 8.1 income not included in regulatory profit / (loss) before tax but taxable;
  - 8.2 expenditure or loss in regulatory profit / (loss) before tax but not deductible;
  - 8.3 income included in regulatory profit / (loss) before tax but not taxable;
  - 8.4 expenditure or loss deductible but not in regulatory profit / (loss) before tax.

**Requirement 8.1** Prior to 2014 EA Networks accounted for capital contributions using the 10 year amortisation method for tax. From the start 2014 capital contributions are offset against the cost of the asset which they are constructed for tax. The \$188k represents amortisation of capital contributions paid prior to the start of 2014 year.

**Requirement 8.2** None

**Requirement 8.3** Regulatory revaluation

**Requirement 8.4** None

*Regulatory tax allowance: disclosure of temporary differences (5a(vi) of Schedule 5a)*

9. In the box below, provide descriptions and workings of items recorded in the asterisked category 'Tax effect of other temporary differences' in 5a(vi) of Schedule 5a.

**Box 6: Temporary differences / Tax effect of other temporary differences (current disclosure year)**

	<u>2013</u>	<u>2014</u>
Employee entitlements	231	239
Provision for ACC	9	11
	240	250
Less 2013		240
Movement		10

*Related party transactions: disclosure of related party transactions (Schedule 5b)*

10. In the box below, provide descriptions of related party transactions beyond those disclosed on schedule 5b including identification and descriptions as to the nature of directly attributable costs disclosed under clause 2.3.6(1)(b).

**Box 7: Related party transactions**

EA Networks is a co-operative company who has regular related party transactions with its shareholders which may include the purchase of and sale of goods and services, all of which are carried out at market value.

Work undertaken by EA Networks contracting is carried out at cost with no profit being created as the result of the transaction.

EA Networks own a fibre network, part of which is rented by the power network on the same commercial terms and conditions as it offers third parties.

The fibre rental of the fibre business is valued using a directors certificate.

*Cost allocation (Schedule 5d)*

11. In the box below, comment on cost allocation as disclosed in Schedule 5d. This comment must include information on reclassified items in accordance with clause 2.7.1(2).

**Box 8: Cost allocation**

EA Networks has employed "ACAM" allocation method.

The cost allocators did not change between last year's disclosure and this year's disclosures.

*Asset allocation (Schedule 5e)*

12. In the box below, comment on asset allocation as disclosed in Schedule 5e. This comment must include information on reclassified items in accordance with clause 2.7.1(2).

**Box 9: Commentary on asset allocation**

During the period EA Networks completed its shift from its old premises at Kermode Street Ashburton to its new premises at Cullen Drive Ashburton. Due to the shift the Kermode street property will no longer be used by the electricity business, as a result it has been transferred to unallocated RAB at the end of the 2014 year.

Refer to box 1 of schedule 15 for the value of the Kermode street property which has been transferred.

*Capital Expenditure for the Disclosure Year (Schedule 6a)*

13. In the box below, comment on capital expenditure for the disclosure year, as disclosed in Schedule 6a. This comment must include-
- 13.1 a description of the materiality threshold applied to identify material projects and programmes described in Schedule 6a;
  - 13.2 information on reclassified items in accordance with clause 2.7.1(2),

**Box 10: Explanation of capital expenditure for the disclosure year**

*Section 13.1 Materiality Threshold*

A two-step principle based test, is used to define materiality associated with schedule 6a.

The risk associated with the project in question, projects with notable risk are detailed in the schedule.

Projects which require notable financial investment are detailed individually; Currently notable financial investment is defined as above \$100k.

*Section 13.2 Reclassified items*

No items have been reclassified.

*Operational Expenditure for the Disclosure Year (Schedule 6b)*

14. In the box below, comment on operational expenditure for the disclosure year, as disclosed in Schedule 6b. This comment must include-

- 14.1 commentary on assets replaced or renewed with asset replacement and renewal operating expenditure, as reported in 6b(i) of Schedule 6b;
- 14.2 information on reclassified items in accordance with clause 2.7.1(2);
- 14.3 commentary on any material atypical expenditure included in operational expenditure disclosed in Schedule 6b, a including the value of the expenditure the purpose of the expenditure, and the operational expenditure categories the expenditure relates to.

**Box 11: Explanation of operational expenditure for the disclosure year***Section 14.1 Assets replacement and renewal.*

The main asset replacement and renewal cost for the year was:

<b>Asset replacement and renewal</b>	
Switchgear	8
Transformer	306
Overhead Line removal	55
Overhead Line	69
Earthing	29
Underground	26
Protection and Circuit breakers	46
Pillar Boxes	20
Kiosks	8
Substation	13
Other	7
Indirect staff time	9
	595

*Section 14.2 Reclassification*

No items were reclassified in accordance with clause 2.7.1(2).

*Section 14.3 Material atypical expenditure*

<b>Atypical expenditure</b>	<b>AMP 2013</b>	<b>Actual</b>	<b>Variance</b>
New Building	50	552	(502)
GIS/Project	250		250

Aerial photography	40		40
Radio telephone	332	472	(140)
LAN upgrade	250	234	16
Financial system upgrade	250	10	240
	1,172	1,267	(95)

**New Building:** In 2013 EA Networks constructed a new head office. At the time that the 2013 AMP was prepared EA Networks had just moved into its new office and an allowance made in atypical capital investment for the completion of the project was made. Throughout the 2014 year additional unplanned capital investment has been required to better meet operational needs of staff in the new building.

**GIS/Project:** Due to an internal staff resourcing issues, the project has been deferred to the back end of the 2015 financial year.

**Aerial photography:** After the 2013 Amp was completed this project was pushed forward to late March 2013.

**Radio telephone:** When the cost of this project was budgeted for, the internal labour cost was under estimated.

**LAN upgrade:** EA LAN Network had reached the end of its life. As shown in the 2013 AMP the LAN network was replaced. The lower than expected cost reflects lower than budgeted hardware costs.

**Financial system upgrade:** Due to an internal staff resourcing issues, the project has been deferred to the back end of the 2015 financial year.

*Variance between forecast and actual expenditure (Schedule 7)*

15. In the box below, comment on variance in actual to forecast expenditure for the disclosure year, as reported in Schedule 7. This comment must include information on reclassified items in accordance with clause 2.7.1(2).

**Box 12: Explanatory comment on variance in actual to forecast expenditure****7(ii)Expenditure on assets:  
Customer connection**

<b>Consumer Connection</b>				
	<b>AMP 2013</b>	<b>Actual</b>	<b>Variance</b>	
General	2,661	3,209	548	20%
Industrial	13	73	60	461%
Irrigation	949	1,189	240	25%
Large Users	850	0	(850)	
	<b>4,473</b>	<b>4,471</b>	<b>(2)</b>	<b>0%</b>

The actual investment in consumer connection has historically and continues to be affected by a large number of external macro events. EA Networks has little control over those macro events, such as dairy pricing which drives irrigation connection demand and earthquakes and the associated population movement from Christchurch. While EA Networks incorporate all known factors into its connection AMP forecast a large amount of data remains hidden from EA. As a result there will always be some variance from forecast to actual.

**Asset replacement and renewal**

The main reason for the variance is projects which were started in 2013 and not completed before the start of 2014. The 2014 AMP did not include the remaining budgets for these projects.

	Brought forward from 2013 and not allowed for in 2014 AMP	2014 AMP	Subtotal	Actual 2014	Variance
AMP - Conversion Mt Somers Township	538				
Mayfield township UG conversion 2012	158				
	696				
Subtransmission		1,106	1,106	592	(514)
Zone substations	23	143	166	39	(127)
Distribution and LV lines	32	625	657	533	(124)
Distribution and LV cables		0	0	24	24
Distribution substations and transformers	144	56	200	1,022	822
Distribution switchgear	497	0	497	503	6
Other network assets		14	14	0	(14)
<b>Total</b>	<b>696</b>	<b>1,944</b>	<b>2,640</b>	<b>2,713</b>	<b>73</b>

The actual allocation process used to split projects into their associated assets was notably different from the process which was used to create the 2013 AMP.

## System Growth

The main reason for the variance is projects which were started in 2013 and not completed before the start of 2014. The 2014 AMP did not include the remaining budgets for these projects.

	Brought forward from 2013 and not allowed for in 2014 AMP	allowed for in the 2014 AMP	Subtotal	Actual 2014	Variance	
Lagmhor transformer purchase	443					
11kV to 22kV conversion						
Dromore	155					
Elgin completion and NTN Bay	103					
Ashburton 66kV Sub external line works	137					
Purchase of transformers	271					
Wakanui Rd 66kV line upgrade	152					
Other	86					
<b>Total</b>	<b>1,347</b>					
<b>Assets</b>						
Subtransmission	(64)	79	15	917	902	
Zone substations	530	884	1,413	254	(1,159)	
Distribution and LV lines	56	428	484	380	(104)	
Distribution and LV cables	0	306	306	43	(263)	
Distribution substations and transformers	723	797	1,520	3,332	1,812	
Distribution switchgear	33	383	416	172	(244)	
Other network assets	71	0	71	103	32	
<b>Total</b>	<b>1,347</b>	<b>2,877</b>	<b>4,224</b>	<b>5,201</b>	<b>977</b>	<b>23%</b>

The 23% variance to budget reflects longer than planned construction time to create the projects. The actual allocation process used to split projects into their associated assets was different from

the process which was used to create the 2013 AMP forecast.

### Quality of Supply

Quality of supply			
Actual	2,673		
<b>Projects deferred due to resourcing issues</b>			
Digbys Bridge 11V (4m)		95	
Modify RMU for Reclose		11	
Dobson Street, Chalmers Ave to Willow Street UG		20	
Dolma Street, Methven UG		277	
Carters Terrace, Grove Street UG		181	
64 Middle Road to Belt Road UG		88	
Hoods Road/Pattons Road/Ashburton Gorge Road, Mt Somers UG		143	
Digbys Bridge UG		56	
Lauriston Protection		37	
Carew Protection and 66V VTs		29	
Methven 10MVA 11/22V Transformer		79	
Substation Security Monitoring		19	
66V Vibration Dampers		18	
66kV Dampers Eifflet to coldstream		15	
		<u>1,067</u>	
			<u>3,740</u>
Targeted in 2013 AMP			<u>3,871</u>
Variance			131

The lower than expected investment in RSE reflects an external constraint placed on the ability to complete the scheduled programme.

### Other reliability safety and environment

The amount allowed for in the 2013 AMP reflected a provision for unscheduled work which would only be undertaken if required.

### Non-network capex.

The variance in a-typical capital investment is explained in box 11.

Typical	AMP 2013	Actual	Variance
Plant	87	89	(2)
Vehicles	153	211	(58)
IT	33	36	(3)

	273	335	(62)	(22%)
<p>One additional vehicle was purchased in the year due to an unforeseen operational requirement.</p> <p>7 (iii) Operational expenditure</p> <p><b>Service interruptions and emergencies:</b> Reflects the cost of two unplanned extreme weather events which occurred in the year.</p> <p><b>Vegetation management:</b> The two extreme weather events, wind storms, resulted in EA Networks being unable to secure the services of arborists for a period of time.</p> <p><b>Asset replacement:</b> Staff was diverted from asset replacement to service interruptions and emergency work for a period of time as the result of the extreme weather event.</p> <p><b>Routine and corrective maintenance and inspections:</b> Staff was diverted from routine and corrective maintenance to service interruptions and emergency work for a period of time as the result of the extreme weather event.</p> <p><b>System operations and network support:</b> A higher than expected amount of time was capitalised to system assets in the period (\$185k), the 2013 AMP allowed a PC amount for consultants and training which was based on long term actual spend. The 2014 actual consultancy and training costs were \$197k and \$87k below the amount allowed for in the 2013 AMP.</p>				

*Information relating to revenue and quantities for the disclosure year*

16. In the box below provide-

- 16.1 a comparison of the target revenue disclosed before the start of the disclosure year, in accordance with clauses 2.4.1 and 2.4.3(3) to total billed line charge revenue for the disclosure year, as disclosed in Schedule 8; and
- 16.2 explanatory comment on reasons for any material differences between target revenue and total billed line charge revenue.

**Box 13: Explanatory comment relating to revenue for the disclosure year**

EA Networks have little control over the weather and the number of new connections both of which affect consumers and revenue. When the revenue forecast was prepared all known factors were incorporated into the model, however a number of risk elements still existed which were outside of the control of EA Networks. These risk elements such as weather conditions and the number of new connections are the main reason for the difference between actual revenue and budgeted revenue.

*Network Reliability for the Disclosure Year (Schedule 10)*

17. In the box below, comment on network reliability for the disclosure year, as disclosed in Schedule 10.

**Box 14: Commentary on network reliability for the disclosure year**

During the course of this reporting year EA Networks has suffered two significant wind storms. The September storm which occurred over a two day period caused damage on a scale similar to the 2006 snow storm and while the October event did less damage it was still a significant event well beyond normal expectations.

Such was the extent of the damage that during the September event both ends of the 66kV sub transmission network were affected simultaneously resulting in almost half of the rural network being off for over 2 ½ hours.

EA Networks customer base is heavily biased towards Ashburton township, approximately 61% of all ICP's are within the town or are on circuits supplied from the urban zone substations. A protection issue where a 33kV fault was not cleared correctly resulted in Ashburton Zone Substation losing supply. Subsequent to this the protection on the lines supplying the Ashburton Urban area has been upgraded to prevent this occurring again.

During the year a third 66kV transformer was added to the Transpower Grid Exit Point. In upgrading the related bus protection at the Elgin substation a technician inadvertently tripped the Bus Zone Protection resulting in loss of supply to the entire 66kV network

Network reliability is compliant with quality requirements under the default price-quality path, however there are inherent limitations in the ability of Electricity Ashburton Limited to collect and record the network reliability information required to be disclosed in Reports 10(i) to 10(iv). Consequently there is no independent evidence available to support the completeness and accuracy of recorded faults and control over the completeness and accuracy of installation control point ('ICP') data included in the SAIDI and SAIFI calculations is limited throughout the year.

*Insurance cover*

18. In the box below provide details of any insurance cover for the assets used to provide electricity distribution services, including-
- 18.1 the EDB's approaches and practices in regard to the insurance of assets used to provide electricity distribution services, including the level of insurance;
  - 18.2 in respect of any self insurance, the level of reserves, details of how reserves are managed and invested, and details of any reinsurance.

**Box 15: Explanation of insurance cover**

*Question 18.1 level of insurance*

Where it is economically sensible to insure assets EA Networks has insurance in place. In practise this means that most items outside of substation fencing will not be insured.

*Question 18.2 levels of reserves*

Rather than holding insurance reserves EA Networks has identified the highest risk associated with the network is adverse weather conditions. In order to minimise this risk EA is undergrounding its networks when it is economically sensible to do so.

Company Name EA Networks

For Year Ended 31 March 2013

## **Schedule 15 Voluntary Explanatory Notes**

*(In this Schedule, clause references are to the Electricity Distribution Information Disclosure Determination 2012)*

1. This Schedule enable EDBs to provide, should they wish to-
  - 1.1 additional explanatory comment to reports prepared in accordance with clauses 2.3.1, 2.4.21, 2.4.22, 2.5.1, 2.5.2, and 2.6.5;
  - 1.2 information on any substantial changes to information disclosed in relation to a prior disclosure year, as a result of final wash-ups.
2. Information in this Schedule is not part of the audited disclosure information, and so is not subject to the assurance requirements specified in section 2.8.
3. Provide additional explanatory comment in the box below.

**Box 1: Voluntary explanatory comment on disclosed information****Schedule 9a:**

**23. Zone Substation Buildings \ Zone substations up to 66kV.** EA Networks do not have a database of ZSS buildings. The quantities have been manually accumulated. The threshold of what should be classified as a 'building' is not defined in the Determination, so at least one small (10m<sup>2</sup>) permanent material building has been excluded.

**28. Zone substation switchgear \ 33kV Switch (Pole Mounted).** The previous disclosure did not include assets that are still in RAB but are not in service. This disclosure does include those assets. Consequently, the total quantity of 33kV switches has increased but they are now spread over ground and pole mounted categories. It has been presumed that all 33kV switches (including those mounted on poles in subtransmission lines many km away from a ZSS) should be included in this category as there is no other category for them. EA Networks have a significant quantity of 66kV switches, but there is no category for their disclosure - so they have been omitted.

**29. Zone substation switchgear \ 33kV RMU.** The previous disclosure included 15 of these assets. That was an error of unknown origin. EA Networks have never owned a 33kV RMU.

**30. Zone substation switchgear \ 22/33kV CB (Indoor).** EA Networks own a significant quantity of 22kV indoor circuit breakers. EA Networks also own a significant quantity of 11kV indoor circuit breakers. Many of these circuit breakers are the same make and model and are externally identical. All of these circuit breakers serve the same function as either bus incomers (from a ZSS transformer) or as a ZSS distribution voltage (MV) feeder. The previous disclosure used the categories literally. So, in an attempt to be consistent, there were 141 indoor 22/33kV circuit breakers disclosed (which included the 11kV circuit breakers as they were 'indoor' circuit breakers). For consistency, all ZSS 11kV or 22kV indoor circuit breakers have now been categorised as '32' - 3.3/6.6/11/22kV CB (ground mounted). We presume that this was the intention for 22kV indoor circuit breakers used in a distribution function.

**31. Zone substation switchgear \ 22/33kV CB (Outdoor).** It would appear that the previous disclosure did not account for all outdoor 33kV circuit breakers. This has now been resolved. The disclosed quantity includes assets that are still in RAB but are not in service.

**32. Zone substation switchgear \ 3.3/6.6/11/22kV CB (ground mounted).** As mentioned above, the 11/22kV circuit breakers previously disclosed as '30' have been recategorised for consistency as '32'.

**34. Zone Substation Transformer \ Zone Substation Transformers.** The previous disclosure included 51 of these assets. That was a significant error of unknown origin. The disclosed quantity has now been verified and includes assets that are still in RAB but are not in service.

**43. Distribution switchgear \ 3.3/6.6/11/22kV Switches and fuses (pole mounted).** The previous disclosure did not include a significant quantity of 11/22kV fuses. An assessment has now been made of the fuses directly associated with pole mounted distribution transformers. EA Networks do not maintain a database of these transformer fuses and can only infer quantities from the number of in-service pole mounted transformers. The quantities of switches and fuses that are operationally 'system numbered' are reasonably accurate.

**44. Distribution switchgear \ 3.3/6.6/11/22kV Switches (ground mounted) – except RMU.** EA Networks only have a small quantity of ground mounted switches and all of these are in zone substations. Presumably, (as there is no category under the zone substation asset category) the intention is to enter them under this category. The significant increase in quantity is caused by the inclusion of assets that are still in RAB but are not in service. The site at which these assets are stored is considered a ground mounted site.

**49. Distribution Substations \ Ground Mounted Substation Housing.** The previous disclosure was an estimate of the total quantity of housings. There is limited information about housings currently held in the asset database. EA Networks were unsure whether a housing that was required for a distribution substation to house the MV RMU and the LV switchgear (the cable box connected transformer is separate and outdoors) was considered a housing (the Determination appears to exclude it). Housings that do not cover a transformer have now been excluded. The quantity is more accurate than the previous disclosure (given Electricity Ashburton's interpretation of the definition of 'Distribution substation').

**54. Protection \ Protection relays (electromechanical, solid state and numeric).** EA Networks do not have a comprehensive database of protection relays. The quantity of numeric relays is well known and documented but the older solid state and numeric relays need to be itemised. The disclosed quantity is the documented population of numeric relays. Future disclosures will include a full inventory of relays.

**55. SCADA and communications \ SCADA and communications equipment operating as a single system.** This category presented a number of conundrums for EA Networks. Firstly the definition of 'Lot' was not available. Does a 'Lot' mean a complete working SCADA system covering the entire network? Does a 'Lot' mean a quantity of equipment purchased in one year that may be used in many places? In reality, a SCADA system has many different components of different cost and age that are continually added to, replaced and improved. Until a clear definition is available of what is required, the decision has been made to disclose one 'Lot' of 'SCADA and communications equipment operating as a single system'.

**58. Load Control \ Relays.** EA Networks do not own the consumer ripple control relays connected to the distribution network. The only ripple relays EA Networks do own are the street lighting control relays located in most urban distribution substations. The disclosed quantity is not considered particularly accurate (too few are known) and over time will be improved with additional data gathering.

**Schedule 9b:**

**24. Zone substation Buildings \ Zone substations up to 66kV.** Without a ZSS building database, the ages of buildings have been inherited from the associated ZSS site. This is generally the same year, but some have been replaced during the lifetime of the site. Data improvements will occur in future disclosures.

**28. Zone substation switchgear \ 33kV Switch (Ground Mounted).** EA Networks stopped purchasing 33kV equipment once conversion to 66kV started in 2000.

**32. Zone substation switchgear \ 22/33kV CB (Outdoor).** It is likely there is some rogue data in this category as the distribution of new circuit breakers in the period 2000-2005 seems to be unlikely. Data improvement will occur for future disclosures.

**54. Distribution switchgear \ 3.3/6.6/11/22kV Switches and fuses (pole mounted).** The ages of switches are documented and in the asset database. These are disclosed with known ages. The age of fuses, particularly transformer fuses, is not known and there are no specific plans to capture that data. Transformer and system fuses represent almost the entire disclosed quantity of unknown age distribution switchgear.

**58. Distribution Transformer \ Ground Mounted Transformer.** EA Networks have good data on all transformers. The only anomaly in the disclosed age profile is the large bulge in ground mounted transformers during 1950 – 1999. This is caused by the inclusion of transformers that are not in service but are in RAB. The site they are stored at is considered a ground mounted site so all transformers (regardless of their prior status as pole or ground mounted) are currently ground mounted.

**60. Distribution Substations \ Ground Mounted Substation Housing.** The age distribution of the substation housings have been inherited from the age of each substation site they are located at. This will typically be correct but a number have been rebuilt on the same site with new housings. EA Networks do not have immediate plans to capture additional data about substation housing ages.

**64. Connections \ OH/UG consumer service connections.** EA Networks do not hold the date of first commissioning of a connection prior to 2000. This means that almost 70% of the connections have a default date of 2000 as their age. There are no plans to gather additional data about the age of connection assets.

**65. Protection \ Protection relays (electromechanical, solid state and numeric).** A more comprehensive database of protection assets will be prepared before the next disclosure and this will permit an accurate age profile to be disclosed. Rather than estimate the profile, the disclosure is only for numeric relays and all of them are less than 15 years old.

**66. SCADA and communications \ SCADA and communications equipment operating as a single system.** As has been described in a note for Schedule 9a ref 55, it is not clear as to how this category could/should be disclosed. Consequently, we have disclosed one lot of unknown age. In reality, no part of the SCADA system hardware is more than 10 years old. Much of it is practically new as IT equipment is replaced before it is likely to fail (typically no older than five years). The software components are continually upgraded to the latest version and thus have no definitive age profile. Once a clear methodology for disclosure if

this equipment is provided a more informative age profile will be provided.

**69. Load Control \ Relays.** Although the GIS asset database stores a quantity of street lighting ripple control relays it is incomplete and no age is stored against the relay. These reliable assets are of low value and are replaced when they fail rather than proactively. EA Networks have no plans to gather additional data on the street lighting ripple control relays. The energy retailers or third parties have ownership of consumer ripple control relays (and metering).

#### **Schedule 9c**

**35. Overhead circuit requiring vegetation management.** EA Networks are not able to isolate specific lengths of overhead network that do not require ongoing tree management. EA Networks do not have a database of specific trees (potentially) in conflict with the electricity network. It has been decided that, in the absence of specific data to the contrary, the most prudent disclosure is 100% of the overhead network. There is a reasonable rationale for this. Whenever a line is examined for vegetation control, the entire line is inspected for existing and new trees, not just the previously known problem vegetation. Even if this is a simple visual inspection from a moving vehicle, it still demonstrates that the line is being actively managed for vegetation risk. It is not uncommon for fast growing tree species to be planted and begin threatening the line within a few years. Trees that have previously not been considered threatening to lines can become problematic due to disease or storm damage (for example, a large tree on the opposite side of the road to a line).

It is likely that EA Networks data on specific vegetation risk will improve over time, but the answer to this particular disclosure question may remain the same for the reasons given above.