



Basis of Preparation

**Endeavour Energy
Response to AER Category Analysis RIN**

Submission date: 31 October 2014

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Purpose

The Category Analysis Regulatory Information Notice (RIN) requires Endeavour Energy to prepare a Basis of Preparation for all historic information in the Regulatory Templates which are the worksheets contained within the Microsoft Excel workbooks at Appendix A of the RIN. By this, the AER mean that for every historic variable in the Templates, Endeavour Energy must explain the basis upon which we prepared information to populate the input cells. The Basis of Preparation must be a separate document (or documents) that Endeavour Energy submits with its completed Templates. The AER will publish Endeavour Energy's Basis of Preparation along with the Templates.

This document is Endeavour Energy's Basis of Preparation in relation to the historic information contained within the Regulatory Templates required to be submitted to the AER by 31 October 2014.

AER's instructions

The AER requires the Basis of Preparation to follow a logical structure that enables auditors, assurance practitioners and the AER to clearly understand how Endeavour Energy has complied with the requirements of the RIN.

To do this, Endeavour Energy has structured its Basis of Preparation with a separate section to match each of the worksheets tabs where a Basis of Preparation is required.

The AER has set out what the minimum requirements for the Basis of Preparation are. This is detailed in Table 1 below:

1	Demonstrate how the information provided is consistent with the requirements of the Notice.
2	Explain the source from which Endeavour Energy obtained the information provided.
3	Explain the methodology Endeavour Energy applied to provide the required information, including any assumptions Endeavour Energy made.
4	In circumstances where Endeavour Energy cannot provide input for a Variable using Actual Information, and therefore must use an estimate, explain: (i) why an estimate was required, including why it was not possible for Endeavour Energy to use Actual Information; (ii) the basis for the estimate, including the approach used, assumptions made and reasons why the estimate is Endeavour Energy's best estimate, given the information sought in the Notice.

Structure of this document

The document is structured as follows:

- We outline our general approach to developing our response to the RIN. We identify key systems used to provide data, note issues relating to data quality, and make comments on the reliability of the data for economic benchmarking purposes.
- We set out our response to worksheets in accordance with the AER's instructions. We note that Worksheets 1 and 3 and Tables 2.16, 7.1, 7.2 and 7.3 do not require a Basis of Preparation to be provided as they are either contain forecast information or require no input material.

General approach

In this section, we identify our general approach to collecting and preparing information.

Systems used to provide data

Where methodologies or assumptions were required to complete the files other than the mere application of the AER approved CAM to the general purpose financial statements Endeavour Energy has included commentary by way of the “note” function within Microsoft Excel to provide guidance to the AER.

Below is a listing of Endeavour Energy’s systems that, to a greater or lesser extent, were directly related to or supported the development of the information contained in the RIN templates:

- Cognos – Business reporting system managing database information such as organisation policies and procedures;
- Ellipse – financial management system including: accounts payable; payroll; asset and equipment registers and financial reporting functions. The Ellipse system also caters for defect management (condition based) and also routine maintenance (planned). The equipment register is also linked to various other supporting systems such as field inspections and the Geographical Information System (GIS);
- TM1 – Endeavour Energy uses this OLAP tool for various purposes including budgeting and forecasting, monthly reporting and regulatory accounts allocations. It is a cube based technology which allows rules to be created between cubes and within cubes;
- eFrams – Endeavour Energy uses this system in relation to IT Allocation Drivers. The system enables access to all telecommunication billing, inventory management/asset register and reporting;
- Remedy - Endeavour Energy uses this system in relation to IT Allocation Drivers. This is a BMC tool used by CGI for asset management, definitive software library, incident management and service request management;
- Autocad - Endeavour Energy uses this system in relation to Property Drivers. This is a program used for computer-aided design and drafting. The program is used to maintain Floor Plans which can be used to summarise occupancy by business unit;
- Banner – Endeavour Energy’s customer database and billing system;
- Figtree – Worker’s compensation claims management data base. This system is maintained separate (but linked at aggregate levels) to other systems to maintain confidentiality of data as required by legislation;
- Value Development Algorithm (VDA) – Endeavour Energy uses the Value Development Algorithm (VDA) for its high level asset renewal expenditure modelling. The model is populated with specific asset data in order to produce the replacement capital forecast. Data for each asset is allocated into asset categories, which represent major components that make up the network such as poles, transformers, conductor, cable, switchgear etc. Each asset type is assigned an asset life and a replacement cost. The quantity of assets installed on the network each financial year is also entered, thus generating an age profile of the network assets;

- Visual Risk – Endeavour Energy uses this Treasury Management System for improving the productivity of its treasury operations. Visual Risk provides functions such as capturing a facility drawdown; valuing an FX option; and facilitating back office administration and financial reporting. Specifically it was used to prepare the cost of funds schedule;
- System Fault Recording (SFR) – Endeavour Energy used this Oracle database system for all reliability reporting up until 2011/12. The data in this system is accessed using Cognos, with further analysis and processing of data being undertaken using Microsoft Office programs such as Access and Excel;
- SCADA - Endeavour Energy uses this system to monitor and control its network. Information from this system feeds into OMS (see below) to enable the calculation of reliability reporting information;
- Outage Management System - - Endeavour Energy uses this system to log outages and other events on its network. From 2012/13 onwards this system has been used as the source of data for all reliability reporting; and
- Contact Centre 6 – Endeavour Energy’s call centre uses this system to run reports on historical call volume according to skill set (Call Type). The system is also used to assign agents to specific call taking groups based on call type.

Data quality issues

In previous consultations on the RIN, we have raised significant concerns with providing historical data in the form required by the AER. We will outline our concerns in relation to the detailed templates when we submit final audited data.

Approach to our obligations under the NEL

Our view of the NEL is that a DNSP is only obligated to provide information that is available, that is, data which has been historically collected in our systems. In cases, where that information cannot be provided in the form required by the AER from our systems, we would have a reasonable excuse under section 28(5) of the NEL not to comply with that element of the notice. We have strong doubts that a RIN can require a business to prepare information by way of estimate that cannot be reasonably derived from information currently held in its systems.

Our understanding of the term ‘prepare’ relates to a power the AER has to compel a DNSP to collect information in the form required by the AER for future periods (for example, by developing new systems) rather than to manipulate historical data in potentially inaccurate ways. We suggest that the AER should give more careful consideration to whether it has appropriately informed itself of the distinction under section 28D of the NEL between the ability of a RIN to require existing information to be provided and the ability to require information to be prepared, maintained and kept on a going forward basis.

Despite this Endeavour Energy has prepared and included the estimated data on an unaudited basis. We will address this issue in more detail in the Basis of Preparation for the final Audited Information.

Recognition by AER that ‘best estimates’ are not robust

The AER has acknowledged that if we are compelled to provide best estimates then there is potential for the data to lack robustness. Endeavour Energy will address the implications of using best estimates which are not robust in its Basis of Preparation to accompany the final Audited Information.

Worksheet 2.1 – Expenditure Summary & Reconciliation

2.1.1 Standard control services capex, 2.1.2 Standard control services opex by category, 2.1.3 Alternative control services capex & 2.1.4 Alternative control services opex

Compliance with requirements of the notice

The data presented in tables 2.1.1 to 2.1.4 is consistent with the requirements of the Category Analysis RIN. In particular:

- Total opex and capex reported represents expenditure split into Standard Control Services and Alternative Control Services and reconciles to the amounts reported in the Annual RIN.
- Opex and capex reported in tables 2.1.1 to 2.1.4 reconciles to corresponding amounts reported in tables 2.2 to 2.10 and 4.1 to 4.4.
- The total expenditure for the capex and opex for each service classification is mutually exclusive and collectively exhaustive.
- A “balancing item” is included (where required) to reconcile total capex and opex in tables 2.1.1 to 2.1.4 with total capex and opex reported in the Annual RIN. The balancing items calculated include capex and opex amounts which have either been reported more than once within tables 2.2 to 2.10 and 4.1 to 4.4 or have not been reported at all in tables 2.2 to 2.10 and 4.1 to 4.4.
- A table that contains the calculation of balancing items reported in tables 2.1.1 to 2.1.4 is provided under the “Source of information” section. A summary of each balancing item is set out below:
 - Table 2.1.1 - the items included in the “balancing item” row include those capex items not reported in tables 2.2 to 2.10 and 4.1 to 4.4. This includes expenditure associated with capital contributions, infrastructure land purchases, system access/switching costs, essential spares, reliability capex, smart grid, power quality, environmental enhancement, asset relocations and direct capital overheads (not included in table 2.10 as these are not transferred from opex). In addition and adjustment is made to remove public lighting capital expenditure which is double counted in tables 2.2 and 4.1.
 - Table 2.1.2 - the items included in the “balancing item” row include the duplicated costs captured under the “non-network” and “metering” line items which are also captured under the “Network Overhead” and “Corporate Overhead” categories.
 - Table 2.1.3 – no balancing items required.
 - Table 2.1.4 – the items included in the “balancing item” row include the duplicated costs captured under the “Network Overhead” and “Corporate Overhead” categories which are captured under the “Public Lighting” category.

Source of information

Table 2.1.1 - Standard Control Services Capex

Replacement Expenditure	188,921	Table 2.2 - Repex
Connections	11,223	Table 2.5 - Connections
Augmentation Expenditure	167,451	Table 2.3 - Augex
Non-Network	42,370	Table 2.6 - Non-network
Capitalised Network Overheads	34,695	Table 2.10 - Overheads
Capitalised Corporate Overheads	37,676	Table 2.10 - Overheads
Metering	2,375	Table 4.2 - Metering
Public Lighting	-	
Balancing Item	119,586	See below

Total Gross Capex (includes Cap Cons) **604,296**

Capital Contributions 84,128

Check (reconciles to annual RIN)

-

Balancing Items

Cap Cons	84,128	Annual RIN Table 6 - Customer contributions by Asset Class
Infrastructure Land	92	General ledger (TM1 Project Reporting cube)
Switching	6,771	General ledger (TM1 Project Reporting cube)
Essential Spares	1,002	General ledger (TM1 Project Reporting cube)
Reliability	9,595	General ledger (TM1 Project Reporting cube)
Asset Relocation	1,373	General ledger (TM1 Project Reporting cube)
Smart Grid	801	General ledger (TM1 Project Reporting cube)
Power Quality	179	General ledger (TM1 Project Reporting cube)
Environmental Enhancement	429	General ledger (TM1 Project Reporting cube)
Other Connections	1,948	General ledger (TM1 Project Reporting cube)
Metering Relays	613	General ledger (TM1 Project Reporting cube)
Direct Capitalised Overheads	13,280	General ledger (TM1 PNL cube)
Public Lighting	(5,518)	Double counted in table 2.2 and 4.1
Other (balancing item of other items)	4,892	Remaining balancing item

Total Balancing Items **119,586**

Table 2.1.2 - Standard Control Services Opex

Vegetation Management	40,200	Table 2.7 - Vegetation Management
Maintenance	58,179	Table 2.8 - Maintenance
Emergency Response	23,006	Table 2.9 - Emergency Response
Non-Network	75,415	Table 2.6 - Non-network
Network Overheads	104,226	Table 2.10 - Overheads
Corporate Overheads	81,812	Table 2.10 - Overheads
Metering	18,655	Table 4.2 - Metering
Public Lighting	-	
Balancing Item	(94,070)	See below

Total Opex	307,423	
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Balancing Items

Non-network	75,415	Double counted in table 2.10
Metering	18,655	Double counted in table 2.10

Total Balancing Items	94,070	
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Table 2.1.3 - Alternative Control Services Capex

Connections	-	
Capitalised Network Overheads	-	
Capitalised Corporate Overheads	-	
Metering	-	
Public Lighting	8,023	Table 4.1 - Public Lighting
Fee & Quoted	-	
Balancing Item	-	

Total Capex	8,023	
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Table 2.1.4 - Alternative Control Services Opex

Connections	-	
Network Overheads	1,652	Table 2.10 - Overheads
Corporate Overheads	5,221	Table 2.10 - Overheads
Metering	-	
Public Lighting	11,776	Table 4.1 - Public Lighting
Fee & Quoted	-	
Balancing Item	(6,873)	

Total Opex	11,776	
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Balancing Items

Network Overheads	1,652	Double counted in table 2.10
Corporate Overheads	5,221	Double counted in table 2.10

Total Balancing Items	6,873	
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Methodology and assumptions

Table	Methodology	Assumptions
2.1.1, 2.1.2, 2.1.3 & 2.1.4	1/ Extract expenditure from the Category Analysis RIN templates listed in the source of information above and link to the relevant category in tables 2.1.1 to 2.1.4.	Nil
	2/ Identify balancing items by extracting information from the general ledger and/or linking to double counted amounts in the Category Analysis RIN.	Nil
	3/ Reconcile the total of each table to the Annual RIN.	Nil

Use of estimated information

All information provided in tables 2.1.1 to 2.1.4 consists of Actual Information (no Estimated Information required).

Reliability of information

All information provided represents information extracted from Endeavour Energy's reporting systems and has been reconciled to reported figures in the Annual RIN. As a result, the information contained in tables 2.1.1 to 2.1.4 is considered to be reliable.

2.1.5 Dual function assets capex

Compliance with requirements of the notice

Endeavour Energy does not have any dual function assets and therefore does not need to complete table 2.1.5.

2.1.6 Dual function assets opex by category

Compliance with requirements of the notice

Endeavour Energy does not have any dual function assets and therefore does not need to complete table 2.1.6.

Worksheet 2.2 – Repex

2.2.1 Cost metrics by asset category and 2.2.2 Descriptor metrics

Compliance with requirements of the notice

Past and future expenditure and replacement quantities were estimated and provided to comply with the requirements of tables 2.2.1 and 2.2.2.

Source of information

Data was sourced as follows:

- Age profiles derived from Table 5.2.1
- Finance historical expenditure data
- VDA data
- Ellipse

Methodology and assumptions

- Historical replacement quantities were calculated by applying a renewal component percentage to age profiles developed for table 5.2.1. The renewal component percentage was calculated based on past expenditure of SARP projects to the total SAMP.
- Past expenditure was categorised into the major categories of the Repex input sheet. The category totals were proportioned into subcategories. Proportioning was weighted by quantity and past replacement costs from VDA.
- Exception was made for service mains where actual quantity was used.
- No data has been provided for pole top structures as that data is unavailable. Costs for the replacement of pole top structures are covered under other categories such as poles and conductors.
- “Other” major category has been utilised for data relating to Zone & Transmission Substation Assets and Distribution Substation Assets.
- Quantities for Urban, Rural Short and Rural Long assets were estimated by applying percentages to total volumes and estimated replacement quantities. Percentages were calculated from feeder lengths and their classifications.
- Quantities for replacement of overhead conductors by material type was estimated by looking at the reductions of conductor types. Network statistics was used to examine which conductors had volume reductions in a 5 year window. The reduction quantities were categorised and used to calculate percentages of conductor materials that have reduced. These percentages were applied to the total overhead conductor replacement quantities.
- Total overhead conductor (categorised by feeder type) volume of 28,782.211 does not align with total overhead conductor (categorised by material type) volume of 21,571.873 due a large volume of unknown conductor material type.
- Failure rates was based on work order for defects and fault and emergencies.
- Total MVA replaced was estimated by multiplying replacement quantities and the median rating of the transformer category.
- Total MVA disposed was assumed to be equal to the Total MVA replaced.

Use of estimated information

Historical expenditure were proportioned into required categories and used to calculate estimates. Actuals could not be used due to high level reporting and lack of discreet data in Ellipse.

Reliability of information

- Source of calculations was based on historical finance data. Estimates and proportioning were based on this data.

Worksheet 2.3 – Augex project data

2.3.1 Augex asset data – Subtransmission substations, switching stations and zone substations

Compliance with requirements of the notice

The information provided on this work sheet is consistent with the requirements of this Notice. Where possible actual costs and values have been used, in areas where individual work orders would need to be obtained and analysed estimates have been made as outlined below.

Source of information

Project information has been obtained from the following sources:

- Network Investment Options Reports
- Project Definitions
- Transmission line designs
- Post Commissioning Review Reports
- Ellipse

Methodology and assumptions

The methodology used to complete table 2.3.1 is outlined below:

- From the Finance group a list of all projects that had money spent from the 2008/2009 financial year to Feb 2014 was obtained for the purposes of the Regulatory Submission earlier in the year. This data was updated with more recent information from the Finance group. The information related to financial year end figures to 30th June 2014.
- From these projects, projects with minimal spend in the above period were removed
- For each of the remaining projects:
 - Actual costs for each of the projects by organisational unit broken into the categories “Labour, Materials, Contractors & Consultants, IT&T Expenses and Other Expenses” for each financial year from 2006/2007 to 30th June 2014 was obtained.
 - Actual costs for each of the projects separated into Labour, Materials etc. was obtained for the period 2000/01 to 2005/06. These costs were not available on an organisational unit basis and hence were separated using averages from the 2006/07 to June 2014 costs.
 - The organisational units were divided into six distinct categories, “Subs, Mains, Subs Civil, Distribution, Land and Projects” based on the organisational unit. The Projects category was required as often work for project is costed to the “Capital Projects” or “Major Projects” group which encompasses substations and mains works, it also includes outsourced work.
 - The number of transformers, switchgear (i.e. hv and lv circuit breakers, e.g. for a 132/11kV zone substation the number of 132kV and 11kV circuit breakers installed) and capacitor banks installed under the project and the actual costs for these plant items was obtained from Ellipse.
 - From the initial Project Definition a ratio of “Transmission Mains costs”, “Transmission mains civil costs”, “Substation civil costs” and “Substation costs” to the total costs of the project was obtained. Where one of these classes of costs was not available an estimate was made based on other projects of a similar nature. These ratios were used to divide the costs of the “Projects” category between table 2.3.1 and 2.3.2.
 - The costs for “Civil Works”, “Other Direct”, “Related Party Contracts” were calculated by apportioning actual costs based on the ratios calculated for the “Projects” type above between the table 2.3.1 and 2.3.2.

- For a limited number of projects the costs had to be subtracted from the “Related Party Contracts” column and added to “Other Plant Costs” to give positive costs for the “Other Plant Costs”. In these scenarios it is likely that the other plant was actually purchased under contracts and hence is in the “Contractors & Consultants” costs.

The costs have been indexed based on the multipliers below. This is consistent with the information provided in the Regulatory Submission:

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
CPI	0.015	0.045	0.044	0.030	0.028	0.023	0.027	0.035	0.0233
Index	1.452	1.390	1.331	1.293	1.258	1.229	1.197	1.156	1.130

	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
CPI	0.0435	0.0182	0.0285	0.0339	0.018	0.025	0.025	0.025	0.025
Index	1.083	1.063	1.034	1	0.983	0.993	0.983	0.993	0.983

	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
CPI	0.025	0.025	0.025	0.025	0.025	0.025
Index	0.993	0.983	0.993	0.983	0.993	0.983

It should be noted that the majority of projects have a substations and a mains component. The total project costs are the sum of the substations and mains component. If the costs from these tables are to be used to determine a \$/MVA for the costs a new zone substation then the costs from the substations component (Table 2.3.1) and the costs from the mains component (Table 2.3.2) have to be summated.

It should be noted that the following projects have been initiated predominantly due to a need to connect new customers (these include non-material projects as well):

Project Number	Project Number	Project Number	Project Number	Project Number
PR029	PR223	PR291	PR424	PR509
PR070	PR238	PR292	PR425	PR546
PR110	PR241	PR302	PR427	PR559
PR128	PR244	PR306	PR429	PR572
PR156	PR254	PR329	PR430	PR596
PR165	PR255	PR338	PR432	PR602
PR168	PR257	PR339	PR436	PR605
PR182	PR260	PR341	PR437	PR656
PR183	PR261	PR342	PR438	PR659
PR184	PR279	PR386	PR444	PR674
PR190	PR280	PR408	PR499	

Use of estimated information

Other Plant Item Expenditure

This value was calculated by subtracting total material costs (apportioned to the substations component) minus the costs for transformers, switchgear and capacitors. In some projects some costs from the “Contracts” component have been moved to the “Other Plant” costs as the plant may

have been procured under “Contracts”. This estimation method was required as it would have been too time consuming to go through individual project work orders to obtain the material costs for each “Other Plant Item”.

Installation (Labour) – Volume

For the periods 2006/07 to June 2014 volume of labour was readily available from the financing systems. For periods outside this the volume of labour has been estimated based on the average \$/hour of the period 2006/07 to June 2014. This labour volume is the labour for the whole project it includes volume for work outside of the installation of plant. This estimation method was required as it would have been too time consuming to go through individual project work orders to determine labour attributable to installation and labour that isn't.

Installation (Labour) – Expenditure

This value was calculated by adding costs from the “Labour” category. The breakdown of the “Projects” component has been estimated based on the initial Project Definition. This labour expenditure is the labour expenditure for the whole project (except for civil works) it includes volume for work outside of the installation of plant. The labour expenditure for 2014/15 and beyond have been adjusted for increases in labour costs above standard inflation rate. This estimation method was required as it would have been too time consuming to go through individual project work orders to determine labour attributable to installation and labour that isn't.

Other Expenditure - Civil Works

This value was calculated by adding costs from the “Subs civil” category and “Projects” category. The breakdown of the “Projects” component has been estimated based on the initial Project Definition. This estimation method was required as it would have been too time consuming to go through individual project work orders to obtain the material costs for each “Other Plant Item”.

Other Expenditure – Other Direct

This value was calculated by adding costs from the “Other Expenses” group, the breakdown of the “Projects” component has been estimated based on the initial Project Definition. This estimation method was required as it would have been too time consuming to go through individual project work orders to determine parts attributable to table 2.3.1 and 2.3.2.

All related party contracts – Total

This value was calculated by adding costs from the “Contractors and Consultants” group, the breakdown of the “Projects” component has been estimated based on the initial Project Definition. This estimation method was required as it would have been too time consuming to go through individual project work orders to determine parts attributable to table 2.3.1 and 2.3.2.

Reliability of information

The actual total costs (total costs from Table 2.3.1 and Table 2.3.2 summated for the project) for the projects are reliable as it is straight from Ellipse. The cost breakdowns between table 2.3.1 and 2.3.2 are estimates; these estimates are then applied to variables outlined above. The apportioning of costs associated incurred by the “Projects” group to the substation/mains component is based on initial estimates in the Project Definitions. The actual proportions may have changed depending on actual designs and unforeseen issues.

2.3.2 Augex asset data – Subtransmission lines

Compliance with requirements of the notice

The information provided on this work sheet is consistent with the requirements of this Notice. Where possible actual costs and values have been used, in areas where individual work orders would need to be obtained and analysed estimates have been made as outlined below.

Source of information

Project information has been obtained from the following sources:

- Network Investment Options Reports
- Project Definitions
- Transmission line designs
- Post Commissioning Review Reports
- Ellipse
- GIS

Methodology and assumptions

The methodology used to complete table 2.3.2 is outlined below:

- From the Finance group a list of all projects that had money spent from the 2008/2009 financial year to Feb 2014 was obtained for the purposes of the Regulatory Submission earlier in the year. This data was updated with more recent information from the Finance group. The information related to financial year end figures to 30th June 2014.
- From these projects, projects with minimal spend in the above period were removed
- For each of the remaining projects:
 - Actual costs for each of the projects by organisational unit broken into the categories “Labour, Materials, Contractors & Consultants, IT&T Expenses and Other Expenses” for each financial year from 2006/2007 to 30th June 2014 was obtained.
 - Actual costs for each of the projects separated into Labour, Materials etc. was obtained for the period 2000/01 to 2005/06. These costs were not available on an organisational unit basis and hence were separated using averages from the 2006/07 to June 2014 costs.
 - The organisational units were divided into six distinct categories, “Subs, Mains, Subs Civil, Distribution, Land and Projects” based on the organisational unit. The Projects category was required as often work for project is costed to the “Capital Projects” or “Major Projects” group which encompasses substations and mains works, it also includes outsourced work.
 - The number of poles/towers added, upgraded was obtained from the relevant transmission line design drawings. Where a pole was replaced it was counted as upgraded, where a new pole was installed it was counted as pole added.
 - The transmission line lengths were obtained from project definitions, transmission line drawings and the GIS system.
 - From the initial Project Definition a ratio of “Transmission Mains costs”, “Transmission mains civil costs”, “Substation civil costs” and “Substation costs” to the total costs of the project was obtained. Where one of these classes of costs was not available an estimate was made based on other projects of a similar nature. These ratios were used to divide the costs of the “Projects” category between table 2.3.1 and 2.3.2.
 - The costs for “Civil Works”, “Other Direct”, “Related Party Contracts” were calculated by apportioning actual costs based on the ratios calculated for the “Projects” type above between the table 2.3.1 and 2.3.2.
 - For a limited number of projects the costs had to be subtracted from the “Related Party Contracts” column and added to “Other Plant Costs” to give positive costs for

- the “Other Plant Costs”. In these scenarios it is likely that the other plant was actually purchased under contracts and hence is in the “Contractors & Consultants” costs.
- Where existing lines being operated originally at a lower voltage have been reused at a higher voltage without any reconductoring they have still been included in “Circuit km upgraded”

The costs have been indexed based on the multipliers below. This is consistent with the information provided in the Regulatory Submission:

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
CPI	0.015	0.045	0.044	0.030	0.028	0.023	0.027	0.035	0.0233
Index	1.452	1.390	1.331	1.293	1.258	1.229	1.197	1.156	1.130

	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
CPI	0.0435	0.0182	0.0285	0.0339	0.018	0.025	0.025	0.025	0.025
Index	1.083	1.063	1.034	1	0.983	0.993	0.983	0.993	0.983

	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
CPI	0.025	0.025	0.025	0.025	0.025	0.025
Index	0.993	0.983	0.993	0.983	0.993	0.983

It should be noted that the majority of projects have a substations and a mains component. The total project cost is the sum of the substations and mains component. If the costs from these tables are to be used to determine a \$/MVA for the costs a new zone substation then the costs from the substations component (Table 2.3.1) and the costs from the mains component (Table 2.3.2) have to be summated.

It should be noted that the following projects have been initiated predominantly due to a need to connect new customers (these include non-material projects as well):

Project Number	Project Number	Project Number	Project Number
PR029	PR190	PR339	PR499
PR070	PR244	PR342	PR521
PR110	PR255	PR425	PR596
PR165	PR261	PR427	PR656
PR182	PR280	PR429	PR674
PR183	PR292	PR444	

Specifically in relation to Schedule 2 instruction 7.3(p) for Table 2.3.2, Endeavour Energy does not record easements as a separate project line item. Endeavour Energy does not acquire land for sub-transmission lines, its policy is to only acquire easements. Land and Easements are itemised as separate expenses within a project.

Use of estimated information

Poles/Towers – Expenditure

A standard rate has been assumed for the pole costs based on the most common pole type used which has then been multiplied by the number of poles added and upgraded. This estimation

method was required as it would have been too time consuming to go through individual project work orders to obtain the material costs for each pole.

Overhead Lines/Underground Cables – Expenditure

A per km rate for material for the standard types of conductors/cables was obtained from the Transmission Mains group. The type of conductor/cable was determined from transmission line drawings/network characteristics document. The standard material rate was applied to the transmission line to calculate the material costs. This estimation method was required as it would have been too time consuming to go through individual project work orders to obtain the material costs for each conductor/cable.

Other Plant Item – Expenditure

This value was calculated by subtracting total material costs (apportioned to the mains component) minus the costs for poles, conductors and cables. In some projects some costs from the “Contracts” component have been moved to the “Other Plant” costs as the plant may have been procured under “Contracts”. This estimation method was required as it would have been too time consuming to go through individual project work orders to obtain the material costs for each “Other Plant Item”.

Installation (Labour) – Volume

For the periods 2006/07 to June 2014 volume of labour was readily available from the financing systems. For periods outside this the volume of labour has been estimated based on the average \$/hour of the period 2006/07 to June 2014. This labour volume is the labour for the whole project it includes volume for work outside of the installation of plant. This estimation method was required as it would have been too time consuming to go through individual project work orders to determine labour attributable to installation and labour that isn't.

Installation (Labour) – Expenditure

This value was calculated by adding costs from the “Labour” category. The breakdown of the “Projects” component has been estimated based on the initial Project Definition. This labour expenditure is the labour expenditure for the whole project (except for civil works) it includes volume for work outside of the installation of plant. The labour expenditure for 2014/15 and beyond have been adjusted for increases in labour costs above standard inflation rate. This estimation method was required as it would have been too time consuming to go through individual project work orders to determine labour attributable to installation and labour that isn't.

Other Expenditure - Civil Works

This value was calculated by adding costs from the “Subs civil” category and “Projects” category. The breakdown of the “Projects” component has been estimated based on the initial Project Definition. This estimation method was required as it would have been too time consuming to go through individual project work orders to obtain the material costs for each “Other Plant Item”.

Other Expenditure – Other Direct

This value was calculated by adding costs from the “Other Expenses” group, the breakdown of the “Projects” component has been estimated based on the initial Project Definition. This estimation method was required as it would have been too time consuming to go through individual project work orders to determine parts attributable to table 2.3.1 and 2.3.2.

All related party contracts – Total

This value was calculated by adding costs from the “Contactors and Consultants” group, the breakdown of the “Projects” component has been estimated based on the initial Project Definition. This estimation method was required as it would have been too time consuming to go through individual project work orders to determine parts attributable to table 2.3.1 and 2.3.2.

Reliability of information

The actual total costs (total costs from Table 2.3.1 and Table 2.3.2 summated for the project) for the projects are reliable as it is straight from Ellipse. The cost breakdowns between table 2.3.1 and 2.3.2 are estimates; these estimates are then applied to variables outlined above. The apportioning of costs associated incurred by the “Projects” group to the substation/mains component is based on initial estimates in the Project Definitions. The actual proportions may have changed depending on actual designs and unforeseen issues.

2.3.3 Augex asset data – HV/LV feeders and distribution substations

Compliance with requirements of the notice

This section is intended to demonstrate how the information provided is consistent with the requirements of this notice.

Table 2.3.3.1 displays the following over the 2013/14 period:

- The quantum of assets added in the HV feeder category (both underground and overhead)
- The quantum of assets added in the LV Feeder category (both overhead and underground)
- The quantum of assets added in the Distribution substation category (indoor, Ground and Pole mounted)
- The quantum of assets upgraded in the HV feeder category (both underground and overhead)
- The quantum of assets upgraded in the LV Feeder category (both overhead and underground)
- The quantum of assets upgraded in the Distribution substation category (indoor, Ground and Pole mounted)

Table 2.3.3.2 displays the total costs of the above activities for the 2013/14 financial year.

Source of information

Expenditure information for the projects associated with tables 2.3.3.1 & 2.3.3.2 has been sourced from Ellipse.

HV feeder project cost information was obtained from the financial data contained within the Ellipse system associated with the distribution projects that were completed within the 2013/14 financial year. It includes costs for those items that were contracted to external accredited designers and constructors. The asset length data for Table 2.3.3.1, was calculated by applying suitable unit rates to the costs incurred by the projects in the 2013/14 year.

Distribution Substation and LV feeder information was also obtained from the Ellipse database from the following categories;

LV001 – Overloaded distribution Substation uprates: Captures costs associated with upgrades to distribution substation transformers based on maximum demand readings

LV002 – Quality of supply reactive projects: Captures costs associated with responding to customer complaints about low volts, frequent loss of supply due to LV overloads and overvoltage issues. Rectification may involve the installation or upgrade of distribution substations and LV overhead and underground feeders.

LV003 – Quality of Supply planned projects: This is reserved for when transformers are not able to be upgraded in LV001 due to capacity constraints and a new substation at another location needs to be established. The scope of work may include installing new pole mount or ground mount subs and new LV overhead or underground feeders.

LV004 – Low voltage system augmentation: This is used to augment mainly LV overhead feeders, for example upgrading undersized LV conductors due to overloading or voltage drop issues.

It should be noted that Tables 2.3.3.1 and 2.3.3.2 do not contain expenditure and quantities relating to network augments or upgrades associated with customer connections.

Methodology and assumptions

The financial details and the calculated length data was gathered on a project to project basis for HV feeders. The project description from the Distribution Works Program was used to categorise the individual projects into categories that allowed for input into the “Units Added” and Units Upgraded” in table 2.3.3.1. The costs associated with these activities were brought together in table 2.3.3.2. Note all projects have been included irrespective of whether they are above or below \$500,000.

For distribution transformers and LV feeders, the costs associated with each category (LV001 – 004) were allocated to the following 5 categories by applying the historical ratios for the split of expenditure as shown by the following formulae. The lengths/quantities, were calculated using typical per unit rates and applying them to the expenditure in each of the 5 categories.

(i)	LV feeder augmentations - overhead lines:	$D+(B+C)*0.1$
(ii)	LV feeder augmentations - underground cables:	$(B+C)*0.4$
(iii)	Distribution substation augmentations - pole mounted (\$000's) :	$0.54*(A+(B+C)*0.4)$
(iv)	Distribution substation augmentations - ground mounted (\$000's):	$0.44*(A+(B+C)*0.4)$
(v)	Distribution substation augmentations - indoor (\$000's):	$0.02*(A+(B+C)*0.4)$

And, LV feeder non-material projects: $T - [(i)+(ii)+(iii)+(iv)+(v)]$

where:

A=LV001, B=LV002, C=LV003, D=LV004, T=A+B+C+D

Use of estimated information

Apart from the assumptions mentioned above, no other estimated information was used in this section.

Reliability of information

The base data presented in Table 2.3.3 is resident in Endeavour Energy’s Ellipse system which provides both financial tracking and project lists. Detailed analysis of the project lists within the Distribution Works Program were also utilised to provide more detailed understanding of the work undertaken, this was used to assign a work category.

The data is therefore considered to be reliable.

2.3.4 Augex asset data – total expenditure

Compliance with requirements of the notice

The information is obtained from the available data in Endeavour Energy.

Source of information

The financial information was sourced from the Ellipse database.

Methodology and assumptions

The expenditure for the following rows was derived as follows:

- Subtransmission Substations, Switching Stations, Zone Substations: The basis of preparation for table 2.3.1 allocated expenditure according to substations or lines. All expenditure occurring in 2013/14 for the substations category was summated from the same worksheet used to derive data for table 2.3.1.
- Subtransmission Lines: The basis of preparation for table 2.3.1 allocated expenditure according to substations or lines. All expenditure occurring in 2013/14 for the subtransmission lines category was summated from the same worksheet used to derive data for table 2.3.1.
- HV Feeders: From table 2.3.3.2
- HV Feeders - Land Purchases and Easements: No land purchase cost captured as most HV feeders are on State land or on road reserves.
- Distribution Substations: From table 2.3.3.2
- Distribution Substations - Land Purchases and Easements: Cost is estimated only for any added ground substations that require land easement. Not required for pole mount or indoor substation.
- LV Feeders: From table 2.3.3.2
- LV Feeders - Land Purchases and Easements: No land purchase cost captured as most LV feeders are on State land or on road reserves.
- Other Assets; Nil

Use of estimated information

A land purchase and easement cost is paid only for newly added ground mount substation. It is very time consuming to search the individual cost of these easements, thus an estimate cost of \$12,000(includes land purchase, survey and legal cost) was used for each ground mount substation added as shown in Table 2.3.3.2. An estimated cost was provided by the Network Property section.

Reliability of information

The information is based on input from other tables.

Worksheet 2.5 – Connections

2.5.1 Connections metrics

Compliance with requirements of the notice

The data provided in this section seeks to address the requirements of the Regulatory Information Notice. Where the data is readily available, actual data has been used to complete template 2.5.1. In other instances, data has been derived from actual data and for the remainder, data has been estimated/calculated based on a number of known parameters.

Source of information

Data has been obtained from a number of internal sources as outlined below;

- Finance and Compliance Division – Ellipse (general ledger, fixed asset register) and Banner (customer data).
- People and Service Division – customer complaint information.
- Network Connections Branch – Customer connection, NOSW information and SAMP 10 year forecast of lots serviced.

Methodology and assumptions

The data held by the Company did not in all cases align with the data breakout as required by the reporting template. As a result it was necessary to cross match and supplement base data with actual data available from other Company systems.

The data used in the completion of the template were as follows;

- Actual customer numbers by class
- Fixed asset register and general ledger for financial details by class
- Customer Application Management System (CAMS) for validation of transformer numbers and size
- Asset Valuation Sheet (AVS) used for the estimation of UG and OH circuit lengths
- Actual volume of customer complaint relating to Connection Services. There is no further requirement to report GSL breaches and payments.
- March 2014 Notification of Service Work (NOSW) Endeavour Energy form number FPJ4503, sample used to determine connection types, customer proportions and connection methodology. This data was used to assist in proportioning the connections between residential and subdivision and as a subset the embedded generator connections that occur to an existing network connection.
- Developed estimation ratios for each connection class and type to fill template requirements
- Financial Report actuals
- Strategic Asset Management Plan (SAMP) 10 year financial data
- SAMP 10 year Lot forecast

Use of estimated information

Endeavour Energy has used estimated information for the following elements of the template;

- The split of OH and UG connections for each of the Connection Subcategories in Template 2.5.1
 - The circuit km added to the network for each of the Connection Subcategories in Template 2.5.1
- An estimate was required for the above reporting elements because actual data was not available from Company records.

- The basis for the estimates is outlined below;
 - a) Split of OH and UG connections – This estimation was applied to connections in the Residential, Commercial/Industrial and Subdivision categories of template 2.5.1. Whilst historical customer data was maintained by the Company in the three major reporting categories it did not naturally break into overhead and underground connections. The Embedded Generation category also needed to be addressed for connection type. A sample of NOSW forms for March 2014 was analysed to determine the connection methodology and type of connection being made. From this analysis, assumptions were developed and applied to the actual data provided in the customer numbers document. These numbers were then included in the reporting template. The process applied used the year on year customer number change, split the numbers into the required categories and then applied the proportion of the OH and UG connection split.
 - b) Circuit km added to the network – The Company did not have available the data that would allow the ready completion of the template for these categories for HV and LV connection. Financial data was available from the financial reports, for both overhead and underground connections, however, route length was not available. To derive these lengths, the current Asset Valuation Sheet (AVS) was used to develop typical costs for standard construction types per km for both HV and LV overhead and underground installations. Indexation is not applied to these costs. The financial data from the AVS was then used to derive route lengths for each connection type. The 2012-13 AVS data was used to calculate the 2013 / 2014 year's conductor length data.
 - c) The 2013 /2014 financial data has been used and applied through the established relational factors to complete the base descriptor metrics for the 2013 / 2014 reporting period only. There have been no changes to the forward estimates based on the 2013 / 2014 actual data.
 - d) Cost per Lot has been obtained by calculation using the SAMP financial data and the lot numbers included in the SAMP 10 year lot forecast.

Reliability of information

The core data used in the calculated value for 2013 / 2014 was Company data that had a high level of integrity. The estimation process outlined in (a), (b) (c) and (d) is technically sound and when applied to the core data has produced acceptable results.

The forward estimate data has been calculated using forward financial data as a basis for determining the means of estimating the forward descriptor metrics. The estimation method is sound and verifiable. There have been no changes to forward descriptor metrics in this report. The report includes actual details for the 2013 / 2014 period only.

Information Not Included in the Template

The following information has not been included in the template;

- **Residential – Mean Days to Connect Residential Customer with LV single phase connection**

The Company does not maintain records of the length of time negotiated or accomplished by a Level 2 Accredited Service Provider in completing the Connection Service arranged with their individual customers. The Company has no involvement in the allocation or monitoring of work completion by Level 2 Accredited Service Providers.

- **Embedded Generation – Distribution Substations and Circuit Augmentation**

Small scale embedded generation systems connected to the network are required to first be a retail customer and have an installation which is already connected to the network. As a result load related matters are dealt with during the load connection process. There are no available Company records that indicate that any distribution substations have been added to the network or circuit augmentation required to facilitate the connection of a small scale embedded generator.

The numbers included in the templates for embedded generator connections are not considered as additional new customers connecting to the network. They therefore are not included in the connection data by Connection Subcategory – Residential, Industrial / Commercial or Subdivision. The data provided in the Actual customer numbers by class document, has a line item for the increase in the number of solar connections. This number was used as the basis to apply the connection ratio to determine the number of OH and UG connections.

The numbers quoted are stand alone based on the connection requirements outlined in paragraph 1 of this reporting item.

2.5.2 Cost metrics by connection classification

Compliance with requirements of the notice

The 2013/14 data provided in this section is based on the core data used to respond to the requirements for template 2.5.1. The data for this template is a restatement of the data provided in the previous template with a focus in this instance on the connection methodology defined in Appendix F.

Source of information

Data has been obtained from a number of internal sources as outlined below;

- Finance and Compliance Division – Ellipse (general ledger, fixed asset register) and Banner (customer data).
- People and Service Division – customer complaint information.
- Network Connections Branch – Customer connection and NOSW information.

The data included in template 2.5.1 using the above sources has been used to complete the relevant parts of template 2.5.2. For example, the number of simple residential connections included in table 2.5.2 for 2013-14 is the sum of the OH and UG connections from line number 1 and 2 of the residential category in table 2.5.1.

Methodology and assumptions

The data held by the Company did not align with the data breakout as required by the reporting template. As a result it was necessary to cross match and supplement base data with other actual data available from other Company systems. Where data was not readily available from historical records, required template information was derived from actual data and current information obtained from analysis and review of available information.

The assumptions used in the completion of this template are as follows;

- **Residential** – All residential connections are simple connections to existing LV infrastructure allowing connection of up to 100 amps single phase or 63 amps three phase.
- **Commercial / Industrial** – All commercial / industrial connections are complex, customers are connected at LV and there is some upstream network works required.
- **Subdivision** – All subdivision connections are complex with HV extension to the network to allow connections to be completed at LV to developed infrastructure.
- **Embedded Generation** – All embedded generation less than 5kW single phase is a simple connection made to an existing network connection for the residential load at the connected premises.

Use of estimated information

The completion of this template has been based on information contained in template 2.5.1. The data used are actual values based on the source data provided by groups listed under the heading "Source of Information".

There have been no changes to the forward estimates contained in template 2.5.1 to reflect 2013/2014 actuals. The basis for calculation of the base data is outlined in 2.5.1 - **Use of estimated information** part (c) and (d)

Reliability of information

The data used to complete the template is based on actual data and has a high level of integrity and reliability.

Worksheet 2.6 – Non-network

2.6.1 Non-network expenditure

Service Subcategory

IT and Communications

Compliance with requirements of the notice

The data presented in the tables contained in table 2.6.1 is consistent with the definition of Non-network IT and Communications Expenditure per the RIN definitions contained in Appendix F. In particular:

- The data presented in table 2.6.1 reflects IT & Communications opex and capex expenditure. The data is reported by Asset Category in accordance with the RIN definitions contained in Appendix F.
- The non-network IT & Communications opex and capex listed in table 2.6.1 is all non-network expenditure directly attributable to IT and communications assets including replacement, installation, operation, maintenance, licensing, and leasing costs but excluding all costs associated with SCADA and Network Control Expenditure that exist beyond gateway devices (routers, bridges etc.) at corporate offices.
- The opex data presented in tables 2.6.1 represents the total operating expenditure including labour, overtime, plant, materials, maintenance, other contractors, professional services and other operating expenses pertaining to all non-network IT & Communications expenditure. Further, Maintenance includes Computer Expenses (expense element 3600), Telephone-Land Line Lse/Purch/Call Chrgs (expense element 3610), Telephone-Employee Rembrs Call Chrg/Rent (expense element 3615) and Telephone-Mobile Phone Lse/Purch/Call Chr (3616).
- The Capex data presented in tables 2.6.1 represents the total operating expenditure including labour, overtime, plant, materials, maintenance, other contractors, professional services and other operating expenses pertaining to all non-network IT & Communications expenditure.
- The non-network IT & Communications opex and capex in table 2.6.1 is directly attributable to this expenditure category in this regulatory template. For the purposes of table 2.6.1 we have reported all capex and/or opex as Direct Costs as required, irrespective of them also being classified as Corporate Overheads or Network Overheads or other capex or opex categories.

Source of information

The information used to populate the tables contained in section 2.6.1 was extracted directly from TM1. Endeavour Energy uses this OLAP tool for various purposes including budgeting and forecasting, monthly reporting and regulatory account allocations and it has been used historically to provide data for previous audited RINs. It is a cube based technology which allows rules to be created between cubes and within cubes.

Set out in the table below are the specific cubes used to obtain the required information for the tables in section 2.6.1, along with a description in relation to the use of the cube by Endeavour Energy:

Table	TM1 Cube	Description
2.6.1	PNL cube	The PNL cube contains General ledger information sourced from Ellipse (GL system) based on Endeavour's chart of accounts.
2.6.1	Project Reporting cube	The Project Reporting cube contains General ledger information sourced from SQL server database which is extracted nightly from Ellipse (GL System).

In addition, information from Work orders was utilised in section 2.6.1 which is extracted directly from MS Access query against the SQL server database which is extracted nightly from Ellipse. Query is run on parameters specified to extract the data.

Methodology and Assumptions

The following table sets out the methodology applied to calculate the required data for the IT and Communications sections in table 2.6.1:

Table	Methodology	Assumptions
2.6.1 (opex)	<ol style="list-style-type: none"> 1. Extract IT & Communications Opex data from the TM1 PNL cube for Information Communication & Technology Division. 2. Extract IT & Communications Maintenance data from the TM1 PNL cube for all Divisions (excluding Information Communication & Technology Division). 3. Extract Work order data from MS Access query, parameters org unit I350 ICT Contracts & Commercial, Maintenance expense elements. Balance to extract of TM1 PNL cube for org unit I350, Maintenance category. 4. Extract data from TM1 cube Project Reporting to identify Retail Sale Labour Costs included in Information Communication & Technology Division Labour category. 5. Asset category allocation of above data based on RIN definitions. 6. Reconcile Asset Category to TM1 PNL cube data extracted above. 	<ul style="list-style-type: none"> • Table 2.6.1 reflects historic opex figures stated in nominal dollars

Table	Methodology	Assumptions
	<p>7. Identify subcategory SCADA and Network Control from Work order data extract above and exclude for IT & Communications Asset Categories Client Device, Recurrent and Non-Recurrent expenditure as have individual subcategory.</p> <p>8. Extract standard control only component by calculating the average opex standard control % of each branch associated with these non-network categories</p>	
2.6.1 (capex)	<p>1. Extract Capital Expenditure data from the TM1 PNL cube for all Org Units across Endeavour coded to IT Capex Sub-Activities:</p> <ul style="list-style-type: none"> • WD – WIP – IT&T Hardware • WE – WIP – IT&T Software • WF – WIP – IT&T Infrastructure <p>2. Extract data from TM1 cube Project Reporting against above Sub-Activities and allocate asset category against projects per RIN definition.</p> <p>3. Extract standard control only component by reconciling to annual RINs</p>	<ul style="list-style-type: none"> • Re-current refers to capital expenditures to Maintain Capability; example includes: applications and server refresh. • Non re-current refers to capital expenditures to Develop New Capabilities and New business enabling technologies, examples include: Transformation, Strategic Re-engineering, Process Re-engineering, CRM, Mobility and AMI. • Table 2.6.1 reflects historic opex figures stated in nominal dollars

Use of estimated information

While Endeavour Energy made an assumption in order to allocate the IT and Communications expenditure into the Asset Categories in the RIN templates, the opex and capex in table 2.6.1 reconciles to the annual RIN (as outlined above), it has not used estimated Information as provided in the definitions with the Regulatory Information Notice.

Reliability of information

All historical information provided represents Actual Information extracted from Endeavour Energy's reporting systems and reconciles to all reported IT and Communications opex and capex figures in the annual RIN however assumptions were made in order to classify the data into Asset Categories. As a result, the information contained in the tables in section 2.6.1 is considered to be reliable.

2.6.1: Non Network Expenditure

Service Subcategory

Motor Vehicles

Compliance with requirements of the notice

The data presented in the tables contained in table 2.6.1 is consistent with the definition of Motor Vehicles Expenditure per the RIN definitions contained in Appendix F. In particular:

- The Opex data presented in tables 2.6 represents the total operating expenditure including leasing, fuel, registration, CTP insurance, self-insurance, inspections, labour, materials, maintenance, contractor and other operating expenses pertaining to all Motor Vehicle expenditure.
- The Capex data presented in tables 2.6 represents the total capital expenditure pertaining to all Motor Vehicle expenditure including procurement of motor vehicles, labour, materials and major overhaul costs.
- The non-network Motor vehicle opex and capex in table 2.6.1 is directly attributable to this expenditure category in this regulatory template. For the purposes of table 2.6.1 we have reported all capex and/or opex as Direct Costs as required, irrespective of them also being classified as Corporate Overheads or Network Overheads or other capex or opex categories.

Source of information

The information used to populate the tables contained in section 2.6.1 was extracted directly from TM1. Endeavour Energy uses this OLAP tool for various purposes including budgeting and forecasting, monthly reporting and regulatory account allocations and it has been used historically to provide data for previous audited RINs. It is a cube based technology which allows rules to be created between cubes and within cubes.

Table	TM1 Cube	Description
2.6.1	PNL cube	The PNL cube contains General ledger information sourced from Ellipse (GL system) based on Endeavour's chart of accounts.

In addition, information was also sourced from:

- The Ellipse Equipment register was utilised in section 2.6.1 which was utilised to extract vehicle numbers and is extracted directly from MS Access query against the SQL server database which is extracted nightly from Ellipse. Query is run on parameters specified to extract the data; and
- Fuel reports provided by suppliers were utilised to calculate kilometres travelled

Methodology and Assumptions

The following table sets out the methodology applied to calculate the required data for the motor vehicles sections in table 2.6.1:

Table	Methodology	Assumptions
2.6.1 (opex)	1. The Opex data presented in table 2.6.1 was sourced from TM1 through the Fleet org units below which contain all motor vehicle expenditure.	<ul style="list-style-type: none">• Motor vehicle leasing, fuel, registration and CTP insurance costs by vehicle type have been maintained since Endeavour started

Table	Methodology	Assumptions
	<ul style="list-style-type: none"> • S750 – Fleet Management • S751 – Fleet Operations • S752 - Vehicle Workshops • S753 – Fabrication Workshops <p>2. Historical data for 2013/14 is based on actuals in TM1</p>	<p>leasing vehicles in December 2009, thus allowing the classification of costs.</p> <ul style="list-style-type: none"> • Fleet Labour, materials, contractors and other costs are not captured by vehicle type hence was apportioned based on advice from the Fleet manager.
2.6.1 (capex)	<p>1. The Capex data presented in table 2.6.1 was sourced from TM1 through org unit S350 – Fleet Capital</p> <p>2. Historical data for 2013/14 is based on actuals in TM1.</p>	

Use of estimated information

The opex and capex in table 2.6.1 reconciles to the annual RIN (as outlined above), it has not used estimated Information as provided in the definitions with the Regulatory Information Notice.

Reliability of information

All historical information provided represents Actual Information extracted from Endeavour Energy's reporting systems, however assumptions were made in order to classify the data into Asset Categories. As a result, the information contained in the tables in section 2.6.1 is considered to be reliable.

2.6.1: Non Network Expenditure

Service Subcategory

Buildings & Property

Compliance with requirements of the notice

The data related to buildings and property expenditure presented in table 2.6.1 is consistent with the requirements of the Category Analysis RIN. In particular:

- The opex and capex reported relates to expenditure directly attributable to non-network buildings and property assets including the replacement, installation, operation and maintenance of non-network buildings, fittings and fixtures. It includes expenditure related to real chattels (e.g. interests in land such as a lease) but excludes expenditure related personal chattels (e.g. furniture) that is reported under non-network other expenditure.
- The opex and capex reported represents total expenditure including labour, plant, property, taxes, materials, maintenance, contractor and other expenses pertaining to all non-network building and property expenditure;
- The opex and capex reported in table 2.6.1 is directly attributable to this expenditure category in this regulatory template. For the purposes of table 2.6.1, Endeavour Energy have reported all capex and/or opex as *Direct Costs* as required, irrespective of them also being classified as *Corporate Overheads* or *Network Overheads* or other capex or opex categories.

Source of information

Opex

Buildings and property opex data in table 2.6.1 was extracted directly from TM1. Endeavour Energy uses this OLAP tool for various purposes including budgeting and forecasting, monthly reporting and regulatory account allocations and it has been used historically to provide data for previous audited Regulatory Accounts / RINs. It is a cube based technology which allows rules to be created between cubes and within cubes.

Table	TM1 Cube	Description
2.6.1	PNL cube	The PNL cube contains General ledger information sourced from Ellipse (GL system) based on Endeavour's chart of accounts.

Capex

The information used to populate buildings and property capex data in table 2.6.1 was extracted directly from Endeavour Energy's general ledger (Ellipse). All non-system capex transactions for the financial year were extracted directly from Ellipse through the use of linked access database.

Methodology and Assumptions

The following table sets out the methodology applied to calculate the required data for non-network buildings and property expenditure reported in table 2.6.1:

Table	Methodology	Assumptions
2.6.1 (opex)	1. The Opex data presented in table 2.6 was sourced from TM1 through the Property Services org units below which contain all the non-network buildings and property	

Table	Methodology	Assumptions
	<p>expenditure</p> <ul style="list-style-type: none"> • S200 - Facilities, Business & Information Support • S220 - Facilities Support - FSC • S230 - Facilities Support - Office Accommodation • S500 - Security Management • S510 - Security Locking • S210 - Property Portfolio Management • S300 - Fleet & Property Management <p>2. Only 50% of S300 costs were allocated to Buildings & Property expenditure as this org unit contains the Property & Fleet branch management costs which are split between Property & Fleet.</p> <p>3. Historical data for 2013/14 is based on actuals in TM1.</p>	
2.6.1 (capex)	<ol style="list-style-type: none"> 1. All non-system capex transactions for the financial year were extracted from the general ledger through an access database query (all activity 92 transactions); 2. Those transactions relating to non-network buildings and property expenditure were identified via the sub-activity assigned to the transaction. Endeavour Energy uses sub-activity WC to identify expenditure on non-network buildings and property; 3. The standard control component of each transaction was identified by applying asset allocation drivers used in the preparation of the Annual RIN; 4. The total standard control component of non-network buildings and property was calculated and reported in table 2.6.1. It should be noted that the non-network buildings and property capex reported in table 2.6.1 reconciles to the non-network buildings and property capex reported in the Annual RIN. 	None.

Use of estimated information

Endeavour Energy has not used Estimated Information, as defined in the RIN Instructions & Definitions, in reporting buildings and property expenditure in table 2.6.1.

Reliability of information

All information provided represents Actual Information extracted from Endeavour Energy's reporting systems and reconciles to non-network building and property expenditure reported in the Annual RIN. As a result, the buildings and property expenditure reported in table 2.6.1 is considered to be reliable.

2.6.1: Non Network Expenditure

Service Subcategory

Other

Compliance with requirements of the notice

The data related to other non-network expenditure presented in table 2.6.1 is consistent with the requirements of the Category Analysis RIN. In particular:

- The opex and capex reported relates to expenditure directly attributable to the replacement, installation, maintenance and operation of non-network assets, excluding Motor Vehicle assets, Building and Property assets and IT and Communications assets and includes:
 - non road registered motor vehicles; non road motor vehicles (e.g. forklifts, boats etc.);
 - mobile plant and equipment; tools; trailers (road registered or not);
 - elevating work platforms not permanently mounted on motor vehicles; and
 - mobile generators.
- The opex and capex reported represents total expenditure including labour, plant, property, taxes, materials, maintenance, contractor and other expenses pertaining to all non-network building and property expenditure;
- The opex and capex reported in table 2.6.1 is directly attributable to this expenditure category in this regulatory template. For the purposes of table 2.6.1, Endeavour Energy have reported all capex and/or opex as *Direct Costs* as required, irrespective of them also being classified as *Corporate Overheads* or *Network Overheads* or other capex or opex categories.

Source of information

Opex

Endeavour Energy has not identified any opex incurred during the financial year which meets the definition of non-network other expenditure.

Capex

The information used to populate non-network other capex data in table 2.6.1 was extracted directly from Endeavour Energy's general ledger (Ellipse). All non-system capex transactions for the financial year were extracted directly from Ellipse through the use of linked access database.

Methodology and Assumptions

The following table sets out the methodology applied to calculate the required data for non-network other expenditure reported in table 2.6.1:

Table	Methodology	Assumptions
2.6.1 (capex)	<ol style="list-style-type: none">1. All non-system capex transactions for the financial year were extracted from the general ledger through an access database query (all activity 92 transactions);2. Those transactions relating to non-network other expenditure were identified	None.

Table	Methodology	Assumptions
	<p>via the sub-activity assigned to the transaction. Endeavour Energy uses sub-activity WG to identify expenditure on furniture fittings, plant and equipment and WH to identify expenditure on motor vehicles (a subset of which meets the definition of non-network other expenditure);</p> <p>3. For the non-system capex expenditure on motor vehicles, those transactions relating to non road registered motor vehicles, non road motor vehicles (e.g. forklifts, boats etc.) and mobile plant and equipment were identified. This was performed using the assigned asset class for unregistered plant and information provided by Fleet in relation to the type of equipment purchased (i.e. bobcats, trailers etc);</p> <p>4. The standard control component of each transaction was identified by applying asset allocation drivers used in the preparation of the Annual RIN;</p> <p>5. The total standard control component of non-network other capex was calculated and reported in table 2.6.1.</p>	

Use of estimated information

Endeavour Energy has not used Estimated Information, as defined in the RIN Instructions & Definitions, in reporting non-network other expenditure in table 2.6.1.

Reliability of information

All information provided represents Actual Information extracted from Endeavour Energy's reporting systems and reconciles to total non-network expenditure reported in the Annual RIN. As a result, the non-network other expenditure reported in table 2.6.1 is considered to be reliable.

2.6.2: Non Network Expenditure

Service Subcategory

IT and communications expenditure

Compliance with requirements of the notice

The data presented in the tables contained in table 2.6.2 is consistent with the definition of Non-network IT and communications expenditure per the RIN definitions contained in Appendix F. In particular:

- The *Non-network IT & Communication - user numbers* are the active IT system log in accounts used for regulated purposes and the *Non-network IT & Communications – device numbers* are the number of client devices used to provide regulated services. Client Devices are hardware devices that accesses services made available by a server and may include desktop computers, laptops, tablets and thin client interfaces and handheld end user computing devices including smart phones, tablets and laptops.

Source of information

The information used to populate the tables contained in section 2.6.2 financials was extracted directly from TM1. Endeavour Energy uses this OLAP tool for various purposes including budgeting and forecasting, monthly reporting and regulatory account allocations and it has been used historically to provide data for previous audited RINs. It is a cube based technology which allows rules to be created between cubes and within cubes.

Table	TM1 Cube	Description
2.6.2	Labour Info cube	The PNL cube contains Staff Details and FTE/Headcount.
2.6.2	Reg Accounts cube	The Reg Accounts cube provides financials for Reg period.
2.6.2	AER Dollars by Account cube	The AER Dollars by Account cube provides financials for forecast AER period.

Set out in the table below are the specific reports used to obtain the required information for section 2.6.2:

Table	Descriptor Metrics	Description / Source
2.6.2	Employee Numbers	Historic – monthly headcount staff listing as agreed with Human Resources on a monthly basis.
2.6.2	User Numbers	CGI Active Directory Listing
2.6.2	Number of Devices	CGI Billing report Schedule U – total desktop & laptops Optus & Telstra Billing Summary report – total PDA's Capital transaction report Workorder specific – Total Tablets

To proportion metrics to regulated services, historic Standard Control % for PC/Devices was sourced from Regulatory Accounts.

Methodology and assumptions

The following table sets out the methodology applied to calculate the required data for the building and property expenditure sections in table 2.6.2:

Table	Methodology	Assumptions
2.6.2	<ol style="list-style-type: none"> Employee Numbers extracted from Monthly Headcount Staff Listing Report for historic data. Standard Control % extracted from TM1 cube Reg Accounts Apply extracted Standard Control % against Employee Numbers for regulated data. 	<ul style="list-style-type: none"> Employee Numbers are headcount numbers at June for each year. Headcount numbers provide a better comparison for user and device numbers. Standard Control % allocation sourced from Reg Accounts and AER cubes for Endeavour Energy, Labour category for each year.
2.6.2	<ol style="list-style-type: none"> User Numbers for 2013/14 actuals extracted from CGI Active Directory Listing (@ August 2014). Apply extracted Standard Control % allocation against User Numbers for regulated data. 	<ul style="list-style-type: none"> CGI Active Directory Listing lists every active account at the present time, Endeavour, CGI, Optus and any other third party who needs to have access to our systems. Periodically this list is reviewed and updated and access is removed for employees who have left the organisation, contractors who no longer need to have access etc. Standard Control % allocation sourced from Annual RIN
2.6.2	<ol style="list-style-type: none"> Device Numbers (excluding PDA's) extracted from CGI Billing report Schedule U – total desktop & laptops for historic data. Device Numbers (PDA only) extracted from Optus and Telstra Billing reports for historic data. Device Numbers (Tablets only) extracted from capital expenditure report for historical data. Apply extracted Standard Control % against Device Numbers for regulated data. 	<p>CGI Billing Report, Schedule U provides number of desktops and laptops. Utilised CSI Billing Report for June.</p> <ul style="list-style-type: none"> Optus and Telstra billing report for June provides the number of PDA's. Capital expenditure report for 2013/14, extracted from access database (Ellipse connector script), with total for workorder 04021137 for Del Tablet 7130 utilised for 2013/14 Actuals. Standard Control % allocation sourced from the Annual RIN

Use of estimated information

Endeavour Energy has not used Estimated information, as defined in the RIN Instructions & Definitions in reporting expenditure in table 2.6.3.

Reliability of information

All historical information provided represents Actual Information extracted from Endeavour Energy's reporting systems. As a result, the information contained in the tables in section 2.6.1 is considered to be reliable.

2.6.3: Non Network Expenditure

Service Subcategory

Motor vehicles expenditure

Compliance with requirements of the notice

The data presented in table 2.6.3 is consistent with the definitions of Motor Vehicle Descriptor Metrics per the RIN definitions contained in Appendix F.

Source of information

The information used to populate the tables contained in section 2.6.3 was extracted from internal Fleet management reports and is consistent with other benchmarking figures provided to Networks NSW. Fleet Service Provider reports were also utilised to extract average kilometres travelled.

Methodology and assumptions

The following table sets out the methodology applied to calculate the required data for the Annual Descriptor metrics for motor vehicles in table 2.6.3:

Table	Methodology	Assumptions
2.6.3	<ol style="list-style-type: none">Average kilometres travelled were derived from Fuel reports provided by leasing companies (Fleet-Plus & SG Fleet) for the leased vehicles and from the Fuel companies (Shell & Caltex) for company owned vehicles.Numbers purchased were extracted from the Equipment register in EllipseNumbers leased were based on reports provided by leasing companies (Fleet-Plus & SG Fleet)Number in Fleet is the combination of leased vehicles and company owned vehicles.	<ul style="list-style-type: none">None

Use of estimated information

Endeavour Energy has not used Estimated information, as defined in the RIN Instructions & Definitions in reporting expenditure in table 2.6.3.

Reliability of information

All historical information provided represents Actual Information extracted from Endeavour Energy's reporting systems. As a result, the information contained in table 2.6.3 is considered to be reliable.

Worksheet 2.7 – Vegetation management

2.7.1 Vegetation management metrics

Compliance with requirements of the notice

The data presented in table 2.7.1 is consistent with the requirements of the Economic Benchmarking RIN. In particular, Endeavour Energy has provided data for the descriptor metrics by zone 1. The remaining cells have been blacked out as there are no other zones.

Source of information

Information provided in table 2.7.1 was sourced from Endeavour Energy's Geographical Information System (GIS), Rural Fire Service map polygons applied to the GIS, a Scope and Audit review of vegetation management contracts using the work flow management system AM4, and the Bureau of Meteorology web site and the Vegetation Program Completion Process.

Work flow Management System AM4:

The Active Tree Service "AM4 System" delivers to Endeavour Energy potential service improvements and cost savings through the provision of an auditable, sophisticated workflow management system that is geospatially enabled (including tracking) with real time data capability.

This product is built on Microsoft SQL Server 2008 R2 technologies, Microsoft SharePoint 2010 technologies, and the Esri ArcGIS Server and ArcGIS Mobile products.

Endeavour Energy implements the workflow described below to manage;

1. Vegetation Management contracts
2. Auditing function
3. the Defect management system to integrate with the Ellipse corporate asset database.

The Vegetation Program Completion Process is detailed in Branch Work Place Instruction WVM 0838. The purpose of this Branch Workplace Instruction is to define the process, including clarity of roles and responsibilities within the Vegetation Control Section of the Maintenance Branch. It is also to minimise business risk. It should be noted by all parties that being flexible and adaptable to the evolving needs of the business is a necessary element of this process and additional information may be requested by the Program Director, the Vegetation Control Manager or the Vegetation Contracts Operations Manager, as required, at any point in the program delivery cycle.

This Branch Workplace Instruction is underpinned by effective, collaborative working relationships between all parties. Equally important is all parties fostering effective relationships with other stakeholders.

The information provided in table 2.7.2 was provided from the financial accruals and work orders contained in corporate database Ellipse.

Methodology and assumptions

The assumptions made in regard to the data in Table 2.7.1 are as follows:

1. Average number of trees per urban and CBD vegetation maintenance span?

Average = total number of trees identified for trimming in urban areas divided by the total number of maintained spans in urban areas.

2. Average number of trees per rural vegetation maintenance span?

Average = the total number of trees identified for trimming in rural areas divided by the total number of maintained spans in rural areas.

Table 2.7.1 identifies a descriptor for vegetation corridors in kilometres. The length of the corridors has described urban and cbd and rural and the data is developed from a spatial query and uses the Urban Centres and Localities (UCL) dataset from Australian Bureau of Statistics attached to the GIS data clipped to the Endeavour Energy franchise. The query describes the length of vegetation corridors as zero as these are included in the route line length and is not in addition to the route line length.

Use of estimated information

In table 2.7.1 the average number of trees per span are estimated as outlined in the methodology above.

Reliability of information

All the information provided represents actual information extracted from Endeavour Energy's reporting systems and reconciled to reported figures in previous audited benchmark RINs. As a result the information contained in table 2.7.1 is considered to be reliable.

2.7.2 Vegetation management costs

Compliance with requirements of the notice

The data presented in the tables contained in section 2.7.2 is consistent with the requirements of the Economic Benchmarking RIN.

Since Endeavour Energy completed the 2009 Distribution Determination RIN there have been a range of structural and operational changes across divisions as well as within the network functions.

As a consequence, Endeavour Energy's activities and sub-activities that are used to identify actual costs by the opex categories contained in the annual RIN were reviewed and updated to ensure that the relationship between internal functions and reported costs is as robust and accurate as possible.

The cost metrics in Table 2.7.2 has been categorised and reported in a manner that is consistent with Endeavour Energy's approved Cost Allocation Method and most recent annual reporting RIN activities in the 2013/14 Regulatory Financial Statements.

The expenditure on vegetation corridor clearance and other vegetation management costs are included in the tree trimming(excluding hazard trees) expenditure line. Endeavour Energy's systems do not capture data on 'vegetation corridor clearance' and 'other vegetation management costs' as they are defined in the RIN. In the absence of both technical and financial information for these expressly termed classifications, Endeavour Energy cannot form a basis for estimation of their volumes or costs.

Source of information

The information used to populate the tables contained in tables 2.7.2 was extracted directly from TM1 and work order account codes in Ellipse. Endeavour Energy uses this OLAP tool for various purposes including budgeting and forecasting, monthly reporting and regulatory account allocations. It is a cube based technology which allows rules to be created between cubes and within cubes.

Methodology and assumptions

The information in table 2.7.2 was already prepared and reported in the Annual Financial Statements for each year of the reported periods and the information has been transposed from the final Annual Financial Statements (rather than being re-performed).

Set out in the table below are the specific cubes used to obtain the required information for tables 2.7.2, along with a description in relation to the use of the cubes by Endeavour Energy:

Table	TM1 Cube	Description
2.7.2	Reg Accounts cube	The Reg Accounts cube is used by Endeavour Energy to store and report the Opex into the service categories (i.e. Standard Control, Alternate Control and Unregulated categories) at the account code level. It is the primary tool used to allocate opex in accordance with Endeavour Energy's approved Cost Allocation Method. Standard control vegetation data was extracted from the TM1 Reg Accounts cube at the account code level (N level org units) for each financial year for the category called "Regulated Network \$".

Use of estimated information

All the information provided represents actual information extracted from Endeavour Energy's reporting systems and reconciled to reported figures in previous audited benchmark RINs. As a result the information contained in table 2.7.2 is considered to be reliable.

Reliability of information

All the information provided represents actual information extracted from Endeavour Energy's reporting systems and reconciled to reported figures in previous audited RINs. As a result the information contained in table 2.7.2 is considered to be reliable.

Worksheet 2.8 – Maintenance

2.8.1 Routine and non-routine maintenance metrics

Compliance with requirements of the notice

Historical numbers of assets and number of assets maintained for 2013/14 have been entered and therefore complies with requirements.

Source of information

Data was obtained from VDA model, NMIP, Network Statistics, GIS and Business management standards (see below comments table).

NMIP present the proposed maintenance targets for past years. Compliance of actual maintenance achievements is close to 100% of the target. Therefore it was assumed that actual units maintained is approximately equal to the proposed targets in the NMIP.

Methodology and assumptions

See below comments table.

Use of estimated information

Data provided is as represented in NMIP Document, VDA model, GIS and Network statistics

Average age was estimated by examining current ages and back-calculating using historical WARL information that was kept by the section.

Average age for non CBD cables were estimated using average ages and total number of network underground cables for LV – 22kV and 33kV and above.

Reliability of information

Actual numbers from VDA model, NMIP, Network Statistics, GIS and Business management standards were used.

2.8.2 Routine and non-routine maintenance costs

Compliance with requirements of the notice

Financial Costs of asset maintenance for the 2013/14 year have been entered and therefore complies with requirements.

Source of information

Data was obtained from financial standard control opex records.

Methodology and assumptions

See below comments table.

Use of estimated information

Some financial data was recorded as lump sums with no breakdown. "Zone Substation Equipment Maintenance" and "Distribution Substation Equipment & Property Maintenance" routine maintenance lump sum expenditures were broken down by viewing past SNMP documents to estimate approximate ratios for each type of equipment

"Zone Substation Equipment Maintenance" and "Distribution Substation Equipment & Property Maintenance" non—routine maintenance lump sum expenditure was broken down by viewing ellipse work orders in and estimating ratios of fault & emergency and condition based work orders for each type of equipment.

Reliability of information

Actual numbers from financial standard control opex records were used

Areas in the tables where data was unavailable were filled with zeroes as per instructions.

Comments Table

MAINTENANCE ACTIVITY	MAINTENANCE ASSET CATEGORY	UNIT OF MEASURE	Assets at Years End	Assets inspected/ maintained	Inspection/ maintenance cycles	Routine Maintenance	Non-Routine Maintenance
POLE TOP, OVERHEAD LINE & SERVICE LINE MAINTENANCE	POLE TOPS AND OVERHEAD LINES	NUMBER OF POLES (000'S)	Network Statistics/ GIS	SNMP - OLI/GLI (No info for 08/09-09/10 but numbers estimated based on number of poles and number of inspections for other years)	OLI GLI cycle	No Historical data available	No Historical data available
	SERVICE LINES	NUMBER OF CUSTOMERS (000'S)	Network Statistics/ GIS	No Historical data available	Not Aplicable	No Historical data available	No Historical data available
POLE INSPECTION AND TREATMENT	ALL POLES	NUMBER OF POLES (000'S)	Network Statistics/ GIS	SNMP - OLI/GLI (No info for 08/09-09/10 but numbers estimated based on number of poles and number of inspections for other years)	OLI GLI cycle	Standard Control opex - OLI/GLI	Standard Control opex - OLI/GLI
OVERHEAD ASSET INSPECTION	ALL OVERHEAD ASSETS	LINE PATROLLED (ROUTE KM)	Network Statistics/ GIS	Estimated on a 4.5 yearly inspection cycle (in reality this inspection cycle only applies for dist. assets)	OLI GLI cycle Dist. MMI0012 transmission	Standard Control opex – OH Sub Trans + OH Dist	Standard Control opex – OH Sub Trans + OH Dist
NETWORK UNDERGROUND CABLE MAINTENANCE: BY VOLTAGE	LV - 11 TO 22 KV	LENGTH (KM)	Network Statistics/ GIS	No Historical data available	No Dist cable inspections	Standard Control opex - Dist UG	Standard Control opex - Dist UG
	33 KV AND ABOVE	LENGTH (KM)	Network Statistics/ GIS	Estimated from Number of cables and 6 yearly inspection	MMI0006	Standard Control opex - UG Sub Trans mains	Standard Control opex UG Sub Trans mains
NETWORK UNDERGROUND CABLE MAINTENANCE: BY LOCATION	CBD	LENGTH (KM)	No CBD assets in the network	No CBD assets	No CBD assets	No CBD assets	No CBD assets
	NON-CBD	LENGTH (KM)	Sum of all network underground cables by voltage	Same as inspections of cables voltages at or above 33kV	Only voltages at 33kV and above are inspected	Addition of UG cables by voltage	Addition of UG cables by voltage
DISTRIBUTION SUBSTATION EQUIPMENT & PROPERTY MAINTENANCE	DISTRIBUTION SUBSTATION TRANSFORMERS	NUMBER OF INSTALLED TRANSFORMERS (000'S)	VDA - 11kV Cable box Tx, 1-3 ph Pole mount Tx, SWER Pole mount Tx, Pad mount Tx. (No info for 09/10-10/11 numbers estimated by assuming linear progression of asset growth)	Number same as Dist. Substation Property inspections	SMI101	Standard Control opex - Total dist subs & equipment costs broken down by analysing works recorded in SNMP	Standard Control opex - Total dist subs & equipment costs broken down by analysing FE and CB work orders in ellipse
	DISTRIBUTION SUBSTATION SWITCHGEAR (WITHIN-SUBSTATIONS AND STAND-ALONE SWITCHGEAR)	NUMBER OF SWITCHES (000'S)	VDA – (11 & 22kV only) ABS, Fuses, Links, Sectionalisers, LV Links (No info for 09/10-10/11 numbers estimated by assuming linear progression of asset growth). It is assumed that this includes switches within substations and ABSs in the feild	SNMP(Distribution) – ABS, RGB12, Holec MD4 (No info for 09/10 but number is estimated based on number of switches and number of inspections for surrounding years)	SMI101		Not Aplicable
	DISTRIBUTION SUBSTATION - OTHER EQUIPMENT	DNSP TO NOMINATE	No Historical data available	No Historical data available	No Historical data available	Not Aplicable	

MAINTENANCE ACTIVITY	MAINTENANCE ASSET CATEGORY	UNIT OF MEASURE	Assets at Years End	Assets inspected/ maintained	Inspection/ maintenance cycles	Routine Maintenance	Non-Routine Maintenance
	DISTRIBUTION SUBSTATION - PROPERTY	NUMBER OF DISTRIBUTION SUBSTATIONS (000'S)	Network Statistics/ GIS	SNMP - Dist Substations (No info for 09/10 but number is estimated based on number of subs and number of inspections for other years)	SMI101	No Historical data available	No Historical data available
ZONE SUBSTATION EQUIPMENT MAINTENANCE	TRANSFORMERS - ZONE SUBSTATION	NUMBER OF ZONE SUBSTATION TRANSFORMERS (000'S)	VDA-11/22kV, 132/11kV, 132/22kV, 33/11kV, 66/11kV and 66/22kV Txs (No info for 09/10-10/11 numbers estimated by assuming linear progression of asset growth)	SNMP - Power Trf (No info for 09/10 but number is estimated based on number of Txs and number of inspections for other years)	SMI100	Standard Control opex (Zone & Sub-Transmission Substations included) - Total trans subs costs broken down by analysing works recorded in SNMP (see working file)	Standard Control opex (Zone & Sub-Transmission Substations included) - Total trans subs costs broken down by analysing FE and CB work orders in ellipse (see working file)
	TRANSFORMERS - DISTRIBUTION	NUMBER OF DISTRIBUTION TRANSFORMERS WITHIN ZONE SUBSTATIONS (000'S)	Assumption: Estimated by one unit per zone substation	SNMP - Aux Tx (No info for 09/10 number estimated from surrounding years)	SMI100		
	TRANSFORMERS - HV	NUMBER OF HV TRANSFORMERS (000'S)	No HV Txs in Zone substations	No HV Txs in Zone substations	Not Aplicable		Not Aplicable
	ZONE SUBSTATION - OTHER EQUIPMENT	DNSP TO NOMINATE	No Historical data available	No Historical data available	Not Aplicable	No Historical data available	No Historical data available
ZONE SUBSTATION PROPERTY MAINTENANCE	ALL ZONE SUBSTATION PROPERTIES	NUMBER OF ZONE SUBSTATION PROPERTIES MAINTAINED (000'S)	Network Statistics/ GIS (zone substation only, excludes sub-transmission substations)	SNMP - Zone Substations (No info for 09/10 but number is estimated based on number of subs and number of inspections for other years)	SMI100	No Historical data available	No Historical data available
PUBLIC LIGHTING MAINTENANCE	MINOR ROADS	NUMBER OF PUBLIC LIGHTS MAINTAINED (000'S)	Network Statistics/ GIS - Includes minor and major roads	No Historical data available	MMI0003	Standard Control opex - includes main & residential roads	Standard Control opex - includes main & residential roads
	MAJOR ROADS	NUMBER OF PUBLIC LIGHTS MAINTAINED (000'S)	Minor & Major roads included in above cell	No Historical data available	Not Aplicable	main & residential roads in cluded in above cell	main & residential roads in cluded in above cell
SCADA & NETWORK CONTROL MAINTENANCE	SCADA & NETWORK CONTROL MAINTENANCE	Number of SCADA Substation sites	VDA - SCADA sub sites (No info for 09/10-10/11 numbers estimated by assuming linear progression of asset growth)	SNMP (No info for 09/10 but number is estimated based on number of SCADA systems and number of inspections for other years)	SMI100	Not Aplicable	Not Aplicable
PROTECTION SYSTEMS MAINTENANCE	PROTECTION SYSTEMS MAINTENANCE	Number of Protection Schemes	SNMP (No info for 08/09 – 10/11 number estimated from number of inspactions and total number of other years)	SNMP (No info for 09/10 number estimated from surrounding years)	PMI4120	Standard Control opex - Prot & Control	Standard Control opex - Prot & Control
SUBTRANSMISSION ASSET MAINTENANCE - FOR DNSPS WITH DUAL FUNCTION ASSETS	SUBTRANSMISSION ASSET MAINTENANCE - FOR DNSPS WITH DUAL FUNCTION ASSETS	DNSP TO NOMINATE	No Historical data available	No Historical data available	Not Aplicable	No Historical data available	No Historical data available

Worksheet 2.9 – Emergency response

2.9.1 Emergency response expenditure

Compliance with requirements of the notice

The data presented in table 2.9.1 is consistent with the requirements of the Category Analysis RIN. In particular:

- The data presented in table 2.9.1 (Emergency response expenditure) represents the opex split of emergency response expenditure into Standard Control Services with the definition of emergency response provided in Appendix F of the Regulatory Information Notice.
- Emergency response expenditure reported in table 2.9.1 only relates to direct expenditure incurred to restore a failed component to an operational state including all expenditure relating to the work incurred where supply has been interrupted or assets damaged or rendered unsafe by a breakdown, making immediate operations and/or repairs necessary.
- Emergency response expenditure is primarily required due to network failure caused by weather events, vandalism, traffic accidents or other physical interference by non-related entities.
- Total emergency response expenditure (A) reported in table 2.9.1 consists of direct expenditure only and excludes overheads (Direct “Network” overheads and Indirect “Corporate” overheads) and reconciles to the total direct emergency response opex as disclosed in the Annual RIN.
- All emergency response expenditure reported in table 2.9.1 are Direct Costs only as outlined in section 1.15 in Appendix E (Principles and Requirements) of the RIN and excludes expenditures on Overheads also as defined in Appendix E (Principles and Requirements) of the RIN.

Source of information

- Total direct emergency response expenditure was extracted from the Annual RIN work papers. Emergency response expenditure is identified by analysing the activity and sub-activity attributes of operating expenditure transactions. Only those transactions with the following activity and sub activity combinations were applicable:

Activity	Sub Activity	Justification
All operating activities (excluding activity 11 – Third Party Impacts which is below)	RF - Fault and Emergency Repairs	Fault and Emergency repair costs are associated with the unscheduled maintenance or repair / replacement of major defective components associated with Endeavour Energy assets and equipment (e.g. through storm damage).
	74 - Unplanned Switching	Unplanned switching work costs are incurred and required for operational maintenance and construction work where no access permit has been obtained.

Activity	Sub Activity	Justification
	75 - Emergency Switching	Emergency switching work costs relate to the provision of switching and fault location on the network under emergency conditions and includes work carried out by Emergency Response Officers.
11 - Third Party Impacts	All sub activities	Costs incurred as a result of events such as motor vehicle accidents, vandalism, and impact damage to poles, mains, substations and street lighting requiring immediate rectification and/or repairs to make safe and operational.

- To complete parts (B) and (C) all emergency response transactions were extracted from the General ledger (Ellipse - ERP). Endeavour uses Ellipse for various purposes including accounts payable, payroll, asset and equipment registers and financial reporting functions.
- A list of Major event days was provided by the Network Performance Review Manager.

Methodology and assumptions

Table	Methodology	Assumptions
2.9.1 (A) Total Emergency Response expenditure	Total emergency response direct expenditure was extracted from the Annual RIN workpapers. Direct emergency response expenditure is identified by analysing the activity and sub-activity attributes of operating expenditure transactions (as explained above).	None
2.9.1 (B) Major Storms O&M expenditure	The AER defines a major storm as Tropical cyclones of Category 1 and above as classified by the Australian Bureau of Meteorology. According the Australian Bureau of Meteorology website NSW has not experienced any tropical cyclones of category 1 and above since 2006. Refer to the below link. http://www.bom.gov.au/cyclone/history/nsw.shtml	.
2.9.1 (C) Major Event Days O&M expenditure	<ul style="list-style-type: none"> Extract all emergency response transactions from the ellipse transaction 	

Table	Methodology	Assumptions
	<p>database.</p> <ul style="list-style-type: none"> Using the list of major event days provided by the Network Performance Review Manager, match these events with the expenditure captured by the parent work orders raised for each event. Group the transactions under each of these parent work orders and report the totals for each major event day. Also review all work orders not linked to a parent work order to determine if they relate to a major event day based on their description and add them to the reported totals. 	

Use of estimated information

Information reported in table 2.9.1 consists of Actual Information as defined in the RIN Instructions & Definitions.

Reliability of information

Information reported in table 2.9.1 consists of Actual Information extracted from Endeavour Energy's reporting systems and reconciles to direct emergency response opex figures calculated for the purposes of the Annual RIN. As a result, the information contained in table 2.9.1 is considered to be reliable.

Worksheet 2.10 – Overheads

2.10.1 Network overheads expenditure & 2.10.2 Corporate overheads expenditure

Compliance with requirements of the notice

The data presented in tables 2.10.1 and 2.10.2 is consistent with the requirements of the Category Analysis RIN. In particular:

- The data presented in table 2.10.1 (Network Overheads expenditure) represents the opex split of network overheads expenditure into Standard Control Services with the definition of network overheads provided in Appendix F of the RIN;
- Endeavour Energy has previously reported network operating costs in its Regulatory Accounting Statements, therefore Endeavour Energy have reported this expenditure under network overhead in regulatory template 2.10.1 and into the six mandatory subcategories provided;
- Network operating costs are disaggregated into the following six sub categories: network management, network planning, network control and operational switching, quality and standard functions, project governance and related functions and other;
- Endeavour Energy has previously reported corporate overheads in its Regulatory Accounting Statements and are not included in any other overhead subcategory, therefore Endeavour Energy have reported this expenditure in regulatory template 2.10.2;
- The data in tables 2.10.1 and 2.10.2 are overhead costs that are reported before allocation to services or direct expenditure and before any capitalisation. The opex in tables 2.10.1 and 2.10.2 has been categorised and reported in a manner that is consistent with Endeavour Energy's approved Cost Allocation Method and the 2013/14 Annual RIN.

Endeavour Energy capitalises a portion of its overheads which are directly attributable to capital works in order to facilitate the identification of the true cost of activities performed. This enables capitalised projects with enduring economic benefit to be capitalised at their true cost.

Source of information

Financial data is sourced from the Reg Accounts cube in TM1. Endeavour Energy uses this OLAP tool for various purposes including budgeting and forecasting, monthly reporting and regulatory account allocations and it has been used historically to provide data for previous audited Regulatory Accounts / RINs. It is a cube based technology which allows rules to be created between cubes and within cubes.

In particular, the Reg Accounts cube is used by Endeavour Energy to store and report annual opex into the service categories (i.e. Standard Control, Alternate Control and Unregulated categories) at the account code level. It is the primary tool used to allocate opex in accordance with Endeavour Energy's approved Cost Allocation Method.

Methodology and assumptions

Table	Methodology	Assumptions
2.10.1 and 2.10.2	1. Extract opex data from the TM1 Reg Accounts cube at the account code level for	Capitalised overheads for 2013/14 were not able to be

Table	Methodology	Assumptions
	<p>the financial year.</p> <ol style="list-style-type: none"> 2. Reconcile the total derived at the individual account code level to the total from the TM1 Reg Accounts cube (N Level Org Units) to ensure no account codes have been excluded. 3. Assign a reg accounts classification to the extracted TM1 data. This classification can be a direct network cost, direct network overhead or a corporate overhead cost: <ul style="list-style-type: none"> - A direct network cost is assigned directly to a RIN category (e.g. maintenance & repair, emergency response etc); - Direct network overheads are the remaining network operating costs that cannot be allocated directly to a RIN category and are allocated on a pro rata basis, based on the proportions of the direct allocation; and - Corporate overheads (and shared business unit costs) are allocated to the network business on a pro rata basis, based on the proportions of the sum of direct network costs and direct network overhead costs. 4. Allocate the direct network overhead costs to those costs classified as direct network costs on a pro rata basis, based on the proportions of the direct allocation of network costs to each service category. 5. Allocate the corporate overhead costs to the costs classified as direct network costs on a pro rata basis, based on the proportions of the direct allocation of network costs (inclusive of network overhead costs) to each service category. This classification is also used to populate table 2.10.1 with the required additional RIN categories. 6. Determine which of the mandatory six subcategories that the costs that have been allocated to the category of "Prescribed services operating costs" (now called "Network Operating Costs"). Assign the 	<p>disaggregated into the various RIN reporting categories and were therefore reported as one line item for standard control.</p>

Table	Methodology	Assumptions
	<p>costs to a subcategory based on the account code combination, org unit or Branch in addition to the guidelines provided in Appendix E and Appendix F of the guidelines document.</p> <p>7. Add back the proportion of capitalised overheads from the historical period.</p> <p>8. Populate tables 2.10.1 and 2.10.2 based on the outcome of steps 1 to 7 above.</p> <p>Note: given TM1 Reg Accounts cube data is available and represents previously reported figures, all information provided for this table consists of actual information (no estimated information required).</p>	

Use of estimated information

Information reported in table 2.10.1 and 2.10.2 consists of Actual Information as defined in the RIN Instructions & Definitions.

Reliability of information

Information reported in table 2.10.1 and 2.10.2 consists of Actual Information extracted from Endeavour Energy’s reporting systems and reconciles to opex figures calculated and reported in the Annual RIN. As a result, the information contained in table 2.10.1 and 2.10.2 is considered to be reliable.

Worksheet 2.11 – Labour

2.11.1 Cost metrics per annum & 2.11.2 Extra descriptor metrics for current year

Compliance with requirements of the notice

The data presented in tables 2.11.1 and 2.11.2 is consistent with the requirements of the Category Analysis RIN. In particular:

- Only labour costs allocated to the provision of standard control services is reported in the labour cost tables.
- Labour used in the provision of contracts for both goods and services, other than contracts for the provision of labour (i.e. labour hire contracts), is not reported in these tables.
- All labour data has been presented according to the labour classification levels provided in the relevant table in the template. The methodology adopted to classify workers into the various classification levels is outlined below.
- Labour related to each classification level obtained through labour hire contracts is reported separately on separate lines to employee based labour.
- The quantities of labour, expenditure and stand-down occurrences have not been reported multiple times across the tables.
- The Average Staff Level ('ASL') for each labour classification level reflects the average paid FTEs for each classification level over the course of the year. Specifically, this represents the average of the opening (30 June 2013) and closing (30 June 2014) staff levels for the year. One ASL is equal to one FTE employee undertaking standard control services work receiving salary or wages over the entire year. Therefore, one FTE that spends 50% of their time on standard control services work is reported as 0.5 ASL.
- Stand down periods are reported against the relevant classification level in the table containing the relevant labour.
- The labour costs consist of labour hire, ordinary time earnings, other earnings and superannuation, but excludes overtime, allowances, bonuses and incentive payments and superannuation contributions.

Source of information

- ASL numbers were sourced from 30 June 2013 and 30 June 2014 detailed FTE reports stored on Endeavour Energy's shared network directory. This detailed FTE information is used in labour reporting to executive management to monitor and manage labour expenditure.
- Labour expenditure, labour rates (normal time and overtime) and overtime hours information was extracted from various reporting cubes in TM1 (PNL cube, Labour Info cube, Labour Reporting cube, Reg Accounts cube and AER Dollars by Account cube). Endeavour Energy uses TM1 for various purposes including budgeting and forecasting, monthly reporting and regulatory account allocations and it has been used historically to provide data for previous audited Regulatory Accounts / RINs. It is a cube based technology which allows rules to be created between cubes and within cubes.

- Average productive work hours were sourced from the detailed FTE reports which provide weekly hours per FTE and is used to estimate the annual productive hours.
- Stand-down occurrences were sourced from Cognos Impromptu. Cognos is a reporting tool used to extract data from Ellipse (ERP).

Methodology and assumptions

The following tables set out the methodology applied to obtain required data for each of the tables in section 2.11.1.

Employee Methodology

Table	Methodology	Assumptions
2.11.1 – Cost Metrics Per Annum	<p>Average Staff Level (ASL)</p> <ol style="list-style-type: none"> 1. Obtain detailed FTE reports as at 30 June 2013 and 30 June 2014 used in the preparation of labour reporting to executive management. 2. Map each worker to a labour classification level required by table 2.11.1 based on the workers position description. In addition, a Network / Corporate allocation is performed based on the workers home org unit. 3. Multiply each FTE by a standard control percentage in order to calculate standard control FTEs. The standard control percentage is calculated by analysing the standard control component of total labour expenditure (opex and capex) for each org unit. 4. Determine ALSs for each labour classification level by calculating the average standard control FTEs for the year using 30 June 2013 and 30 June 2014 data and populate table 2.11.1. 	<p>The standard control percentage for each org unit is assumed to apply equally to all employees within that org unit.</p>
	<p>Total Labour Expenditure</p> <ol style="list-style-type: none"> 1. Extract system capex labour expenditure from the PNL cube at the org unit and expense element level. Allocate switching and capitalised overheads to each line item on a pro-rata basis and identify the standard control labour expenditure for each line item (i.e. all line items excluding Public Lighting will be standard control). 2. Extract non-system capex labour expenditure from the PNL cube at the org unit and expense element level. Apply standard control percentages obtained 	<ul style="list-style-type: none"> • The standard control percentage for each org unit is assumed to apply equally to all employees within that org unit. • Standard control labour expenditure per org unit is assumed to be attributed to each labour classification level based on the ratio of FTEs.

Table	Methodology	Assumptions
	<p>from the non-system capex Annual RIN workings to each asset class in order to calculate the the standard control component of each line item.</p> <p>3. Extract opex labour expenditure from the PNL cube at the org unit and expense element level. Identify the standard control component by applying the outcomes of the CAM in relation to the standard control component of total labour expenditure at the org unit level.</p> <p>4. Calculate total labour cost for standard control services excluding overtime, bonuses and allowances by org unit. Pro-rata the standard control labour cost at the org unit level to each labour classification level identified for each org unit from the detailed FTE report.</p> <p>5. Summarise standard control labour expenditure by labour classification level and populate table 2.11.1.</p>	
	<p>Average Productive Work Hours</p> <p>1. Calculate the annual productive hours for each FTE in the detailed FTE report as hours per week x 52.17 weeks x the average productive rate per FTE (84%).</p> <p>2. Using the labour classification level mappings completed for ASL purposes, calculate the average productive hours per labour classification level and populate table 2.11.1.</p>	Average productive rate per FTE at Endeavour Energy is estimated to be 84%.
	<p>Stand-down Occurrences</p> <p>1. Extract all stand-down transactions from Ellipse via a Cognos report which restricts transactions to labour earning code 011 (stand-down).</p> <p>2. Using the employee's service number, map each employee to the relevant labour classification level (from ASL workings).</p> <p>3. Divide the total number of stand-down occurrences by the ASL for each labour classification level to calculate average stand-down occurrences per ASL and populate table 2.11.1.</p>	None.
2.11.2	Average productive work hours (ordinary time) per ASL is equal to the figures reported in table 2.11.1.	None.
	Average hourly rate (ordinary time) per ASL	None.

Table	Methodology	Assumptions
	<ol style="list-style-type: none"> 1. Extract ordinary time hourly rates including oncost from the Labour Info cube in TM1 for each FTE listed in the detailed FTE report. 2. Using the labour classifications determined for each employee for the purposes of completing table 2.11.1, calculate an average hourly rate for each labour classification level and populate table 2.11.2. 	
	<p>Average productive work hours (overtime) per ASL</p> <ol style="list-style-type: none"> 1. Extract overtime hours per org unit from the Labour Hours Reporting cube in TM1. 2. Pro-rata the overtime hours for each org unit over the labour classification levels within each org unit (based on FTEs) to determine overtime hours per labour classification level. 3. Divide the overtime hours for each labour classification level by the equivalent ASL for the current year to determine the average productive work hours (overtime) per ASL. 	The overtime hours worked per org unit are pro-rated against the labour classification levels for each org unit based on FTE mappings.
	<p>Average hourly rate (overtime) per ASL</p> <ol style="list-style-type: none"> 1. Extract overtime hourly rates from the Labour Info cube in TM1 for each FTE listed in the detailed FTE report. 2. Using the labour classifications determined for each employee for the purposes of completing table 2.11.1, calculate an average hourly rate for each labour classification level and populate table 2.11.2. 	None.

Labour Hire

Table	Methodology	Assumptions
2.11.1	<p>Average Staff Level (ASL)</p> <ol style="list-style-type: none"> 1. Extract agency labour expenditure from the PNL cube in TM1 by org unit for the financial year. 2. Extract the agency staff listing and budgeted expenditure for 2014/15 from the Labour Info cube in TM1. Using this information calculate an average agency labour cost per FTE. 3. Apply the average agency labour cost per FTE calculated 	<ul style="list-style-type: none"> • Given 2013/14 agency staff FTEs are not available it was assumed that the average agency labour cost per FTE calculated from the 2014/15 budget represents the average agency labour cost per FTE for 2013/14. • The standard control

Table	Methodology	Assumptions
	<p>from the 2014/15 budget to the 2013/14 actual expenditure to estimate the ASL for agency staff in 2013/14. This methodology is required because agency staff numbers were not recorded 2013/14.</p> <p>4. Multiply total agency staff FTEs in each org unit by the standard control percentage calculated for the purposes of total employee labour expenditure to calculate agency staff ASL.</p> <p>4. Pro-rata agency staff ASLs for each org unit over the labour classification levels within each org unit (based on employee FTEs) to determine agency staff ASL per labour classification level. Populate table 2.11.1 with the outcomes.</p>	<p>percentage for each org unit is assumed to apply equally to all agency staff within that org unit.</p> <ul style="list-style-type: none"> Standard control agency staff per org unit is assumed to be attributed to each labour classification level based on the ratio of FTEs.
	<p>Total Labour Expenditure</p> <p>1. Extract system capex agency staff expenditure from the PNL cube at the org unit and expense element level. Allocate switching and capitalised overheads to each line item on a pro-rata basis and identify the standard control agency staff expenditure for each line item (i.e. all line items excluding Public Lighting will be standard control).</p> <p>2. Extract non-system capex agency staff expenditure from the PNL cube at the org unit and expense element level. Apply standard control percentages obtained from the non-system capex Annual RIN workings to each asset class in order to calculate the the standard control component of each line item.</p> <p>3. Extract opex agency staff expenditure from the PNL cube at the org unit and expense element level. Identify the standard control component by applying the outcomes of the CAM in relation to the standard control component of total labour expenditure at the org unit level.</p> <p>4. Calculate total agency staff cost for standard control services excluding overtime, bonuses and allowances by org unit. Pro-rata the standard control labour cost at the org unit level to each labour classification level identified for each org unit from the detailed FTE report.</p> <p>5. Summarise standard control labour expenditure by labour classification level and populate table 2.11.1.</p>	<ul style="list-style-type: none"> The standard control percentage for each org unit is assumed to apply equally to all employees within that org unit. Standard control labour expenditure per org unit is assumed to be attributed to each labour classification level based on the ratio of FTEs.
	<p>Average Productive Work Hours for agency staff are equal to that of Endeavour Energy employees.</p>	<p>Average productive work hours for agency staff assumed to be equal to Endeavour employees.</p>
	<p>Stand-down Occurrences, agency staff do not have any stand-down occurrences.</p>	<p>None.</p>
2.11.2	<p>Average productive work hours (ordinary time) per ASL is equal to the figures reported in table 2.11.1.</p>	<p>None.</p>
	<p>Average hourly rate (ordinary time) per ASL data is not captured by Endeavour Energy for agency staff and therefore it cannot be reported.</p>	<p>None.</p>
	<p>Average productive work hours (overtime) per ASL data</p>	<p>None.</p>

Table	Methodology	Assumptions
	is not captured by Endeavour Energy for agency staff and therefore it cannot be reported.	
	Average hourly rate (overtime) per ASL data is not captured by Endeavour Energy for agency staff and therefore it cannot be reported.	None.

Use of estimated information

Estimated information was used in the following instances:

- Labour classification levels were assigned to each FTE based on an assessment of each FTEs position description. This categorisation is not maintained by Endeavour Energy in its reporting systems.
- Productive hours for each FTE were estimated since Endeavour Energy's reporting systems do not have the capability to report productive hours per FTE for the time period requested. The estimate of productive hours is based on hours worked per week times 52.17 weeks per year multiplied by the average productive labour rate (84%).
- Accurate labour hire FTEs are not available for 2013/14. Therefore, a unit rate derived from the 2014/15 budget was applied to 2013/14 actual expenditure to estimate the number of agency staff in 2013/14.

Reliability of information

Employee data, labour expenditure and stand down occurrences represent Actual Information extracted from Endeavour Energy's reporting systems. Although assumptions were required to classify the data into the labour classification levels required by the AER, determine the average productive hours and calculate labour hire ASLs, there were no other alternatives available to present the data in the form required by the AER. Therefore the data provided is considered to be reliable.

Worksheet 2.12 – Input tables

2.12. Input tables

Compliance with requirements of the notice

The data presented in table 2.12 is consistent with the requirements of the Category Analysis RIN. In particular:

- The total amounts reported in table 2.12 reconciles to the amounts reported in tables 2.7, 2.8, 2.10, 2.3, 2.5, 2.9, 4.1, 4.2, 4.3, 4.4, 2.2 and 2.6.
- The opex and capex data reported in table 2.12 is reported on an as-incurred basis

Source of information

Several sources of information were used in the completion of table 2.12:

- System capex data by project and expense type was extracted from the annual system capex report.
- Non-network expenditure (capex and opex) by expense type was extracted from the general ledger (TM1 PNL cube).
- Standard control services and alternative control services opex by expense type was extracted from the Reg Accounts cube in TM1. The Reg Accounts cube is used by Endeavour Energy to store and report opex into service categories (i.e. Standard Control, Alternative Control and Unregulated) at the account code level. It is the primary tool used to allocate opex in accordance with Endeavour Energy's approved Cost Allocation Method. Standard and alternative control opex data was extracted from the TM1 Reg Accounts cube at the account code level (N level org units) for the categories called "Regulated Network \$" (i.e. standard control services) and "Street Lighting \$" (i.e. alternative control services).
- Category Analysis RIN tables 2.7, 2.8, 2.10, 2.3, 2.5, 2.9, 4.1, 4.2, 4.3, 4.4, 2.2 and 2.6 were also used complete table 2.12.

Methodology and assumptions

Table	Methodology	Assumptions
2.12 Input Tables - Vegetation Management - Routine Maintenance - Non-routine Maintenance - Overheads - Emergency Response	<ol style="list-style-type: none"> 1. Extract standard control services opex at the account code / expense element level from the Reg Accounts cube in TM1. Using the allocations performed for the purposes of the Annual RIN, map each account code to one of the following categories: <ol style="list-style-type: none"> a. 2.7 Vegetation Management b. 2.8 Maintenance c. 2.9 Emergency Response d. 2.10 Overheads e. 4.2 Metering f. 4.3 & 4.4 Fee & Quote Based Services 2. Determine the proportional split by expense category (labour, materials, contractors and other) for each of the above allocations for standard 	<p>The following Annual RIN category mappings were adopted in step 1:</p> <ul style="list-style-type: none"> • 'Vegetation Management' mapped to '2.7 Vegetation Management' • 'Inspection', 'Maintenance & Repair' and 'Other Distribution Maintenance Costs' mapped to '2.8 Maintenance' • 'Emergency Response' mapped to '2.9 Emergency

Table	Methodology	Assumptions
<ul style="list-style-type: none"> - Metering (opex) - Fee & Quote Based Services 	<p>control services.</p> <p>3. Multiply the relevant total expenditure amount from tables 2.7, 2.8, 2.9, 2.10, 4.2, 4.3 and 4.4 by the proportion for each expense category calculated in step 2 above and populate table 2.12.</p>	<p>Response'</p> <ul style="list-style-type: none"> • 'Network OH Allocation', 'OH Allocation', 'Other Operating Costs' and 'Prescribed Services Operation Costs' mapped to '2.10 Overheads' • 'Meter Reading Costs' mapped to '4.2 Metering' • 'Customer Service' mapped to '4.3 & 4.4 Fee & Quote Based Services' <p>This methodology assumes that the proportional split by expense element obtained from the mappings outlined above represents the split of total expenditure disclosed in tables 2.7, 2.8, 2.9, 2.10, 4.2, 4.3 and 4.4.</p>
<p>2.12 Input Tables</p> <ul style="list-style-type: none"> - Augex - Connections - Repex - Metering (capex) - Public Lighting (capex) 	<p>1. Extract system capex at the account code / expense element level from the annual system capex report and map each account code to one of the following categories based on parent project numbers:</p> <ul style="list-style-type: none"> a. 2.3 Augex – LV feeders b. 2.2 Repex – Other c. 2.2 Repex – Poles / Pole top structures / Overhead conductors / Underground cables / Service lines / Transformers / Switchgear d. 2.3 Augex – Distribution substations e. 2.3 Augex – HV feeders f. 2.3 Augex – Subtransmission substations, switching substations, zone substations and subtransmission lines g. 2.5 Connections h. 4.1 Public Lightitng i. 4.2 Metering <p>2. Determine the proportional split by expense category (labour, materials, contractors and other) for each of the above allocations for system capex.</p> <p>3. Multiply the relevant total expenditure amount from tables 2.2, 2.3, 2.5, 4.1 and 4.2 by the proportion for each expense category calculated in step 2 above and populate table 2.12</p>	<p>The following capex project number mappings were adopted in step 1:</p> <ul style="list-style-type: none"> • All PR*** projects excluding land purchases mapped to 2.2 Repex – Subtransmission substations, switching stations, zone substations and subtransmisson lines. • All TM, TS & DS projects mapped to 2.2 Repex – Poles / Pole top structures / Overhead conductors / Underground cables / Service lines / Transformers / Switchgear • All HVW and OFP projects mapped to 2.3 Augex – HV feeders. • Project LV001 mapped to 2.3 Augex – Distribution substations. • All other LV*** projects mapped to 2.3 Augex – LV feeders.

Table	Methodology	Assumptions
		<ul style="list-style-type: none"> • All projects starting with IC, NU, UR and AR mapped to 2.5 Connections. • All projects starting with MC mapped to 4.2 Metering. • All projects starting with SL mapped to 4.1 Public Lighting. • All communications, automation and protection projects mapped to 2.2 Repex – Other. <p>This methodology assumes that the proportional split by expense element obtained from the mappings outlined above represents the split of expenditure disclosed in tables 2.2, 2.3, 2.5 and 4.2.</p>
2.12 Input Tables - Public Lighting (opex)	<ol style="list-style-type: none"> 1. Extract alternative control services opex at the account code / expense element level from the Reg Accounts cube in TM1. 2. Determine the proportional split by expense category (labour, materials, contractors and other) for Public Lighting opex. 3. Multiply the total expenditure amount from table 4.1 by the proportion for each expense category calculated in step 2 above and populate table 2.12. 	Nil

Use of estimated information

All information reported in table 2.12 consists of actual information (no estimated information required). However, the split of source data into the various expenditure categories required judgement to be applied as outlined above.

Reliability of information

All information used to split source data into the various expense types represents Actual Information extracted from Endeavour Energy's reporting systems and has been reconciled to reported figures in the Category Analysis and Annual RIN. While assumptions needed to be made in order to map the source data to the relevant categories and apply these percentages to expenditure totals from other Category Analysis tables, no valid alternatives exist which would result in a materially different outcome. Therefore the data provided is considered to be reliable.

Worksheet 4.1 – Public lighting

4.1.1 Public lighting descriptor metrics current year

Compliance with requirements of the notice

The data provided for “Current Population of Lights” (Table 4.1.1) has been reported as of the 30th June 2014 to represent the current year (2013/14). The light types are broken down into individual light types (Mercury, Compact Fluorescent, T5 fluorescent etc.) and wattages of each light type in use.

Source of information

The data is extracted from predefined query developed for the purpose of extracting this and similar data in a controlled and consistent manner (established by Endeavour Energy’s IT department) using the organisation’s COGNOS 8 program. COGNOS 8 extracts this data from Ellipse (the organisations asset management database).

Methodology and assumptions

This data can be extracted for historical periods. For the purpose of this submission, the data is extracted for 30th June 2014 for considering it as current year.

Use of estimated information

Estimation was not necessary as data is extracted for the date 30 June 2014.

Reliability of information

The data within COGNOS 8 / Ellipse is considered reliable and is Endeavour Energy’s main source of asset / financial data. Historical data is frequently applied for budgeting and forecasting.

4.1.2 Public lighting descriptor metrics annually

Compliance with requirements of the notice

The data provided under “Descriptor Metrics Annually” is in line with the data format provided.

Source of information

The information with “Descriptor Metrics Annually” is based upon Endeavour Energy projects / costs only and does not include any projects associated with Accredited Service Providers. The 2013-14 data was obtained from the following sources:

Light Installation volume data

The data was extracted from predefined query developed for the purpose of extracting this and similar data in a controlled and consistent manner (established by Endeavour Energy’s IT department) using the organisation’s COGNOS 8 program. COGNOS 8 extracts this data from Ellipse (the organisations asset management database).

Values for “Number of Poles Installed” have been identified as zero as the number of poles installed purely for streetlight by Endeavour Energy is already incorporated in the Major Road Light Installation Volume and Minor Road Light Installation Volume.

Light Installation Total Cost

“Total Cost” associated with Light Installation has been sourced from Endeavour Energy’s Finance and Compliance department.

Light Replacement Total Cost comprises of Condition based maintenance (RC) and Inspection (RI : Patrol / Routine column inspection). The Light Maintenance Total Cost comprises of Fault and Emergency (RF) and Preventive maintenance comprising of Bulk Lamp Replacement (RP). This data is also sourced from Endeavour Energy’s Finance and Compliance department.

Pole numbers:

The number of poles installed includes steel columns and dedicated wood poles for street light.

Light Replacement volume data:

Volume data for light replacements have been divided into four categories:

COL – Column Replacement (indicates complete new column replaced)

OMS – Outage Management System (Fault & Emergency)

BC – Bulk Change

LC – Luminaire Replacement

For the purpose of compliance, the data under Light Replacement Volume and Light Maintenance Volume have been added as follows:

Light Replacement Volume = COL + OMS + LC

Light Maintenance Volume = OMS + BC

COL data was obtained from Network Data & Performance using the COGNOS 8 reporting program. The data extracted by COGNOS 8 is taken from Ellipse (the organisations asset management database).

The OMS data was obtained from the organisations Outage Management System to identify the number of fault and emergency projects associated with streetlights.

The LC data was obtained from Endeavour Energy's Street Light Contract Manager. LC data is not available in a major / minor road format and a ratio (of 72% Major, 28% Minor) has been applied to obtain a split. Source of the ratio is documented in "Methodology and assumptions".

Light Replacement Total Cost:

The source of this data is as described in "Light Installation Total Cost".

Light Maintenance Volume:

The source of this data is as described in "Light Replacement volume data". Number of poles installed is already covered in the Installation and Replacement data above. The numbers given under Maintenance refer to the Light Columns inspected during the year.

The BC data was obtained from Endeavour Energy's Street Light Contract Manager. BC data is not available in a major / minor road format and a ratio (of 72% Major, 28% Minor) has been applied to obtain a split. Source of the ratio is documented in "Methodology and assumptions".

Light Maintenance Total Cost:

The source of this data is as described in "Light Installation Total Cost".

Quality of Supply:

Quality of Supply data including "Mean days to rectify/replace public lighting assets" and "Volume of Customer Complaints" was extracted from a predefined query developed for the purpose of extracting this and similar data in a controlled and consistent manner (established by Endeavour energy's IT department) using the organisation's COGNOS 8 program. COGNOS 8 extracts this data from Ellipse (the organisations asset management database).

"Volume of GSL Breaches" data obtained from Endeavour Energy's Customer Interaction Centre who maintains a report of each GSL Breach which is stored in the organisation eDOCs system for control and security. Total GSL breaches are based on all customer complaints. "GSL payments" data is based on "Volume of GSL Breaches" multiplied by \$15.00.

Methodology and assumptions

As described in the source of information section above.

Use of estimated information

The data provided is based on actuals.

Reliability of information

The information within COGNOS 8 / Ellipse is considered reliable and is Endeavour Energy's main source of asset / financial data. Historical data is frequently applied for budgeting and forecasting.

4.1.3 Public lighting cost metrics

Compliance with requirements of the notice

The data provided under Cost Metrics is consistent with the requirements of this Notice. Assumptions, if any, are explained in detail below.

Source of information

“Average Cost” data for the Installation of Lights on major / minor roads for the 2013/14 financial year was obtained from Ellipse directly for each of the projects used in the “Average Unit Cost” values provided.

“Average Cost” data for the replacement and maintenance of street lights on major / minor roads was obtained from Endeavour Energy’s Street Light Contract Manager. This data was sourced from the Streetlight Refurbishment Report Rate (approved by finance). Material unit prices have been supplied by procurement for each of the individual light types shown.

Methodology and assumptions

Data for the “Average Unit Costs” for the installation of Street Lightings on Major and Minor roads has been obtained from a random sample of internal Street Lighting projects. The sample of projects have been used to calculate average costs for the 2013/14 financial year in the following three categories “Installation of Columns”, “Installation of a Dedicated Wood Pole” and “Installation of Street Lighting on an existing wood pole”.

The following projects / sample sizes have been used to develop an average cost per column / pole:

Road Type	Light Type	Project #
Minor Road	Column	SLNP0341
		SLNL0332
	Dedicated Pole	SLNL0366
	Network Pole	SLN0371
		SLNA0101
		SLNM0244
		SLNL0374
		SLNL0369
SLNA0098		
Major Road	Column	SLNP0360
		SLNA0092
		SLNA0102
		SLNF0021
		SLNF0019
	Dedicated Pole	SLN0353
	Network Pole	SLNM0228
		SLNM0226

Sample sizes vary between “Light Type” / “Road Type” based on the availability of project information and the data for the “Average Unit Costs” for the installation of Street Lightings on Major and Minor roads.

Use of estimated information

As described above.

Reliability of information

The data within COGNOS 8 / Ellipse is considered reliable and is Endeavour Energy’s main source of asset / financial data. Historical data is frequently applied for budgeting and forecasting.

Worksheet 4.2 – Metering

4.2.1 Metering descriptor metrics

Compliance with requirements of the notice

The data presented in table 4.2.1 is consistent with the principles and requirements set out in Appendix E of the Category Analysis RIN.

Source of information

The volume of meters including key parameters such as number of phases and connection type was obtained from Endeavour Energy's meter asset management system (Banner) for the reporting period 2013/14.

Methodology and assumptions

Meter volumes for 2013/14 are based on actual volumes as at June 2014.

Important notes in relation to the interpretation of table 4.2.1:

- Type 4 meters disclosed in table 4.2.1 represent non-contestable franchise market meters with communication equipment. Endeavour Energy does not have any Type 5 manually read interval meters as all meters in the Type 5 energy volume range have had communications equipment installed (and are read remotely) and are therefore defined as Type 4 meters.

Use of estimated information

Nil

Reliability of information

The information provided represents Actual Information as defined in the RIN. As a result, the information contained in table 4.2.1 is considered to be reliable.

4.2.2 Metering cost metrics

4.2.2 Cost Metrics (Expenditure)

Compliance with requirements of the notice

The data presented in table 4.2.2 (expenditure) is consistent with the principles and requirements set out in Appendix E of the Category Analysis RIN. In particular:

- The data presented in table 4.2.2 (expenditure) reflects expenditure relating to metering services in accordance with the definitions provided in Appendix F of the Category Analysis RIN.
- The Metering Service Charge model is used by Endeavour Energy to calculate charges, and an associated revenue requirement, for metering services classified as alternative control services for the 2015-19 regulatory period in accordance with the AER's Framework & Approach Paper – March 2013. Therefore, in order to present information on a consistent basis for the 2013/14 year, expenditure presented in this template reflects expenditure associated with metering services classified as alternative control services for the 2015-19 regulatory period (i.e. type 5 and 6 metering provision, maintenance, reading and data services).
- Endeavour Energy has not distinguished expenditure for metering services between standard or alternative control services. It is noted that for Endeavour Energy, metering services are classified as standard control services for the 2009-14 regulatory period and alternative control services for the 2015-19 regulatory period.
- Endeavour Energy has not distinguished expenditure for metering services as either capital expenditure or operating expenditure. However, the service sub-categories required in table 4.2.2 (expenditure) inherently split expenditure between operating and capital, with meter purchase, new meter installation, meter replacement, IT infrastructure capex and communications infrastructure capex all capital related activities and the remainder operating related activities.
- Endeavour Energy has not reported data in relation to metering services which have been classified as contestable by the AER and has only reported data for non-contestable / regulated metering services (including work performed by third parties on behalf of Endeavour Energy). It is noted that while type 4 meters are classified as contestable in NSW, Endeavour Energy has reported expenditure related to type 4 meters. This is because Endeavour Energy has installed communications equipment on all of their type 5 meters¹, converting them into remotely read interval meters with communications functionality, and therefore type 4 meters by definition. As a result, the expenditure presented for type 4 meters refers to type 5 meters with communications functionality (or non-contestable type 4 meters).

Source of information

Expenditure relating to metering services was extracted from Endeavour Energy's general ledger, which is contained in an IT system called Ellipse. Ellipse contains operating and capital work orders / projects which are reporting tools used to capture expenditure associated with a particular task.

Methodology and assumptions

¹ Given the small number of type 5 meters in Endeavour Energy's network area, it was decided that installing communications equipment on each of these meters (and therefore converting them into type 4 meters) represented the most cost effective method of reading the meter data.

The method applied to report metering services expenditure in accordance with the requirements of the RIN can be described in 5 broad steps as set out below:

1. Calculate capital expenditure related to regulated meters only (i.e. excluding relays and load control);
2. Calculate direct operating expenditure associated with scheduled meter reading;
3. Calculate direct operating expenditure associated with metering services (excluding scheduled meter reading);
4. Estimate network and corporate overheads associated with metering services; and
5. Split expenditure (operating and capital) between meter types 4 and 6.

1. Calculate historic capital expenditure related to regulated meters only (i.e. excluding relays and load control)

Metering capital expenditure was extracted from the general ledger by project. These projects included expenditure related to both regulated meters and load control equipment. For the purposes of populating table 4.2.2, only capital expenditure related to metering equipment is relevant, as activities related to load control remain classified as standard control for the 2015-19 regulatory period. Specific projects related to the purchase of meters the purchase of associated test equipment were identified. In addition, as there exists only one project for capitalised labour related to meters and load control replacement, the meter related component of this project was calculated based on the proportion of meter and load control material costs.

The result represents capital expenditure related to regulated meters only and each project is mapped to a specific metering service sub-category in table 4.2.2.

In completing the 2013/14 Category Analysis RIN, Endeavour Energy refined the allocation of metering capital expenditure to the metering service sub-categories in table 4.2.2. The below sets out the changes adopted in 2013/14 compared to the presentation of expenditure information in the Category Analysis RIN:

- Expenditure related to the purchase of meters for replacement activities was reported under the 'Meter Replacement' category. Endeavour Energy is now reporting meter purchase expenditure for replacement activities under the 'Meter Purchase' category, along with the expenditure associated with the purchase of meters for growth activities; and
- Endeavour Energy identified labour costs associated with the issuance of meters to ASPs being reported under the 'Meter Replacement' category. This labour component is now reported under the 'New Meter Installation' category.

2. Calculate historic direct operating expenditure associated with scheduled meter reading

Scheduled meter reading activities are performed by the Market Operations branch in Endeavour Energy. In order to calculate the direct operating expenditure associated with scheduled meter reading, service order volumes and task time-to-complete estimates provided by the Market Operations Manager were used to split total 2013/14 Market Operations branch operating expenditure between its relevant functions (one of which is scheduled meter reading).

3. Calculate historic direct operating expenditure associated with metering services (excluding scheduled meter reading)

All other metering services (excluding scheduled meter reading activities) are performed by the Metering Information branch in Endeavour Energy. In order to calculate the direct operating

expenditure associated with the metering services performed by the Metering Information branch, the following steps were performed:

- i. Operating expenditure for 2013/14 was extracted from the general ledger for the Metering Information branch at the work order level;
- ii. Based on the work order description and the GL account code assigned to the work order, those work orders related to regulated metering were identified, along with Metering Information branch overhead, other standard control activities and contestable metering. For those work orders identified as relating to regulated metering, Endeavour Energy allocated the work order to specific metering service sub-categories based on the work order description and GL account code, in accordance with the categories required in table 4.2.2 of the Category Analysis RIN; and
- iii. Expenditure identified as Metering Information branch overhead was allocated to regulated metering service sub-categories based on the proportion of regulated metering services to total Metering Information branch direct costs.

The above steps resulted in the identification of Metering Information branch expenditure related to regulated metering and the disaggregation of this operating expenditure into the metering service sub-categories required by table 4.2.2.

Endeavour Energy has not reported any expenditure or volumes associated with special meter reading in table 4.2.2. Given special meter reading is classified as an Ancillary Network Service in the 2015-19 regulatory period (in accordance with the AERs Framework & Approach Paper – March 2013), expenditure and volumes associated with type 6 special meter reading have been captured in tables 4.3 and 4.4 (fee-based and quoted services respectively) to reflect the classification for the forthcoming regulatory control period.

4. Estimate historic network and corporate overheads associated with metering services

The operating expenditure calculated in step 2 and 3 above only relates to direct operating expenditure. In order to allocate a reasonable portion of network and corporate overheads to each metering service for the historic period, the average network and corporate overhead factor derived from the Cost Allocation Methodology (CAM) model for the 2015-19 regulatory period (specific to regulated metering services) was applied to direct costs for 2013/14. This assumes that the ratio of direct costs to costs inclusive of network and corporate overheads for metering services as calculated by the CAM model for the 2015-19 regulatory period, reflects the actual consumption of network and corporate overheads in 2013/14. This assumption has been applied as the level of network and corporate overheads as a proportion of company direct costs have not materially changed over time and the regulated metering activity as a whole has not changed significantly during the current regulatory control period.

This resulted in metering service operating expenditure at the sub-category level inclusive of network and corporate overheads.

5. Split historic expenditure (operating and capital) between meter types 4 and 6

Historic expenditure was split between meter types 4 and 6 based on the ratio of type 4 and 6 meters from table 4.2.1.

Use of estimated information

The expenditure reported in table 4.2.2 is materially dependent on information recorded in Endeavour Energy's accounting records. In addition, although a number of assumptions have been applied to calculate and report metering services expenditure in accordance with metering service

sub-categories (as outlined above), there are no valid alternatives to the assumptions applied which could lead to a materially different presentation.

As a result, the expenditure information presented in table 4.2.2 represents Actual Information as defined in the Category Analysis RIN.

Material accounting policy changes

Endeavour Energy have not undertaken any material changes in accounting policies which would impact the expenditure data contained in table 4.2.2.

Reliability of information

The expenditure information contained in table 4.2.2 represents Actual Information as defined in the Category Analysis RIN. While a number of assumptions have been applied in order to report the figures in accordance with the requirements of the Category Analysis RIN, Endeavour Energy considers these assumptions to be reasonable and result in reliable information.

Table 4.2.2 Cost Metrics (Volumes)

Compliance with requirements of the notice

The data presented in table 4.2.2 (volumes) is consistent with the principles and requirements set out in Appendix E of the Category Analysis RIN.

Source of information

The volume of meter purchase was obtained from Endeavour Energy's meter asset management system (Banner) for the reporting period 2013/14. The volume of metering services was obtained from Endeavour Energy's metering work management system (Click) for the reporting period 2013/14.

Methodology and assumptions

The volume for the meter purchase subcategory for the reporting period 2013/14 is based on actual meter installation volumes from Banner.

The total volume for the meter testing, meter investigation, special meter reading, meter replacement and meter maintenance subcategories for the reporting period 2013/14 are based on actual service orders from Click. The total volume for each subcategory is then assigned to a meter type based on the type 6 to type 4 meter ratio.

The total volume for the scheduled meter reading subcategory for the reporting period 2013/14 is based on actual volumes from data used to validate our meter reading contractor's invoice.

The total volume for the remote meter reading subcategory for the reporting period 2013/14 is based on actual meters from Banner.

The total volume for the new meter installation subcategory is calculated by summing the total of both the meter replacement and meter maintenance, then multiply this with the NMI to meter ratio and then subtracting it away from the total meter purchase. This is only applicable to type 6 meters as ASP are not allowed to install type 4 meters.

Important notes in relation to the interpretation of table 4.2.2 (volumes):

- Type 4 meters disclosed in table 4.2.2 represent non-contestable franchise market meters with communication equipment. Endeavour Energy does not have any Type 5 manually read interval meters as all meters in the Type 5 energy volume range have had communications equipment installed (and are read remotely) and are therefore defined as Type 4 meters.
- The new meter installation subcategory is nil for type 6 meters because this type of service is performed by ASPs therefore no volume is included for Endeavour Energy.
- The new meter installation subcategory is nil for type 4 meters because type 4 meters are not installed at new metering installations, instead they are meter changes from type 6 to type 4 once the consumption breaches the type 6 consumption threshold.
- The remote meter re-configuration subcategory is nil because Endeavour Energy does not perform this task.

Use of estimated information

The assignment of volumes to meter types in the meter testing, meter investigation, special meter reading, meter replacement and meter maintenance subcategories is based on a type 6 to type 4 meter ratio. Given the small percentage of type 4 meters any errors in the estimation would be insignificant.

Reliability of information

The volume information contained in table 4.2.2 represents Actual Information as defined in the Category Analysis RIN. While a number of assumptions have been applied in order to report the figures in accordance with the requirements of the Category Analysis RIN, Endeavour Energy considers these assumptions to be reliable.

Worksheet 4.3 – Ancillary services – Fee based services

4.3.1 Cost metrics for fee based services and 4.4.1 Cost metrics for fee based services

Compliance with requirements of the notice

The data presented in tables 4.3.1 and 4.4.1 is consistent with the principles and requirements set out in Appendix E of the Category Analysis RIN. In particular:

- The data presented in tables 4.3.1 and 4.4.1 reflects operating expenditure and volumes relating to Ancillary Network Services for either “fee-based services” or “quoted services” in accordance with the definitions provided in Appendix F of the Category Analysis RIN. Specifically, fee-based services have been identified as those where a fixed fee is charged to the customer for the provision of the service (i.e. the fee charged to the customer is either fixed per job or fixed per item/activity and not charged on a per hour basis). Quoted services have been identified as those where a quoted fee is provided based on a fixed hourly rate. Quoted services have fees which are charged on an hourly basis as the nature and scope of these services are specific to individual customers’ needs and vary from customer to customer.
- The fee-based services and quoted services listed in tables 4.3.1 and 4.4.1 respectively include all the services identified as Ancillary Network Services in Appendix D of the AER’s Framework and Approach Paper (March 2013). This includes all fee-based and quoted services listed in the annual tariff proposal, as well as new fees for services which Endeavour Energy have not previously charged a fee for, but will commence charging a fee from 2015/16 onwards (in accordance with the AER’s Framework and Approach Paper).
- A description of each Ancillary Network Service (which covers all fee-based and quoted services listed in templates 4.3 and 4.4), is included in the Service Description page of each Ancillary Network Service Fee Methodology document provided as an attachment to the Substantive Regulatory Proposal (‘SRP’). The purpose of each service and the activities which comprise each service are outlined in the Service Descriptions.
- Endeavour Energy has not distinguished expenditure for fee-based and quoted services between standard or alternative control services in regulatory templates 4.3 and 4.4. It is noted that for Endeavour Energy, Ancillary Network Services (which covers all fee-based and quoted services) are classified as standard control services for the 2009-14 regulatory period and alternative control services for the 2015-19 regulatory period.
- Endeavour Energy has not distinguished expenditure for fee-based and quoted services as either capital expenditure or operating expenditure in regulatory templates 4.3 and 4.4. However, it is noted that all expenditure related to fee-based and quoted services is operating expenditure.
- The data presented in tables 4.3.1 and 4.4.1 is consistent with the principles and requirements set out in Appendix E of the Category Analysis RIN. In particular:

Source of information

Information relating to fee-based and quoted services was extracted from a variety of sources as listed below. This information was used to calculate expenditure and volumes for fee-based and quoted services presented in tables 4.3.1 and 4.4.1 respectively.

- Customer Application Management System (CAMS) – A company developed database used for the management of contestable works projects. This system was used to extract volume data (where available) for certain services and service sub-categories.
- Banner – Endeavour Energy’s corporate customer information and billing system. Banner contains revenue information as well as service order² information which has been used to extract volume data (where available) for certain services.
- Ellipse – Endeavour Energy’s primary IT management system utilised for a variety of functions throughout the company. Ellipse contains Endeavour Energy’s general ledger and has been used to extract and/or calculate expenditure and volumes related to fee-based and quoted services. Ellipse contains work orders which are a reporting tool used to capture costs / revenue associated with a particular task.
- MBS (Metering Business System) – IT system which supports basic meter data management and market interactions with other market participants and AEMO. MBS includes service order¹ information related to basic meter customers which has been used to extract volume data (where available) for certain services.

Methodology and assumptions

The specific methodology and assumptions applied to calculate expenditure and volumes varies slightly between each Ancillary Network Service. The individual Ancillary Network Service Fee Methodology documents should be referred to in order to understand the methodology applied to calculate expenditure and volumes.

Presented below is a high level summary of the methodology and assumptions applied in order to calculate expenditure and volumes for each Ancillary Network Service. The methodology applied includes five broad steps:

1. Calculate volumes for each Ancillary Network Service at the fee sub-category level;
2. Calculate direct expenditure for each Ancillary Network Service at the fee sub-category level;
3. Estimate network and corporate overheads for each Ancillary Network Service at the fee sub-category level;
4. Identify the driver for each Ancillary Network Service fee at the fee sub-category level and categorise as either a fee-based service or a quoted service; and
5. Aggregate expenditure and volume data for each Ancillary Network Service and populate tables 4.3.1 and 4.4.1 in accordance with the Category Analysis RIN.

These steps are described in further detail below.

1. Calculate historic volumes associated with each Ancillary Network Service at the fee sub-category level.

As outlined above, the specific methodology applied to calculate volumes varies slightly between each Ancillary Network Service. Presented below is a summary which outlines how volumes have been calculated for each Ancillary Network Service.

Ancillary Network Service Fee	Volume Calculation Method
Administration Fee	Method 1

² A service order is a tool used by Endeavour Energy to initiate work to be carried out for a customer.

Ancillary Network Service Fee	Volume Calculation Method
Administration Fee	Method 1
Design Information Fee	Method 1
Design Certification Fee	Method 1
Design Recertification Fee	Method 1
Notification of Arrangement	Method 1
Inspection of service work (Level 1 work)	Method 1
Reinspection Fee (Level 1 & 2 work)	Method 1
Inspection of service work (Level 2 work)	Method 1
Access (Standby Person)	Method 1
Access Permits	Method 1
Contestable Substation Commissioning	Method 1
Authorisation of ASP's	Method 1
Site Establishment Fee	Method 1
Conveyancing Information	Method 1
Planning studies relating to distribution connection applications - SIMPLE JOBS	Method 2
Planning studies relating to distribution connection applications - COMPLEX JOBS	Method 2
Connection Offer Service (Basic)	Method 2
Connection Offer Service (Standard)	Method 2
Customer Interface co-ordination for contestable works	Method 2
Inv, rev & impl of remedial actions associated with ASP's connection work	Method 2
Preliminary Enquiry Service - SIMPLE JOBS	Method 2
Preliminary Enquiry Service - COMPLEX JOBS	Method 2
Services involved in obtaining deeds of agreement	Method 2
Clearance to Work	Method 2
Rectification Works	Method 2
Disconnections / Reconnections (Pole Top / Pillar Box)	Method 1
Excluded Distribution Services	Method 2
Meter Test Fee	Method 1
Off Peak Conversions	Method 3
Disconnections / Reconnections (Meter Box)	Method 3
Disconnections / Reconnections (Meter Load Tail)	Method 3
Disconnections / Reconnections (Site Visit)	Method 3
Network Tariff Change Request	Method 3
Special Meter Reads	Method 3

Method 1 – These services generally represent Ancillary Network Services for which Endeavour Energy is already charging a fee (i.e. Miscellaneous or Monopoly Fees). As a result, volume data is available from Endeavour Energy business systems (i.e. CAMS, Banner or Ellipse), or able to be calculated based on dividing revenue by current fees. Initially, volume data was extracted from business systems, or derived based on actual revenue. These volumes have also been used to populate tables 4.3.1 and 4.4.1 for these services.

Method 2 – These services generally represent Ancillary Network Services for which Endeavour Energy has never charged a fee and therefore volume data was unable to be obtained from

business systems. As a result, Endeavour Energy estimated volumes for these services based on information provided by relevant internal stakeholders.

Method 3 – Each of these services are predominantly carried out by the Market Operations branch in Endeavour Energy, with the services initiated by service orders issued by Retailers or through internal processes. Service order volumes were extracted for the financial year from MBS.

2. Calculate historic direct expenditure for each Ancillary Network Service at the fee sub-category level.

As outlined above, the specific methodology applied to calculate expenditure varies slightly between each Ancillary Network Service. Presented below is a summary which outlines how direct operating expenditure has been calculated for each Ancillary Network Service.

Ancillary Network Service Fee	Opex Calculation Method
Administration Fee	Method 1
Design Information Fee	Method 1
Design Certification Fee	Method 1
Design Recertification Fee	Method 1
Notification of Arrangement	Method 1
Inspection of service work (Level 1 work)	Method 1
Reinspection Fee (Level 1 & 2 work)	Method 1
Inspection of service work (Level 2 work)	Method 1
Access (Standby Person)	Method 1
Access Permits	Method 1
Contestable Substation Commissioning	Method 1
Authorisation of ASP's	Method 1
Site Establishment Fee	Method 1
Conveyancing Information	Method 1
Planning studies relating to distribution connection applications - SIMPLE JOBS	Method 2
Planning studies relating to distribution connection applications - COMPLEX JOBS	Method 2
Connection Offer Service (Basic)	Method 2
Connection Offer Service (Standard)	Method 2
Customer Interface co-ordination for contestable works	Method 2
Inv, rev & impl of remedial actions associated with ASP's connection work	Method 2
Preliminary Enquiry Service - SIMPLE JOBS	Method 2
Preliminary Enquiry Service - COMPLEX JOBS	Method 2
Services involved in obtaining deeds of agreement	Method 2
Clearance to Work	Method 2
Rectification Works	Method 2
Disconnections / Reconnections (Pole Top / Pillar Box)	Method 1
Excluded Distribution Services	Method 2
Meter Test Fee	Method 1
Off Peak Conversions	Method 3
Disconnections / Reconnections (Meter Box)	Method 3
Disconnections / Reconnections (Meter Load Tail)	Method 3

Ancillary Network Service Fee	Opex Calculation Method
Disconnections / Reconnections (Site Visit))	Method 3
Network Tariff Change Request	Method 3
Special Meter Reads	Method 3
Move in / Move out meter reads	Method 3

Method 1 – These services represent Ancillary Network Services for which Endeavour Energy is already charging a fee (i.e. Miscellaneous or Monopoly Fees). As a result, direct operating expenditure was able to be extracted from work orders, or able to be calculated based on resource requirement (labour hours) assumptions and labour rates provided by internal stakeholders. Labour rates calculated for 2012/13 were used and increased by 2.7% representing the labour increase for award staff for the financial year. Direct operating expenditure was calculated at the total Ancillary Network Service level and then allocated to the fee sub-categories based on the split of volumes and/or standard hours.

Method 2 – These services generally represent Ancillary Network Services for which Endeavour Energy has never charged a fee and therefore direct operating expenditure data was unable to be obtained from business systems. In order to calculate proposed fees and revenue requirements for these services for the 2015-19 regulatory period, unit rates were developed in 2012/13 dollars. These unit rates were escalated for 2013/14 based on labour/CPI escalation factors, and multiplied by the relevant volumes for the year in order to estimate direct operating expenditure.

Method 3 – Each of these services are predominantly carried out by the Market Operations branch in Endeavour Energy, with some involvement from Network Operations (for off peak conversions) and Finance & Compliance & Metering (for network tariff changes).

In order to estimate operating expenditure for the Market Operations component, total Market Operations branch operating expenditure for 2013/14 was split between each relevant Ancillary Network Service. This was based on service order volumes and task time-to-complete estimates provided by the Market Operations Manager.

In order to estimate historic operating expenditure for the Network Operations (for off peak conversions) and Finance & Compliance & Metering (for network tariff changes) contribution to these services, 2012/13 unit rates were escalated for 2013/14 based on labour/CPI escalation factors and multiplied by the relevant volumes in that year.

3. Estimate historic network and corporate overheads for each Ancillary Network Service at the fee sub-category level.

The expenditure calculated in step 2 above only relates to direct operating expenditure. In order to allocate a reasonable portion of network and corporate overheads to each Ancillary Network Service, the average network and corporate overhead factor derived from the Cost Allocation Methodology (CAM) model for the 2015-19 regulatory period (specific to Ancillary Network Services) was applied to direct costs for 2013/14. This assumes that the ratio of direct costs to costs inclusive of network and corporate overheads for Ancillary Network Services as calculated by the CAM model for the 2015-19 regulatory period, reflects the actual consumption of network and corporate overheads in 2013/14. This assumption has been applied as the level of network and corporate overheads as a proportion of company direct costs has not materially changed over time and the Ancillary Network Service activity as a whole has not changed significantly during the current regulatory control period.

4. Identify the driver for each Ancillary Network Service fee at the fee sub-category level and categorise as either a fee-based service or a quoted service.

The driver for each Ancillary Network Service fee was identified as either being on a per unit basis (i.e. per job, project, lot, pole etc) or a per hour basis. Based on the identified fee driver, each fee sub-category was identified as either a fee-based service (charged on a per unit basis) or a quoted service (charged on a per hour basis).

5. Aggregate the historic expenditure and volume data for each Ancillary Network Service and populate tables 4.3.1 and 4.4.1 in accordance with the Category Analysis RIN.

Expenditure and volume data for each Ancillary Network Service was aggregated into a single worksheet and the data for each fee sub-category was populated into tables 4.3.1 and 4.4.1 based on the identification performed in step 4 above.

Use of estimated information

As outlined in the methodology above, regardless of the method chosen, expenditure and volumes related to fee and quoted services is materially dependent on information recorded in Endeavour Energy's accounting records or other records used in the normal course of business (i.e. the approved CAM). However, a number of assumptions (as outlined above) have been applied in order to derive expenditure and volume data for 2013/14, for certain Ancillary Network Fees and at the fee sub-category level required by tables 4.3.1 and 4.4.1. While Endeavour Energy does not believe there are valid alternative assumptions which could lead to a materially different presentation, the number of assumptions applied to present data in the detail required by tables 4.3.1 and 4.4.1 has resulted in Endeavour Energy classifying all data in tables 4.3.1 and 4.4.1 as Estimated Information.

Material accounting policy changes

Endeavour Energy have not undertaken any material changes in accounting policies which would impact the data contained in tables 4.3.1 and 4.4.1.

Reliability of information

While a number of assumptions have been applied in order to derive expenditure and volume data for 2013/14, for certain Ancillary Network Fees and at the fee sub-category level required by tables 4.3.1 and 4.4.1, Endeavour Energy considers these assumptions to be reasonable and without valid alternatives and therefore the resulting information to be reliable.

Worksheet 5.2 – Asset age profile

5.2.1 Asset age profile

Compliance with requirements of the notice

Age profiles were developed for Endeavour Energy's asset base.

Source of information

Age profiles were developed for Endeavour Energy's asset base using:

- Ellipse/Cognos
- GIS/Network Statistics
- ODRC/VDA
- SARP

Methodology and assumptions

- Profile was carried over from the Reset RIN for years 2012/13 and back. Refer to Reset RIN BOP for development of data.
- Mean life and standard deviation was carried over from Reset RIN.
- Some recategorisation was applied to move some subcategories that Endeavour created for the Reset RIN into the subcategories of the Category RIN.
- Some age profiles (where the profile creation was straightforward) were recreated to accommodate some of the recategorisations.
- Partial data for 13/14 was available at the time when the Reset RIN was developed. This data was used to estimate the quantities for 13/14. As the age profiles were developed in March, the 13/14 partial quantity was multiplied by 4/3 to estimate the full year's quantity.

Use of estimated information

Estimation was required due to lack of commissioning date data. Estimation was carried out with the methods explained above.

Reliability of information

Age profiles were developed based on available data and existing profiles. Estimation was carried out to allocate quantities of assets with unknown commissioning dates to the profiles.

Worksheet 5.3 – Maximum demand at network level

5.3.1 Raw and weather corrected coincident maximum demand at network level

Compliance with requirements of the notice

All data supplied complies with the requirements of the Regulatory Information Notice. Data has been entered into the spreadsheet by following the instructions set out in the RIN.

Source of information

Network Load History (NLH) database – Raw & Co-incident Actuals

Methodology and assumptions

Actual Data (Raw & Co-incident) requested for 2013-14 was taken from NLH.

Network total refers to the summation of all the Bulk Supply Points (BSP) and all the known embedded generation.

Embedded Generation has been included in the figures provided.

See Basis of Preparation (Worksheet 5.4) for short description of forecasting methodology and weather correction.

Use of estimated information

No Estimations were provided in this worksheet.

Reliability of information

Network load information is sourced from measured values and is considered reliable.

Worksheet 5.4 – Maximum demand and utilisation at spatial level

5.4.1 Non-coincident and coincident maximum demand

Compliance with requirements of the notice

All data supplied complies with the requirements of the Regulatory Information Notice. Data has been entered into the spreadsheet by following the instructions set out in the RIN.

Source of information

Network Load History (NLH) database – Raw & Co-incident Actuals

Transmission Network Planning Review (TNPR) 2014 Report – Firm Capacity Ratings

Endeavour Energy Transmission Network Cyclic Rating Report February 2014 – Cyclic Ratings

Methodology and assumptions

For 2013-14 the peak demand occurred in summer.

Subtransmission substations refer to the Bulk Supply Points (BSP).

Actual Data (Raw & Co-incident) requested for 2013-14 was taken from NLH.

Embedded Generation

Embedded Generation has been included in the figures provided.

Subtransmission Substation:

Dapto BSP: Generation is included into Dapto BSP figures. Scheduled Generation is from the Tallawarra Generator which can supply up to 435MW.

Sydney West BSP: Generation is included into Sydney West BSP figures. Both Semi Scheduled Generation (Smithfield) and Non-Scheduled (Appin & Tower Colliery) Generation is included. Smithfield can supply up to 160MW. Appin & Tower can supply up to 97MW.

Substation Cyclic Ratings (MVA):

Substation Ratings – All substation ratings refer to the substations firm capacity (N-1) and have been taken from the TNPR reports. The only known cyclic ratings for zone substations can be found below. There are also a small number of zones listed below that have only one transformer and the substation capacity in the spreadsheet is shown as (N).

Albion Park as at February 2014 - 13.04(trf1) & 11.93 (trf2) & 11.93 (trf3)

Arndell Park as at February 2014 - 42.31(trf1) & 42.31 (trf2)

Culburra as at February 2014 - 10.53(trf1) & 10.53(trf2)

Kangaroo Valley as at February 2014 - 5.72(trf1) & 2.73(trf2)

Nepean Zone as at February 2014 - 38.11(trf6) & 38.11(trf7)

Robertson as at February 2014 - 3.81(trf1) & 3.81(trf2)

Schofields as at February 2014 - 47.63(trf1) & 47.63(trf2)

South Granville as at February 2014 - 26.57(trf1) & 26.57(trf2)

Substations which only have one transformer:

Appin 1 x 15MVA

Berrima Junction 1 x 20MVA

Bolong Road 1 x 12.5MVA

Ilford Hall 1 x 2.5MVA

Jamberoo 1 x 3.75MVA

Jordan Springs 1 x 22MVA (currently, a mobile substation)

Meadow Flat 1 x 2.5MVA

Oran Park 1 x 20MVA (currently, a mobile substation)

The Oaks 1 x 15MVA

Wentworth Falls 1 x 10MVA

Wisemans 1 x 12.5MVA

Yatte Yattah 1 x 6.5MVA

Substations where Maximum Demand in MVA was higher than MVA values coinciding with Maximum MW:

Subtransmission Substation:

Wallerawang BSP

FY2009/10 – Maximum MVA is 112.7MVA, FY2010/11 – Maximum MVA is 109.0MVA

Zone Substation:

Baulkham Hills 11kV FY2008/09 - Maximum MVA is 36.0385

Blackheath FY2013/14 - Maximum MVA is 4.37

Cabramatta FY2008/09 - Maximum MVA is 30.1526

Cambridge Park FY2008/09 - Maximum MVA is 29.116

Cattai FY2009/10 - Maximum MVA is 12.1360

Culburra FY2009/10 - Maximum MVA is 9.94

Darkes Forest FY2010/11 - Maximum MVA is 1.22442, FY2011/12 - Maximum MVA is 1.185

Eastern Creek FY2009/10 - Maximum MVA is 12.3693

Helensburgh FY2008/09 - Maximum MVA is 12.92

Inner Harbour FY2009/10 - Maximum MVA is 9.11, FY2010/11 Maximum MVA is 9.469

Katoomba FY2010/11 - Maximum MVA is 13.32

Lennox FY2012/13 - Maximum MVA is 31.8

Mittagong FY2013/14 - Maximum MVA is 12.80

Moorebank FY2012/13 - Maximum MVA is 39.0, FY2013/14 – Maximum MVA is 34.43

Mungerie Park FY2011/12 - Maximum MVA is 23.917

North Eastern Creek FY2013/14 - Maximum MVA is 9.11

Nowra FY2011/12 - Maximum MVA is 20.888

Schofields FY2012/13 - Maximum MVA is 17.589

South Wollongong FY2009/10 - Maximum MVA is 14.88

West Wetherill Park FY2013/14 - Maximum MVA is 31.95

Wisemans FY2008/09 - Maximum MVA is 5.54

Yennora FY2010/11 - Maximum MVA is 25.62

Substations that have been de-commissioned, commissioned or expected to be commissioned

Sub Transmission:

Commissioned:

Holroyd BSP – Expected to be commissioned FY2013/14

Decommissioned:

None

Zone Substation:

Commissioned:

Abbotsbury – Expected to be commissioned in FY2014/15

Berrima Junction – Commissioned in FY2009/10

Casula - Commissioned in FY2013/14

Cawdor – Commissioned in FY2012/13

Chertion Avenue - Commissioned in FY2012/13

Chipping Norton - Commissioned in FY2013/14

Claremont Meadows - Commissioned in FY2013/14

Denham Court - Expected to be commissioned in FY2015/16

East Richmond - Commissioned in FY2013/14

Edmondson Park - Expected to be commissioned in FY2015/17

Figtree - Commissioned in FY2013/14

Glenorie- Expected to be commissioned in FY2013/14

Huntingwood - Commissioned in 2013/14

Jordan Springs – Currently running on a mobile substation, expected commissioning in FY2014/15

Nepean Zone - Commissioned in FY2012/13

North Eastern Creek- Commissioned in FY2012/13

North Warragamba – Commissioned FY2009/10

Oran Park - Currently running on a mobile substation, expected commissioning in FY2014/15

South Marsden Park - Expected to be commissioned in FY2015/16

The Oaks - Commissioned in FY2013/14

Tomerong Zone - Expected to be commissioned in FY2014/15

West Liverpool Zone - Commissioned in FY2012/13

West Parramatta - Commissioned in FY2013/14

Wilton - Commissioned in FY2013/14

Decommissioned:

Camden – Decommissioning started in FY2012/13

Hoxton Park – Decommissioned FY2012/13

Parramatta – Expected to be decommissioned FY2013/14

Richmond – Expected to be decommissioned FY2013/14

Warragamaba - Decommissioned FY2008/09

A note about special Zone Substations:

Endeavour Energy has two main growth sectors in its region – the North West and South West Sectors. Three fictional zone substations have been established to provide a way to show the unallocated load expected from the large planned developments. It is envisaged that load will remain on these substations until it is allocated to an existing substation or a new substation in the future.

North West Sector

North West Sector represents growth around the Marsden Park Industrial Site & Sydney Business Park. The load is expected to be allocated to zone substations supplied by Vineyard BSP.

South West Sector (Macarthur)

South West Sector Macarthur represents Residential and Employment land in Bringelly, Catherine Field, North Catherine Field and Maryland. The load is expected to be allocated to zone substations supplied by Macarthur BSP.

South West Sector (Sydney West)

South West Sector Sydney West represents Residential and Employment land in Rossmore, North Rossmore, Austral, South Leppington, North Leppington, Kemps Creek, Oakdale West and North Bringelly. The load is expected to be allocated to zone substations supplied by Sydney West BSP.

Short Description of the Weather Correction Process and forecasting methodology:

Historical peak demands for each season are corrected to the respective reference temperatures. The temperature correction is based on a second-order polynomial fit to the weekday daily demands and the corresponding maximum temperatures at Nowra for the South Coast or at Richmond for the remaining areas in summer, and daily 6 pm temperatures at Richmond for all Endeavour Energy areas in winter.

Peak demand forecast accounts for the total growth from the existing customers as well as the new customers. The forecasting process can be divided into two major steps. The first step is to estimate the organic growth at the zone substation which specifies the internal growth from its existing customers likely to be experienced over the forecast period. For summer, it was calculated by the known current and projected penetration rates of air conditioners and the percentage of residential peak load at the zone substation. This organic growth at the zone substation is used to establish the base level of the 10-year forecast. For winter, the organic growth at zone substations is assumed to be flat with zero growth.

The second step of the forecast process involves incorporating the planner's inputs to the base level forecast. The inputs include new developments planned to occur (lot releases), new load increases expected from customer applications (spot loads) and also information regarding the transfer of load from one zone substation to another (load transfers). The final forecast at a zone substation is derived from the base level forecast after adjustment for planned load transfers, spot loads, land releases and re-development in the zone substation.

The final forecasts for all zone substations would be presented to the Network Planners for confirmation of the expected demand growth. The Network Planners' local knowledge is vital in determining load transfer, embedded generation, proposed spot-loads and predicted lot release information. This feedback also provides an audit trail for quality purposes.

Forecasts at transmission substations and bulk supply points are calculated by the corresponding historical diversity factors. The zone substation forecasts are summated to obtain the undiversified

totals and then multiplied by the calculated diversity factor for that transmission substations or bulk supply point.

Use of estimated information

Estimations & Assumptions

For each substation where no actual MVA information was available for the financial years required, an MVA estimate was calculated by dividing the substations historical average power factor by the actual recorded peak MW value.

If the explanation above is not valid for a particular substation it will be identified below with reasons for the estimation and the approach used to obtain the estimation.

Sub Transmission:

Ingleburn BSP

FY2013/14- An assumed PF of 0.97742 was used for the conversion to MVA

Regentville BSP –

For FY2013/14 an assumed PF of 0.967 was used for the conversion to MVA

Sydney North BSP –

For FY2013/14 an assumed PF of 0.995 was used for the conversion to MVA

Zone Substation:

Gerringong –

For FY2013/14 an assumed PF of 0.973 was used for the conversion to MVA

Reliability of information

Network load information is sourced from measured values and is considered reliable.

Worksheet 6.3 – Sustained interruptions to supply

6.3.1 Sustained Interruptions

Compliance with requirements of the notice

Reported SAIDI/SAIFI complies with the requirements of the Benchmarking RIN. The following aspects are noted:

1. **Excluded incidents** have been determined in accordance with the requirements of the STPIS (3.3a)

Major Event Days (MED's) have been determined in accordance with the requirements of the STPIS (3.3b). The 20113/14 MED SAIDI threshold is 4.63, therefore any day in the period that exceeded this threshold was classified as a MED.

2. **Outages affecting single premises** – Single premise outages that occur as a result of a fault on Endeavour Energy's network are included in the 2013/14 reliability result.
3. **Subsequent interruptions caused by network switching during fault finding**, in general switching operations associated with an unplanned incident may include subsequent interruptions to customers that are associated with fault finding. Current systems do not have any facility to identify these operations and therefore exclude them from reliability calculations. It should be noted that removing these operations from reliability calculations would result in an inaccurate record of actual customer experience.
4. We note that the RIN, defines a sustained interruption as being greater than 0.5 seconds. However, the SAIDI definition in appendix A of the STPIS also states that unplanned SAIDI excludes momentary interruptions (**one minute or less**).

The MAIFI definition is “ The total number of customer interruptions of **one minute or less**”

Therefore our interpretation of the RIN 0.5 second threshold is that it applies as a minimum threshold for a momentary interruption (MAIFI) and this RIN does not require the reporting of MAIFI.

Source of information

1. **Base outage data (customers interrupted and CMI)**

2013/14 – Data sourced from OMS. All records in this database were validated and checked in accordance with a Work Place Instruction WPB1014.

Reporting tool – Cognos 8

2. **Customer numbers for calculation of SAIDI and SAIFI**

Customer numbers used to calculate SAIDI and SAIFI were average customer numbers for the relevant reporting period and were sourced from customer numbers in the OMS Archive database - refer Annual RIN

Methodology and assumptions

MED days – MED day threshold of 4.63 (2013/14 threshold) was applied, therefore any day in the period that exceeded this threshold was classified as a MED.

Excluded interruptions – Reporting tool Cognos 8 identifies excluded interruptions based on a cause that is assigned to each interruption in accordance with STPIS 3.3a.

Customer numbers – It should be noted that the accuracy of customer numbers and its impact on SAIDI has been the subject of an AER audit and recent IT projects have been completed to rectify the identified errors.

The errors cannot be removed from historical and are therefore likely to have some impact on the reported SAIDI/SAIFI information.

As noted in the Annual RIN a step change due to the IT project has had a minor impact on the average customer numbers for the period. This impact is not expected to be carried in to any subsequent years.

Allocation of Reason for Interruptions and detailed Reason for Interruption

Interruption cause information in the OMS does not record causes in the same way as the RIN. Therefore causes in OMs were mapped to the RIN causes in an external mapping table

Reliability of information

All the information provided represents actual information extracted from Endeavour Energy's reporting systems and reconciled to reported figures in previous audited RINs. As a result the information contained is considered to be reliable cognisant of the comments made above.