TCFT BUSINESS SERVICES

ABN 30 503 145 127

Limited Assurance Audit Report

Report of Limited Assurance Audit of non-financial information to be provided by Endeavour Energy to the Australian Energy Regulator in accordance with the Reset Regulatory Information Notice of 7 March 2014

26 May 2014

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EXECUTIVE SUMMARY

This Audit Report presents the findings of the limited assurance audit of non-financial information provided by Endeavour Energy in response to the Regulatory Information Notice (RIN) issued to Endeavour Energy by the Australian Energy Regulator (AER) on 7 March 2014[1].

This audit has been undertaken in accordance with the requirements of Appendix C: Audit and Review of the above RIN issued by the AER and ASAE 3000.

The audit was conducted during April - May 2014. The scope of the audit included the assessment of non-financial information in the Actual, Estimated and Consolidated Information Templates and associated sections of the Basis of Preparation (BoP) document as follows:

(i)   '2.1 Expenditure summary and reconciliation' to '2.11 Labour';

(ii)   '4.1 Public lighting' to '4.4 Quoted Services';

(iii)   '5.2 Asset Age Profile' to '5.4 MD & utilization-spatial'; and

(iv)   '6.1 Telephone answering' to '6.4 Historical MEDs'.

The complete list of RIN templates within the scope of this audit is given in the Appendix.

Relevant audit samples were selected on a random basis. Testing of these samples was undertaken and discussions were held with Endeavour Energy managers and key staff responsible for the procedures and systems used to capture and record the information as raw or after some processing. The associated parts of the Basis of Preparation document were reviewed to assess if they reasonably reflected the sources of information, process of preparing and reporting the information in the RIN templates.

The work performed allowed TCFT Business Services to understand the policies, procedures and practices followed and systems used to capture and record the information in the AER's reset regulatory templates. Additional testing was undertaken to confirm whether the procedures, work instructions and IT systems were robust, operating correctly, and to check the data reported to substantiate its accuracy, completeness and compliance with reporting requirements for AER.

Based on this work performed, TCFT Business Services is able to provide a limited assurance report in respect of the non-financial information provided by Endeavour Energy in response to the AER's reset RIN. This limited assurance report is submitted separately to Endeavour Energy.

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[1]   AER, *Regulatory Information Notice issued under section Division 4 of Part 3 of the National Electricity (New South Wales) Law*, 7 March 2014.

INTRODUCTION

Endeavour Energy is a New South Wales State Government owned corporation established under the Energy Services Corporations Act 1995 (NSW) and the State Owned Corporations Act 1989 (NSW). It operates within the terms and conditions imposed by the Electricity Supply Act 1995 (NSW) on behalf of the shareholder, the New South Wales Government.

Endeavour Energy is licenced by the NSW jurisdiction and registered with the Australian Energy Market Operator (AEMO) to operate as a Distribution Network Service Provider (DNSP) for its distribution area in NSW. Endeavour Energy's network is located across a network area spanning approximately 24,500 square kilometres in the Blue Mountains, Greater Western Sydney, the Illawarra and Southern Highlands of NSW.

In accordance with Division 4 of Part 3 of the National Electricity (New South Wales) Law (NEL), the Australian Energy Regulator (AER) issued a Regulatory Information Notice (RIN) to Endeavour Energy on 7 March 2014. This RIN requires Endeavour Energy to provide, prepare and maintain the information in the manner and form specified in the RIN. The AER requires the information for the performance or exercise of its functions or powers conferred on it under the NEL and the National Electricity Rules.

As stated in the RIN, the AER requires that Endeavour Energy has the data and process, procedure and information recorded in the regulatory templates and associated sections of the Basis of Preparation (BoP) document audited in accordance with the requirements of Appendix C: Audit and Review of the RIN.

TCFT Business Services has been appointed by Endeavour Energy to carry out this audit of non-financial parts of the RIN information. In relation to the conduct of the audit, Endeavour Energy has specified that the scope of the work to be undertaken by TCFT Business Services relates to the non-financial information in the following regulatory templates:

2.2   Repex

2.3   Augex Project Data

2.4   Augex Model

2.5   Connections

2.6   Non Network Expenditure

2.7   Vegetation Management

2.8   Maintenance

2.11   Labour

4.1   Public Lighting

4.2   Metering

4.3   Ancillary Services - Fee-based Services

4.4   Ancillary Services - Quote based Services

5.2   Asset Age Profile

5.3   Maximum Demand - Network Level

5.4　　Maximum Demand and utilisation at spatial level

6.1　　Telephone answering

6.2　　Reliability and Customer Service Performance

6.3　　Sustained Interruptions to supply

6.4　　Historical Major Event Days (MEDs)

Together with the associated parts of the BoP.

The detailed list of all the templates within the scope of this audit is given in the Appendix A.

The audit of the above templates and the associated sections of the BoP document has been undertaken in accordance with the requirements of Appendix C of the RIN and ASAE 3000.

The information contained in the RIN templates and associated BoP document has been prepared by Endeavour Energy solely to meet the RIN requirements of the AER and consequently the templates and the associated BoP document may not be suitable for any other purpose.

This audit report has been prepared for submission to Endeavour Energy and is not to be used for any other purpose. This report refers only to the items specified above and does not extend to any other financial, regulatory or compliance requirements, nor is it an opinion on the effectiveness of the internal controls of Endeavour Energy, taken as a whole. TCFT disclaims any responsibility for any reliance on this report to any person other than that for which it was prepared.

RESPONSIBILITY FOR THE INFORMATION

Endeavour Energy's directors, management and staff are responsible for the:

- determination, preparation, calculation, presentation and inclusion of all information reported in the AER's RIN templates and the BoP document

- preparation, presentation and inclusion of the description of the processes, procedures, measurement systems, information systems and quality control systems used in calculating and providing all of the information reported in the AER's RIN templates and describing these in the BoP document

- establishment and maintenance of internal controls relevant to the information reported in the AER's RIN templates and the associated BoP document.

SCOPE OF WORK

The scope of the work undertaken by TCFT included:

- assessment of the non-financial information provided in the RIN templates listed in the Appendix and relevant parts of the associated BoP document;

- inquiring with relevant Endeavour Energy personnel;

- drilling down and testing a random sample of the data; and

- locating, sighting and examining relevant procedures, processes, and systems to address the matters identified during the audit process and those detailed in the relevant parts of Appendix E: Principles and Requirements and Appendix F: Definitions of the RIN.

Our audit procedure involved:

1. Initiation of Audit

1.1. Conduct initiation/introduction meeting with Endeavour Energy management.

1.2. Obtain a copy of the completed Estimated, Actual and Consolidated templates for the non-financial parts of the RIN:

(i) '2.1 Expenditure summary and reconciliation' to '2.11 Labour';

(ii) '4.1 Public lighting' to '4.4 Quoted Services';

(iii) '5.2 Asset Age Profile' to '5.4 MD & utilisation-spatial'; and

(iv) '6.1 Telephone answering' to '6.4 Historical MEDs'.

1.3. Obtain a copy of the BoP document including the required supporting process, procedures and systems information.

1.4. Review the completed RIN templates, associated sections of the BoP document and supporting information provided by Endeavour Energy.

1.5. Identify the Endeavour Energy (EE) managers responsible for:

- compiling the required data reported in each regulatory template;

- the processes and procedures to gather, compile, verify and control the data in each regulatory template; and

- the systems used to record and report the data in each regulatory template. (e.g., SCADA, Outage Reporting Database, GIS, Customer Billing, public lighting, energy and demand data, vegetation maintenance, reliability and customer service performance etc.)

1.6. Schedule initial meetings with the relevant Managers; the purpose of these initial meetings being to gather information regarding the current systems, processes and procedures; and to request the manager to demonstrate the source of selected cases for scrutiny.

2. Audit of Regulatory Templates

2.1. Check that Endeavour Energy has completed the regulatory templates given in Appendix A in accordance with Appendices E and F of the RIN issued by the AER to Endeavour Energy on 7 March 2014.

2.2.   Check that Endeavour Energy has identified and provided in the BoP document a description of the processes, procedures, measurement systems, information systems and quality control systems applied in providing the information required in the regulatory template.

2.3.   Meet with the managers responsible for the supporting information provided in the regulatory templates and in the BoP document:

- Discuss and record the details of the systems / databases used, including to identify any changes or significant errors experienced during the period of the audit;

- Discuss and record the details of the processes used, including to identify any changes or significant errors experienced during the period of the audit;

- Discuss and record the details of the procedures used, including to identify any changes or significant errors experienced during the period of the audit; and

- Discuss and record the details of the key internal controls in operation, including to identify any changes or significant errors experienced during the period of the audit

2.4.   Update the audit 'standing' working paper information, including process maps as applicable, to reflect Endeavour Energy's current RIN information related systems, processes and procedure, internal controls, transaction volumes and relevant operational risks.

2.5.   Meet with the managers responsible for providing the data in the regulatory templates and:

- Obtain a copy of the relevant control and management reports that can be used to verify the data reported in the regulatory templates to the underlying systems / databases;

- Obtain a listing of the relevant transactions and data input forms that have been processed during the period of the audit (such as transaction reference ID, source document ID, description, amount etc.);

- Using the transactions listing, select an audit sample of source documents and data entry input forms that have been processed in the relevant systems / databases for audit testing. The audit sample will be selected to test the effective operation of relevant controls and mitigation of operational risks;

- Request the relevant Manager to locate and provide the requested sample of source documents and data entry input forms;

- Identify and explain all sample cases used in undertaking the audit;

- If changes occurred in documented procedures, processes or systems during the audit period, the sample must include cases or information from before and after such changes so the auditor can gauge whether accuracy or reliability has significantly altered; and

- Obtain relevant reports from the systems / databases that can be used to verify the correct processing of the selected sample in the relevant systems / databases.

2.6.   Undertake testing and verification of the sample of transactions to the relevant systems / databases and control reports.

2.7.   Undertake a review of the relevant process and procedure documentation and information.

2.8.   Identify and record any issues or matters of audit concern arising during the testing of the samples and the review of the relevant process and procedure documentation and information. Discuss these audit concerns with the relevant Endeavour Energy Manager.

2.9.   In respect of the non-financial information provided, based on the testing undertaken check the accuracy and reliability of the information.

2.10.   In respect of the identified processes, procedures and systems, based on the testing undertaken, check:

- the reliability of the processes, procedures used and the systems applied to provide and prepare the information;

- whether the processes, procedures and systems were correctly used and applied by the relevant staff to prepare and provide the information;

- whether the systems are able to prepare and provide the required parameter definitions and the required information in respect of the templates;

- whether the systems are able to competently identify and correct errors and whether the information referred to in the regulatory templates reflects any such corrections; and

- whether the processes, procedures or systems point to any missing information or unusual trends that suggest errors in information entry or manipulation.

2.11.   Update the audit findings into the draft audit report.

2.12.   Discuss any significant audit findings with the relevant Endeavour Energy Manager.

SAMPLING METHODOLOGY

Obtaining sufficient appropriate evidence in a limited assurance audit as required by ASAE 3000 Assurance Engagements Other than Audits or Reviews of Historical Financial Information included the use of audit sampling to assist with the selective testing.

Audit sampling (sampling) means a process which includes the application of audit procedures to less than 100% of items within a class of transactions such that all sampling units have a chance of selection. This enables the auditor to obtain and evaluate audit evidence about some characteristic of the items selected in order to form or assist in forming a conclusion concerning the population from which the sample is drawn.

Because the purpose of audit sampling is to draw conclusions about the entire population, the auditor needs to:

- select a representative sample by choosing sample items which have characteristics typical of the population; and

- select the sample so that bias is avoided.

In selecting the samples for this Reset RIN audit, the following matters were taken into consideration:

- results of the audit of information provided to the AER in response to the Benchmarking Regulatory Information Notice (RIN) issued to Endeavour Energy by the Australian Energy Regulator (AER) on 18th December 2013 and the associated Instructions and Definitions, dated November 2013

- results of the audit of the 2012 - 2013 STPIS and DMIS-DMIA information provided to the Australian Energy Regulator in accordance with the Regulatory Information Notice issued to Endeavour Energy on 28th September 2013; this audit was carried out in October-November 2013

- results of the audit of the 2011-2012 STPIS RIN information provided to the AER; this audit was conducted in November 2012

- the extent of changes, if any, to the underlying systems, processes, procedures and controls used to prepare the RIN information since the last audits of Benchmarking RIN 2013, STPIS RIN in November 2012; and STPIS and DMIS-DMIA RIN in October-November 2013

- the extent of changes in the key personnel who are responsible for producing the RIN information for these past audits

- an assessment of the key risks in the underlying systems, processes, procedures and controls used to prepare the information for this RIN.

Additionally, all samples were selected adopting the random sampling method to ensure that all transactions in the entire population had a chance to be selected without any sampling bias.

TESTING APPROACH

TCFT identified applicable processes and procedures used by Endeavour Energy for collection, classification and reporting of data as required by the RIN as well as specific RIN requirements applicable to each RIN template.

Subsequently the testing of the data and related processes and procedures, and associated parts of the Basis of Preparation (BoP) document was undertaken as described below.

General Testing

When testing the selected samples, the following testing approach was applied to each of the RIN templates within the scope of this audit except as noted in the section on Audit Findings:

RIN Templates

- Audit procedures appropriate to the purpose of the test for each selected sampling unit were undertaken, for example:
  - The raw and adjusted maximum demands (MW and MVA) were checked against the source data files (Network Load History data base;
  - Asset related data in Routine and Non-routine Maintenance templates was checked against data recorded in Selected Asset Characteristics template; and
  - Data in the Planned Interruption database RequestIT was checked against the information recorded in Outage Management System (OMS).

- TCFT then drilled down each randomly selected sample adopting a range of audit procedures to test the selected transactions and to obtain the required audit evidence.

- The range of audit procedures included inspection, observation, re-calculation, verification, in addition to enquiry and seeking further clarification from the relevant Endeavour Energy staff.

- Details of the transactions selected, supporting evidence obtained and audit procedures undertaken have been recorded in the audit work papers.

- The data provided in the RIN templates was checked to the AER requirements.

- The three RIN templates – Estimated, Actual and Consolidated templates – were checked to assess if they were populated as per classification of the data.

- An assessment of data for all years for all RIN templates within the scope of this audit was made to check the trends and identify any unusual variations which were then discussed with relevant Endeavour Energy staff.

- Documentary evidence was obtained and examined to ascertain the accuracy of the data, and the reliability of the processes, procedures and systems in place; in this regard no field tests or site inspections were undertaken.

- Where instances of data issues were identified, or where supporting documentary evidence could not be located, TCFT used professional judgement to review the nature and cause of the error or misstatement, to evaluate the possible effect on the purpose of the audit and to assess the risk of material error or misstatement occurring. TCFT referred any matters arising to the relevant Endeavour Energy staff for clarification, correction and amendments to the RIN templates as appropriate. After the RIN templates had been corrected, TCFT undertook further suitable audit procedures to ensure this risk is reduced to an acceptably low level.

- Subsequently, the revised RIN templates were reviewed to make sure that the agreed clarifications, corrections and amendments have been incorporated.

BoP Document

- The BoP was reviewed to test whether the explanation of the methodology and processes was reasonably complete and comprehensible.

- The relevant parts of the BoP for each of the RIN templates was checked to AER requirements and for the description of processes and procedure used to complete the RIN templates.

- Where instances of unclear statement were identified, or where supporting documentary evidence could not be located, TCFT used professional judgement to review the nature and cause of the misstatement, to evaluate the possible effect on the purpose of the audit and to assess the risk of material misstatement occurring. After discussion, Endeavour Energy corrected the information and TCFT undertook further suitable audit procedures to ensure this risk is reduced to an acceptably low level.

- After discussion, Endeavour Energy amended the BoP document to reflect changes in the information and/or explain more accurately the process for obtaining, recording and reporting the information in the RIN templates.

- Referred any matters arising to Endeavour Energy for clarification, correction and amendments as appropriate.

- Subsequently, the revised BoP document was reviewed to make sure that the agreed clarifications, corrections and amendments have been incorporated.

Additional Testing

In addition to the General Testing, as described above, testing was undertaken that was considered appropriate to each of the RIN templates to further test the robustness of the information in the RIN templates, together with the approach and processes used to prepare the required data and the data sources set out in the corresponding parts of the BoP document.

The findings arising from this additional testing has been included in the chapter Audit Findings under each of the RIN Templates within the scope of this audit as appropriate.

AUDIT FINDINGS

General Observations

Endeavour Energy has in general processes and procedures in place for collecting, classifying and reporting non-financial data for reporting in accordance with its jurisdictional and license conditions requirements.

The TCFT audit revealed that these processes and procedures could generally be used for responding to the RIN.

However, during the current audit there were instances identified where no formal procedure or process existed to produce or report data exactly as required by this RIN. (Examples are set out in the specific audit findings). In such cases, it was found that Endeavour Energy officers have adapted the existing procedures and processes to provide the information required by the RIN.

Specific Audit Findings for RIN Templates and Associated BoP

The specific findings arising from our audit work in respect of each of the RIN templates are set out in the following sections.

Template 2.2   Repex

2.2.1   Replacement Expenditure, Volumes and Asset Failures by Asset Category

2.2.2   Selected Asset Characteristics

Endeavour Energy Managers interviewed:

➢ Manoraj Jayasekara

➢ Warren Thai

Policies, Procedures and Work Instructions:

➢ Replacement Capital Expenditure Modeling SARP 2014/15 – 2023/24, May 2014

Endeavour Energy Systems used for this RIN Template:

➢ Replacement asset volumes are derived from asset age profiles, separately audited at Template 5.2.1.

➢ Endeavour Energy's Value Development Algorithm (VDA) model. This is similar in structure and provides similar outcomes to the AER's repex model.

➢ Ellipse information on asset maintenance works orders; and

➢ 2014/15 Strategic Asset Replacement Plan and Strategic Asset Maintenance Plan

Description of the processes used:

Template 2.2.1

Endeavour Energy's process of estimating historical replacement asset volumes is based on applying renewal rates to the asset populations and age profiles of Template 5.2.1. The renewal proportion of assets was based on an annual assessment of the replacement asset expenditure to the total expenditure.

Asset failure rates were derived from Ellipse.

Template 2.2.2

The proportion of urban/short rural/long rural lines and cables was derived from OMS categorisation of the assets. This proportion was applied to the asset replacement volumes.

Information reported to the AER

The non-financial information reported to the AER appears to be in the form required.

Additional testing undertaken

The testing of the costing components of Template 2.2.1 is beyond the scope of this audit.

Template 2.2.1

Excel spreadsheets comprising the source data for major asset classes were provided by Endeavour Energy. These spreadsheets contain the asset inventory and age profile of existing assets in the categories concerned. These additional files enabled the process followed to be reviewed as reasonable and the entries in 2.2.1 to be reconciled with source data extracted from the relevant systems.

The RIN templates were reviewed and it was substantiated that the total number of poles (wood, steel and concrete) at 305, 282 aligns with the total in Template 2.2.2.

Template 2.2.2

The totals for poles replaced, conductor replaced and underground cables replaced in Template 2.2.2 were confirmed to align with the totals from Template 2.2.1 for 2008/09 to 2012/13.

The transformer MVA capacity added was based on the numbers of items added and average transformer ratings. This calculation provided and was confirmed to be reasonable and in alignment with the RIN entries.

It is noted that the total asset volumes for poles, line lengths and cable lengths differ from those reported for the economic benchmarking RIN in April 2014. However, the difference is not considered material and there are no issues identified to be resolved.

Basis of Preparation Document

The BoP document was reviewed and checked to AER requirements. The BoP provides a reasonable explanation of the processes followed in deriving the information for the RIN template.

Conclusion

The information in Templates 2.2.1 and 2.2.2 has been provided in accordance with the requirements of the AER and nothing has come to the attention of TCFT that casts doubt to cause us to believe that the historical non-financial information is not, in all material respects, presented fairly in accordance with the requirements of the Reset RIN and Endeavour Energy's Basis of Preparation. The Basis of Preparation document adequately describes the processes involved in producing this information.

Template 2.3   Augex Project Data

> **2.3.1   Augex Asset Data - Subtransmission Substations, Switching Stations and Zone Substations**
>
> **2.3.2   Augex Asset Data - Subtransmission Lines**
>
> **2.3.3   Augex Data - HV/LV Feeders and Distribution Substations**

Endeavour Energy Managers interviewed:

➢ Charles Howat

➢ Harshul Dalal

Policies, Procedures and Work Instructions:

➢ No formal procedures or work instructions exist for preparing and reporting this RIN template data.

Endeavour Energy Systems used for this RIN Template:

Template 2.3

➢ Ellipse (principally). This is Endeavour Energy's corporate repository of asset and associated financial data. This system is under ICT control.

➢ Planning and project documentation is also used. For example, to determine the number of transformers and circuit breakers at a zone substation. Sources are listed in the BoP.

➢ The GIS system was used in some instances to determine the pole count of subtransmission lines and to check distances. This system is under ICT control.

Description of the processes used:

Template 2.3

The split of projects between Augex (this Template) and Repex (Template 2.2) is on the basis of the principal driver of each augmentation. Projects are not apportioned between the two drivers. This is in accordance with the AER's Augex model instructions.

Templates 2.3.1 (Subtransmission and zone substations) and 2.3.2 (Subtransmission lines) comprise an extract from Ellipse. This includes all material projects (>$5M expenditure) where project finalisation was during the initial regulatory years (2008-13), the final year of the current determination (2013/14) and the forthcoming regulatory control period (2014-19). This is as per the AER's RIN notice.

Because some project expenditures took place or are expected to take place over several years, the associated information dating from 2000/01 to the most recently available was required.

Project information for the HV feeder category in Template 2.3.3 was gathered in a similar manner, that is, a report from Ellipse yielded the list of relevant projects that were completed (or are to be completed) within the requested time frames. The asset length data for HV feeders was then estimated using data from the Distribution Works Program. A sample of data was used to develop length/cost factors. These length/cost factors were then used to estimate lengths.

Each Endeavour Energy Region provided the information on distribution transformers and LV feeders in Template 2.3.3. This information is based on estimates of the number of distribution transformers (pole, ground and indoor), LV overhead and underground cables added or upgraded.

Template 2.3.1 – Subtransmission and Zone substations

The following components have been separately identified for each substation project:

- Transformers (number and capacity);
- Circuit breakers (number and capacity added); and
- Capacitors (capacity).

This information was derived from Ellipse and from established planning and project documentation:

- Network Investment Options reports;
- Project Definitions; and
- Post Commissioning Review reports.

Template 2.3.2 – Subtransmission lines

For each line project, the following was identified:

- Operating voltage;
- Line length in km (new and upgraded); and
- Poles (new and upgraded).

The line length and number of poles was derived from GIS or Transmission Line Design reports.

Template 2.3.3 –HV/LV Feeders and Distribution Substations

The template requires information on circuit length added or upgraded each year for each of HV and LV overhead and underground circuits. The template also requires information on the number of distribution substations added or upgraded in the categories pole mounted, pad mounted and indoor.

This information was obtained from Ellipse and from the Distribution Works Program, as well as directly from Endeavour Energy Regions.

Information reported to the AER

Templates 2.3.1, 2.3.2, and 2.3.3 appear to have been completed according to the AER requirements.

Additional testing undertaken

Templates 2.3.1 and 2.3.2

The selection of projects for inclusion in Templates 2.3.1 and 2.3.2 was based on reports from Ellipse, a system under ICT control. TCFT sighted spreadsheets based on these reports which were used to identify projects which were material and to classify those projects into substations and lines, as required to complete Templates 2.3.1 and 2.3.2. The process undertaken by Endeavour Energy was described to TCFT and is considered appropriate.

Template 2.3.1 – Zone and subtransmission substations

For the randomly selected sample of data items for Template 2.3.1, the sources of the specific data were reviewed.

Testing involved locating the specific project documents related to the transformer, circuit breaker and capacitor components. It was noted that in each case tested, the total procurement of equipment was properly split across multiple projects depending on their voltage levels and functions.

Testing was undertaken through Endeavour Energy representatives replicating how the data was obtained from the relevant systems. Data was obtained from Ellipse, including individual work orders, from GIS and from the Network Characteristics Database. The outcome of this testing was that each of the above Template 2.3.1 entries was demonstrated to align with the project documentation and Ellipse source data, for transformer numbers and capacity, for the number of circuit breakers and for capacitor installations.

Template 2.3.2 – Subtransmission l1nes

For the randomly selected data items for Template 2.3.1, the sources of the specific data were reviewed.

The information on the number of circuit km added for each project was derived from the examination of GIS records, the Network Characteristics data base or where these were not yet finalised, the line design documentation. The number of poles was derived from the GIS or from line design documentation.

In each case the source documentation confirmed the number of circuit km and poles in Template 2.3.1.

A sample project document PR 126 was provided for the feeder 516/501 rebuild, which was associated with the establishment of Chipping Norton 33//11 kV zone substation and the formation of two 33 kV feeders to Liverpool transmission substation.

TCFT considers that the non-financial data for all the samples selected for testing for Template 2.3.2 have been demonstrated to be correct.

Template 2.3.3

The part of this information that relates to HV feeders is taken from Ellipse. The annual Distribution Works Program was then used to classify projects into the categories required. Scope sheets were used to determine lengths for two years of data. From this, factors were then developed for the cost/km of overhead and underground feeders. These factors were applied to the costs to estimate new and upgraded feeder lengths (not specific data from the projects listed in the Distribution Works Program). TCFT has reviewed the spreadsheet used to assemble project data for each year, to assign it into categories and then estimate lengths added or upgraded based on the cost factors. Data for 5 projects were checked to the Distribution Works Program to confirm the categorisation of the projects. All were found to be correct. The totals from this process were then transferred to Template 2.3.3.1. TCFT has checked the figures for four years in the RIN template and has confirmed that they match those in the source spreadsheet.

The remaining physical data is compiled from data supplied by Endeavour Energy Regions.

Overall, TCFT considers that Endeavour Energy has undertaken a reasonable process to assemble this data and audit test checks have identified no errors.

Basis of Preparation Document

The BoP contains a reasonable description of the processes used and assumptions made.

The BoP contained an error regarding the materiality threshold for HV lines (page 22 of 7/5/14 draft) where it stated that projects costing more than $50k are considered material. The RIN specifies a materiality level of $500k. This was corrected in a later draft of the BoP.

Also the BoP provided a slightly different description of how lengths were obtained for HV feeders which were added or upgraded, which was later clarified.

Conclusion

The information in Templates 2.3.1 to 2.3.3 has been provided in accordance with the requirements of the AER and nothing has come to the attention of TCFT that casts doubt to cause us to believe that the historical non-financial information is not, in all material respects, presented fairly in accordance with the requirements of the Reset RIN and Endeavour Energy's Basis of Preparation. The Basis of Preparation document adequately describes the processes involved in producing this information.

Template 2.4   Augex Model

2.4.1   Augex model inputs - asset status - sub transmission lines

2.4.2   Augex model inputs - asset status - high voltage feeders

2.4.3   Augex model inputs - asset status - subtransmission substations, subtransmission switching stations, and zone substations

2.4.4   Augex model inputs - asset status - distribution substations

2.4.5   Augex model inputs - network segment data

2.4.6   Capex and net capacity added by segment group

Endeavour Energy Managers interviewed:

➢ Charles Howat

➢ Harshul Dalal

Policies, Procedures and Work Instructions:

➢ No formal procedures or work instructions exist for preparing and reporting this RIN template data.

Endeavour Energy Systems used for this RIN Template:

Template 2.4

➢ The Network Characteristics data base contains details of subtransmission feeders and their ratings.

➢ The Network Load History (NLH) data base contains details of subtransmission feeder loading.

➢ Transmission Network Planning reports and forecasts for substation loads were used for temperature correction and for the loading of a few feeders not equipped with SCADA.

➢ The GIS system was used to provide line lengths for distribution feeders.

➢ The Distribution Network Status report and the Network Characteristics Database were the source of line length and rating information on distribution feeders.

Description of the processes used:

Template 2.4

This template sets out the utilisation of Endeavour Energy's existing network assets.

2.4.1 – Subtransmission feeders

These feeders are not normally classified as Urban/Short rural/Long rural. In reality the loading at the subtransmission voltage level is usually a mix and the classifications that apply to HV feeders cannot be used. Each has been classified on the basis of the predominant nature of the load supplied.

The Network characteristics data base was used as the source of ratings information and the NLH data base as the source of loading information.

Demands were weather corrected to 50% PoE using the relevant correction for the associated transmission substation.

2.4.2 – HV feeders

The feeder length and rating information in this Template was drawn from the Distribution Network Status report. This report is produced from data in the GIS and the NLH database. Raw load data is filtered to remove anomalous conditions. The growth rate for feeders is assumed to be the same as that for the connected zone substation, except that feeders supplying only a HV load customer are assumed to have zero growth rate (unless there is an identified growth forecast for that customer).

Temperature correction of demand to 50% PoE used data from the source zone substation.

2.4.3 - Subtransmission and Zone substations

Transformer information was drawn from the Network Characteristics data base and loading from the Network Load History data base or the substation forecasts.

2.4.4 - Distribution substations

Maximum demand readings are available for about 75% of distribution transformers in the Ellipse system. The remainder were estimated using a standard figure of 80% of nameplate rating for urban subs and 70% for rural subs. The nameplate ratings from Ellipse were used for substation ratings.

A growth rate of 0.22% per annum in annual maximum demand was assumed based on a study by Endeavour Energy Primary Systems Branch. TCFT was provided with a copy of this study and confirmed that this was the figure included in that study.

2.4.5 – Network Segment Data

For this template, Endeavour Energy was required to classify its network into segments and then assemble a range of data for each segment.

For transmission lines, sub transmission and zone substations, data was assembled for about 50 projects undertaken between 2009 and 2012. The source data was project definition reports created at the time of project initiation.

For distribution feeders and substations, data was obtained from the Regions. Data was sourced either from Ellipse or from local databases.

2.4.6 – Capex and Net Capacity Added by Segment Group

The data for this Template was assembled using the same process as for Templates 2.3.1 and 2.3.2. Project data was extracted from Ellipse as well as overall activity data for high voltage and low voltage distribution feeders and distribution transformers. Capacities added were obtained from Project planning and post-commissioning reports and from the annual Distribution Works Programs. Note that all of the non-financial data in this Template is forecast data, including for 2013/14, and therefore is beyond the scope of this audit.

Information reported to the AER

Templates 2.4.1 to 2.4.6 appear to have been completed according to the AER requirements.

Additional testing undertaken

The testing of the costing components in these Templates is beyond the scope of this audit.

Template 2.4.1 – Subtransmission lines

A random sample of data entries from RIN Template 2.4.1 was selected. The data was substantiated by Endeavour Energy staff responsible for the information demonstrating that the Maximum Demand (raw and weather corrected) aligned with the Network Load History data. In each case of the selected sample, the RIN templates were demonstrated to align with the source data.

Separately, TCFT used the Transmission Network Characteristics document to demonstrate that the RIN line length and rating entries in each case also corresponded with the data base entries.   RIN capacities are in MVA and the data base entries in Amps. It was concluded that the sample of entries above aligned with the source files, which were derived from systems used in the normal operation of the business.

Template 2.4.2 – HV lines

As with Template 2.4.1, this RIN Template contains the line length, classification, capacity and loading for each of Endeavour Energy's High Voltage lines.

A random sample of data for this RIN template was selected from Template 2.4.2 – Marayong 1953 feeder. The Endeavour Energy representative replicated the processes used to produce this data and demonstrated that the line length aligned with data derived from the GIS system. The Maximum Demand (raw and weather corrected) aligned with the Network Load History data. The feeder classification (urban/rural/rural long) was derived from the OMS system.

TCFT examined the source files to verify a randomly selected sample of the RIN entries for HV lines. The RIN entries in Template 2.4.2 for this sample were confirmed to align with the source information, with three exceptions. The thermal rating and average growth rate for feeder CT1206, and the thermal rating for feeder GV1204, did not align. Subsequently, an updated version of RIN Template 2.4.2 was provided which resolved the alignment issues that had been identified.

The information in the RIN Template was found to align with data sourced from Endeavour systems used in the normal course of business.

Template 2.4.3

TCFT checked a random sample of 14 substations against the data in the Network Characteristics Database and Endeavour Energy substation forecasts.

The check of network data used a version of the Network Characteristics Database dated July 2013. All tested data was confirmed to be correct.

Maximum demand data was also checked against Endeavour Energy's Green Book forecast data. Selected data was checked. Of the 56 items checked, one was incorrect. This was followed up with Endeavour and a corrected figure was included in the version of the RIN template dated 5/5/2014. It

was noted that some substations had winter peak demands, which were correctly included in the Template. No further action is now required.

Template 2.4.4

The distribution substation utilisation figures in Template 3.4.2 were derived from Ellipse as the MDI report, which is the historical maximum demand information obtained from field records. Not all substations are equipped with MDI indication.

TCFT examined the source file containing a dump of all MDI and rating information from Ellipse for the randomly selected data, including information on the feeder type (from the OMS system) and distribution substations by feeder. The source file had this information sorted into the categories required to be reported in the RIN. The RIN template entries were confirmed to align with the information in the spreadsheet provided.

TCFT further did a chart comparison to look at the utilization pattern.

Based on the above investigations, trend analysis and discussion with Endeavour Energy; it is considered that the data in this template is reasonably complete and accurate.

Template 2.4.5

This RIN template includes aggregated data for nominated network segments. For segments 1-19, data on particular projects was assembled and then aggregated in a spreadsheet. TCFT testing for one substation established that all data was correct, providing confidence in the data. For example, data for that substation would have been aggregated with data from the substations used to produce the summary figures in the RIN template.

Endeavour Energy provided copies of the spreadsheets used to calculate the data in Template 2.4.5. TCFT checked the calculation of capacity factor for two segments (66kV lines and 3x Tx zone substations) and confirmed that the number shown is consistent with the spreadsheet. The utilisation factor for 3x Tx zone substations was also checked (an assumed figure is used for 66kV lines).

Template 2.4.6

All the non-financial data in this template is forecast data and thus beyond the scope of this audit.

Basis of Preparation Document

The BoP contains a reasonable description of the processes used and assumptions made.

Conclusion

TCFT audit has established that the information provided in Templates 2.4.1 to 2.4.6 has been provided in accordance with the requirements of the AER and nothing has come to the attention of TCFT that casts doubt to cause us to believe that the historical non-financial information is not, in all material respects, presented fairly in accordance with the requirements of the Reset RIN and Endeavour Energy's Basis of Preparation. The Basis of Preparation document adequately describes the processes involved in producing this information.

Template 2.5   Connections

> **2.5.1   Descriptor Metrics (Volume data only)**
>
> **2.5.2   Cost Metrics by Connection Classification – Connection Subcategory (Volumes only)**

Endeavour Energy Managers interviewed:

➢ Paul Hardman

➢ Nadeem Khan

➢ Albert Lo

Policies, Procedures and Work Instructions:

➢ No formal procedures or work instructions exist for preparing and reporting this RIN template data.

Endeavour Energy Systems used for this RIN Template:

➢ Ellipse – General Ledger, Fixed Asset Register, Customer data

➢ Banner – Customer numbers data

➢ Network Operations Division – Guaranteed Service Level data

➢ Network Connections Branch – CAMS – Connection Application Management System, Notification of Service Work (NOSW) forms and SAMP (Strategic Asset Management Plan) which largely uses data from Ellipse. Ellipse and CAMS are under ICT control.

Description of the processes used:

The RIN template, 2.5.1 Descriptor Metrics, requires Endeavour Energy to provide a range of data related to annual new connections in the categories of residential, commercial/industrial, subdivision and embedded generation.

Data on the growth in customer numbers each year, categorised by class of customer, was extracted from Banner. The customer classes used by Endeavour Energy for data collection do not exactly match those required by the AER – notably Endeavour Energy's residential data needs to be split into residential and subdivisions. The data needed to be further processed to fit the four categories required by the AER. Endeavour Energy took a sample of 589 Notification of Service Work sheets from early 2014 and calculated the proportion of total domestic connections to be assigned to residential and to subdivisions. These proportions were then used to split the number of new connections each year into these AER categories.

Data on the number of distribution transformers installed and the total MVA added was obtained from SAMP and from CAMS data. Again, this data was proportioned into AER categories using the proportions from the NOSW analysis.

Endeavour Energy did not have records readily available for the number of overhead or underground connections in each category. Accordingly, the NOSW analysis was again used to proportion connections in each category into the number of overhead and underground connections. Endeavour

Energy also did not have data readily available on the length of circuit km added for each category of connections. Cost data for each category was available.

In the absence of a direct correlation with AER's customer classification, the above approach by Endeavour Energy to comply with the AER's RIN requirements can be considered reasonable.

The data on Guaranteed Service Levels (GLS) was provided for each year from the system used by Endeavour Energy for licence condition reporting. Only historical data is provided.   Similarly, the Manager Customer Interaction Centres provided annual data on the number of customer complaints regarding connection services.

The RIN Template on Connection Subcategory Connection Classification is intended to summarise the connection number data into simple or complex connections at various voltages, etc. Endeavour Energy has put all the connections for each major category into a single classification. For example all residential connections are listed as "Simple connection LV". The rationale is that for each category, Endeavour Energy connects new customers in a particular way that is standard for that category. For example, all new subdivisions are regarded as "Simple HV with upstream asset works".

Information reported to the AER

TCFT noted and advised Endeavour Energy the Template 2.5 has the words 'no data' which appeared to be not consistent with AER's guidelines. This has been addressed in the revised version of the Template 2.5. Hence it is considered that this issue has been resolved.

It was noted that Endeavour Energy has not prepared a forecast for future level of GSL breaches and customer complaints. Endeavour Energy explained to TCFT that this is because their target for future years is zero GSL breaches. This explanation is considered reasonable and has been included in the BoP. No further action is required.

The non-financial information reported to the AER appears consistent with the requirements of the RIN and the template worksheet.

Additional testing undertaken

The process undertaken by Endeavour Energy was explained to TCFT and is considered to be reasonable. Additional testing was undertaken using source worksheets and reports provided to TCFT.

The total customer numbers in the second Template were confirmed to equal the sum of the relevant numbers in Template 5.2.1. For example the number of residential overhead and residential underground connections equals the total for residential customers in the second Template. This was correct for all five years from 2008/9 to 2012/13.

Additional checks were done on total customer numbers in the second Template against customer number data provided separately to TCFT for another template. The numbers for residential and subdivision matched those for residential, and those for embedded generation matched those for solar connections for all five years. The customer numbers are therefore considered to be consistent with Endeavour Energy's standard customer number estimates.

TCFT also checked the numbers in the template for Volume of GSL breaches for residential customers against annual summary sheets of GSL records. The numbers were found to be consistent for all five years. It was noted that there is an increasing trend in GSL breaches.

Similarly, the Volume of customer complaints relating to connection services was checked against a report provided by the Manager Customer Interaction Centres. The numbers in the template were found to be consistent with those in the report for all five years. It was noted that customer complaints about connections were at much higher levels than previously in 2010/11 and 2011/12. Endeavour Energy advised that this was due to solar connections and TCFT testing found there was a matching spike in solar connections in those two years.

Endeavour Energy provided the raw numbers from its NOSW analysis and the working sheet which was used to determine relevant proportions. TCFT also did additional checks on the proportions for residential connections and then applied the proportioning factors to repeat the calculations to derive the numbers for residential overhead and underground connections. The figures were consistent with those in the RIN template for all five years.

In the original version of the RIN template, TCFT identified that Endeavour Energy customer numbers spiked in 2012/13. It was established that much of this spike related to a change in the treatment of vacant sites when assembling Endeavour Energy's customer numbers.   Endeavour Energy subsequently developed a revised set of consistent customer numbers and corrected the numbers for 2012/13 in this template. No material further issues remain in this regard.

Basis of Preparation Document

TCFT noted that the BoP does not cover as to why Endeavour Energy has no data on mean days to connect residential customers with a LV single phase connection as that work is now done by ASPs. After discussion with Endeavour Energy this issue is now covered well in the revised BoP and a number of other requested clarifications were made.

An issue regarding an apparent increase in customer numbers in 2012/13 arising from billing system changes was resolved by Endeavour Energy.

The amended BoP provides a reasonable explanation of the process undertaken. No further action is required.

Conclusion

Based on the audit as described above, it is considered that the information in Templates 2.5.1 and 2.5.2 has been provided in accordance with the requirements of the AER and nothing has come to the attention of TCFT that casts doubt to cause us to believe that the historical non-financial information is not, in all material respects, presented fairly in accordance with the requirements of the Reset RIN and Endeavour Energy's Basis of Preparation. The Basis of Preparation document adequately describes the processes involved in producing this information.

Template 2.6   Non Network Expenditure

2.6.2   Annual Descriptor Metrics – IT & Communication Expenditure (Volumes)

2.6.3   Annual Descriptor Metrics – Motor Vehicles (Volumes)

2.6.2   Annual Descriptor Metrics – IT & Communication Expenditure (Volumes)

Endeavour Energy Managers interviewed:

➢ Susan Morgan

Policies, Procedures and Work Instructions:

➢ No formal procedures exist for preparing and reporting this RIN template data. - This was a one off exercise to produce information for the AER and is not covered by an existing procedure.

Endeavour Energy Systems used for this RIN Template:

➢ Headcount provided by HR from Ellipse data

➢ User numbers taken from CGI active directory listing

➢ Number of devices taken from CGI Billing Schedule U

➢ Standard Control % taken from Regulatory Accounts

Description of the processes used:

Employee numbers have been sourced from Ellipse by Human Resources and supplied to Finance for each year for the purposes of populating the RIN template.

The data for User Numbers was extracted from the CGI active directory listing. This information is subject to periodic clean-ups to remove users who have left the organisation.

Similarly the data for number of devices was extracted from the CGI Billing report Schedule U.

Information reported to the AER

Template 2.6.2 Annual Descriptor Metrics -IT & Communications has been populated in line with AER's requirements.

The Basis of Preparation has been completed in line with AER requirements

Additional testing undertaken

Additional testing of employee numbers (Staff headcount numbers) for 2010-11 and 2011-12 was undertaken.

The working spreadsheet used to apply the standard control percent was supplied to allow visibility of the standard control percentages applying for the relevant years. Application of the standard control percentage to staff headcount provided for 2010-11 and 2011-12 resulted in a difference of 10 staff for 2010-11 and a difference of 3 for 2011-12. Subsequent investigation found the differences due to rounding.

Located the CGI Billing Schedule U and sighted the summary total of 2,862 for desktops and laptops. Applying the standard control % of 60.7% resulted in the 1,736 shown in the template.

Differences in Employee numbers and User numbers were explained as being due to the sharing of generic user ids by infrequent users in the field. Some minor differences were reported as being due to the timing of the periodic clean-up of data relating to the generic user ids.

Growth in Number of Devices was reported as being due to the adoption of laptops, smartphones and tablets.

Basis of Preparation Document

The Basis of Preparation document provides information on compliance and provides information on definitions used. The source of information is disclosed along with the methodology and assumptions applied to create the template data.

Conclusion

Based on the above described audit, TCFT considers that the information in Template 2.6.2 has been provided in accordance with the requirements of the AER and nothing has come to the attention of TCFT that casts doubt to cause us to believe that the historical non-financial information is not, in all material respects, presented fairly in accordance with the requirements of the Reset RIN and Endeavour Energy's Basis of Preparation. The Basis of Preparation document adequately describes the processes involved in producing this information.

2.6.3   Annual Descriptor Metrics – Motor Vehicles (Volumes)

Endeavour Energy Managers interviewed:

➢ Aveen Kumar

Policies, Procedures and Work Instructions:

➢ Fleet Management output reports

Endeavour Energy Systems used for this RIN Template:

The information used to populate this RIN template was extracted from Endeavour Energy's Fleet Management System. It is noted that Endeavour Energy uses external service providers SGFleet and FleetPlus for its motor vehicle fleet management. The volumes data in terms of vehicles in the RIN categories comes from SGFleet and FleetPlus and also from the financial database. Endeavour Energy officers take these data and process them for reconciliation and reporting.

Endeavour Energy uses fuel cards for the purchase of fuel for all its vehicles. The fuel cards used at present are from Shell and Caltex.

Number of vehicles in use including new purchases, if any, are extracted from the Equipment register in the Ellipse database and also from the information provided by the fleet management companies.

Since 2010/11 year, Endeavour Energy has stopped purchasing new motor vehicles and uses leased vehicles almost exclusively.

It is noted that the Ellipse database is under IT control and is subject to Endeavour Energy's IT audit procedures.

Similarly, the external fleet management service providers use their own database systems which are subject their own IT procedures and are also subject to contractual obligations with Endeavour Energy.

Description of the processes used:

The information provided by SGFleet and FleetPlus is used to extract:

- Average kilometres per vehicles travelled in a reporting period. This information also comes from fuel card companies. These sets of data are used for reconciliation and reporting.

- The number of motor vehicles purchased was extracted from Equipment register in Ellipse database

- Number of vehicles leased is based on the data provided by the leasing companies SGFleet and FleetPlus.

- The total number in the fleet is a combination of the leased vehicles and those owned by Endeavour Energy.

Information reported to the AER

TCFT's initial review of the RIN information in template 2.6.3 revealed that the units of measurement used in reporting the information in these Templates were not complying with the AER requirements. In particular, the vehicle numbers in all data cells were reported in thousands (000's) rather than as single unit numbers. Discussions revealed that prior to 2011/12 there were no proper fleet reports or data and the reported data was an estimate based on financial data. However, all data reported was in the Actuals template.

Subsequent to discussions, Endeavour Energy undertook to correct the reported data and fill the relevant Actual, Estimated and Consolidated templates correctly. Endeavour Energy has subsequently done so and provided updated templates and BoP document.

The final information in these RIN Templates appears to comply with AER requirements and no further action is required.

Additional testing undertaken

A drop to zero in number of motor vehicles from 2010/11 onwards was noted. Endeavour Energy explained that this is because since 2010/11 Endeavour Energy leases all its new vehicles and does not purchases vehicles.

Copies of the fleet reports were provided by Endeavour Energy to allow cross checking of the reported data.

It was also noted that there is an observable drop in the total number of cars. This was explained due to a change in motor vehicle policy.

Basis of Preparation Document

The Basis of Preparation document reasonably represents the processes employed in preparing the information in Template 2.6.3.

There was an error in referring to the Appendix in the RIN notice, namely Appendix G instead of Appendix F. This has been corrected in the revised version of the BoP document and no further action is required.

Conclusion

The information provided in Template 2.6.3 has been prepared in accordance with the requirements of the AER and nothing has come to the attention of TCFT which would cast doubt to cause us to believe that the historical non-financial information is not, in all material respects, presented fairly in accordance with the requirements of the Reset RIN and Endeavour Energy's Basis of Preparation. The Basis of Preparation adequately describes the processes involved in producing this information.

Template 2.7   Vegetation Management

2.7.1   Vegetation Management metrics

2.7.2   Vegetation management costs - Expenditure Metrics by Zone

2.7.3   Descriptor Metrics across all Zones - Unplanned Vegetation Events

RIN Template Nos:

Template 2.7 – Vegetation Management - Template 2.7.1, Descriptor Metrics by Zone.

Template 2.7.1 was confirmed to be similar information to that provided in Template 8.2 of the Economic Benchmarking RIN, in April 2014. This material was audited as part of the Economic Benchmarking RIN.

Endeavour Energy Managers interviewed:

➢ Robert Moore

Policies, Procedures and Work Instructions:

➢ WVM08038 – Vegetation Management

Endeavour Energy Systems used for this RIN Template:

Information on vegetation management inspections and activities has been held in the AM4 database, since its commissioning on 20 December 2013. This database is operated by Active Tree Services, under a service level agreement with Endeavour Energy. The same system has been in use by SA Power Networks for around a decade.

Description of the processes used:

All entries in Template 2.7.1 were provided for the economic benchmarking RIN and the processes used are described in the BoP and associated audit report.

It was noted that Endeavour has produced non-financial and financial entries for one vegetation management zone. The choice of zone(s) is at the discretion of Endeavour Energy, in accordance with the RIN instructions, based on cost drivers such as vegetation type and bushfire mitigation costs. This choice appears to be compliant with the AER RIN instructions.

One entry in the Template 2.7.1 relates to vegetation corridors. Endeavour Energy has interpreted this to mean the length of subtransmission line routes where an access track is within or in close proximity to the line easement/reservation. However, this has not been separately reported as the maintenance costs are not distinguishable from standard line routes and thus corridors are included in the route length of lines. This approach appears to comply with the AER's RIN instructions.

Information reported to the AER

Template 2.7.1 is considered to have been completed according to the AER requirements.

Additional testing undertaken

TCFT reviewed the BoP document and discussed the process of data collection and the process of completing the Template 2.7.1 with Endeavour Energy manager responsible for the data. TCFT also reviewed the previous audit report and testing of the same data for the Economic Benchmarking RIN in April 2014 that had confirmed the accurate transcription of GIS and FM4 data entries to the RIN Templates. Based on the outcome of these measures, the information in Template 2.7.1 is considered to be reasonably accurate and complete.

Basis of Preparation Document

The Basis of Preparation document reasonably represents the processes employed in preparing the information in Template 2.7.

Conclusion

The information provided in Template 2.7 has been provided in accordance with the requirements of the AER and nothing has come to the attention of TCFT which would cast doubt to cause us to believe that the historical non-financial information is not, in all material respects, presented fairly in accordance with the requirements of the Reset RIN and Endeavour Energy's Basis of Preparation. The Basis of Preparation adequately describes the processes involved in producing this information.

Template 2.8   Maintenance

2.8.1   Descriptor Metrics for Routine and Non-Routine Maintenance

2.8.2   Cost Metrics for Routine and Non-Routine Maintenance costs

Endeavour Energy Managers interviewed:

➢ Manoraj Jayasekara

➢ Warren Thai

➢ Dinuka Samaraweera

Policies, Procedures and Work Instructions:

➢ Strategic Network Maintenance Plans (SMNP) for 2008-11, 2011/12 to 2013/14, 2011/12, 2012/13

➢ Associated spreadsheets for 2011/12 and 2012/13

➢ Maintenance instructions MMI003, MMI006, MMI012, PMI4120, SMI100, SMI101.

Endeavour Energy Systems used for this RIN Template:

This maintenance Template 2.8 is in four discrete parts as described below.

(a) Asset quantities are based on information from the following systems:

- Networks statistics (a 6-monthly recording of data from the GIS system); and

- The Value Development Algorithm system (similar to the AER repex model).

(b) Assets inspected and maintained are based on information in the SMNPs.

(c) The average age of assets in Template 2.8 is summarised from the information in Template 5.2, which in turn is developed from:

- The Ellipse system;

- GIS and Networks Statistics reports;

- The most recent SKM ODRC assessment; and

- The Strategic Asset Replacement Program (SARP).

(d) Asset maintenance cycles are set out in Maintenance Instructions.

All of the above systems are corporate systems under ICT control. These systems and processes are used in the normal course of Endeavour Energy's business operations.

Description of the processes used:

(a) The majority of the information on asset volumes was derived from the GIS system and the associated 6-monthly Networks Statistics snapshots of GIS data. The remainder was derived from the VDA system, which contains data used for Endeavour Energy's planning of asset replacements and expenditures.

(b) The SMNPs set out Endeavour Energy's maintenance planning requirements for each of the asset classes that it maintains. These plans are periodically updated. Information was drawn from these documents and the associated spreadsheets

(c) Template 5.2 lists the volumes of assets commissioned each year, for the past 70 years. This information is drawn from a number of corporate systems listed above. Endeavour Energy has made some estimation of volume profiles was required for certain asset classes to make use of the most reliable source of data. For example, the age profile of poles was based on an ODRC assessment (involving field data sampling) with recent quantities updated from Ellipse. This information is classified as estimated data.

(d) Asset maintenance cycles are drawn directly from Maintenance Instructions.

Information reported to the AER

The non-financial information reported to the AER in Template 2.8 is considered to be in the form required by the AER.

Additional testing undertaken

(a) Three of the source data spreadsheets were reviewed, representing the major asset classes. These spreadsheets contained asset volumes by year of commissioning for Poles, Distribution transformers, and Zone transformers.

The information on asset volumes reported in Template 2.8 was checked to align with that provided for these major asset classes in the source data spreadsheets.

(b) Asset quantities inspected/maintained were checked and found to align with the SMNP for 2011/12 and 2012/13 for all of the four major maintenance activities described above.

(c) In Template 5.2, the three source data spreadsheets were checked to align with the reported asset age profiles for major asset classes. Some weighted averages of this data were recorded in Template 2.8. A spreadsheet containing this calculation was provided and the average ages in Template 2.8 were confirmed to align with this calculation.

(d) The information in Template 2.8.1 on maintenance cycles was confirmed to align with that detailed in the relevant Maintenance Instructions.

Basis of Preparation Document

The Basis of Preparation document reasonably represents the processes employed in preparing the information in Templates 2.8.1 and 2.8.2.

Conclusion

The information provided in Templates 2.8.1 and 2.8.2 has been prepared in accordance with the requirements of the AER and nothing has come to the attention of TCFT which would cast doubt to cause us to believe that the historical non-financial information is not, in all material respects, presented fairly in accordance with the requirements of the Reset RIN and Endeavour Energy's Basis of Preparation. The Basis of Preparation adequately describes the processes involved in producing this information.

Template 2.11 Labour

2.11.1 Labour Cost Metrics per Annum

2.11.2 Labour Extra Descriptor Metrics for Current Year

Endeavour Energy Managers interviewed:

➢ Michael Ware

Policies, Procedures and Work Instructions:

➢ The process to produce information in Template 2.11 for the AER is not covered by an existing procedure.

Endeavour Energy Systems used for this RIN Template:

➢ TM1 cube - OLAP cube used extensively by Finance and others for reporting. The OLAP cube is under IT&T change management control
➢ Annual FTE listings extracted from Ellipse at end of year
➢ Cognos for stand down occurrences. Written independently from Finance and under IT&T change management control

Description of the processes used:

Annual FTE extracted from annual FTE listings, used for FTE counts and productive hours. This data was extracted from Ellipse at end year.

Stand down occurrences were extracted from Ellipse using Cognos.

Average productive work hours were sourced from TM1.

Information reported to the AER

Templates 2.11.1 and 2.11.2 have been populated in line with the AER instructions.

Additional testing undertaken

Ellipse does not keep end of year records for FTE. Annual FTE listings are produced from Ellipse and kept to provide a FTE historical record.

The working files provided allowed the sighting of all the Endeavour Energy staff for the period 2008/09 to 2013/14, the determination made on the AER job category and the determination made on the % of time allocated to standard control services.

TCFT analysed the calculation of the ASL using the working files provided:

- The FTE listings for the randomly selected data sample were extracted and a Standard Control percentage applied.

- The Standard Control percentage had been established for the purpose of a previous RIN at the Business Unit level. This Standard Control percentage was then applied to each member of the BU.

- The FTE numbers were then reduced by the application of the Standard Control percentage.

- The resulting FTE numbers for the selected data sample were used to calculate the ASL by summing and dividing by 2. The result was confirmed to reconcile with Template 2.11.1.

The calculation of the ASL was found to be correct.

Basis of Preparation Document

Templates 2.11.1 and 2.11.2

TCFT reviewed the BoP document and found it to be compliant with AER requirements and consistent with the RIN Template 2.11. The BoP was found to identify source data, outline methodologies and assumptions adequately.

Conclusion

The Templates 2.11.1 and 2.11.2 and the corresponding Basis of Preparation have been prepared in line with AER requirements. The methodology and assumption information provided details the processes followed to derive the information required by the AER. Nothing has come to TCFT's attention that causes TCFT to believe that the non-financial information in Template 2.11 is not presented fairly in accordance with AER's RIN requirements and Endeavour Energy's Basis of Preparation.

Template 4.1   Public Lighting

4.1.1   Public lighting Descriptor Metrics over Current Year

4.1.2   Public lighting Descriptor Metrics Annually

Endeavour Energy Managers interviewed:

➢ Jude Perera

➢ David Mate

➢ Geoff Cowley

➢ Amitabh Shukla

Policies, Procedures and Work Instructions:

➢ No formal procedures or work instructions exist for preparing and reporting this RIN template data.

➢ The work performed was a one off for the purposes of populating these AER templates.

Endeavour Energy Systems used for this RIN Template:

➢ Ellipse

➢ Cognos 8 reports

Description of the processes used:

Public lighting data is extracted from Cognos reports showing data by local Councils. The data has been imported in Excel. The headings and sub totals have been removed by an Excel macro to allow numbers to be totalled.

Information reported to the AER

The Basis of Preparation Worksheet has been completed for Template 4.1 Public Lighting which consists of AER Templates 4.1.1 Descriptor Metrics over Current Year, 4.1.2 Descriptor Metrics Annually and 4.1.3 Cost Metrics. Template 4.1.3 is outside the scope of this audit.

Additional testing undertaken

Template 4.1.1 Cognos reports containing Light Type data by local Councils were interrogated to test the volume of 400w Mercury. Heading information was removed and an Excel query run to sum the 400w Mercury present for each Council. The total calculated was adjusting for the percentage of lamps shared between Councils to avoid double counting. The total 1,452 was seen to reconcile with the number reported in Template 4.1.1

Further testing of Template 4.1.1 was done by selecting 70w Sodium HP. Using the same process as outlined for 400w Mercury Cognos data to extract the 70w Sodium HP and the total 1,369 was seen to reconcile with the number reported in Template 4.1.1.

Additional testing of Template 4.1.2 Descriptor Metrics Annually was undertaken by selecting a sample of data randomly. The data was sourced from a Cognos report. This data was extracted into a

form that could be used with Excel and an Excel query was created. The major roads install volume in Template 4.1.2 was found to match the Excel query total.

Template 4.1.2 was also tested for Light maintenance - Volume of works and expenditure 2008/9 number of poles. The source of this data was identified as an Ellipse query. The query reconciled with the Template 4.1.2 reported number.

Basis of Preparation Document

The Basis of Preparation document has been completed in line with AER instructions and contains information on compliance, identifies sources of data for both costs and volumes, details the methodology and assumptions applied to derive the AER required information from the source data and contains a statement on the reliability of information.

Conclusion

The Templates 4.1.1 and 4.1.2 and the supporting Basis of Preparation have been populated in line with AER requirements. The methodology and assumption information provided details the processes followed to derive the information required by the AER. Nothing has come to TCFT's attention that causes TCFT to believe that the non-financial information in Templates 4.1.1 and 4.1.2 is not presented fairly in accordance with AER's RIN requirements and Endeavour Energy's Basis of Preparation.

Template 4.2   Metering

4.2.1   Metering Descriptor Metric

4.2.2   Metering Cost Metrics – volumes only

Endeavour Energy Managers interviewed:

➢ Dino Ou

➢ Yiu Kar Ho

Policies, Procedures and Work Instructions:

➢ No formal procedures or work instructions exist for preparing and reporting this RIN template data.

Endeavour Energy Systems used for this RIN Template:

The Endeavour Energy system used is Banner. This system is under ICT control. Banner is gradually being phased out and metering data has recently been migrated to MBS – Metering Business System. However, data for this RIN template was sourced from Banner.

Description of the processes used:

Template 4.2.1 provides data on the population of meters of different types for the years 2008/09 to 2012/13 and then forecasts for the years 2013/14 to 2018/19. TCFT is only concerned with the non-financial data for years 2009-13.

Endeavour Energy generated a report from Banner, their metering IT system, on the population of meters in each category in March 2014. Endeavour Energy maintains reports of customer numbers in various categories for each year historically. The average customer numbers for each year were then used to develop an Adjustment Factor – essentially the ratio of customer numbers in a given year to the customer numbers in March 2014. The Adjustment Factor was then used to back-cast the number of meters in each asset category for the period 2008/09 to 2012/13.

Template 4.2.2 includes volumes of metering services provided each year, for example the number of meters purchased and number of meters tested. For meter purchases, Endeavour Energy used the number of meters installed each year (rather than purchases). Actual data was available from Banner for each year. For the other service subcategories, Endeavour Energy was able to use reports from Banner to obtain the total number of each service undertaken in each historical year. This data was not categorised into numbers relating to each meter type. Accordingly, the breakup of volumes according to meter types was estimated, based on the overall proportion of meter types in the total meter population.

TCFT notes that in Template 4.2.2 the data is not derived in the same manner for each category. For meter purchases the numbers are actual meters purchased. For other categories entries are based on the number of services provided. For example, the number of meter replacements is the number of meter installations where this occurred and most of these would have more than one meter. This issue is not considered significant.

Information reported to the AER

The non-financial information reported to the AER is consistent with the RIN and the templates.

Additional testing undertaken

TCFT obtained a copy of Endeavour Energy's calculation spreadsheet for this Template. It is a very well organised spreadsheet. Data from Banner reports is presented and calculations have been made consistent with the description provided and in the BoP.

All the figures for each year in the Template 4.2.1 and the volumes section of Template 4.2.2 were confirmed in the spreadsheet.

TCFT obtained a copy of the work sheet used for the derivation of the Adjustment figure used for back-casting the meter population. TCFT confirmed that this figure had been used in the main calculation spreadsheet.

TCFT raised apparent inconsistencies in the numbers with more Type 6 meters purchased over the 5 year period than were used in meter replacements or in additional direct connect meters. It was established that this apparent discrepancy was due to meter replacements and meter maintenance being shown as the number of services rather than the number of meters involved. Endeavour Energy has included a note in the BoP to make this clearer. No further action is considered necessary.

TCFT identified that Endeavour Energy customer numbers spiked in 2012/13, while reviewing another template. It was established that much of this spike related to a change in the treatment of vacant sites when assembling Endeavour Energy's customer numbers. The meter population numbers presented here initially reflected this spike. However, Endeavour Energy established a consistent set of customer growth numbers and has corrected the figures to reflect this. No further action is required.

Basis of Preparation Document

The Basis of Preparation document provides a reasonable description of the process for obtaining the data provided.

Conclusion

The information provided in Templates 4.2.1 and 4.2.2 has been provided in accordance with the requirements of the AER and nothing has come to the attention of TCFT that casts doubt to cause us to believe that the historical non-financial information is not, in all material respects, presented fairly in accordance with the requirements of the Reset RIN and Endeavour Energy's Basis of Preparation. The Basis of Preparation document adequately describes the processes involved in producing this information.

Template 4.3 Ancillary Services - Fee-based Services

4.3.1   Cost Metrics for Fee-Based Services

and

4.4   Ancillary Services – Quote based Services

4.4.1   Cost Metrics for Quoted Services

Endeavour Energy Managers interviewed:

➢ Cindy Moors

Policies, Procedures and Work Instructions:

➢ No formal procedures exist for preparing and reporting this RIN template data. - this was a one off procedure to get the data for the AER template

Endeavour Energy Systems used for this RIN Template:

➢ CAMS - Customer Application Management System

➢ Banner - Customer Information System

➢ Ellipse - ERP system for accounts and invoices

➢ MBS - Metering Business Systems (Historic volume data for certain services)

Description of the processes used:

The accounting entries in Ellipse resulting from fee based and quoted services were extracted and analysed. The accounting entries were then categorised into the required groupings. The count of the volumes for each category was then derived from the number of accounting entries present for each type of fee and quoted service.

Information reported to the AER

Endeavour Energy has provided a Basis of Preparation document and populated the AER templates in line with AER requirements.

Additional testing undertaken

TCFT was provided with a working spreadsheet that detailed the results of the extraction of fee and quoted services account transactions and subsequent categorisation into the services provided for the years 2008 to the current year 2013-14. TCFT was able to sight the account transactions and understand their subsequent categorisation into the fee type volumes reported.

The worksheet provided contained a control check whereby volumes were multiplied by fee for service and reconciled with revenue to establish completeness of the volume information provided.

Further detailed testing was undertaken by randomly selecting a data set in each of the Templates 4.3 and 4.4.   Based on the analysis of the source data, TCFT was able to confirm that volume totals in the source spreadsheets line up with those in the AER templates.

Basis of Preparation Document

The Basis of Preparation document addresses the compliance with the AER requirements and details how compliance is met. The sources of data are noted and the methodology and assumptions detail the processes followed to derive the AER template entries.

Conclusion

Based on the audit testing, it is considered that the information provided in Templates 4.2.1 and 4.2.2 has been prepared in accordance with the requirements of the AER and nothing has come to the attention of TCFT that casts doubt to cause us to believe that the historical non-financial information is not, in all material respects, presented fairly in accordance with the requirements of the Reset RIN and Endeavour Energy's Basis of Preparation. The Basis of Preparation document adequately describes the processes involved in producing this information.

Template 5.2 Asset Age Profile

5.2.1 Asset Age Profile

Managers interviewed

➢ Manoraj Jayasekara

➢ Warren Thai

➢ Dinuka Samaraweera

Policies, Procedures and Work Instructions Reviewed

➢ No specific procedures or work instructions existed specific for reporting this RIN template data.

Systems

The information in Template 5.2.1 has been is developed from:

- The Ellipse system;

- GIS and Networks Statistics reports;

- The most recent SKM ODRC assessment; and

- The Strategic Asset Replacement Program (SARP).

The asset profiles of Template 5.2.1 are also used in Endeavour Energy's VDA model (very similar to the AER's Repex model).

Description of the processes used

Template 5.2 lists the volumes of assets commissioned each year, for the past 70 years. This information is drawn from the corporate systems listed above. Endeavour Energy has made some estimation of volume profiles in certain asset classes to make use of the most reliable source of data. For example, the age profile of poles was based on an ODRC assessment (involving field data sampling) with recent quantities updated from Ellipse. This information is classified as estimated data.

Endeavour provided asset profile data for three of the major classes of assets in spreadsheet form:

- Poles;

- Distribution transformers; and

- Zone transformers.

Information Reported to AER

Endeavour Energy has provided a Basis of Preparation document and populated the AER templates in line with AER requirements. The Basis of Preparation document adequately describes the process followed.

Additional testing undertaken

The data in Template 5.2.1 was confirmed to align with the age profile data used by Endeavour Energy for major asset classes above. A non-material difference in the distribution transformer profile was explained to be as a result of excluding some transformers that were the property of High Voltage customers.

Basis of Preparation Document

The Basis of Preparation document provides a reasonable description of the process for obtaining the data provided.

Conclusion

The information Template 5.2.1 has been provided in accordance with the requirements of the AER and nothing has come to the attention of TCFT that casts doubt to cause us to believe that the historical non-financial information is not, in all material respects, presented fairly in accordance with the requirements of the Reset RIN and Endeavour Energy's Basis of Preparation. The Basis of Preparation document adequately describes the processes involved in producing this information.

Template 5.3   Maximum Demand – Network Level

5.3.1   Raw and Weather Corrected Coincident MD at Network Level
(Summed at Transmission Connection Point)

and

5.4   Maximum Demand and utilisation at spatial level

5.4.1   Non-Coincident & Coincident Maximum Demand

Notes:

Template 5.3 – Template 5.3.1, MD - Network level.

Template 5.3.1 was confirmed to be the same information that was provided in Template 5.3.2 of the Economic Benchmarking RIN, in April 2014. This material was audited as part of the Economic Benchmarking RIN.

Template 5.4 – Template 5.4.1 Non-coincident and coincident maximum demand (at spatial level). This Template is in two parts, at the TransGrid BSP level and at the zone substation level.

Endeavour Energy Managers interviewed:

➢   James Gould

➢   Franki Lee

Policies, Procedures and Work Instructions:

➢   No formal procedures or work instructions exist for preparing and reporting this RIN template data.

Endeavour Energy Systems used for this RIN Template:

Template 5.4

➢   The Network Load History data base was the source of information on substation coincident and non-coincident demands. This was used directly and also to develop Endeavour Energy's Summer Demand Forecast.

➢   The Network Characteristics data base contains details of substations and their transformer ratings. The transformer ratings are reported in the Summer Demand Forecast.

The above two corporate systems are used in the normal course of business and are under ICT control.

Description of the processes used:

Template 5.4.1 contains non-coincident and coincident maximum demand (at the spatial level). This is in two parts, at the TransGrid BSP level and at the zone substation level.

The source of the demand information in Template 5.4.1 is the NLH data base. Interval data for bulk supply and zone substations in this repository was processed to derive both coincident and non-coincident demands.

Weather normalisation of the demand at each substation followed Endeavour Energy's standardised process, which adjusts for the previous years' temperature conditions at two representative weather stations.

Information reported to the AER

Template 5.4.1 appears to have been completed according to the AER requirements.

Additional testing undertaken

Examining the source data files (NLH data base), it was confirmed for two bulk supply substations that the raw adjusted MD (MW and MVA) aligned with the RIN Templates. TCFT then undertook testing of the RIN entries for a sample of the remaining substations from the source information.

Two separate MD summary reports were provided, both of which had been directly sourced from the Network Load History database. The former two of these reports summarise the coincident loading at the time of Endeavour Energy's peak demand in (MW and MVA) at each substation. The latter two summarise the non-coincident loading. Their results had been transferred directly into the RIN Template.

Endeavour has 12 Bulk Supply points (connections to the TransGrid network). A sample of three substations was selected to confirm the information supplied. These were: Dapto; Ingleburn; and Regentville.   There are 172 zone substations. Of these, six were selected for testing: Ambarvale; Anzac Village; Cranebrook; Hinchinbrook; Moss Vale; and Quakers Hill. The following information was confirmed for these substations.

- Substation Rating (MVA): this was confirmed to align with the (n-1) transformer rating stated in the Summer Demand Forecast.

- Raw Adjusted MD (MW and MVA, non-coincident): was confirmed to align with the Summer Demand Forecast.

- Raw Adjusted MD (MW and MVA, coincident and non-coincident): the MD in MW and MVA and the date and time of occurrence was confirmed to align with the MD summary reports above.   In the case of Dapto bulk supply point, it was also confirmed that the embedded generation at Tallawarra had been included in the bulk supply point total. The time and date of occurrence of the coincident peak demand was confirmed.

- Weather corrected 10% and 50% PoE, MW and MVA: non-coincident demands were reported for these substations. The MVA figures were confirmed to align with the Summer Demand Forecast and the MW figures were consistent with the historical power factor at the substation.

TCFT notes the treatment of energy provided by embedded generators, which has not been adjusted for distribution losses when netted off the transmission connection points. As the distribution losses associated with Endeavour's embedded generators are relatively small this matter is not considered significant.

Basis of Preparation Document

The BoP contains a reasonable description of the processes used and assumptions made.

Conclusion

The information in Templates 5.3.1 and 5.4.1 has been provided in accordance with the requirements of the AER and nothing has come to the attention of TCFT that casts doubt to cause us to believe that the historical non-financial information is not, in all material respects, presented fairly in accordance with the requirements of the Reset RIN and Endeavour Energy's Basis of Preparation. The Basis of Preparation document adequately describes the processes involved in producing this information

Template 6.1   Telephone answering

6.1.1   Telephone answering data

Endeavour Energy Managers interviewed:

➢ Stuart Medbury (17/4 and 30/4)

➢ Shaun Monro (30/4)

Policies, Procedures and Work Instructions:

➢　Monthly & YTD, Network Call Performance Report - WCSS0011

Endeavour Energy Systems used for this RIN Template:

➢ Monthly Network Call Statistics Reports, which are based on data from:

➢ Contact Centre 6 (CC6)

➢ Intellemanager Web View Reporting application

Description of the processes used:

Monthly Network Call Statistics reports are prepared each month as part of Endeavour Energy's internal reporting. The reports are based mainly on daily data extracted from the Contact Centre 6 (CC6) application, a system under ICT control. CC6 stores data about calls which proceed beyond the automatic interactive service (recorded messages). Data is also extracted from Intellemanager which records the total number of calls received and the number of calls where the caller is satisfied by the interactive message. The monthly reports are retained and have been used as the source of information for Template 6.1.

Endeavour Energy has two call centres at Huntingwood and Coniston. Data is extracted separately each month for the two call centres and aggregated in the monthly reports.

As the daily data is retained for only 13 months, the monthly totals have been divided by the number of days each month to give approximate daily data.

Daily data is provided for the four years specified in the RIN template – 2008/9 to 2011/12.

Information reported to the AER

Template 6.1 is completed as required by the RIN template provided. It is noted that there are no specific instructions in the RIN documents.

Additional testing undertaken

Copies of the monthly reports for 2009/10 were obtained together with the spreadsheet used by Endeavour Energy to process this data into the form required by the AER. The data and calculations were checked for each month. A discrepancy was found for August 2009. This was taken up with Endeavour staff and the error was corrected in a later version of the template. No further action is considered warranted. Further testing was undertaken to confirm the robustness of the calculations using data for 2010/11 and was checked and no issues were found.

Basis of Preparation Document

The BoP document includes a reasonable description of the process undertaken and the data sources used. TCFT's suggestion to note the existence of two call centres at Huntingwood and Coniston and in the combined data for this template was adopted by Endeavour Energy.

Conclusion

The information Template 6.1.1 has been provided in accordance with the requirements of the AER and nothing has come to the attention of TCFT that casts doubt to cause us to believe that the historical non-financial information is not, in all material respects, presented fairly in accordance with the requirements of the Reset RIN and Endeavour Energy's Basis of Preparation. The Basis of Preparation document adequately describes the processes involved in producing this information.

Template 6.2   Reliability and Customer Service Performance

6.2.1   Unplanned minutes off supply (SAIDI) - Actual, target and proposed reliability

6.2.2   Unplanned interruptions to supply (SAIFI) - Actual, target and proposed reliability

6.2.3   Unplanned momentary interruptions to supply (MAIFI) - Actual, target and proposed reliability

6.2.4   Customer numbers

6.2.5   Customer service

6.2.6   Estimated data percentage accuracy – SAIDI

6.2.7   Est*i*mated data percentage accuracy – SAIFI

Template 6.3   Sustained Interruptions

6.3.1 Sustained interruptions to supply (from 1 July 2008)

NOTE: Templates 6.2 and Template 6.3 were audited together.

Endeavour Energy Officers interviewed:

➤ Richard Foster

➤ Mark Ezzy for Planned Outages

Policies, Procedures and Work Instructions:

➤ WPB1014 OMS Unplanned Reliability Data Validation and Editing

➤ WPB1007 System Fault Recording (SFR)

➤ WPB1012 Calculation of Major Event Day

Endeavour Energy Systems used for this RIN Template:

➤ OMS (Outage Management System)

➤ SFR (System Fault Reporting)

➤ Cognos

➤ RequestIT for planned outages for 2012-13

➤ Planned Outage database (Access) for 2008-9 to 2011-12

Description of the processes used:

Template 6.3 Sustained Interruptions data for 2008-9 to 2011-12 was sourced from SFR (System Fault Recording) under procedure WPB1007.

Template 6.3 Sustained Interruptions data for 2012-13 was sourced from OMS (Outage Management System) under procedure WPB1014.

The data was placed into a working spreadsheet and summarised by feeder category (CBD, Urban, Rural Short and Rural Long). SAIDI and SAIFI were then calculated taking into consideration applicable exclusions and without exclusions to create the totals required by Templates 6.2.1 Unplanned minutes off supply SAIDI and Template 6.2.2 Unplanned Interruptions to supply SAIFI.

Data for Template 6.2.3 Unplanned Momentary Interruptions to Supply (MAIFI) for 2012-13 was sourced from OMS. Endeavour Energy MAIFI data in OMS differs from the definition of MAIFI in RIN Appendix E paragraph 22.2. OMS has captured interruptions between 0.5 seconds and 1 minute as MAIFI. Interruptions greater than 1 minute have been categorised as sustained and reported under SAIDI/SAIFI.

Endeavour Energy had not collected MAIFI data prior to 2012-13 so 2008-9 to 2011-12 was estimated. The estimates for 2008-9 to 2011-12 were constructed by using the ratio of SAIFI to MAIFI that applied in 2012-13.

Information reported to the AER

The Templates 6.2.1 Unplanned Minutes Off Supply (SAIDI) and Template 6.2.2 Unplanned Interruptions to Supply (SAIFI) have been populated according to AER instructions.

Template 6.2.3 Unplanned Momentary Interruptions to Supply (MAIFI) has been populated for 2012-13 with MAIFI data collected in OMS from outages less than 1 min. MAIFI data for 2008-9 to 2011-12 has been estimated. This estimated data is recorded appropriately in the estimated data spreadsheet.

The MAIFI data for 2008-9 to 2011-12 is estimated as MAIFI was not captured by Endeavour Energy's systems during that period. The MAIFI data for 2012-13 is captured in OMS whenever the outage is between 0.5 seconds and 1 minute. It is noted that Endeavour Energy MAIFI is based on MAIFI E. Endeavour Energy has advised TCFT that no data was available for sub components of a MAIFI outage due to physical limitations in its recording systems.

Cognos is used to extract MAIFI OMS data for Urban 2010-13 from OMS. This Cognos report was reported to be independently written and under IT&T control. The results were summed in Excel to create a total of 0.463 which matched the value found in Template 6.2.3 Unplanned Momentary Interruptions to Supply.

The ratio of 2012-13 SAIFI to MAIFI was used as the basis for estimating 2008-9 to 2011-12.

Template 6.2.4 Customer Numbers has been populated with required customer numbers. Endeavour Energy advised that Customer Numbers in Template 6.2.4 were transcribed from previously published ENPR reports.

Template 6.2.5 Customer Service has been populated with required customer call data.

Template 6.2.6 Estimated data percentage accuracy SAIDI and template 6.2.7 Estimated data percentage accuracy SAIFI have been populated with estimated data error percentages.

Template 6.3 Sustained Interruptions to Supply has been populated with the required outage data. 2008 to 2011 data was captured into an Access database and 2011-12 onwards data is captured in RequestIT.

The Basis of Preparation document details how the information provided complies with AER requirements, the sources of information and the methodology and assumptions.

The Basis of Preparation document details how the information provided complies with AER requirements, the sources of information and the methodology and assumptions applied.

Additional testing undertaken

SAIDI

TCFT required Endeavour Energy to recreate SAIDI Urban unplanned data from source database for a randomly selected data set. Filters were applied to the sustained interruptions to supply data used in Template 6.3 to remove planned outages. Totalling of effect on SAIDI for each sustained outage matched the figure in the Template 6.2.1

SAIFI

TCFT tested SAIFI Rural Short unplanned for a randomly selected data set. Totalling the effect on SAIFI column for each sustained outage in Template 6.3 Sustained Interruptions produced a result matching the template 6.2.2 Unplanned minutes off supply SAIFI.

MAIFI

The BoP document describes the process of calculating MAIFI. TCFT tested whether this process yields the data in the RIN Template 6.2.3 and confirmed that such was the case.

The BoP also mentions that the MAIFI ratio applicable to 2012/13 has been applied to 2008-09 to 2011-12 SAIFI to create the MAIFI numbers in the RIN Table 6.2.3. TCFT testing revealed that the MAIFI numbers present were correct.

Sustained Interruptions

TCFT tested planned outage data contained in Template 6.3 Sustained Interruptions. TCFT randomly selected a planned outage data set in RequestIT. Endeavour Energy then ran a query for planned outages impacting customer numbers. This query totals were compared to the information reported in RIN templates. There was some difference in the two sets of numbers. Endeavour Energy explained that the difference occurred due to timing issue. The file for planned outages used for the RIN was created in August 2013 while some updates would have been made after Aug 2013. In this case the RIN number is on average 0.66% higher. This difference is considered to be small enough to be immaterial.

Customer Numbers

Additional checks were performed for Endeavour Energy's total customers, urban customers and rural short customers for a randomly selected data set. TCFT was able to sight the same numbers in the

template 6.2.4 except in the case of 2012-13 where there was a difference of 2 in rural short. The ENPR shows 149,116 customers for rural short and the template shows 149,118 customers. This difference is small and is considered not material and no further action is deemed necessary.

Basis of Preparation Document

The BoP document includes a reasonable description of the process undertaken and the data sources used.

Conclusion

The information Template 6.1.1 has been provided in accordance with the requirements of the AER and nothing has come to the attention of TCFT that casts doubt to cause us to believe that the historical non-financial information is not, in all material respects, presented fairly in accordance with the requirements of the Reset RIN and Endeavour Energy's Basis of Preparation. The Basis of Preparation document adequately describes the processes involved in producing this information.

RIN Template No.: 6.2.5 Customer Service

Endeavour Energy Managers interviewed:

➢ Stuart Medbury (30/4)

➢ Shaun Monro (30/4)

Policies, Procedures and Work Instructions:

➢ Monthly & YTD, Network Call Performance Report - WCSS0011

Endeavour Energy Systems used for this RIN Template:

➢ Monthly Network Call Statistics Reports, which are based on data from:

➢ Contact Centre 6 (CC6)

➢ Intellemanager Web View Reporting application

Description of the processes used:

Monthly Network Call Statistics reports are prepared each month as part of Endeavour Energy's internal reporting. The reports are based mainly on daily data extracted from the Contact Centre 6 (CC6) application, a system under ICT control. CC6 stores data about calls which proceed beyond the automatic interactive service (recorded messages). Data is also extracted from Intellemanager which records the total number of calls received and the number of calls where the caller is satisfied by the interactive message. The monthly reports are retained and have been used as the source of information for Template 6.2.5.

Endeavour Energy has two call centres at Huntingwood and Coniston. Data is extracted separately each month for the two call centres and aggregated in the monthly reports.

Data from the monthly reports has been aggregated to provide annual data.

As this template requires Endeavour Energy to exclude data for defined exclusion days (Major Event Days or STPIS exclusion days), data was obtained from Richard Foster on the MED for exclusion. Stored daily reports for those days were then accessed to obtain the numbers to be excluded from the annual totals.

This template has been taken to require slightly different data from Template 6.1. The number of calls received in Template 6.2.5 does not exclude calls abandoned within 30 seconds.

Information reported to the AER

Template 6.2.5 is completed in accordance with the AER RIN requirements.

Additional testing undertaken

The annual figures were compared with a total of call numbers for the four years of data available in Template 6.1 (which had been separately checked). Allowing for the inclusion of calls abandoned within 30 seconds, the annual totals were identical for 2008/9 and 2009/10 but different for 2010/11 and 2011/12. Endeavour Energy explained that the differences seen were due to exclusion of certain days during 2010/11 and 2011/12. Copies of daily reports for the relevant days and Endeavour

Energy's calculations were provided for the exclusions in 2011/12 for further checking. The number of calls received was then found to be correct for 2011/12. The number of calls answered was not correct and Endeavour Energy advised that this was an oversight and corrected the number in the next version of the RIN template. No further action is required.

Estimated data percentage accuracy SAIDI – Template 6.2.6

TCFT were advised that Endeavour Energy does not have a formal process for estimating SAIDI data accuracy. Endeavour Energy has chosen to use an informal process to estimate SAIDI data accuracy. This process is taken from the 2009-10 RIN.

The process described from the 2009-10 RIN was obtained and the findings reviewed. The process used draws on the processes around transcribing outage data into the SFR system and addresses the impact of the difference in customer numbers between GIS and CSS/BANNER to establish a grade of assessment for SAIDI data.

Review of Templates 6.2.6 estimated, actual and consolidated data was undertaken. The improvement in the difference between CSS/Banner and GIS customer numbers was observed as the cause of the reduction in the estimated data error percentage. This reduction in customer number difference stemmed from the project to align the CSS/Banner and GIS customer numbers and the subsequently implemented operational processes to maintain alignment.

The templates for estimated and consolidated data contained data for CBD, otherwise the templates were found to be correctly populated. Since Endeavour Energy does not have any CBD feeders this data was subsequently removed. The corrected data is consistent with the requirements of the RIN.

Estimated data percentage accuracy SAIFI – Template 6.2.7

TCFT were advised that Endeavour Energy does not have a formal process for estimating SAIDI data accuracy. Endeavour Energy has chosen to use an informal process to estimate SAIDI data accuracy. This process is taken from the 2009-10 RIN.

The process described from the 2009-10 RIN was obtained and the findings reviewed. The process used draws on the testing done on the processes around transcribing outage data into the SFR system and addresses the impact of the difference in customer numbers between GIS and CSS/BANNER to establish a grade of assessment for SAIFI data.

TCFT has considered the process described from the 2009-10 RIN and are of the view that its methodology used are applicable to the estimation of SAIFI data accuracy as required by this RIN.

As with SAIDI, a review of Templates 6.2.7 estimated, actual and consolidated data was undertaken. The improvement in the difference between CSS/Banner and GIS customer numbers was observed as the cause of the reduction in the estimated data error percentage. This reduction in customer number difference stemmed from the project to align the CSS/Banner and GIS customer numbers and the subsequently implemented operational processes to maintain alignment.

The templates for estimated and consolidated data contained data for CBD, otherwise the templates were found to be correctly populated. Since Endeavour Energy does not have any CBD feeders this data was subsequently removed. The corrected data is consistent with the requirements of the RIN.

Basis of Preparation Document

It is noted that the RIN does not provide guidance on how to estimate the data accuracy for these RIN templates. However, the BoP document identifies the method used to estimate the data accuracy and includes an adequate description of the process undertaken and the data sources used.

TCFT suggested to Endeavour Energy that they consider including in the BoP document a list of the days for which data has been excluded and the source for that data. This was implemented in later version of the BoP.

Conclusion

The templates 6.2.1 to 6.2.7 and 6.3.1 and the supporting Basis of Preparation have been populated in line with AER requirements. The methodology and assumption information provided details the processes followed to derive the information required by the AER. Nothing has come to the attention of TCFT which would cast doubt to cause us to believe that the historical non-financial information is not, in all material respects, presented fairly in accordance with the requirements of the Reset RIN and Endeavour Energy's Basis of Preparation.

Template 6.4   Historical MEDs

6.4.1   Major Event Day data

Endeavour Energy Officers interviewed:

➢ Richard Foster

Policies, Procedures and Work Instructions:

➢ WPB1014 OMS Unplanned Reliability Data Validation and Editing

➢ WPB1007 System Fault Recording (SFR)

➢ WPB1012 Calculation of Major Event Day

➢ Memo approved by Acting EGM/Network – File No. 12-13 Beta – Major Event Day calculation of the 2012-13 Reporting Period

➢ SFR Daily Interruptions Records for 2005-06, 06-07, 07-08, 08-09, 09-10, 10-11, 11-12

Endeavour Energy Systems used for this RIN Template:

➢ OMS (Outage Management System)

➢ SFR (System Fault Reporting)

➢ Cognos 7 impromptu

Description of the processes used:

Endeavour Energy has advised that the calculation of MEDs complies with the STPIS. This was confirmed by checking a recent STPIS audit report. It is noted that the basis of excluding MED events has to follow the calculation of MED which determines the exclusion threshold. The reported data in the RIN Templates complies with this.

Sources of information were System Fault Recording (SFR) database for years 2008/09 to 2011/12. This database is populated in accordance with the Work Place Instruction WPB1007. This instruction was sighted and the methodology confirmed.

After 2011/12, the data source is the OMS database. Entries in this database are populated according to work place instruction no. WPB1014. This instruction was also sighted and following of the methodology in calculating the data was confirmed. The reporting tool to query the database is cognos impromptu.

Endeavour Energy has advised that the calculation of MED for the 2012-13 year is based on the methodology approved by Endeavour Energy management. The Memo approved by Acting EGM/Network – "File No. 12-13 Beta – Major Event Day calculation of the 2012-13 Reporting Period" refers. This memo was sighted and it was confirmed that MED calculation for 2012/13 follows the approved methodology.

Endeavour Energy considers that the information is actual as it is directly derived from the databases which record actual information and all the procedures are used in its daily business.

Information reported to the AER

Template 6.4.1 contains actual non-financial information on MED calculated in accordance with AER's STPIS methodology and Endeavour Energy's approved calculation procedures.

Additional testing undertaken

All of the procedures and memos used in calculating MEDs were sighted and the information in OMS and SFR was checked using randomly selected samples.

In addition, Endeavour Energy officers were able to demonstrate the actual calculation of MED for randomly selected audit sample. This included replicating the process used for data collection, estimating MED and reporting.

Basis of Preparation Document

The Basis of Preparation document addresses the compliance with the AER requirements and details how compliance is met. The sources of data are noted and the methodology and assumptions detail the processes followed to derive the AER template entries.

Conclusion

The RIN template 6.4.1 and the supporting Basis of Preparation have been populated in line with AER's requirements in particular AER's STPIS RIN. Nothing has come to the attention of TCFT which would cast doubt to cause us to believe that the historical non-financial information is not, in all material respects, presented fairly in accordance with the requirements of the Reset RIN and Endeavour Energy's Basis of Preparation.

APPENDIX A: Full list of RIN Templates in the scope of this audit

Note: Only those Templates containing non-financial information are listed.

2.2   Repex
2.2.1   Replacement Expenditure, Volumes and Asset Failures by Asset Category
2.2.2   Selected Asset Characteristics

2.3   Augex Project Data
2.3.1   Augex Asset Data - Subtransmission Substations, Switching Stations and Zone Substations
2.3.2   Augex Asset Data - Subtransmission Lines
2.3.3   Augex Data - HV/LV Feeders and Distribution Substations

2.4   Augex Model
2.4.1   Augex model inputs - asset status - sub transmission lines
2.4.2   Augex model inputs - asset status - high voltage feeders
2.4.3   Augex model inputs - asset status - subtransmission substations, subtransmission switching stations, and zone substations
2.4.4   Augex model inputs - asset status - distribution substations
2.4.5   Augex model inputs - network segment data
2.4.6   Capex and net capacity added by segment group (except forecasts)

2.5   Connections
2.5.1   Descriptor Metrics (volume data only)
2.5.2   Cost Metrics by Connection Classification - Connection Subcategory Volumes only

2.6   Non Network Expenditure
2.6.2   Annual Descriptor Metrics - IT & Communications Expenditure (Volumes data only)
2.6.3   Annual Descriptor Metrics - Motor Vehicles (Volumes data only)

2.7   Vegetation Management
2.7.1   Vegetation Management metrics
2.7.2   Vegetation management costs – Expenditure metrics by Zone
2.7.3   Descriptor Metrics across all Zones - Unplanned Vegetation Events

2.8   Maintenance
2.8.1   Descriptor Metrics for Routine and Non-Routine Maintenance
2.8.2   Cost Metrics for Routine and Non-Routine Maintenance

2.11   Labour
2.11.1   Labour Cost Metrics Per Annum
2.11.2   Labour Extra Descriptor Metrics for Current Year

4.1   Public Lighting
4.1.1   Public lighting Descriptor Metrics over Current Year
4.1.2   Public lighting Descriptor Metrics Annually

4.2   Metering

4.2.1   Metering Descriptor Metric

4.4.2   Metering cost metrics – volume only

4.3   Ancillary services - Fee-based Services

4.3.1   Cost Metrics for Fee-Based Services

4.4   Ancillary services - Quote-based Services

4.4.1   Cost Metrics for Quote-Based Services

5.2   Asset Age Profile

5.2.1   Asset Age Profile

5.3   Maximum Demand - Network Level

5.3.1   Raw and Weather Corrected Coincident MD at Network Level
         (Summed at Transmission Connection Point)

5.4   Maximum Demand and utilisation at spatial Level

5.4.1   Non-Coincident & Coincident Maximum Demand

6.1   Telephone answering

6.1.1   Telephone answering data

6.2   Reliability and Customer Service Performance

6.2.1   Unplanned minutes off supply (SAIDI) - Actual, target and proposed reliability

6.2.2   Unplanned interruptions to supply (SAIFI) - Actual, target and proposed reliability

6.2.3   Unplanned momentary interruptions to supply (MAIFI) - Actual, target and proposed
         reliability

6.2.4   Customer numbers

6.2.5   Customer service

6.2.6   Estimated data percentage accuracy – SAIDI

6.2.7   Estimated data percentage accuracy – SAIFI

6.3   Sustained Interruptions to supply

6.3.1   Sustained interruptions to supply (from 1 July 2008)

6.4   Historical Major Event Days (MEDs)

6.4.1   Major Event Day data