Annual Reporting RIN

Basis of Preparation
2019-2020

Contents

Purpose

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

This document is Endeavour Energy's Basis of Preparation in relation to the historic information contained within the Regulatory Templates required to be submitted to the AER by 2 November 2020.

Australian Energy Regulator's Instructions

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

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

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

1. Endeavour Energy must explain, for all information in the Information Templates, the basis upon which it prepared information. This is the Basis of Preparation;
2. The Basis of Preparation must be a separate document that Endeavour Energy submits with its completed Information Templates;
3. The Basis of Preparation must follow a logical structure that enables auditors, assurance practitioners and the AER to clearly understand how Endeavour Energy has complied with the requirements of this Notice; and
4. When carrying out an audit or review as specified in Appendix C, an auditor or assurance practitioner shall have reference to Endeavour Energy's Basis of Preparation.

Structure of this document

We outline our general approach to developing our response to the RIN. We identify key systems used to provide data, note issues relating to data quality, and make comments on the reliability of the data for economic benchmarking purposes.

General approach

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

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

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

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

General approach

- Visual Risk – Endeavour Energy uses this Treasury Management System for improving the productivity of its treasury operations. Visual Risk provides functions such as capturing a facility drawdown; valuing an FX option; and facilitating back office administration and financial reporting. Specifically, it was used to prepare the cost of funds schedule;

- System Fault Recording (SFR) – Endeavour Energy used this Oracle database system for all reliability reporting up until 2011-12. The data in this system is accessed using Cognos, with further analysis and processing of data being undertaken using Microsoft Office programs such as Access and Excel;

- SCADA - Endeavour Energy uses this system to monitor and control its network. Information from this system feeds into OMS (see below) to enable the calculation of reliability reporting information;

- Outage Management System - - Endeavour Energy uses this system to log outages and other events on its network. From 2012-13 onwards this system has been used as the source of data for all reliability reporting; and

- Contact Centre 6 – Endeavour Energy's call centre uses this system to run reports on historical call volume according to skill set (Call Type). The system is also used to assign agents to specific call taking groups based on call type.

Data quality issues
In previous consultations on the RIN, we have raised significant concerns with providing data in the form required by the AER.

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

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

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

3.6 Quality of Services

3.6 Quality of Services

3.6.6.1 Technical Quality of Supply

Compliance with requirements of the notice
The data provided is compliant with the definitions and requirements of the notice.

Source of information
Information is sourced from the 'Satisfy Database'. Satisfy is the complaints database used to log all customer complaints and compliments. Complaints are logged under a 'root cause' tree, based on the description of the problem by the customer.

Methodology and assumptions
All complaints are logged into the 'Satisfy System' database.

Pivot table report of the complaints logged into 'Satisfy' displaying all complaints for the financial year, is searched for complaints regarding 'voltage variation' and 'quality of supply'.

Use of estimated information
There is no estimated data in this worksheet.

Reliability of information
The complaints are catergorised based on the description of the issue by the customer. The root cause can be adjusted after the initial logging of the complaint if the investigation determines that the complaint should be logged against a different root cause.

3.6.7.1 Timely Provision of Services

Compliance with requirements of the notice
The number of connections made: N/A

The number of connections not made on or before the agreed date: N/A

Endeavour Energy does not carry out customer connections as this is carried out by the accredited service provider with agreement by the customer.

Source of information
ASP SP114800 Endeavour Energy

eNOSW Console

Methodology and assumptions
Number of connections taken directly from a search in the eNOSW Console for contestable service work submissions

Use of estimated information
No estimated information used

3.6 Quality of Services

Reliability of information
eNOSW Console is an Endeavour Energy program for processing notifications of contestable service works submissions.

Note
Final connections are arranged by Customers through a contestable accredited service provider and the date of connection is the date that they can arrange. Endeavour Energy do not stipulate a date of connection and merely provide agreement that the customer may connect.

3.6.7.2 Timely Repair of Faulty Street Lights

Compliance with requirements of the notice
The data provided for “Street lights - average monthly number out” and “Street lights - average number of days to repair” (Table 3.6.7.2) has been reported for the period 1 July 2019 to 30 June 2020 to represent the current year 2020. The monthly figure is arrived at by dividing the full year data by 12. Street lights – not repaired by “fix by” date are a total for the FY.

The “Total number of street lights” has been reported as of the 30 June 2019 to represent the year 2020.

Source of information
The “Street lights - average monthly number out” and “Street lights - average number of days to repair” is extracted from the NSW Public Lighting Annual report as submitted to IPART for compliance with the NSW public lighting code.

Street lights – not repaired by “fix by” date is extracted from the same report submitted to IPART. “Total number of street lights” is extracted from the Endeavour Energy’s asset management system (Ellipse). Only street lighting assets (lanterns) “in service” and without a de-energised date are counted.

Source of information
For the purpose of this submission, the data is extracted for the period 1 July 2019 to 30 June 2020 for considering it as the year 2020.

The data within COGNOS 10/Ellipse is considered reliable (except for the failure of the link between the two systems mentioned above) and is Endeavour Energy’s main source of asset/financial data. Historical data is frequently applied for budgeting and forecasting.

3.6.7.3 Call Centre Performance

Compliance with requirements of the notice
The data provided is compliant with the definitions and requirements of the notice.

Source of information
Information was sourced from MyNetFone Precision Analytics, Verint and Cisco applications.

3.6 Quality of Services

Methodology and assumptions

- Calls to fault line is a sum of monthly report figures of calls to the 131 003 number taken from MyNetFone PA reports;
- Calls answered in 30 seconds applies only to those calls where a customer elected to speak to a consultant after listening to the IVR message (including those instances where the IVR provided detailed information concerning their outage). This data was sourced from the Cisco reporting application;
- Average wait time before call answered applies only to those calls where a customer elected to speak to a consultant after listening to the IVR message (including those instances where the IVR provided detailed information concerning their outage). This data was sourced from the Verint application;
- Overload events was recorded from the Cisco application; and
- Percentage calls abandoned applies only to those calls where a customer elected to speak to a consultant after listening to the IVR message (including those instances where the IVR provided detailed information concerning their outage). This data was sourced from the Cisco reporting application. It is assumed that customers that don't elect to queue to speak with a consultant are satisfied with the level of outage information provided by the IVR.

Use of estimated information

There is no estimated data in this worksheet.

Reliability of information

All data comes directly from the reporting systems.

3.6.8 Network Feeder Reliability

Compliance with requirements of the notice

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

- excluded incidents detailed in table 6.8 have been determined in accordance with the requirements of the STPIS (3.3);
- Major Event Days (MED's) have been determined in accordance with the requirements of the STPIS (3.3) – and as per Endeavour Energy distribution determination 2019 to 2024 – Service target performance incentive scheme April 2019;
- the determination allows for the alternative Box cox methodology. The process is described in WPB 1012 – Calculation of Major Event Day Threshold;
- outages affecting single premises – Single premise outages that occur as a result of a fault on Endeavour Energy's network are included in the reliability result;

3.6 Quality of Services

- subsequent interruptions caused by network switching during fault finding, in general switching operations associated with an unplanned incident may include subsequent interruptions to customers that are associated with fault finding. Current systems do not have any facility to identify these operations and therefore exclude them from reliability calculations. It should be noted that removing these operations from reliability calculations would result in an inaccurate record of actual customer experience; and

- unplanned interruptions are sustained interruptions greater than three minutes in accordance with the SAIDI definition in appendix A of the STPIS.

- Feeder Category information is determined at the start of the year as per the method required by the AER. During the year as new Feeders are created the Feeder Category is determined from comparing similar Feeders. Where Feeders have not been categorised during the year and appear in the data from the source systems they are defaulted to "Urban", unless a similar Feeder can inform of the likely Feeder category. This includes Feeders that did not have interrupted customers but appear in the data as part of a consolidated interruption record.

Source of information

1. Base outage data (customers interrupted and CMI)

Data sourced from OMS. All records in this database were validated and checked in accordance with a Work Place Instruction WPT0001 (supersedes WPB1014).

Reporting tool – Cognos 10

2. Customer numbers for calculation of SAIDI and SAIFI

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

Methodology and assumptions

Major Event Days (MED's) have been determined in accordance with the requirements of the STPIS (3.3) – and as per Endeavour Energy distribution determination 201924 – Service target performance incentive scheme April 2019.

Excluded interruptions – Excluded Trouble Orders are identified in the system with distinct Causes and other factors. This data is extracted through a database query/view based on a exclusions in accordance with STPIS 3.3a.

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

Energy not supplied - Unplanned – OMS customer minutes off supply used to calculate unplanned energy not supplied in sheet 3.6.8

3.6 Quality of Services

Energy not supplied – Planned for sheet 3.6.8 – Customer minutes off supply used to calculate planned energy not supplied in sheet 3.6.8

This data is supplied by System Control

Methodology and assumptions

Average annual consumption of **all** customers was divided by the number of customers, average days of supply and minutes per day (1440) to obtain an average kWh per minute consumption per customer, for each reporting period.

Average kWh per minute per customer was then multiplied by the number of customers interrupted and the duration of the interruption to determine kWh energy not supplied (expressed as MWh in the RIN).

Consumption data per customer is based on Domestic Controlled Load, Domestic General Rate, Commercial General Supply non TOU and Commercial General Supply TOU.

Excluding Unmetered (a summated figure) and Industrial load based on the assumption that the majority of industrial load has either a backup supply or is on dedicated feeders that have high reliability. Including this load would over state load lost to other customers.

The method that Endeavour Energy has adopted is a variant of the AER's option 1, using averaged customer consumption data.

Use of estimated information

Endeavour Energy has used estimated information for table 3.6.8 (energy not supplied columns). An estimate was required because we were unable to apply current or historical data to get actual information in accordance with the AER prescribed options.

Limitations included:

- available data in large volumes and separated across different information systems; and
- merging data sets unmanageable and requires a large degree of assumptions to be made.

3.6.9 Network Feeder Reliability – Planned Outages

Compliance with requirements of the notice

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

- excluded incidents detailed in table 6.8 have been determined in accordance with the requirements of the STPIS (3.3a);
- Major Event Days (MED's) have been determined in accordance with the requirements of the STPIS (3.3b) – and as per Endeavour Energy distribution determination 2019-24 – Service target performance incentive scheme April 2019;
- the determination allows for the alternative Box cox methodology. The process is described in WPB 1012 – Calculation of Major Event Day Threshold;

3.6 Quality of Services

- outages affecting single premises – Single premise outages that occur as a result of a fault on Endeavour Energy's network are included in the reliability result;
- subsequent interruptions caused by network switching during fault finding, in general switching operations associated with an unplanned incident may include subsequent interruptions to customers that are associated with fault finding. Current systems do not have any facility to identify these operations and therefore exclude them from reliability calculations. It should be noted that removing these operations from reliability calculations would result in an inaccurate record of actual customer experience; and
- unplanned interruptions are sustained interruptions greater than three minutes in accordance with the SAIDI definition in appendix A of the STPIS.
    - Feeder Category information is determined at the start of the year as per the method required by the AER. During the year as new Feeders are created, the Feeder Category is determined from comparing similar Feeders. Where Feeders have not been categorised during the year and appear in the data from the source systems they are defaulted to "Urban" unless a similar Feeder can inform of the likely Feeder Category. This includes Feeders that did not have interrupted customers but appear in the data as part of a consolidated interruption record.

Source of information

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

Data sourced from SwitchIT database using Cognos 7 Report.

Reporting tool – Cognos 7

2. Customer numbers for calculation of SAIDI and SAIFI.

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

Methodology and assumptions

Major Event Days (MED's) have been determined in accordance with the requirements of the STPIS (3.3) – and as per Endeavour Energy distribution determination 2019-24 – Service target performance incentive scheme April 2019.

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

4.1 Public Lighting

4.1 Public Lighting

4.1.4 Public Lighting Metrics by Tariff

Compliance with requirements of the notice

The data provided is compliant with the definitions and requirements of the notice.

Source of information

The Public Lighting Metrics by Tariff class details (Number of Lights and Public Lighting) are populated from the Finance public lighting financial report that is run on a monthly basis.

Methodology and assumptions

Information is sourced via TM1 which queries Endeavour Energy's corporate asset management system Ellipse. This report identifies all street lighting assets that are current in-service and being billed to a customer, sub categorised by tariff class and technology on a monthly basis. End of year values are used to populate RIN table 4.1.4.

Use of estimated information

There is no estimated data in this worksheet.

6.2 Reliability & Customer Service Performance

6.2 Reliability & Customer Service Performance

6.2 Reliability and Customer Service Performance

Compliance with requirements of the notice

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

- Excluded incidents detailed in table 6.8 have been determined in accordance with the requirements of the STPIS (3.3).
- Major Event Days (MED's) have been determined in accordance with the requirements of the STPIS (3.3) – and as per Endeavour Energy distribution determination 2019-24 – Service target performance incentive scheme April 2019.
- The determination allows for the alternative Box cox methodology. The process is described in WPB 1012 – Calculation of Major Event Day Threshold.
- Outages affecting single premises – Single premise outages that occur as a result of a fault on Endeavour Energy's network are included in the reliability result.
- Subsequent interruptions caused by network switching during fault finding, in general switching operations associated with an unplanned incident may include subsequent interruptions to customers that are associated with fault finding. Current systems do not have any facility to identify these operations and therefore exclude them from reliability calculations. It should be noted that removing these operations from reliability calculations would result in an inaccurate record of actual customer experience; and
- Unplanned interruptions are sustained interruptions greater than one minute in accordance with the SAIDI definition in appendix A of the STPIS.

Source of information

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

Data sourced from OMS. All records in this database were validated and checked in accordance with a Work Place Instruction WPT0001 (supersedes WPB1014).

Reporting tool – Cognos 10

2. Customer numbers for calculation of SAIDI and SAIFI.

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

Methodology and assumptions

Major Event Days (MED's) have been determined in accordance with the requirements of the STPIS (3.3) – and as per Endeavour Energy distribution determination 2019-24 – Service target performance incentive scheme April 2019.

6.2 Reliability & Customer Service Performance

Excluded interruptions – Reporting tool Cognos 10 identifies excluded interruptions based on a cause that is assigned to each interruption in accordance with STPIS 3.3. All the information provided represents actual information extracted from Endeavour Energy's reporting systems and reconciled to reported

6.6 STPIS Customer Service

6.6 STPIS Customer Service

6.6.1 Telephone Answering

Compliance with requirements of the notice
The data provided is compliant with the definitions and requirements of the notice.

Source of information
Information was sourced from the MyNetFone Precision Analytics and Cisco applications.

Methodology and assumptions
- Calls to fault line is a sum of monthly report figures of calls to the 131 003 number taken from the MyNetFone PA daily reports;

- Calls received after removing excluded events. Excluded calls included calls to the IVR where customer did not elect to speak with a consultant as well as any calls where the customer abandoned the call within 30 seconds of queuing to speak with a consultant. There were six excluded days due to major events; and

- Calls answered in 30 seconds applies only to those calls where a customer elected to speak to a consultant after listening to the IVR message (including those instances where the IVR provided detailed information concerning their outage). This data was sourced from the Cisco reporting application. There were six excluded days due to major events.

Use of estimated information
There is no estimated data in this worksheet.

Reliability of information
All data comes directly from the reporting systems.

6.6.2 Inadequately Served Customers

Compliance with requirements of the notice
The data provided is compliant with the definitions and requirements of the notice.

Source of information
Information was sourced from the OMS Archive database via database views of customer data that is recorded when an interruption occurs.

Methodology and assumptions
The threshold was calculated as the average of the 2017-18, 2018-19 and 2019-20 unadjusted SAIDI values, multiplied by four (4). The data for 2017-18 and 2018-19 was adjusted to remove all interruptions, or partial interruptions that are now considered momentary interruptions (i.e. interruptions with a duration less than or equal to three minutes).

Inadequately served customer data was extracted for customers who experienced a total duration of unplanned sustained interruptions that exceeded the threshold.

6.6 STPIS Customer Service

Note: Some data on which Feeder the customer is situated on when the interruption occurred was not available. Best efforts were made to determine the normal feeder for the customer.

The data was then summated and aggregated with Feeder Category information. Feeder Category SAIDI and SAIFI was calculated and summated, and then the Top 5 Feeders determined for each.

Average and Highest customer data was determined along with the calculation of the Network SAIDI and SAIFI for all inadequately Served Customers.

6.7 STPIS Daily Performance Data

6.7 STPIS Daily Performance Data

6.7.1 Daily Performance Data – Unplanned

Compliance with requirements of the notice

The data provided is compliant with the definitions and requirements of the notice.

Source of information

Information was sourced from the Cisco application.

Methodology and assumptions

- Calls received after removing excluded events. Excluded calls included calls to the IVR where customer did not elect to speak with a consultant as well as any calls where the customer abandoned the call within 30 seconds of queuing to speak with a consultant. There were six excluded days due to major events; and

- Calls answered in 30 seconds applies only to those calls where a customer elected to speak to a consultant after listening to the IVR message (including those instances where the IVR provided detailed information concerning their outage). This data was sourced from the Cisco reporting application. There were six excluded days due to major events.

Use of estimated information

There is no estimated data in this worksheet.

Reliability of information

All data comes directly from the reporting systems.

6.8 STPIS Exclusions

6.8 STPIS Exclusions

6.8 STPIS Exclusions

Compliance with requirements of the notice

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

- excluded incidents detailed in table 6.8 have been determined in accordance with the requirements of the STPIS (3.3a);
- Major Event Days (MED's) have been determined in accordance with the requirements of the STPIS (3.3b) – and as per Endeavour Energy distribution determination 2019-24 – Service target performance incentive scheme April 2019;
- the determination allows for the alternative Box cox methodology. The process is described in WPB 1012 – Calculation of Major Event Day Threshold;
- outages affecting single premises – Single premise outages that occur as a result of a fault on Endeavour Energy's network are included in the reliability result;
- subsequent interruptions caused by network switching during fault finding, in general switching operations associated with an unplanned incident may include subsequent interruptions to customers that are associated with fault finding. Current systems do not have any facility to identify these operations and therefore exclude them from reliability calculations. It should be noted that removing these operations from reliability calculations would result in an inaccurate record of actual customer experience; and
- unplanned interruptions are sustained interruptions greater than three minutes in accordance with the SAIDI definition in appendix A of the STPIS.

Source of information

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

Data sourced from OMS. All records in this database were validated and checked in accordance with a Work Place Instruction WPT0001 (supersedes WPB1014).

Reporting tool – Cognos 10.

2. Customer numbers for calculation of SAIDI and SAIFI.

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

Methodology and assumptions

Major Event Days (MED's) have been determined in accordance with the requirements of the STPIS (3.3b) – and as per Endeavour Energy distribution determination 2019-24 – Service target performance incentive scheme April 2019.

Excluded interruptions – Excluded interruptions are based on a cause or factor that is assigned to each interruption in accordance with STPIS 3.3a.

6.8 STPIS Exclusions

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

6.9 STPIS Guaranteed Service Level

6.9 STPIS Guaranteed Service Level

Street lights

“Individual GSL Payments” are based on values provided in the “Street Lighting Customer Payments Report” from Customer Resolutions department. This report is used to track the number of GSL payments made to customers on a monthly basis. For each non-compliant defect / call the number of events are multiplied by $25 as per the NSW Street Lighting Code

“General Fault SLA” is calculated based NSW Public Lighting Report (to identify the number of customers where the SLA was not reached) and TM1 finance report for FY20 Public Lighting Revenue (by Customer). For each Customer where the SLA was not reached the total FY20 revenue is multiplied by 0.25% to determine the GSL payment.

7.8 Avoided TUOS Payments

7.8 Avoided TUOS Payments

7.8 Avoided TUOS Payments

Compliance with requirements of the notice

The data presented in table 7.8.1 contained in section 7.8 is consistent with the requirements of the Annual RIN. It represents the Avoided TUoS payments required to be paid by Endeavour Energy to the Embedded Generator(s) in accordance with clause 5.5(h) of the NER, as per below.

"A Distribution Network Service Provider must pass through to a Connection Applicant the amount calculated in accordance with paragraph (i) for the locational component of prescribed TUoS services that would have been payable by the Distribution Network Service Provider to a Transmission Network Service Provider had the Connection Applicant not been connected to its distribution network ('avoided charges for the locational component of prescribed TUoS services')."

Source of information

The information used to populate table 7.8.1 was extracted directly from TM1. Endeavour Energy uses this OLAP tool for various purposes including budgeting and forecasting, monthly reporting and regulatory account allocations and it has been used historically to provide data for previous audited Regulatory Accounts / RINs. It is a cube-based technology which allows rules to be created between cubes and within cubes.

The information for worksheet 7.8 (Avoided TUoS payments) was extracted from the TM1 TUoS Reconciliation Cube. This cube is used by Endeavour Energy to store and report energy and demand import data from various connection points including embedded generators, as well calculate associated TUoS charges (i.e. Demand charges, Exit charges and General & Common Service charges) at the connection point level. It is the primary tool used to calculate the monthly avoided TUoS accrual for embedded generators at month end and is also used extensively for budgeting and forecasting TUoS related charges.

The data from TM1 TUoS Reconciliation Cube is also reconciled with the TM1 PNL cube which represents the values in the General Ledger.

Methodology and assumptions

The following methodology is used to calculate avoided TUoS payment which reflects the requirements of clause 5.5(i) of the NER:

- Extract half hourly generation data for each embedded generator and the associated Bulk Supply Points (BSP), i.e. the BSP which service the same area as the embedded generator and calculate the peak demand for each BSP for the month.
- The energy generated by each embedded generator is adjusted by the relevant Distribution Loss Factor (DLF) in order to calculate the equivalent amount of energy which would have needed to have been supplied through the BSP.
- For each embedded generator, the Distribution Loss Factor (DLF) codes and corresponding values are obtained from the current AEMO Distribution Loss Factor Report.

7.8 Avoided TUOS Payments

- The grossed-up energy for each embedded generator is added to the associated BSP to calculate the total amount of energy generated for the system area. In addition, the peak demand for the system area is also calculated.
- The peak demand for each system area is isolated (zeroing out all other half hourly intervals) and the peak demand contributed by the embedded generators is calculated as the difference between the peak demand for the system area less the peak demand for the relevant BSP.
- The proportional contribution of each embedded generator to the peak demand for the system area is calculated for the relevant half hourly interval. The proportional contribution of each embedded generator is multiplied by the peak demand contributed by all the embedded generators for the system area in order to calculate the avoided TUoS peak demand for each specific embedded generator and loaded in TM1 TUoS Reconciliation cube.
- The avoided TUoS peak demand amounts for each generator are multiplied by the relevant peak demand rates to calculate avoided TUoS charges in TM1 TUoS Reconciliation cube.

No assumptions are made and the calculation is based on actual system import data for each connection points.

Use of estimated information

As per the definition of Actual Information provided in the Regulatory Information Notice issued under section Division 4 of Part 3 of the National Electricity (New South Wales) Law, Accruals & Provisions are considered as Actuals.

Endeavour Energy has not used estimated Information in completing table 7.8.1.

Reliability of information

All the information provided represents Actual Information extracted from Endeavour Energy's reporting systems. As a result, the information contained in the table 7.8.1 is considered to be reliable.

7.10 Jurisdictional Schemes

7.10 Jurisdictional Schemes

7.10.1 Jurisdictional Scheme Payments

Compliance with requirements of the notice

Endeavour Energy is required to list each relevant jurisdictional scheme individually and report information for each scheme separately from other schemes.

Endeavour Energy has provided information in accordance with this requirement. Endeavour Energy is subject to two jurisdictional schemes, in accordance with 6.18.7A(e)(2) and 6.18.7A(e)(3) of the Rules:

1. the NSW Solar Bonus Scheme (SBS); and
2. the Climate Change Fund (CCF).

Source of information

The NSW SBS closed 31 December 2016. See NSW Government website:

https://www.energy.nsw.gov.au/energy-consumers2/solar/solar-bonus-scheme/the-solar-bonus-scheme-is-closed

Endeavour Energy's payment to the CCF has been sourced from correspondence received from the NSW Minister for Energy and Environment. Refer to Figure 1.

Information on each schemes purpose and commencement has been sourced from NSW Government websites:

- SBS: https://www.energy.nsw.gov.au/energy-consumers2/solar/solar-bonus-scheme; and
- CCF: http://www.environment.nsw.gov.au/grants/ccfund.htm.

Methodology and assumptions

No assumptions have been made to complete this worksheet.

Use of estimated information

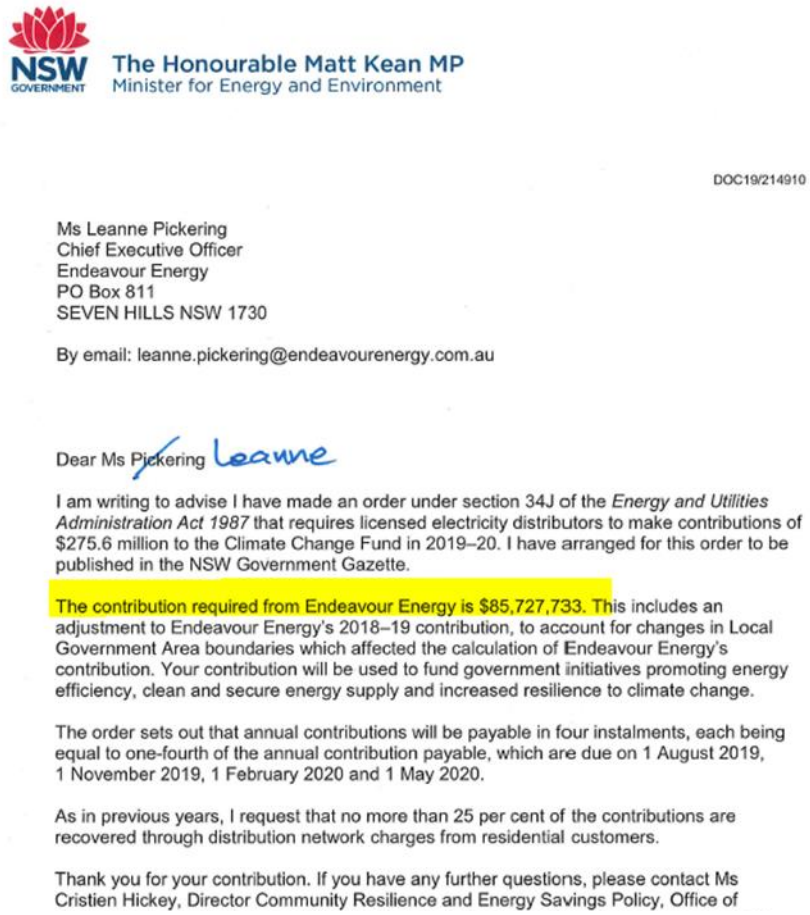
No estimates have been made to complete this worksheet.

Reliability of information

No estimates or assumptions have been made to complete this worksheet.

7.10 Jurisdictional Schemes

Figure 1: Correspondence received from NSW Minister for the Environment, Local Government and Heritage



NSW GOVERNMENT

The Honourable Matt Kean MP
Minister for Energy and Environment

DOC19/214910

Ms Leanne Pickering
Chief Executive Officer
Endeavour Energy
PO Box 811
SEVEN HILLS NSW 1730

By email: leanne.pickering@endeavourenergy.com.au

Dear Ms Pickering Leanne

I am writing to advise I have made an order under section 34J of the *Energy and Utilities Administration Act 1987* that requires licensed electricity distributors to make contributions of $275.6 million to the Climate Change Fund in 2019–20. I have arranged for this order to be published in the NSW Government Gazette.

The contribution required from Endeavour Energy is $85,727,733. This includes an adjustment to Endeavour Energy's 2018–19 contribution, to account for changes in Local Government Area boundaries which affected the calculation of Endeavour Energy's contribution. Your contribution will be used to fund government initiatives promoting energy efficiency, clean and secure energy supply and increased resilience to climate change.

The order sets out that annual contributions will be payable in four instalments, each being equal to one-fourth of the annual contribution payable, which are due on 1 August 2019, 1 November 2019, 1 February 2020 and 1 May 2020.

As in previous years, I request that no more than 25 per cent of the contributions are recovered through distribution network charges from residential customers.

Thank you for your contribution. If you have any further questions, please contact Ms Cristien Hickey, Director Community Resilience and Energy Savings Policy, Office of

7.11 Demand Management Incentive Scheme

7.11 Demand Management Incentive Scheme

7.11.1 DMIS – Projects Submitted for Approval

Endeavour Energy currently has one Demand Management Innovation Scheme (DMIS) projects to report for 19-20 with a total of $209,900 in operating expenditure.

Project	Operating expenditure ($ nominal)	Capital expenditure ($ nominal)	Relevant net benefit ($ nominal)
Albion Park ZS Load Control Replacement Program	$209,900	$0	$722,060

Albion Park ZS Load Control Replacement Program

The Albion Park ZS load control equipment has reached the end of its life and requires replacement. Peak demand will increase substantially on failure of load control equipment exceeding the network capacity by 6 MVA. The existing 11kV network and surrounding ZS do not have the capacity to offload Albion Park ZS by the required quantity. Network options to address this limitation include replacing the load control equipment or alternatively replacing every load control relay on customers switchboard with a time clock. A non-network option report was issued on 29 July 2019 and three submissions were received. The preferred proposal was based on replacing the load control relay and basic meters with a smart meter with load control functionality.

An agreement to carry out the meter replacement at 2853 customer sites was concluded in late 2019 and the replacement work commenced in early 2020 and will continue into FY21. At 30 June 2020, costs of the equipment replacement were $209,900 with an expected total cost of $460,038.80 at the completion of the project with the remaining costs to be reported in FY21.

Net Benefit

Endeavour Energy has performed a financial analysis and business case for the available network options, which included the level of load at risk and probability of contingency capacity at the Albion Park Zone Substation. This analysis demonstrated that network investment is justifiable (Net Present Value positive) to undertake works to manage the constraint risk through a new upgraded AFIC system or alternative network owned control means.

The RIT-D calculation of Risk of the “do nothing” option is: $2,042,581. At a project cost of $460,038.80 the calculated net benefit of this project is $1,582,542.20

When calculating the Relevant net benefit for this project in 19/20 as reported in table 7.11.1 the net benefit has been pro-rata over the expense i.e. ($209,900/$460,038.80) x $460,038.80 = $722,060 with the remainder of the benefit due to be reported next year.

7.11 Demand Management Incentive Scheme

7.11.2 DMIA – Projects Submitted for Approval

Endeavour Energy currently have three Demand Management Innovation Allowance (DMIA) projects:

1. **Grid Connected Battery Energy Storage Trial** which commenced in FY17-18.
2. **Low Voltage Static Var Compensator Trial** which commenced in FY18-19.
3. **Digital Customer Engagement Platform** which commence in FY19-20.

The total DMIA claim for FY19-20 is $260,263.

Project	Operating expenditure ($ nominal)	Capital expenditure ($ nominal)	Total expenditure ($ nominal)	New or Continuing
Grid Connected Battery Energy Storage System	$0	$41,073	$41,073	Continuing
Low Voltage Static Var Compensator Trial	$0	$21,160	$21,160	Continuing
Digital Customer Engagement Platform	$0	$198,030	$198,030	New
Total	**$0**	**$260,263**	**$260,263**	

Background

This report has been prepared in accordance with the AER's Regulatory Information Notice in response to paragraph 6 of Schedule 1. The information provided will constitute the provision of an annual report for the purposes of paragraph 3.1.4.1 of the Demand Management Incentive Scheme (DMIS) applying to Endeavour Energy (as set out in the 2019-2024 Distribution Determination).

As per paragraph 6 of the AER's Regulatory Information Notice Schedule 1, Endeavour Energy is requested to provide responses describing its expenditure and the nature of its demand management activities for review by the AER. The annual reporting requirements are outlined below.

Endeavour Energy's response on the Demand Management Incentive Allowance must include:

1. Identify each demand management project or program for which Endeavour Energy seeks approval;

2. For each demand management project or program identified in the response to paragraph 1:

7.11 Demand Management Incentive Scheme

- explain:
  - how it complies with the Demand Management Innovation Allowance criteria detailed at section 3.1.3 of the demand management incentive scheme;
  - its nature and scope;
  - its aims and expected outcomes;
  - the process by which it was selected, including its business case and consideration of any alternatives;
    - *how it was/is to be implemented;*
    - *its implementation costs; and*
    - *any identifiable benefits that have arisen from it, including any off peak or peak demand reductions;*

- confirm that its associated costs are not:
  - recoverable under any other jurisdictional incentive scheme;
  - recoverable under any other Commonwealth or State Government scheme; and
  - included in the forecast capital or operating expenditure approved in the 2014-19 Distribution Determination or recoverable under any other incentive scheme in that determination; and:

- state the total amount of the Demand Management Innovation Allowance spent in the Relevant Regulatory Year and how this amount has been calculated; and

3. Provide an overview of developments in relation to projects or programs completed in previous years of the regulatory control period, and of any results to date.

Previously Approved Projects

Low Voltage Static Var Compensator Trial

Static Var compensators (Statcoms) have been available for some time, but it is only recently that smaller systems designed for low voltage applications have become available. Statcoms manage voltage through injecting or absorbing reactive power and can help to manage voltage constraints on the network. For example, reducing LV feeder voltage during high solar generation or increasing voltage during peak demand times.

Low Voltage Statcoms are a viable alternative to network augmentation and can help to defer or avoid network investment in edge of grid applications. This trial aims to test the benefits of LV Statcoms to improve customer voltages and manage LV network constraints.

Project scope includes:

- Procure 1 single phase and 3 three phase LV Statcom units;
- Identify suitable install locations where voltage regulation is poor;
- Develop designs for installation of the units;
- Commission the systems with remote communications;
- Demonstrate the voltage benefits on constrained feeders; and

7.11 Demand Management Incentive Scheme

- Confirm the cost effectiveness of the technology compared to conventional feeder augmentation, that is, transformer updates and reconductoring.

Aims and expectations of the trial include:

- Determine the suitability for peak demand reduction and other network support applications such as voltage, power quality and power factor management;
- Gain an understanding of design considerations such as efficiency, system sizing, system lifecycle, safety, installation, control and monitoring requirements, and any limitations of the equipment;
- Understanding the practicalities of installation, testing and commissioning;
- Ensuring the LV statcoms can maintain a target voltage of between 216V and 253V; and
- Investigating other applications of the technology such as coordinated voltage regulation across multiple LV feeders.

LV statcoms are an emerging technology that have the potential to increase DER hosting capacity, correct power factor and alleviate network voltage constraints more cost effectively than conventional network augmentation. This technology will be trialled by Endeavour Energy to determine the benefits and potential use cases. If the trial demonstrates the technology is cost effective, further applications of the technology will be investigated on a case by case basis.

The trial will be implemented as follows:

- Procure 1 single phase and 3 three phase LV statcom units (10kVar/phase);
- Power quality meter data will be reviewed to identify network constraints and determine suitable install locations;
- Design and installation of the units have been completed in November 2019; and
- Monitoring of the systems will be undertaken for 1 year.

The benefits and results of the technology will then be reviewed.

Expenditure claim in FY2019-20 is $21,160 in CAPEX covering the costs for engineering development and installation works associated with the project. All expenses are accounted in work orders linked to the project.

An evaluation report will be completed by November 2020.

Grid Connected Battery Energy Storage System (BESS) Trial

Battery storage can provide several network benefits to Endeavour Energy. Primary network benefits such as peak load lopping, voltage management, load balancing and reliability improvement can be realised in the foreseeable future and may reduce or defer investment decisions. There is strategic value in understanding the operation of battery storage in order to position the company to realise storage related opportunities and applications as they are developed.

Utilising a BESS to defer the construction of a greenfield zone substation (ZS) is one such opportunity. In this application, the BESS can be used as an alternative to a Mobile ZS for deferral periods of up to 3 years. Short term demand growth can be met with supplementary supply from a BESS to defer both the augmentation of the existing network and the establishment of the final supply infrastructure.

7.11 Demand Management Incentive Scheme

Project scope includes:

- Identify the functional requirements of the BESS for connection and operation on Endeavour Energy's network;
- Procure a grid connected BESS with a minimum of 1MWh storage capacity, and 500kVA inverter, with a modular and transportable design;
- Deploy BESS onsite at West Dapto;
- Prove the BESS can provide 1MWh at a peak of 500kVA as required for peak shaving;
- Confirm round trip charge/discharge energy efficiency of 80%;
- Understanding the SCADA control and protection requirements for the grid connected BESS; and
- Test the voltage, power quality, power factor management and reliability support functions of the BESS.

Aims and expectations of the trial include:

- Determine the suitability for peak demand reduction and other network support applications such as voltage, power quality and power factor management;
- Test the use of battery storage as grid backup supply for reliability support;
- Gain an understanding of design considerations such as component losses, charge/discharge rates, system lifecycle, safety, installation, control and monitoring requirements, and any limitations of the equipment;
- Confirm the viability of a relocatable storage solution, in terms of cost and ease of relocation;
- Practicalities of installation, testing and commissioning;
- Check the maturity of the technology and suppliers in the Australian market;
- Understand the cost to procure a grid connected BESS; and
- Viability of intended primary application of the battery storage, that is, as a tool to assist in deferral of zone substation construction.

Battery storage is approaching a price point that makes this technology a contender as an alternative network investment option. BESS have the potential to provide NPV positive returns when used for ZS construction deferral and will also provide a potential opportunity return, as the substations may be amalgamated, relocated or further deferred if load growth does not meet forecast levels.

It is in Endeavour Energy's interest to pilot grid connected storage to position the company to realise the benefits battery storage can provide such as peak shaving, reliability support, quality of supply improvement, and better understand the operational impacts of their application to our network.

West Dapto ZS, planned for construction in 2022, has been identified as a suitable location for the pilot. Pending successful testing of the BESS' peak lopping capability, the solution will remain onsite to alleviate demand growth in the West Lakes Illawarra development area and assist to defer West Dapto ZS construction.

- Develop a functional specification documenting the requirements of the BESS for connection and operation on Endeavour Energy's network;
- Tender for a grid connected BESS with a minimum of 1MWh storage capacity, and 500kVA inverter, with a modular and transportable design;

7.11 Demand Management Incentive Scheme

- Following selection of the supplier, finalise design of the solution to meet the BESS functional requirements;
- Work with the supplier to construct and test the BESS;
- Connect and commission the BESS onsite at West Dapto in time for summer 2019-20; and
- Complete testing of the BESS functions by the end of the 2019-20 financial year.

Expenditure claim in FY19-20 is $41,073 in CAPEX covering engineering development, testing and equipment costs associated with the project. All expenses are accounted in work orders linked to the project.

Endeavour Energy is currently still in the trialling phase of the BESS with the testing of the grid connection and islanding operation, with some functionality still in development. The key learnings from the trial to date are related to the significant nature of the challenges met in the implementation of such a project.

- Integration of the battery system (such as inverter, batteries, transformer, protection) capable of a high voltage connection is a significant task, even when components are understood and at manufacturing maturity.
- A functional specification was used for procurement of the BESS, this permitted vendors flexibility to nominate optimal design of the system.
- The BESS was designed with modular HV and LV containers. Fit out was completed in the workshop before relocation to site for commissioning. This demonstrated the potential to rapidly deploy or relocate the BESS to address network constraints.
- The size of the solution limits the range of workshop testing that can be performed i.e. due to reliance on generator supply and load banks. Grid connection is required to test the full range system capability.
- Existing internal and external standards are not designed for grid sized battery systems, and requirements that are appropriate for household systems are less appropriate for grid scale.
- The market is still emerging for grid battery energy storage technology. This has provided opportunities for innovation and customisation of the solution.
- Protection and Safety systems being implemented require considerable expertise from both battery, inverter and utility backgrounds to achieve an outcome that allows for a safe and reliable connection to the grid.
- Considerations relating to the use of the BESS for network support, and operational use of the BESS.
- Detailed understanding of the capacity and sizing requirements to network functions including islanding operation, peak shaving, and power factor support.
- Maintenance and support needs for the BESS.

The benefits of these key learnings from the battery system will be optimal for use as a deferral of network expenditure in locations where the growth of customers and loading is low and/or uncertain. An evaluation report will be completed at the end of the trial.

7.11 Demand Management Incentive Scheme

New Projects for Approval

Digital Customer Engagement Platform

A Digital customer engagement platform (DCEP) is a mobile application and web portal which Endeavour Energy will trial as a customer engagement and recruitment tool for multiple Demand Management (DM) programs. This project provides a non-network option by implementing DM programs as alternatives to network augmentation and to address network limitations where cost effective to do so.

The DCEP trial is marketed to residential customers as the "PowerSaver" program and aims to provide opportunities for customers to employ one or more of the DM programs in their household, as well as provide real-time energy consumption data.

Specific programs target selected areas in our network that currently experience network constraints during peak loading times.

To encourage customers to participate, Endeavour Energy will offer the incentives of gift cards as rewards for meeting energy usage goals outlined by the program. These "PowerSaver" programs will educate customers on how to effectively manage power usage and in turn, their impact on the Low Voltage (LV) network.

Through an Expression of Interest and Request for Proposal procurement process, GreenBe was identified as the successful supplier to provide software and services to develop a DCEP for Endeavour Energy to meet the trial's objectives.

The project scope includes:

- Engage a supplier for the provision of software and services to develop a DCEP (mobile app and web portal) for Endeavour Energy to meet the program objectives;
- Sign up 1,000 residential customers predominantly within the Penrith and Albion Park ZS supply areas;
- Segment participants into the following DM programs and reward-based groups via the DCEP:

  PeakSaver – voluntary load curtailment program;
  CoolSaver – air conditioning control program;
  SolarSaver – residential battery DR program;
  AtHomeSaver – challenge to save energy and receive personal rewards; and
  CommunitySaver – challenge to save energy and receive community-based rewards.

- Implement up to 15 DR events for the duration of the trial (two summers and one winter period);
- Engage and communicate with participants;
- Provide near real-time consumption data to participants by integrating internal applications (Historian) to the DCEP. Acquisition of smart meter data from metering providers may be required;
- Conduct a customer survey at the end of the trial;
- Prepare a project evaluation report at the end of the trial with the view of incorporating the learnings into; and
- future DM programs either internally or by using external service providers.

7.11 Demand Management Incentive Scheme

Aims and expectations of the trial include:

- Determine the effectiveness of a DCEP including the customer facing mobile application and web portal, and a strategy for the ongoing use of the customer engagement platform for both DM and customer strategy;
- Further improving the network demand reduction delivered from residential customers using the customer facing application and the accompanying communication strategies;
- Finding the most effective communications modes and channels for each program;
- Gaining a further understanding of the most effective and preferred reward mechanism;
- Helping to develop a customer education strategy; and
- Finding the cost-effective means for implementing a DCEP.

A DCEP has the potential to transform the way we approach, communicate and engage customers. The use of a DCEP is an innovative way to engage customers and encourage participation in our programs. This solution offers a cost-effective means of implementing residential DM programs and the communication needs for the company. The solution will not only test app-based engagement of our customers, but also digital recruitment methods to maximise participation in DM programs.

The trial will be implemented as follows:

- Approval of business case in September 2019;
- Release of RFP in September 2019;
- Award contract to successful supplier in November 2019;
- Finalise product design with supplier in November 2019;
- Secure involvement of partners (local councils, community groups, schools) in November 2019;
- Internal approval of marketing collateral in November 2019;
- DCEP go-live in January 2020;
- Post summer events review in April 2020;
- Winter events launch in May 2020;
- Post winter events review in November 2020;
- Second summer events launch in November 2020;
- End of trial on 31st March 2021;
- Post-trial customer survey and analysis in May 2021; and
- Final evaluation report in July 2021.

The trial commenced in FY19-20 and will run for two summers and one winter period.

The trial has a budget of $849,830 for FY2019-20 to FY2021-22.

Expenditure claim in FY2019-20 is $198,030 in CAPEX covering the costs for engineering, software development, and program setup associated with the project. All expenses are accounted in work orders linked to the project.

An evaluation report will be completed by November 2021.

7.11 Demand Management Incentive Scheme

Statement

Endeavour Energy confirms the funding of the projects contained in this report are not:

a. recoverable under any other jurisdictional incentive scheme;

b. recoverable under any other state or Commonwealth government scheme; and

c. included in the forecast CAPEX or OPEX approved in the AER's distribution determination for the next regulatory control period, or under any other incentive scheme in that determination (such as the D-factor scheme for NSW).

8.1 Income

8.1 Income

8.1.1 Income Statement

Compliance with requirements of the notice

The data presented in Table 8.1.1 – Income Statement is consistent with requirements of the Annual Reporting RIN. In particular;

- Data presented in Table 8.1.1 – Income Statement covers the 2018-19 financial year with respect to financial information on revenue and expenditure relating to Standard Control Services, in accordance with the Cost Allocation Methodology (CAM).

- Financial information provided relates to a breakdown of Revenue (such as Distribution Revenue, Customer contributions, Interest income, Jurisdictional scheme amounts and TUOS revenue), Expenditure (such as TUOS expenditure, Avoided TUOS expenditure, Depreciation, Finance charges, Maintenance and Operating expenses) and Income tax expense/(benefit)in accordance with the elements required in the template.

Source of information

Source information used to populate 8.1.1 Income Statement was extracted from;

a) the Annual Financial Statements to populate the “Audited Statutory Accounts”;
b) the TM1 Financial Reporting system for the analysis of the Distribution business between Standard Control Services, Alternative Control Services and Unregulated Services (shown as “Adjustments” in the RIN Template); and
c) Excel work papers for certain adjustments and reconciliations.

Information Systems used include;

- Ellipse: Endeavour Energy’s Enterprise Resource Management (ERM) system, with data extracted from the General Ledger module; and

- TM1: an OLAP tool used for various purposes including budgeting and forecasting, monthly reporting and regulatory accounts allocations. It is a cube-based technology which allows rules to be created between cubes and within cubes.

The TM1 model splits the Income Statement into line items (i.e. rows) included within the annual AER RIN template, which reflects a different categorisation of revenue and expense items compared to normal internal management and statutory P&L formats.

8.1 Income

Operating Expenditure

Operating Expenditure (Opex) was extracted from the relevant TM1 cube based on mappings in accordance with the Annual RIN Instructions and Definitions, and the Cost Allocation Methodology (CAM). Data was reconciled to Opex reported in the Management and Statutory results. Certain additional steps are performed as part of the Annual RIN process in order to calculate the required information;

1. Extract operating expenditure data from the relevant TM1 cube at the account code level. Extract the data as labour and non-labour line items.

2. Reconcile the total derived at the individual account code level to the total from the TM1 cube ("N Level" Org Units in TM1) to ensure no account codes have been excluded.

3. Reconcile the total derived at the individual account code level to the total operating expenditure reported in the management and statutory results.

4. Assign a regulatory accounts classification to the extracted TM1 data. This classification can be a direct network cost, direct network overhead or a corporate overhead cost. A direct network cost is assigned directly to a RIN category (e.g. maintenance & repair, emergency response etc). Direct network overheads are the remaining network operating costs that cannot be allocated directly to a RIN category and are allocated on a pro rata basis based on the proportions of the direct allocation.

5. Populate table 8.1.1.2 Expenditure with the results of the above steps in accordance with the RIN instructions & definitions.

Note: given the relevant TM1 cube data is available and based on actual operating expenditure results for the year and the approved CAM, all information provided for this table consists of actual information (no estimated information required).

Methodology and assumptions

Table	Methodology	Assumptions
8.1.1.1 Distribution Revenue	Distribution ("DUoS") revenue data was extracted from the relevant TM1 cube based on mappings in accordance with the Annual RIN Instructions and Definitions. DUoS is allocated as 100% Standard Control.	No assumptions required.
8.1.1.1 Cross Boundary Revenue	Endeavour Energy does not have any Cross-Boundary Revenue – not applicable.	No assumptions required.

8.1 Income

8.1.1.1 Contributions	Contributions - Capital Contributions are sourced from an Excel work paper which is based initially on Fixed Asset Reconciliations of the Ellipse data for Capital Contributions. The capital contributions are mapped in accordance with the Annual RIN Instructions and Definitions, and the results are ultimately uploaded into TM1 (as a % split of the total annual Capital Contributions). Data was reconciled to revenues reported in the Management and Statutory results.	No assumptions required.
8.1.1.1 Interest Income	Interest Income is extracted from the relevant TM1 cube based on mappings in accordance with the Annual RIN Instructions and Definitions. Interest Income is allocated as 100% Standard Control.	No assumptions required.
8.1.1.1 Jurisdictional Scheme Amounts	Jurisdictional Scheme Amounts are extracted from the relevant TM1 cube based on mappings in accordance with the Annual RIN Instructions and Definitions. Jurisdictional Scheme Amounts includes Climate Change Fund Recovery and Solar Bonus Scheme Recovery. CCF Recovery and SBS Recovery are both allocated as 100% Standard Control.	No assumptions required.
8.1.1.1 Profit from Sale of Fixed Assets	Profit from Sale of Fixed Assets is sourced from an Excel work paper which is based initially on Fixed Asset Reconciliations of the Ellipse data for Disposals. The profit from sale balances are mapped in accordance with the Annual RIN Instructions and Definitions, and the results are ultimately uploaded into the relevant TM1 cube. Allocation drivers are used to assign amounts to Standard Control Services, Alternative Control Services and Unregulated Services. Data was reconciled to revenues reported in the Management and Statutory results. Note that this line is only populated if there is a net profit from sale (i.e. if a net loss from sale section 8.1.1.2 Loss from sale of fixed assets is populated instead).	No assumptions required.

8.1 Income

Table	Methodology	Assumptions
8.1.1.1 TUOS Revenue	Transmission Use of Service ("TUoS") revenue data was extracted from the relevant TM1 cube based on mappings in accordance with the Annual RIN Instructions and Definitions. TUoS is allocated as 100% Standard Control.	No assumptions required.
8.1.1.1 Pass through revenue (F-factor)	Endeavour Energy does not have any Pass-through revenue (F-factor) – not applicable.	No assumptions required.
8.1.1.1 Other Revenue	Other Revenues – sourced from the relevant TM1 cube, with the exception of an adjustment for Group Management Fee Income recovery revenues. Each account combination is allocated into Standard Control Services, Alternative Control Services and Unregulated Services, and further into RIN categories based on the nature of the revenue. Standard Control Services reconciles to Private power line and customer installation inspections, Monopoly Services, Emergency recoverable works and an allocation of Group Management Fee Income recovery revenues. Alternative Control Services revenue reconciles to Revenue from maintenance of public lighting, Metering Services Charges, Miscellaneous and Monopoly services income and an allocation of Group Management Fee Income recovery revenues. Unregulated Services reconciles to Customer funded connections, Customer specific services, Type 1-4 Metering services, TSA revenues, Other revenues and an allocation of Group Management Fee Income recovery revenues. Group Management Fee Income recovery is allocated based on an Excel work paper, using the Opex for the Group cost centres as the basis for the regulatory split. The resulting adjustments are used to "gross up" revenue since the recoveries are mapped to Opex for management reporting but to Other Revenue in the Annual RIN Income Statement.	No assumptions required.

8.1 Income

8.1.1.2 TUOS Expenditure	Transmission Use of System (“TUoS”) expenditure data was extracted from the relevant TM1 cube based on mappings in accordance with the Annual RIN Instructions and Definitions. TUoS expenditure is allocated as 100% Standard Control.	No assumptions required.
8.1.1.2 Avoided TUOS Expenditure	Avoided Transmission Use of System (“TUoS”) expenditure data was extracted from the TM1 TUoS Reconciliation cube and TM1 P&L cube. The data is prepared in accordance with the Annual RIN Instructions and Definitions. Avoided TUoS is allocated as 100% Standard Control. Data is cross-checked with confirmation from the Network Revenue Manager.	No assumptions required.
8.1.1.2 Cross Boundary Expenditure	Endeavour Energy does not have any Cross-Boundary Expenditure – not applicable.	No assumptions required.
8.1.1.2 Depreciation	Depreciation & Amortisation is sourced from an Excel work paper which is based initially on Fixed Asset Reconciliations of the Ellipse data for Depreciation & Amortisation. The depreciation and amortisation balances are mapped in accordance with the Annual RIN Instructions and Definitions. Depreciation & Amortisation relating to system assets is directly allocated to Standard Control Services, and further causally allocated to Standard Control Services, Alternative Control Services and Unregulated Services based on usage, consistent with Property, Plant and Equipment allocations. Depreciation expense relating to non-system assets is causally allocated to services based on usage, consistent with Property, Plant and Equipment allocations. The results are ultimately uploaded into the relevant TM1 cube. Data was reconciled to the depreciation and amortisation expense reported in the Management and Statutory results.	No assumptions required.

8.1 Income

8.1.1.2 Finance charges	Finance charges are extracted from the relevant TM1 cube based on mappings in accordance with the Annual RIN Instructions and Definitions. Borrowing costs are directly attributable to Standard Control Services due to their relationship with investments and the underlying network assets that are funded by interest bearing debt facilities. Data was reconciled to Finance charges reported in the Management (Net Finance expense i.e. net of interest income) and Statutory results (Interest Income is classified under revenues).	No assumptions required.
8.1.1.2 Impairment Losses	Impairment losses are extracted from the relevant TM1 cube based on mappings in accordance with the Annual RIN Instructions and Definitions. Data was reconciled to impairment losses reported in the Management and Statutory results (where impairment losses are applicable).	No assumptions required.
8.1.1.2 Jurisdictional Scheme Amounts	Jurisdictional Scheme Amounts are extracted from the relevant TM1 cube based on mappings in accordance with the Annual RIN Instructions and Definitions. Jurisdictional Scheme Amounts includes Climate Change Fund expense and Solar Bonus Scheme expense. CCF Expense and SBS Expense are both allocated as 100% Standard Control.	No assumptions required.
8.1.1.2 Loss from Sale of Fixed Assets	Loss from Sale of Fixed Assets is sourced from an Excel work paper which is based initially on Fixed Asset Reconciliations of the Ellipse data for Disposals. The loss from sale balances are mapped in accordance with the Annual RIN Instructions and Definitions, and the results are ultimately uploaded into the relevant TM1 cube. Allocation drivers are used to assign amounts to Standard Control Services, Alternative Control Services and Unregulated Services. Data was reconciled to loss on disposal reported in the Management and Statutory results. Note that this line is only populated if there is a net loss from sale (i.e. if a net profit from sale section 8.1.1.1 Profit from sale of fixed assets is populated instead).	No assumptions required.

8.1 Income

8.1.1.2 Maintenance Expenditure	Maintenance Expenditure is extracted from the relevant TM1 cube based on mappings in accordance with the Annual RIN Instructions and Definitions. Maintenance Expenditure was "reconciled in total" to Total Opex reported in the Management and Statutory results.	No assumptions required.
8.1.1.2 Other Operating Expenditure	Other Operating Expenditure excluding Maintenance Expenditure is extracted from the relevant TM1 cube based on mappings in accordance with the Annual RIN Instructions and Definitions. Other Operating Expenditure is adjusted for Group Management Fee Income recovery revenues. Other Operating Expenditure excluding Maintenance Expenditure was "reconciled in total" to Total Opex reported in the Management and Statutory results. Group Management Fee Income recovery is allocated based on an Excel work paper, using the Opex for the Group cost centres as the basis for the regulatory split). The resulting adjustments are used to "gross up" revenue since the recoveries are mapped to Opex for management reporting but to Other Revenue in the Annual RIN Income Statement.	No assumptions required.
8.1.1.2 Other	Other Expenditure is extracted from the relevant TM1 cube based on mappings in accordance with the Annual RIN Instructions and Definitions. Other Expenditure was "reconciled in total" to Total Opex reported in the Management and Statutory results.	No assumptions required.
8.1.1.3 Income Tax Expense (/benefit)	Income Tax Expense (/benefit) is extracted from the relevant TM1 cube based on mappings in accordance with the Annual RIN Instructions and Definitions. Income Tax is pro-rated across the various regulatory segments based on their respective proportions of "Profit Before Tax". Income Tax Expense (/benefit) was "reconciled in total" to Income Tax Expense/(Benefit) reported in the Management and Statutory results.	No assumptions required.

Use of estimated information

Endeavour Energy has not used estimated information in determining a profit and loss split of Standard Control Services, Alternate Control Services and Unregulated Services for the period.

Material accounting policy changes

Endeavour Energy has not undertaken any material change in accounting policies which would impact data contained in Table 8.1.1 – Income Statement.

8.1 Income

Reliability of information

All information provided is based on actual information extracted from the audited Annual Financial Statements and associated Ellipse general ledger records. As a result, the information contained in Table 8.1.1 – Income Statement is considered to be sufficiently reliable.

8.2 Capital Expenditure

8.2 Capital Expenditure

8.2.1 – Capex by Purpose – Standard Control Services

8.2.2 – Capex by Purpose – Material Difference Explanation

8.2.3 – Capex Other

8.2.4 – Capex by Asset Class

8.2.5 – Capital Contributions by Asset Class

8.2.6 – Disposals by Asset Class

8.2.7 – Expensing Capex

Compliance with requirements of the notice

The data presented in tables 8.2.1, 8.2.2, 8.2.3, 8.2.4, 8.2.5, 8.2.6 and 8.2.7 is consistent with the requirements of the Annual RIN. In particular:

- Only costs allocated to the provision of standard control services are reported in tables 8.2.1, 8.2.2 and 8.2.4 and costs allocated to the provision of alternate control services are reported in table 8.2.3.
- The categories listed in table 8.2.1 align to the categories in the AER's 2020-24 Distribution Determination.
- The asset classes in table 8.2.4 align with the asset classes set out in Endeavour Energy's PTRM and RFM issued with the AER's 2020-24 Distribution Determination.

Source of information

- CPI adjusted forecasts were sourced from in Endeavour Energy's 2020-24 final determination folder on the AER website.
- Actual capital expenditure by purpose was sourced from Category Analysis RIN tables 2.1 – Expenditure Summary, 2.2 – Repex, 2.3 – Augex, 2.5 – Connections, 2.6 – Non-Network and 2.10 – Overheads.
- Work order and Project level data extracted directly from a MS Access query against the SQL server database which is extracted nightly from Ellipse. The specific query is run on parameters specified to extract the data (re: non-system CAPEX for activity "92" and "94").
- Work order and Project level report (SAMP CAPEX report) received from Commercial Finance (re: system CAPEX for activity "91").
- Asset classes assigned to work orders were sourced from TM1.
- Expensed capex data was obtained from additions labelled as MS within the Tax Fixed Assets register.

8.2 Capital Expenditure

Methodology and assumptions

The following tables set out the methodology applied to obtain the required data for tables 8.2.1, 8.2.2, 8.2.3, 8.2.4, 8.2.5, 8.2.6 and 8.2.7:

Table	Methodology	Assumptions
8.2.1 – Capex by Purpose – Standard Control Services	1. CPI adjusted forecast was sourced from Endeavour Energy's 2020-24 final determination on the AER website. 2. This forecast was then updated into nominal (19/20 dollars) using updated actual CPI escalation factors. 3. Actual expenditure was sourced from category RIN tables 2.1 – Expenditure Summary, 2.2 – Repex, 2.3 – Augex, 2.5 – Connections, 2.6 – Non-Network and 2.10 – Overheads. 4. The split of actual expenditure by voltage level was done with input from the capacity planning manager.	Variances exist between the Annual RIN and Category Analysis RIN due to the passage of time and the order of operations was changed. Variance exist between the Annual RIN and Category Analysis RIN as a consequence.
8.2.2 – Capex by Purpose – Material Difference Explanation	1. System capex commentary was based on a comparison of the final AER determination vs actuals by project. 2. Non-system capex commentary was based on a comparison of the final AER determination vs actuals by activity (92) and sub activity (WC, WE, WF, WG and WH) and activity (94).	None.
8.2.3 – Capex Other	1. Actual expenditure was sourced from category RIN table 2.1 – Expenditure Summary.	None.
8.2.4 – Capex by Asset Class	**System Capex** 1. Extract all system capital work orders (activity 91) that incurred expenditure for the year from SAMP Capex Report with source data from Ellipse via a MS access query. 2. Use TM1 formula to extract the asset classes assigned to each of these work orders. 3. Review the list of work orders with asset classes assigned and update any errors with the correct asset.	None.

8.2 Capital Expenditure

	4. For any work orders missing asset classes discuss with the relevant network staff to determine what asset class should be assigned. 5. Allocate capitalised overheads (OH) and switching (SW) on a proportional basis based on the direct costs on a work order over the total. 6. Map each asset class to a RAB category. Summarise the totals and populate table 8.2.4. **Non-System Capex** 1. Extract all non-system capital transactions (activity 92 & 94) from Ellipse via a MS access query. 2. Assign each non-system capex transaction to an asset class on the basis of sub activity for activity 92. Use TM1 formula to extract the asset classes assigned to each of these work orders for activity 94. 3. For any work orders missing asset classes discuss with the relevant network staff to determine what asset class should be assigned. 4. Apply the asset allocation drivers obtained from Financial Control to the transaction listing at the asset class level to determine the standard control component of each transaction. 5. Summarise the standard control components for each RAB category and populate table 8.2.4.	
8.2.5 – Cap Contributions by Asset Class	1. Obtain capital contributions for the year **by asset class** from Asset Accounting Team. Asset Accounting obtains this data by means of a pivot on capitalisations for the 12 months from the "additions" schedule that feeds into the General Ledger Reconciliations. The total of the data from Asset Accounting Team should agree to what was credited to E410 0 06 80 1600 during the year. 2. The capital contributions per TM1 would be the TOTAL booked to Element 1600 during the year. Any capital contributions that have not been credited to E410 0 06 80 must be queried with Regulatory team regarding their classification for Note 8.2.5. Typically, these "additional" cap cons would pertain to Streetlighting.	None.

8.2 Capital Expenditure

	3. Check it reconciles in total.	
8.2.6 – Disposals By Asset Class	1. Carry forward the live TM1 file from last financial year to the new financial year and update the year. 2. Obtain the details of disposals by asset class and journals from the Asset Accounting team (Summary excl. non-true Disposals tab).	None.
8.2.7 – Expensing Capex	3. Data obtained from Tax Fixed Asset register held by the Taxation Section.	

Use of estimated information
None

Reliability of information
Information reported in tables 8.2.1, 8.2.2, 8.2.3, 8.2.4, 8.2.5, 8.2.6 and 8.2.7 consists of Actual Information extracted from Endeavour Energy's reporting systems and reconciles to capex figures calculated and reported in the Category RIN. As a result, the information contained in those tables is considered to be reliable.

8.4 Operating Expenditure

8.4 Operating Expenditure

8.4.1 Operating and maintenance expenditure by purpose

8.4.2 Operating and maintenance expenditure by purpose – margins only

8.4.3 Operating and maintenance expenditure – explanation of material difference

Compliance with requirements of the notice

The data presented in tables 8.4.1, 8.4.2 and 8.4.3 is consistent with the requirements of the Annual RIN. In particular:

- The categories listed in table 8.4.1 align to the categories identified in Endeavour Energy's regulatory proposal at table 3.2.1.1 current opex categories and cost allocations.

Source of information

Actual opex for standard and alternative control expenditure by purpose was sourced from the AER dollars by account cube in TM1. Endeavour Energy uses TM1 for various purposes including budgeting and forecasting, monthly reporting and regulatory account allocations and it has been used historically to provide data for previous audited Regulatory Accounts / RINs. It is a cube-based technology which allows rules to be created between cubes and within cubes.

Methodology and assumptions

The following tables set out the methodology applied to obtain the required data for tables 8.4.1, 8.4.2 and 8.4.3.

Table	Methodology	Assumptions
8.4.1 – Operating & maintenance expenditure – by purpose	1. CPI adjusted forecast was sourced from table 8 in the AERs "Final decision Endeavour Energy distribution determination – overview" Table 8 (page 34) on the AERs website. 2. This forecast was then updated into nominal (14-15 dollars) using updated actual CPI escalation factors. 1. The forecast was pro-rated across the categories on the basis of the actual results as the AER's April 2015 determination did not provide the allowance by category, only as a total opex amount. 4. Actual expenditure for both standard and alternate control was sourced from AER Totex by account cube in TM1.	None.

8.4 Operating Expenditure

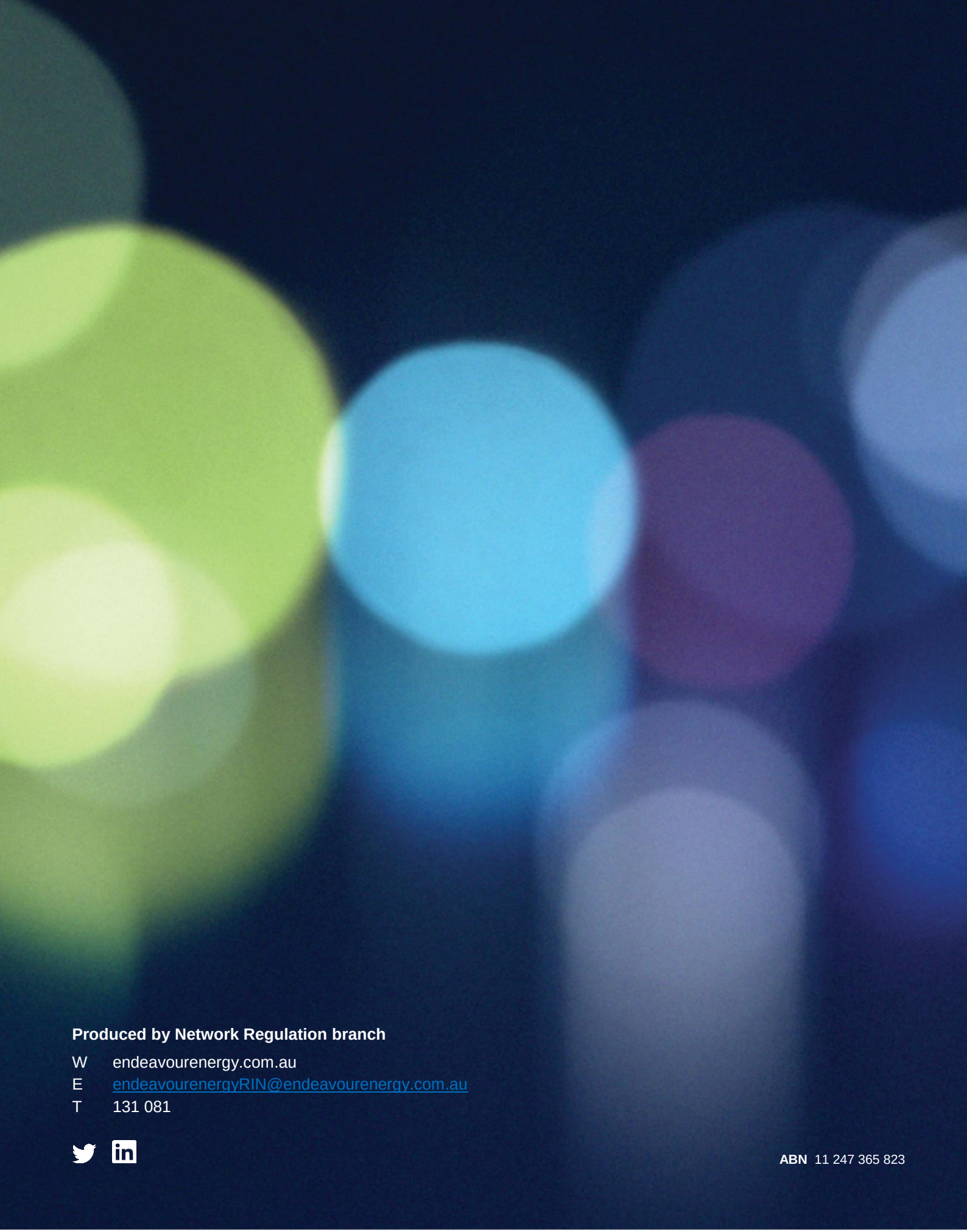
8.4.2 – Operating & maintenance expenditure – by purpose – margins only	Under Corporate Oveheads: Report the Group Management fee (TAMSA)	None.
8.4.3 - Operating & maintenance expenditure –explanation of material difference	1. Operating and maintenance variance commentary was based on a high-level analysis of the main factors driving the expenditure within each category.	None.

Use of estimated information
None

Reliability of information
Information reported in tables 8.4.1 and 8.2.3 consists of Actual Information extracted from Endeavour Energy's reporting systems and reconciles to opex figures calculated and reported in the Category RIN. As a result, the information contained in tables 8.4.1 and 8.4.3 is considered to be reliable.

There is nothing to report for table 8.4.2 for this reporting period.

THIS PAGE IS INTENTIONALLY BLANK



Produced by Network Regulation branch

W endeavourenergy.com.au
E endeavourenergyRIN@endeavourenergy.com.au
T 131 081

ABN 11 247 365 823

Endeavour Energy