
# Regulatory Information Notice

## Category Analysis 2019/20

30 October 2020

# Contents

# 1. Introduction

TransGrid operates and manages the major high voltage electricity transmission network in NSW and the ACT as a transmission network service provider, connecting generators, distributors and major end users.

TransGrid is the trading name for the NSW Electricity Networks Operations Pty Ltd (ACN 609 169 959) as a Trustee for the NSW Electricity Networks Operations Trust (ABN 70 250 995 390). Prior to 16 December 2015, it was a State Owned Corporation (SOC) owned by the NSW government.

On 7 March 2014, the Australian Energy Regulator (AER) issued TransGrid with a Regulatory Information Notice Under Division 4 of Part 3 of the National Electricity (New South Wales) Law (the 'RIN'), requiring the business to prepare and submit certain information to support the AER's regulatory responsibilities.

This Basis of Preparation document has been prepared to support the audited information package that is due to be submitted to the AER by 31 October 2020. The whole RIN package is comprised of:

1. The populated worksheets provided as Appendix A to the RIN;
2. The Basis of Preparation for each variable covered in the RIN worksheets, including any Confidentiality Claims (this document);
3. Audit & Review Report by the independent auditor provided as Appendix B to the RIN
4. Verification of the information by way of a Statutory Declaration in the form provided as Appendix C to the RIN.

# 2. Compliance with the RIN Requirements

The Category Analysis RIN outlines the requirements for the Basis of Preparation as follows:

3. BASIS OF PREPARATION
3.1 TransGrid must explain, the basis upon which TransGrid prepared information to populate the input cells (basis of preparation), for all information in the following regulatory templates 2.1 Expenditure Summary' to '2.11 Provisions', and '2.13 Insurance & Self-insurance' and '2.15 Step changes, and '4.1 Asset Age Profile' to '4.3 MD & utilisation-spatial', and '5.1(a) ECFM' and '5.1(b) EBSS', '5.2. STPIS' and '6.4. Shared assets'.
3.2 The basis of preparation must be a separate document (or documents) that TransGrid submits with its completed regulatory templates.
3.3 The basis of preparation must follow a logical structure that enables auditors, assurance practitioners and the AER to clearly understand how TransGrid has complied with the requirements of this Notice.
3.4 At a minimum, the basis of preparation must:

*(a) demonstrate how the information provided is consistent with the requirements of the Notice;*
*(b) explain the source from which TransGrid obtained the information provided;*
*(c) explain the methodology TransGrid used to provide the required information, including any assumptions TransGrid made; and*
*(d) explain circumstances where TransGrid cannot provide input for a variable using actual information, and therefore must provide estimated information:*

*(i) why an estimate was required, including why it was not possible for TransGrid to use actual information;*
*(ii) the basis for the estimate, including the approach used, assumptions made and reasons why the estimate* is TransGrid's best estimate, given the information sought in the Notice.

3.5 TransGrid may provide additional detail beyond the minimum requirements if TransGrid considers it may assist a user to gain an understanding of the information presented in the regulatory templates.
3.6 When reporting an audit opinion or making an attestation report on the regulatory templates presented by TransGrid, an auditor or assurance practitioner shall opine or attest by reference to TransGrid's basis of preparation.

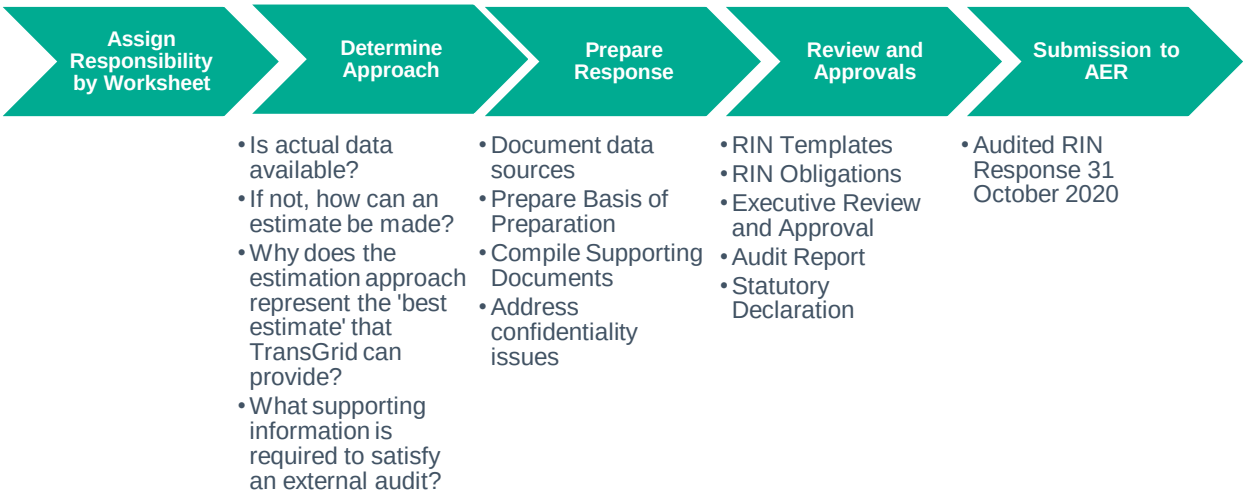
To promote a common approach across the business to addressing the requirements of the Category Analysis RIN, TransGrid has gathered information from across the business using a template prepared to respond to each of the AER's requirements. This is outlined in the table below.

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition[1]? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| *'Variable_Code' & 'Variable' from worksheet* | *If AER definition is not clear, document TransGrid interpretation and its rationale*<br>***Responds to RIN requirement a)*** | *Specify source systems, reports, forms, other RIN variables etc*<br>***Responds to RIN Requirement b)*** | *Yes/No*<br>*If estimate is used for this variable, document:*<br>• *Why an estimate was required, including why it was not possible to use Actual Financial Information or Actual Non-Financial Information*<br>• *Estimate basis, including the approach used, assumptions made and reasons why the estimate is TransGrid's best estimate*<br>***Responds to RIN Requirement d)*** | *Clear description of approach steps / methodology*<br>***Responds to RIN Requirement c)*** | *Clearly describe any assumptions used and the rationale for each*<br>***Responds to RIN Requirement c)*** |

1 'Information presented in response to the Notice whose presentation is not Materially dependent on information recorded in the NSP's historical accounting records or other records used in the normal course of business, and whose presentation for the purposes of the Notice is contingent on judgments and assumptions for which there are valid alternatives, which could lead to a Materially different presentation in the response to the Notice.', page 34, "Economic benchmarking RIN For transmission network service providers, Instructions and Definitions".

# 3. Preparation Process

TransGrid's high level process for preparing its response to the RIN is outlined below.




## 3.1 Document Control

The RIN Templates, Basis of Preparation and supporting documents for the Annual RINs are located on TransGrid's file servers. These documents will be retained to support the preparation of the annual information required in future years.

## 3.2 Governance

The information required under the RIN has been prepared by the responsible personnel within TransGrid, termed "data collectors", who populate the RIN templates and the relevant sections of the Basis of Preparation. This information is then reviewed internally to check the validity of the data collected by "data reviewer". "Data approvers" provide sign-offs to individual sections of the RINs and the associated BOPs. This internally verified information is presented to the auditors, PwC, who then verify the information with data collectors and other relevant persons within TransGrid. A management representation letter is provided to the auditor (PwC) on accuracy of data, and validity of estimates as the best available by TransGrid.

# 4. Principles of Preparation

TransGrid's response to the RIN has been prepared in accordance with the AER issued "*Regulatory Information Notice Under Division 4 of Part 3 of the National Electricity (New South Wales) Law"* to TransGrid.

In accordance with the AER's instructions TransGrid has provided actual information using 'records used in the normal course of business' wherever this is possible.

Where TransGrid has been unable to provide actual information, the variables have been estimated as follows:

- In the first instance, where actual information exists, but the presentation is contingent of a judgement or assumption, TransGrid has used actual information to prepare the variable and stated the judgement or assumption that has been made.
- Where actual information exists, but the information is incomplete over the time period or by the categories required by the RIN, TransGrid has used the actual information as far as practicable and stated the methodology used to estimate the remaining data.
- Where no actual information is recorded for the variable in the normal course of business, TransGrid has stated the methodology that it has used to estimate the variable required by the AER, including the assumptions made and the data sources used.

By following these principles of preparation, TransGrid considers that where estimates have been provided, these represent the best estimate available for each variable, noting that considerable uncertainty remains with respect to the AER's specific purpose(s) for the information.

TransGrid has prepared the schedules in compliance with the requirements of Accounting Standard AASB 108 Accounting Policies, Changes in Accounting Estimates and Errors and in compliance with the recognition, measurement and classification requirements of other relevant Accounting Standards mentioned above. To the extent determined appropriate, the RIN schedules have been prepared in compliance with the disclosure requirements of the relevant Accounting Standards.

# 5. Information Sources

Due to the combination of financial and non-financial data requested by the AER, including a number of items that are not routinely reported, TransGrid has drawn data from a large number of information sources that are used across its business. In most cases it has been necessary to undertake additional analysis to derive the specific information that is required in the RIN response.

The key systems and information sources that have been relied on are summarised in the table below, and are referred to, in the detailed basis of preparation tables in section 7.

| Information Source | Brief Description | Supports |
|---|---|---|
| **Asset Inspection Manager (AIM)** | TransGrid's information system used to record asset inspection data | 2.8 Maintenance |
| **AEMO Connection Point Forecast 2019** | AEMO connection point forecasts 2018 are used in applying weather correction (both 10% POE and 50% POE) for non-coincident maximum demand | 5.4 MD & Utilisation - Spatial |
| **TransGrid NSW Region top down forecasts** | TransGrid NSW Region top down forecasts, used for applying weather correction (both 10% POE and 50% POE) for system maximum demand | 5.3 MD – Network Level |
| **Aerial Laser Survey (ALS)** | Refer to LiDAR | 2.7 Vegetation Management |
| **Economic Benchmarking RIN Data Templates** | The Data Templates submitted to the AER in response to the Economic Benchmarking RIN | 2.8 Maintenance, 5.2 Asset Age Profile |
| **Ellipse** | TransGrid's ERM system, including asset, business and financial reporting<br>Finance data cube refers to the process of querying TransGrid's financial information from the Ellipse ERM system | 2.1 Expenditure Summary, 2.6 Non-network Expenditure, 2.2 Repex, 2.3 Augex, 2.5 Connections, 2.6 Non-network Expenditure, 2.7 Vegetation Management, 2.8 Maintenance, 2.10 Overheads, 2.11 Labour , 2.12 Input Tables, 5.2 Asset Age Profile |
| **SG Fleet Database** | SG Fleet Database manages TransGrid's fleet of mobile plant and motor vehicles. Their reporting system reports on running costs attributed to individual motor vehicles and mobile plant. | 2.6 Non-network |
| **Invoices Received** | Contractor invoices received for vegetation management works have been used to estimate the variables requested in Template 2.7 | 2.7 Vegetation Management |
| **IT Configuration Management System** | TransGrid utilise the ServiceNow configuration management system which is part of the IT Service Management application on the platform. | 2.6 Non-network |
| **LiDAR** | Light Detection and Ranging data sourced from aerial surveys that is used to measure vegetation clearances from TransGrid's transmission line assets. | 2.7 Vegetation Management |
| **Maintenance Plans** | Used for the operation and maintenance of TransGrid's assets, these outline equipment information, standard practices and maintenance requirements. | 2.7 Vegetation Management, 2.8 Maintenance |
| **Operating Manuals** | Record the ratings of each circuit on the TransGrid network | 2.2 Repex, 2.3 Augex, 2.5 Connections, 5.2 Asset Age Profile, 5.4 MD & Utilisation - Spatial |
| **Opex Model** | TransGrid's opex model used for the preparation of the regulatory proposal and the annual regulatory accounts. | 2.7 Vegetation Management 2.8 Maintenance, 2.11 Labour, 2.12 Input Tables |

| Information Source | Brief Description | Supports |
|---|---|---|
| **Power BI** | Business analytics reporting tool to allow summarising of Ellipse Equipment Register, Switch Bays, MSTs, line lengths, program of work, etc. in appropriate categories. | 2.2.2 Selected Asset Characteristics, 2.8 Maintenance, 5.2 Asset Age Profile |
| **Project planning & project management documents** | Various individual documents used for planning, approval and delivery purposes. This record more detailed project specific information that is not recorded in TransGrid's other systems at a project level. | 2.3 Augex, 2.5 Connections, 2.8 Maintenance, 5.2 Asset Age Profile |
| **Network Performance Review** | Internal report on outages that is generated each month from the THEOS System | 2.2 Repex, 2.7 Vegetation Management |
| **Renewal and Maintenance Strategies** | Defines the renewal and maintenance strategies for TransGrid's Transmission Line fleet. In doing this it applies the overarching asset management strategy and objectives, and relevant Lifecycle Strategies. | 5.2 Asset Age Profile |
| **System Operating Diagrams** | High Voltage Operating Diagrams detail in plan view, single line format, the high voltage equipment, operational nomenclature and electrical connections for substations, switching stations and power station switchyards | 2.2 Repex, 5.2 Asset Age Profile |
| **TransGrid Spatial System (TSS) – formerly TAMIS** | NSW Transmission System and TransGrid Asset Management Information System (TAMIS) is the Geographical Information System (GIS) used by TransGrid to manage its spatial asset data.<br>The formal name of the TAMIS system has recently been changed to TSS. | 2.2 Repex, 2.7 Vegetation Management, 2.8 Maintenance, 5.2 Asset Age Profile |
| **THEOS** | TransGrid's outage recording/reporting system | 2.2 Repex, 2.7 Vegetation Management |
| **TransGrid Regulatory Accounts** | TransGrid's annual regulatory accounts which are prepared and submitted in accordance with the AER's requirements | 2.1 Expenditure Summary, 2.2 Repex, 2.3 Augex Project Data, 2.5 Connections, 2.6 Non-network, 2.7 Vegetation Management, 2.8 Maintenance, 2.10 Overheads, 2.11 Labour, 2.12 Input Tables |
| **TransGrid Electrical Data Book** | A central record of electrical asset data regarding TransGrid's network that is published on the TransGrid Intranet (The Wire). | 2.2 Repex – Substations Reactive plant by Reactive Capacity , 2.7 Vegetation Management, 2.8 Maintenance, 5.2 Asset Age Profile, 5.4 MD & Utilisation – Spatial |
| **TransGrid's Network Management Plan** | A long term asset management plan prepared for the TransGrid networks | 2.8 Maintenance |
| **TUOS System** | Transmission Use of System (TUOS) charges are TransGrid's primary source of revenue.<br>The TUOS System is the billing system that underpins TransGrid's invoicing and records the information from the various metering installations deployed across TransGrid's network. | 5.3 MD - Network Level, 5.4 MD & Utilisation - Spatial |

# 6. Confidentiality Claims

| Data affected | Description | Topic | Category | Reasoning for category | Why disclosure would be detrimental, and why this outweighs benefits |
|---|---|---|---|---|---|
| **Worksheet 2.2 Repex: 2.2.1 Expenditure** | Expenditure associated with asset replacements | Repex | Market Sensitive Cost Inputs<br>Market Intelligence | Disclosure may provide the ability to determine TransGrid's unit rates for procurement of equipment and installation / replacements of assets. | Disclosure may result in suppliers tendering to a set price previously accepted, not their most competitive.<br>The same goes for non-regulated revenue opportunities. Competitors may not provide best price, only a price that would trump a TransGrid bid. This would be a poor result for the customer. |
| **Worksheet 2.5 Connections: 2.5.1 Expenditure on connection projects** | Expenditure associated with connections | Connections | Market Sensitive Cost Inputs<br>Market Intelligence | Disclosure may provide the ability to determine TransGrid's unit rates for procurement for labour and materials. | Disclosure may result in suppliers tendering to a set price previously accepted, not their most competitive.<br>The same goes for non-regulated revenue opportunities. Competitors may not provide best price, only a price that would trump a TransGrid bid. This would be a poor result for the customer. |
| **Worksheet 2.11 Labour: 2.11.1 Cost metrics + 2.11.2 Descriptor metrics** | This contains information relating to individuals' remuneration arrangements. | Staff numbers & remuneration | Information affecting the security of the network<br>Personal Information<br>Other | RIN categories enable identification of Labour information including information on individuals' remuneration. | TransGrid Key Management Personnel (predominantly executive) are seen by Federal Government security agencies as being particularly vulnerable to coercion and influence by foreign threats counter to Australia's national security interests. This is mitigated to an extent by requiring those individuals to be vetted to particular levels of 'secret' clearance with those security agencies. Revealing sensitive information about those individuals may aid foreign threats in planning campaigns of targeted coercion of such individuals. |
| **Worksheet 5.4 MD and utilisation-spatial: Industrial/ Broken Hill Mine, Tomago 330kV, ANM, Gadara, Orange 132kV, Parkes 132kV, Boggabri East, Boggabri North** | Certain TransGrid BSPs are predominantly (or exclusively) connected to direct customers. | Load | Personal Information<br>Other | RIN categorisation enables identification of:<br>1. Customer loads for directly connected customers | NSWEN's Transmission Operator's License included mandatory provisions in relation to keeping customer data confidential |

# 7. Detailed Basis of Preparation

The following sections outline the Basis for Preparation for each line item in the RIN Templates.

## 7.1 Contents Worksheet

The Contents Worksheet does not require any input by TransGrid.

## 7.2 Worksheet 1.0 Business & Other Details

Worksheet 1.0 Business & Other Details requires general business address and contact information.

## 7.3 Worksheets 2.1 to 2.12, 5.2 to 5.4

The Basis of Preparation outlines the necessary explanations with regards to the preparation of the RIN template, as per section 2 above. Blue indicated financial information and green indicates non-financial information, in line with the AER colour coding in the templates.

### 7.3.1 Worksheet 2.1 Expenditure Summary

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| **2.1.1 - PRESCRIBED TRANSMISSION SERVICES CAPEX (as incurred)** | | | | | |
| Replacement Expenditure | The total expenditure for prescribed augmentation capital projects, exclusive of capitalised overheads and reported on an 'as incurred' basis. The reported expenditure reconciles to the Regulatory Accounts.<br><br>Amounts are rounded to whole dollars. | TransGrid financial records reported from Ellipse and Business Reporting.<br><br>Supporting information reported in RIN 2.1 is in line with RIN 2.12 Input Tables. | No | Comprises the total expenditure for prescribed replacement capital projects for the following Portfolio groupings in Ellipse:<br><br>• Major Proj-Presc Security Comp<br>• Major Proj-Presc Replacement<br>• Asset renewal strategies<br><br>The replacement capex for this RIN schedule does not include capitalised overheads and is reported on an 'as incurred' basis. No adjustments have been made to capitalised labour oncosts for Defined Benefit Superannuation and from accounting to cash basis for Employees' Accrued Benefits Provision. | N/A |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Connections | The total expenditure for prescribed connections capital projects, exclusive of capitalised overheads and reported on an 'as incurred' basis. The reported expenditure reconciles to the Regulatory Accounts.<br><br>Amounts are rounded to whole dollars. | TransGrid financial records reported from Ellipse and Business Reporting.<br><br>The supporting information and list of projects for this RIN schedule are in line with RIN 2.5 Connections and RIN 2.12 input tables. | No | Comprises the total expenditure for prescribed connections capital projects for the following Portfolio grouping in Ellipse:<br><br>• Major Proj-Pres Connections<br><br>The connections capex for this RIN schedule does not include capitalised overheads and is reported on an 'as incurred' basis. No adjustments have been made to capitalised labour oncosts for Defined Benefit Superannuation and from accounting to cash basis for Employees' Accrued Benefits Provision. | N/A |
| Augmentation Expenditure | The total expenditure for prescribed augmentation capital projects, exclusive of capitalised overheads and reported on an 'as incurred' basis. The reported expenditure | TransGrid financial records reported from Ellipse and Business Reporting. | No | Comprises the total expenditure for prescribed augmentation capital projects for the following Portfolio groupings in Ellipse: | N/A |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | reconciles to the Regulatory Accounts.<br><br>Amounts are rounded to whole dollars. | Financials reported in RIN 2.1 is in line with RIN 2.3 Augex - Table 2.3.3, as well as RIN 2.12 Input Tables. | | • Major Proj-Presc Aug-Main Grid<br>• Major Proi-Pres Aug-Sub Sys<br>• Major Proj-Pres Connections<br><br>The augmentation capex reported in this schedule excludes contingent capex projects that have not received AER approval. The QNI minor upgrade project was approved by the AER on 28 April 2020 and has been included in this schedule for the 2019-20 period, including those costs incurred in the 2018-19 period.<br><br>The augmentation expenditure for this RIN schedule does not include capitalised overheads and is reported on an 'as incurred' basis. No adjustments have been made to capitalised labour oncosts for Defined | |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | Benefit Superannuation and from accounting to cash basis for Employees' Accrued Benefits Provision. | |
| Non-Network | The total expenditure for prescribed non-network capital projects, exclusive of capitalised overheads and reported on an 'as incurred' basis. The reported expenditure reconciles to the Regulatory Accounts.<br><br>Amounts are rounded to whole dollars. | TransGrid financial records reported from Ellipse and Business Reporting.<br><br>Information reported in RIN 2.1 is in line with RIN 2.6 Non-Network, as well as RIN 2.12 Input Tables. | No | Comprises the total expenditure for prescribed non-network capital projects for the following Portfolio groupings in Ellipse:<br>• Support - IT<br>• Support - Motor Vehicles<br>• Support - Plant & Equipment<br>• Support-Facilities and Depots<br>• Presc - other<br><br>The non-network capex for this RIN schedule does not include capitalised overheads and is reported on an 'as incurred' basis. No adjustments have been made to capitalised labour | N/A |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | oncosts for Defined Benefit Superannuation and from accounting to cash basis for Employees' Accrued Benefits Provision. | |
| Capitalised Network Overheads<br><br>Capitalised Corporate Overheads | The overheads are allocated to the prescribed capital projects in accordance with the AER-approved Cost Allocation Methodology for TransGrid and reconcile to the Regulatory Accounts.<br><br>Amounts are rounded to whole dollars. | TransGrid financial records reported from Ellipse and Business Reporting.<br><br>Supporting information reported in RIN 2.1 is in line with RIN 2.10 Overheads.<br><br>Capitalised overheads for the purposes of this schedule exclude contingent capex projects that have not received AER approval. The QNI minor upgrade project was approved by the AER on 28 April 2020 and has been included in the 2019-20 period, | Yes | Overheads i.e., support costs allocated to prescribed capital projects are separately shown in the Finance cube. The capitalised support costs are then categorised into Network and Corporate Overheads based on the Responsibility Center ("RC") that incurred the costs.<br><br>No adjustments have been made to capitalised labour oncosts for Defined Benefit Superannuation and from | TransGrid's cost allocation process does not directly break down capitalised overheads into the categories reported in this RIN schedule. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | including those overhead costs incurred in the 2018-19 period. | | accounting to cash basis for Employees' Accrued Benefits Provision. | |
| Balancing Item | Amount and treatment of NCIPAP projects are consistent with the NCIPAP projects reported in the historical capex schedule in the Regulatory Accounts.<br><br>The reported NCIPAP capex excludes capitalised overheads. | Balancing item relates to prescribed NCIPAP projects which do not fall under the other Capex categories for this RIN schedule. | No | Amount and treatment of NCIPAP projects are consistent with the NCIPAP projects reported in the historical capex schedule in the Regulatory Accounts. | N/A |
| **2.1.2 - PRESCRIBED TRANSMISSION SERVICE OPEX by Category** | | | | | |
| Vegetation Management | Based on Vegetation Management expenditure reported in RIN 2.7 and reconciles to the Regulatory Accounts.<br><br>Amounts are rounded to whole dollars. | TransGrid financial records reported from Ellipse and Business Reporting.<br><br>RIN 2.1 Expenditure Summary figure reconciles to RIN 2.7 Vegetation Management.<br><br>Supporting information for RIN 2.1 is in line with EB RIN 3.2. | No | Vegetation management opex for this RIN schedule is based on actual prescribed opex for the relevant Maintenance categories in the Opex Model generated from TransGrid's financial records: | N/A |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Maintenance | Based on Maintenance expenditure reported in RIN 2.8 and reconciles to the Regulatory Accounts.<br><br>Amounts are rounded to whole dollars. | TransGrid financial records reported from Ellipse and Business Reporting.<br><br>RIN 2.1 Expenditure Summary figure reconciles to RIN 2.8 Maintenance.<br><br>Supporting information in RIN 2.1 is in line with EB RIN 3.2. | No | Maintenance opex for this RIN schedule is based on actual prescribed opex for the relevant Maintenance categories in the Opex Model generated from TransGrid's financial records: | N/A |
| Non-Network | Consistent with prior years, for this RIN schedule, TransGrid includes the Non-network opex reported in RIN 2.6 as Overheads, hence the amount here is nil. | TransGrid financial records reported from Ellipse and Business Reporting and 2018-19 Regulatory Accounts. Consistent with prior period, TransGrid includes the non-network Opex in network / corporate overheads, hence the amount here is nil. | No | N/A | N/A |
| Network Overheads | Network overheads reported in this RIN schedule reconcile to the opex component of the total Network Overheads reported in RIN 2.10 and the Regulatory Accounts.<br><br>Amounts are rounded to whole dollars. | TransGrid financial records reported from Ellipse and Business Reporting.<br><br>RIN 2.1 Expenditure Summary figure reconciles to EB RIN schedule 3.2 for<br><br>• Maintenance Support & Asset Management<br>• Operations / Control room | No | Network overheads for this RIN schedule are based on actual prescribed opex as per the following categories in the Opex Model generated from TransGrid's financial records:<br><br>• Maintenance Support & Asset Management | N/A |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | • Grid Planning<br><br>Supporting information reported in RIN 2.1 is in line with RIN 2.10 Overheads. | | • Operations<br>• Grid Planning | |
| Corporate Overheads | Corporate overheads reported in this RIN schedule reconcile to the opex component of the total Corporate Overheads reported in RIN 2.10 and the Regulatory Accounts.<br><br>Amounts are rounded to whole dollars. | TransGrid financial records reported from Ellipse and Business Reporting.<br><br>RIN 2.1 Expenditure Summary figures reconcile to EB RIN schedule 3.2 for<br><br>• Insurance<br>• Rates & taxes<br>• Property management<br>• Environmental<br>• Corporate Governance<br>• Customer relations<br>• Regulatory<br>• Finance<br>• Information technology<br>• HR & Payroll<br>• Defined Benefit Superannuation Adjustment | No | Corporate overheads for this RIN schedule are based on actual prescribed opex as per the following categories in the Opex Model generated from TransGrid's financial records:<br><br>• Insurance<br>• Rates & taxes<br>• Property management<br>• Environmental<br>• Corporate Governance<br>• Customer relations<br>• Regulatory<br>• Finance<br>• Information technology<br>• HR & Payroll | N/A |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | • Network Support<br><br>Supporting information reported in RIN 2.1 is in line with RIN 2.10 Overheads. | | • Defined Benefit Superannuation Adjustment<br>• Network Support | |
| Balancing Item | N/A | N/A – Nil Balancing item | N/A | N/A | N/A |

### 7.3.2 Worksheet 2.2 Repex

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| **2.2.1 REPLACEMENT EXPENDITURE, VOLUMES AND ASSET FAILURES BY ASSET CATEGORY** | | | | | |
| **Expenditure** | | | | | |
| Transmission Towers | Expenditure associated with projects deemed as being structure replacement from the Repex Capital budget. | Report provided by Finance on expenditure of commissioned projects. | Yes | A combination of the construction contract schedule items, estimate from project managers, project documents, procurement schedules and a cost breakdown algorithm for unattributable costs. | TransGrid costs are extracted directly from Ellipse system however cost breakdowns for individual components are not available, estimation is used to allocated costs to various components. |
| Transmission Tower Support Structures | Expenditure associated with projects deemed as being support structure replacements (e.g. crossarm replacements, whole structure insulator replacements, etc). | Report provided by Finance on expenditure of commissioned projects. | No | A combination of the construction contract schedule items, estimate from project managers, project documents, procurement schedules and a cost breakdown algorithm for unattributable costs. | TransGrid costs are extracted directly from Ellipse system however cost breakdowns for individual components are not available, estimation is used to allocated costs to various components.<br><br>Support structure Repex consisted of tension structure insulator |

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| | | | | | replacements (condition based). |
| Conductors | Expenditure associated with projects deemed as being conductor replacements. | Report provided by Finance on expenditure of commissioned projects. | Yes | A combination of the construction contract schedule items, estimate from project managers, project documents, procurement schedules and a cost breakdown algorithm for unattributable costs. | TransGrid costs are extracted directly from Ellipse system however cost breakdowns for individual components are not available, estimation is used to allocated costs to various components. |
| Transmission Cables | Expenditure associated with projects deemed as being transmission cable replacements. | Report provided by Finance on expenditure of commissioned projects. | No | There were no Transmission Cables Repex in 2020FY. | There were no Transmission Cables Repex in 2020FY. |
| Substation Switchbays<br>Substation Power Transformers<br>Substation Reactive Plant | Expenditure associated with projects deemed as being HV assets in substation switchbays replacements.<br><br>Expenditure associated with projects deemed as being power transformer replacements.<br><br>Expenditure associated with projects deemed as being reactive plant replacements. | For projects identified as ready for service during 2019/20, financial data originates from Ellipse and extracted from the finance cube. | Yes | The project managers have provided cost estimate for asset replacements for Major Repex projects. Construction contract schedules, project documents, procurement schedules have been used by the project managers for splitting costs amongst assets within the project. Costs for asset replacement strategy projects are directly attributable to a number of categories. | TransGrid costs are extracted directly from Ellipse system however cost breakdowns for individual components are not available, estimation is used to allocated costs to various components of large scale projects |

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| | This does not include replacements associated under Opex, which is typically on an urgent basis. | | | | |
| SCADA, Network Control and Protection Systems | Expenditure associated with projects deemed as being SCADA, Control, Communications, Protection, Metering replacements and associated ancillary requirements or their operation (including cabling, infrastructure, batteries, AC supply).<br><br>This does not include replacements associated with day to day operations, which is typically on an urgent basis. | For projects identified as ready for service during 2019/20, financial data originates from Ellipse and extracted from the finance cube.<br><br>Summarised in:<br><br>RIN CA 2.2 Major REPEX FY20.xlsx<br><br>RIN CA 2.2 ARS FY20.xlsx | Yes | TransGrid costs are extracted directly from Ellipse system however cost breakdowns for individual components are not available, estimation is used to allocated costs to various components of large scale projects<br><br>Values are extracted directly from Ellipse system, calculations are completed based on the assumptions listed for large scale projects.<br><br>Asset Renewal programs are directly assigned values | Refer to methodology below.<br><br>Values for large projects involving various asset categories have typically been allocated according to the percentage distribution of directly attributable values (e.g. asset procurement).<br><br>Costs that cannot be attributed to one particular asset category (e.g. project management) are spread across all relevant assets |

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| | | | | | using a weighted average. For example, if 10% of the total attributable costs is allocated to a particular asset, then 10% of the unattributable costs will be added to this asset. |
| Other – TNSP defined<br><br>Earthwire fitting corrections Installation of low span warning signs (covering qty of spans)<br><br>Installation of low span warning signs (covering qty of spans)<br><br>Snowy Area AAAC Midspan joints, Deadends and Vibration Dampers | Expenditure associated with projects that should not be included in the nominated categories above. The separation limits potential skewing of benchmarks due to one-off scopes that do not fit into predefined AER categories. As a result, asset failures are not clearly linked to the projects in the 'Other' category and all failures are linked to the predefined asset types above. | Report provided by Finance on expenditure of commissioned projects. | Yes | Where a project was split into multiple items, a combination of the construction contract schedule items, estimate from project managers, project documents, procurement schedules and a cost breakdown algorithm for unattributable costs. Otherwise the whole project cost was included against the given description. | This is an estimate due to low span warning signage they were installed in a project which mostly consisted of structure replacements. TransGrid costs are extracted directly from Ellipse system however cost breakdowns for individual components are not available, estimation is used to |

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| | | | | | allocated costs to various components.<br><br>The others were actuals as the whole project was costs came into the single category. |
| Other – TNSP defined<br><br>Major Steelwork<br><br>2-way isolator (including special structure<br><br>Transformer Refurbishment | Expenditure associated with projects deemed as dealing with HV assets in the switchyards, but not attributable to the respective CB, VT, CT etc.<br><br>This does not include replacements associated under Opex, which is typically on an urgent basis. | For projects identified as ready for service during 2019/20, financial data originates from Ellipse and extracted from the finance cube. | Yes | Reports are received from the project managers, allocating costs to the various categories. Those costs are converted to a percentage of overall cost, which is then applied to the value of the project that is reported to RIN. That is processed through a spreadsheet which groups up the like items, providing a total. | The project managers have provided cost estimate for asset replacements for Major Repex projects. Construction contract schedules, project documents, procurement schedules have been used by the project managers for splitting costs amongst assets within the project. Costs for asset replacement strategy projects are |

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| | | | | | directly attributable to a number of categories.<br><br>TransGrid costs are extracted directly from Ellipse system however cost breakdowns for individual components are not available, estimation is used to allocated costs to various components of large scale projects |
| Other – TNSP defined<br><br>Transmission Plant Spares (Various)<br><br>Building<br><br>Major Substation Rebuild/ Civil Works | Expenditure associated with assets/components not related to the defined categories. | For projects identified as ready for service during 2019/20, financial data originates from Ellipse and extracted from the finance cube.<br><br>Summarised in:<br><br>RIN CA 2.2 Major REPEX FY20.xlsx<br><br>RIN CA 2.2 ARS FY20.xlsx | Yes | TransGrid costs are extracted directly from Ellipse system however cost breakdowns for individual components are not available, estimation is used to allocated costs to various components of large scale projects.<br><br>Values are extracted directly from Ellipse system, calculations are completed based on the assumptions listed for large scale projects.<br><br>Asset Renewal programs are directly assigned values. | Refer to methodology below.<br><br>Values for large projects have typically been allocated according to the percentage distribution of directly attributable values (e.g. asset procurement).<br><br>Costs that cannot be attributed to a particular asset (e.g. project management) are spread across all relevant assets using a weighted |

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| | | | | | average. For example, if 10% of the total attributable costs is allocated to a particular asset, then 10% of the unattributable costs will be added to this asset. |
| Total Financial Expenditure | Expenditure associated with projects that are in the nature of Asset Replacements This covers capital projects with the following portfolio groupings:<br>• Major Proj-Presc Security Comp<br>• Major Proj-Presc Replacement<br>• Asset renewal strategies<br><br>Expenditure is reported on an as commissioned basis projects ready for service in $Nominal . | TransGrid financial records reported from Ellipse and Business Reporting based on "portfolio grouping description".<br><br>Portfolio groupings "Major Proj-Presc Security Comp", "Major Proj-Presc Replacement" and "Asset renewal strategies"are included.<br><br>Commissioning data comes from EPPMS system project tracking records. | No | Total life to date project costs (excluding overheads i.e., support costs) for each project ready for service in FY19/20. | N/A |

| Asset Replacements | | | | | |
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| Transmission Towers | Units of asset replaced associated with Replacement Expenditure projects as defined above. | Project RIN template completed by Project Manager. | No | If a project was included in the report provided by Finance then the project documentation will be inspected and quantities tabulated.<br><br>The number of structures noted requiring replacement for each project is included.<br><br>There is some structure refurbishment Repex expenditure. As this does not alter the asset age profile it has been included in the "Other Asset" category. | Structures are only included if the project is closed out during 2020FY. This will cause a mismatch in section 5.2 which reports structure installation at June 30 2020. |
| Transmission Tower Support Structures | Units of asset replaced associated with Replacement Expenditure projects as defined above. | Project RIN template completed by Project Manager. | No | The number of support structures noted requiring replacement for each project is included. | Support Structures are only included if the project is closed out during 2020FY. This value includes crossarm risers and insulator replacements. |
| Conductors | Units of asset replaced associated with Replacement Expenditure projects as defined above. | Project RIN template completed by Project Manager. | No | The horizontal circuit length requiring replacement is used. | Conductor replacements are only included if the project was closed out in 2020FY. |

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| Transmission Cables | Units of asset replaced associated with Replacement Expenditure projects as defined above. | Project RIN template completed by Project Manager. | No | The cable route length of cable replaced as per design drawings.<br><br>As the Underground Cable Repex will not change the Asset Age Profile, it has been included in the "Other Asset" category. | Only projects that were closed out in 2020FY are included. |
| Substation Switchbays<br><br>Substation Power Transformers<br><br>Substation Reactive Plant | Units of asset replaced associated with Replacement Expenditure projects as defined above. | Project RIN template completed by Project Manager. | No | Category classification of each asset replacement are manually added and check with the ARS Tracking Register. The categories are confirmed by checking HVODs, Project Approval Documents and project descriptions. Asset Replacement numbers are obtained by manually checking the Asset Register for fitments during FY19/20 | It is assumed that data within TransGrid's systems is accurate and recorded in a timely manner |
| SCADA, Network Control and Protection Systems | An asset replaced as part of replacement works where the associated project has been completed during FY2019/20 | Project RIN template completed by Project Manager. | No | All assets with projects completed in FY2019/20. Replacement assets manually confirmed through Ellipse data register and PDGS approved assets | It is assumed that data within TransGrid's systems is accurate and recorded in a timely manner |

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| Other – TNSP defined<br><br>Earthwire fitting corrections Installation of low span warning signs (covering qty of spans)<br><br>Installation of low span warning signs (covering qty of spans)<br><br>Snowy Area AAAC Midspan joints, Deadends and Vibration Dampers | Expenditure associated with projects that should not be included in the nominated categories above. The separation limits potential skewing of benchmarks due to oneoff scopes that do not fit into predefined AER categories. As a result, asset failures are not clearly linked to the projects in the 'Other' category and all failures are linked to the predefined asset types above. | Data is from "Asset Replacement Listing" provided by project delivery group and was originally gathered through Ellipse and Works Delivery Replacement Tracking SharePoint site | No | All assets with projects completed in FY20. Assets manually confirmed by project delivery and replacement assets manually confirmed through Ellipse data register and PDGS approved assets | It is assumed that data within TransGrid's systems is accurate and recorded in a timely manner |
| Other – TNSP defined<br><br>Major Steelwork<br><br>2-way isolator (including special structure<br><br>Transformer Refurbishment | Expenditure associated with projects that should not be included in the nominated categories above. The separation limits potential skewing of benchmarks due to oneoff scopes that do not fit into predefined AER categories. As a result, asset failures are not clearly linked to the projects in the 'Other' category and all failures are linked to the predefined asset types above. | Report provided by Finance on expenditure of commissioned projects. | Yes | The respective project managers report against the categories of expenditure which aren't otherwise primary plant (CBR, CT, VT etc). In this case, it was for a large number of steel structures that were addressed as part of other switchyard component replacements. | That the project managers maintain good records, and report on them accurately. |

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| Other – TNSP defined<br><br>Transmission Plant Spares (Various)<br><br>Building<br><br>Major Substation Rebuild/ Civil Works | An asset replaced as part of replacement works where the associated project has been completed during FY2019/20. | Project RIN template completed by Project Manager. | No | All assets with projects completed in FY2019/20. Replacement assets manually confirmed through Ellipse data register and PDGS approved assets. | It is assumed that data within TransGrid's systems is accurate and recorded in a timely manner. |
| **Asset Failures** | | | | | |

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| Transmission Towers | The failure of any entire transmission structure, subcategorised by voltage and single/multiple circuit.<br><br>Failure of an asset is defined as when the asset causes a fault outage of non-transient nature, or otherwise enters into a state of unfit for use (condition based asset replacements/repairs not included).<br><br>The failures are quantified by the number of outages caused. | The 'QAPR Comment on Outage' table within the Statistics Backend database stored on TransGrid's shared drive (with secure access for only required staff), which in turn is populated from the outage records in THEOS (the business database application used by Network Operations staff to record outage data). An extract of this table has been provided in the RINB-2-2-01 spreadsheet, in the 'NPR Outages List Linked Table' worksheet. The 'Category Analysis RIN' worksheet uses this table to count up the number of asset failures for each category. | No | Every outage record in the 'QAPR Comment on Outage' table within the Statistics Backend database contains a 'RIN Category' field which is populated with the applicable RIN asset group and category combination (as defined in the AER RIN template) for that outage. This 'RIN Category' field is represented by column AW in the 'NPR Outages List Linked Table' worksheet within RINB-2-2-01. Each numerical value in this column corresponds to a unique RIN asset group and category combination. For each asset group and category combination, the frequency of the corresponding numerical value is counted and reported across the relevant financial year. | It is assumed that every asset failure that has occurred has caused an unplanned outage that is recorded by Network Operations staff in THEOS, as per standard procedure. |

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| Transmission Tower Support Structures | The failure of any individual component of a transmission structure (e.g. insulators, crossarms) but not the entire structure, subcategorised by voltage and single/multiple circuit.<br><br>Failure of an asset is defined as when the asset causes a fault outage of non-transient nature, or otherwise enters into a state of unfit for use (condition based asset replacements/repairs not included). Failures due to external causes (e.g. thunderstorms) have been excluded.<br><br>The failures are quantified by the number of outages caused. | The 'QAPR Comment on Outage' table within the Statistics Backend database stored on TransGrid's shared drive (with secure access for only required staff), which in turn is populated from the outage records in THEOS (the business database application used by Network Operations staff to record outage data). An extract of this table has been provided in the RINB-2-2-01 spreadsheet, in the 'NPR Outages List Linked Table' worksheet. The 'Category Analysis RIN' worksheet uses this table to count up the number of asset failures for each category. | No | Every outage record in the 'QAPR Comment on Outage' table within the Statistics Backend database contains a 'RIN Category' field which is populated with the applicable RIN asset group and category combination (as defined in the AER RIN template) for that outage. This 'RIN Category' field is represented by column AW in the 'NPR Outages List Linked Table' worksheet within RINB-2-2-01. Each numerical value in this column corresponds to a unique RIN asset group and category combination. For each asset group and category combination, the frequency of the corresponding numerical value is counted and reported across the relevant financial year. | It is assumed that every asset failure that has occurred has caused an unplanned outage that is recorded by Network Operations staff in THEOS, as per standard procedure. |

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| Conductors | The failure of any conductor on a transmission line, subcategorised by voltage and rating. Overhead earth-wires have been classified into the 'Other' category.<br><br>Failure of an asset is defined as when the asset causes a fault outage of non-transient nature, or otherwise enters into a state of unfit for use (condition based asset replacements/repairs not included). Failures due to external causes (e.g. thunderstorms) have been excluded.<br><br>The failures are quantified by the number of outages caused. | The 'QAPR Comment on Outage' table within the Statistics Backend database stored on TransGrid's shared drive (with secure access for only required staff), which in turn is populated from the outage records in THEOS (the business database application used by Network Operations staff to record outage data). An extract of this table has been provided in the RINB-2-2-01 spreadsheet, in the 'NPR Outages List Linked Table' worksheet. The 'Category Analysis RIN' worksheet uses this table to count up the number of asset failures for each category. | No | Every outage record in the 'QAPR Comment on Outage' table within the Statistics Backend database contains a 'RIN Category' field which is populated with the applicable RIN asset group and category combination (as defined in the AER RIN template) for that outage. This 'RIN Category' field is represented by column AW in the 'NPR Outages List Linked Table' worksheet within RINB-2-2-01. Each numerical value in this column corresponds to a unique RIN asset group and category combination. For each asset group and category combination, the frequency of the corresponding numerical value is counted and reported across the relevant financial year. | It is assumed that every asset failure that has occurred has caused an unplanned outage that is recorded by Network Operations staff in THEOS, as per standard procedure. |

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| Transmission Cables | The failure of any transmission cable, subcategorised by voltage and insulation type.<br><br>Failure of an asset is defined as when the asset causes a fault outage of non-transient nature, or otherwise enters into a state of unfit for use (condition based asset replacements/repairs not included). Failures due to external causes (e.g. thunderstorms) have been excluded.<br><br>The failures are quantified by the number of outages caused. | The 'QAPR Comment on Outage' table within the Statistics Backend database stored on TransGrid's shared drive (with secure access for only required staff), which in turn is populated from the outage records in THEOS (the business database application used by Network Operations staff to record outage data). An extract of this table has been provided in the RINB-2-2-01 spreadsheet, in the 'NPR Outages List Linked Table' worksheet. The 'Category Analysis RIN' worksheet uses this table to count up the number of asset failures for each category. | No | Every outage record in the 'QAPR Comment on Outage' table within the Statistics Backend database contains a 'RIN Category' field which is populated with the applicable RIN asset group and category combination (as defined in the AER RIN template) for that outage. This 'RIN Category' field is represented by column AW in the 'NPR Outages List Linked Table' worksheet within RINB-2-2-01. Each numerical value in this column corresponds to a unique RIN asset group and category combination. For each asset group and category combination, the frequency of the corresponding numerical value is counted and reported across the relevant financial year. | It is assumed that every asset failure that has occurred has caused an unplanned outage that is recorded by Network Operations staff in THEOS, as per standard procedure. |

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| Substation Switchbays | The failure of any components within a substation switchbay, subcategorised by voltage and the following equipment types: CB, Disconnector, Earth Switch, VT, CT, GIS Module, and Other.<br><br>Failure of an asset is defined as when the asset causes a fault outage of non-transient nature, or otherwise enters into a state of unfit for use (condition based asset replacements/repairs not included). Failures due to external causes (e.g. thunderstorms) have been excluded.<br><br>The failures are quantified by the number of outages caused. | The 'QAPR Comment on Outage' table within the Statistics Backend database stored on TransGrid's shared drive (with secure access for only required staff), which in turn is populated from the outage records in THEOS (the business database application used by Network Operations staff to record outage data). An extract of this table has been provided in the RINB-2-2-01 spreadsheet, in the 'NPR Outages List Linked Table' worksheet. The 'Category Analysis RIN' worksheet uses this table to count up the number of asset failures for each category. | No | Every outage record in the 'QAPR Comment on Outage' table within the Statistics Backend database contains a 'RIN Category' field which is populated with the applicable RIN asset group and category combination (as defined in the AER RIN template) for that outage. This 'RIN Category' field is represented by column AW in the 'NPR Outages List Linked Table' worksheet within RINB-2-2-01. Each numerical value in this column corresponds to a unique RIN asset group and category combination. For each asset group and category combination, the frequency of the corresponding numerical value is counted and reported across the relevant financial year. | It is assumed that every asset failure that has occurred has caused an unplanned outage that is recorded by Network Operations staff in THEOS, as per standard procedure. |

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| Substation Power Transformers | The failure of power transformers subcategorised by voltage and MVA rating.<br><br>Failure of an asset is defined as when the asset causes a fault outage of non-transient nature, or otherwise enters into a state of unfit for use (condition based asset replacements/repairs not included). Failures due to external causes (e.g. thunderstorms) have been excluded.<br><br>The failures are quantified by the number of outages caused. | The 'QAPR Comment on Outage' table within the Statistics Backend database stored on TransGrid's shared drive (with secure access for only required staff), which in turn is populated from the outage records in THEOS (the business database application used by Network Operations staff to record outage data). An extract of this table has been provided in the RINB-2-2-01 spreadsheet, in the 'NPR Outages List Linked Table' worksheet. The 'Category Analysis RIN' worksheet uses this table to count up the number of asset failures for each category. | No | Every outage record in the 'QAPR Comment on Outage' table within the Statistics Backend database contains a 'RIN Category' field which is populated with the applicable RIN asset group and category combination (as defined in the AER RIN template) for that outage. This 'RIN Category' field is represented by column AW in the 'NPR Outages List Linked Table' worksheet within RINB-2-2-01. Each numerical value in this column corresponds to a unique RIN asset group and category combination. For each asset group and category combination, the frequency of the corresponding numerical value is counted and reported across the relevant financial year. | It is assumed that every asset failure that has occurred has caused an unplanned outage that is recorded by Network Operations staff in THEOS, as per standard procedure. |

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| Substation Reactive Plant | The failure of reactive plant subcategorised by voltage and the following reactive plant types: SVCs, Capacitors, Oil Filled Reactors, and Other. Note that failures of capacitors or reactors within an SVC, or any equipment within the SVC building, are classified as SVC failures.<br><br>Failure of an asset is defined as when the asset causes a fault outage of non-transient nature, or otherwise enters into a state of unfit for use (condition based asset replacements/repairs not included). Failures due to external causes (e.g. thunderstorms) have been excluded.<br><br>The failures are quantified by the number of outages caused. | The 'QAPR Comment on Outage' table within the Statistics Backend database stored on TransGrid's shared drive (with secure access for only required staff), which in turn is populated from the outage records in THEOS (the business database application used by Network Operations staff to record outage data). An extract of this table has been provided in the RINB-2-2-01 spreadsheet, in the 'NPR Outages List Linked Table' worksheet. The 'Category Analysis RIN' worksheet uses this table to count up the number of asset failures for each category. | No | Every outage record in the 'QAPR Comment on Outage' table within the Statistics Backend database contains a 'RIN Category' field which is populated with the applicable RIN asset group and category combination (as defined in the AER RIN template) for that outage. This 'RIN Category' field is represented by column AW in the 'NPR Outages List Linked Table' worksheet within RINB-2-2-01. Each numerical value in this column corresponds to a unique RIN asset group and category combination. For each asset group and category combination, the frequency of the corresponding numerical value is counted and reported across the relevant financial year. | It is assumed that every asset failure that has occurred has caused an unplanned outage that is recorded by Network Operations staff in THEOS, as per standard procedure. |

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| SCADA, Network Control and Protection Systems | The failure of all SCADA, Network Control and Protection equipment subcategorised by the following types: Protection Assets, Control Assets, Communications Assets and Metering Assets. Note that this category does not include the Material Failures of SCADA as reported in the previous Economic RIN to the AER.<br><br>Failure of an asset is defined as when the asset causes a fault outage of non-transient nature, or otherwise enters into a state of unfit for use (condition based asset replacements/repairs not included). Failures due to external causes (e.g. thunderstorms) have been excluded.<br><br>The failures are quantified by the number of outages caused. | The 'QAPR Comment on Outage' table within the Statistics Backend database stored on TransGrid's shared drive (with secure access for only required staff), which in turn is populated from the outage records in THEOS (the business database application used by Network Operations staff to record outage data). An extract of this table has been provided in the RINB-2-2-01 spreadsheet, in the 'NPR Outages List Linked Table' worksheet. The 'Category Analysis RIN' worksheet uses this table to count up the number of asset failures for each category. | No | Every outage record in the 'QAPR Comment on Outage' table within the Statistics Backend database contains a 'RIN Category' field which is populated with the applicable RIN asset group and category combination (as defined in the AER RIN template) for that outage. This 'RIN Category' field is represented by column AW in the 'NPR Outages List Linked Table' worksheet within RINB-2-2-01. Each numerical value in this column corresponds to a unique RIN asset group and category combination. For each asset group and category combination, the frequency of the corresponding numerical value is counted and reported across the relevant financial year. | It is assumed that every asset failure that has occurred has caused an unplanned outage that is recorded by Network Operations staff in THEOS, as per standard procedure. |

| 2.2.2 SELECTED ASSET CHARACTERISTICS | | | | | |
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| **Asset Volumes currently in commission** | | | | | |
| Conductors | The type of conductor installed on TransGrid's transmission network identified by route length (km) | PowerBI report.<br><br>Electrical databook where PowerBI report not complete. | No | Calculations are based on total length of conductors. No specific PowerBI report available for conductor type. The detailed PowerBI underlying data is incomplete with respect to conductor type. The missing data was filled with analysis from previous years and the Electrical Databook. The Electrical Databook was used as the primary source for for the previous years analysis. | Calculations are based on total circuit length of conductor. Where a circuit has a split phase configuration, it is counted twice.<br><br>This calculation has only been performed on phase conductors not earthwires.<br><br>Circuit length of conductor is used (twin conductor not counted twice, three phases not counted three times) |
| Total MVAr By SVC (2.2.2) | Asset volumes: The combined nominal maximum reactive power rating for all SVCs in service at the end of the financial year.<br><br>This is capacitive for TransGrid SVCs. Asset replacements: The total nominal maximum reactive | Small number of SVCs manually counted. Ratings from the Electrical Data Book. | No | Manual count. Check: Asset volume = Asset volume in prior year + asset volume installed in current FYasset volume decommissioned in current FY.<br><br>Asset replacement column presents the total installed during the FY. | N/A |

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| | output of SVCs replaced in the year. | | | | |
| Total MVARs by Capacitors (2.2.2) | Asset volumes: The combined nominal reactive power rating for all capacitors in service at the end of the financial year.<br><br>Asset replacements: The combined nominal reactive power rating for all capacitors replaced in the year. | Capacitors identified using asset count data prepared for schedule 5.2. Rating information is cross checked using Operating Diagrams.<br><br>Manual review of Operating Diagrams for the small number of projects identified | No | Manual count. Check: Asset volume = Asset volume in prior year + asset volume installed in current FYasset volume decommissioned in current FY.<br><br>Asset replacement column presents the total installed during the FY. | N/A |

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| Total MVArs by Oil Filled reactors (2.2.2) | Asset volumes: The combined nominal reactive power rating for all oil filled SHUNT reactors in service at the end of the financial year.<br><br>Asset replacements: The combined nominal reactive power rating for all oil filled SHUNT reactors replaced in the year. | Reactors identified using asset count data prepared for schedule 5.2. Rating information is cross checked using Operating Diagrams. | No | Manual count. Check: Asset volume = Asset volume in prior year + asset volume installed in current FYasset volume decommissioned in current FY.<br><br>Asset replacement column presents the total installed during the FY. | Series reactors are excluded as they do not provide voltage support for the network. |
| **Asset Replacements** | | | | | |
| Conductors | The type of conductor replaced or installed for line rearrangements for substation replacement projects by route length (km). | Project Line Schedules or design advices | No | These values were calculated from design drawings | Line rearrangements for other project requirements is not counted as replacement expenditure, e.g. for line deviations.<br><br>Earthwire replacement and reuse of conductors have not been included.<br><br>The replacement scope includes the following:<br><br>5.552 km of ACSR and 0.93 km of AAAC damaged by fire resulting in conductor fall. These |

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| | | | | | replacements were not conducted under REPEX so have not been included.<br><br>13.375 km of ACSR was replaced with ACSS as part of a NCIPAP project. NCIPAP projects are not included in the RIN so this figure has not been included. |
| Substation Reactive Plant | Summation of all replaced reactive plant' MVAr rating in FY19/20 | Ellipse TRB 601 REPORT;<br><br>Extract Tracing information<br><br>Reactive plant capacity as shown on High Voltage Operating Diagrams | No | Summation of all replaced reactive plant' MVAr rating | N/A |

### 7.3.3 Worksheet 2.3 Augex project data

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| **2.3.1 AUGEX ASSET DATA - SUBSTATIONS** | | | | | |
| **Expenditure** | | | | | |
| Total Direct Expenditure - Non-material projects | Projects reported for purposes of this schedule are in the nature of substation projects and relate to the augmentation of the network in order to improve the quality of the network and to meet regulatory obligations.<br><br>Amounts are rounded to whole dollars. | TransGrid financial records reported from Ellipse and Business Reporting based on "portfolio grouping description" and "asset type description".<br>Portfolio groupings 'Major Pro-Presc Aug-Main Grid' and 'Major Pro-Presc Strategic Property' are included. | No | Reference is drawn from "asset type description" to classify the projects into three categories "Substations", "Lines" and "Other Assets". The classification is reviewed and verified by Asset Management. It is noted that the AER guidelines require further disclosure of substations ready for service in a reported financial year, if the life to date project costs are above $5 million.<br><br>Total life to date project costs for each project ready for service in FY2019-20 are analysed and there is no project above the $5 million benchmark, therefore all | No assumptions or estimations made except for the CPI indexation. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | projects are disclosed in the Non-material projects line. All projects are summarised together and indexed by CPI to FY2019-20 dollars.<br><br>Overheads i.e., support costs are excluded. | |
| Substation and Project Summary Information | As per AER RIN definition | Project planning documents.<br><br>No disclosure required for FY19/20. Refer explanation in 'Augmentation Project' above. | No | Values captured from project documents. | No assumptions were made as data was extracted straight from project plans. |
| Plant & Equipment Volume | As per AER RIN definition | Project planning documents.<br><br>No disclosure required for FY18/19. Refer explanation in 'Augmentation Project' above. | No | Values captured from project documents. | No assumptions were made as data was extracted straight from project plans. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Plant & Equipment Expenditure | Procurement costs of the plant / equipment. | TransGrid financial records reported from Ellipse and Business Reporting.<br><br>Categorisation of costs is based on expense element classification in Ellipse.<br><br>No disclosure required for FY19-20. Refer explanation in 'Augmentation Project' above. | Yes | Detailed project transaction report is run for each project, and expenditures for each project are analysed to obtain the transformer, switchgear, reactive plant and other plant & equipment costs. | No assumptions were made as data was extracted straight from Ellipse and Business Reporting. |
| Installation Labour Volume | The number of hours allocated to labour expenditure | TransGrid financial records reported from Ellipse and Business Reporting.<br><br>Categorisation of costs is based on expense element classification in Ellipse.<br><br>No disclosure required for FY19-20. | No | Detailed project transaction report is run for each project which includes the internal labour hours costed to the project. | Categorisation of labour volume is based on the expense element classification in Ellipse. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Installation Labour Expenditure<br><br>Expenditure – Civil Works<br><br>Expenditure – Other Direct | **Installation Labour Expenditure**<br>TransGrid labour costs directly charged to the work orders of the Augmentation projects<br><br>**Expenditure - Civil Works**<br><br>Costs allocated to civil works including buildings, earthworks, drainage, landscaping, roads and fencing.<br><br>**Expenditure - Other Direct**<br>Direct costs charged to the Augmentation projects other than plant & equipment procurement, labour and civil works.Direct costs charged to the Augmentation projects other than plant & equipment procurement, labour and civil works. | TransGrid financial records reported from Ellipse and Business Reporting.<br><br>Categorisation of costs is based on expense element classification in Ellipse.<br><br>No disclosure required for FY18-19. Refer explanation in 'Augmentation Project' above. | Yes | Detailed project transaction report is run for each project, and expenditures for each project are analysed to obtain the civil works costs. | No assumptions were made as data was extracted straight from Ellipse and Business Reporting. |
| Years Incurred | The period the augmentation project took place. | Project documentation<br><br>No disclosure required for FY19/20. Refer explanation in 'Augmentation Project' above. | No | Information from relevant project documentation. | N/A |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Related Party Contract Margin<br><br>Related Party Contract Total | The Regulatory Information Notice issued under Division 4 of Part 3 of the National Electricity (New South Wales) Law dated 7 March 2014 included definitions and Interpretation which have been used to guide the assessment for Related Party.<br><br>The dollar amount of profit a Related Party gains above its total actual costs under a Related Party Contract with TransGrid. This profit may include margins, management fees or incentive payments. | TransGrid does not have related party contracts in relation to augmentation projects | No | TransGrid does not have related party contracts in relation to augmentation projects. | TransGrid does not have related party contracts in relation to augmentation projects. |
| Non Related Party Contracts | This category is defined as Contracts that do not fall within the definition of a Related Party Contract. | TransGrid financial records reported from Ellipse and Business Reporting.<br><br>No disclosure required for FY19-20. Refer explanation in 'Augmentation Project' above. | No | Detailed project transaction report is run for each project, and expenditures for each project are analysed to obtain other direct costs. | Categorisation of costs is based on expense element classification in Ellipse and plant and equipment costs reallocated as appropriate. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Land Purchases Expenditure | Expenditures incurred to acquire land | TransGrid financial records reported from Ellipse and Business Reporting.<br><br>Categorisation of costs is based on expense element classification in Ellipse.<br><br>No disclosure required for FY19-20. Refer explanation in 'Augmentation Project' above. | No | Detailed project transaction report is run for each project, and expenditures for each project are analysed to obtain land purchase costs. | No assumptions were made as data was extracted straight from Ellipse and Business Reporting. |
| **Plant & Equipment Expenditure & Volume** | | | | | |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Transformers [Units added]<br><br>Transformers [MVA added]<br><br>Switchgear [Insulation]<br><br>Switchgear [Units added]<br><br>Reactive Plant [Plant Type]<br><br>Reactive Plant [Units Added]<br><br>Installation (Labour) | As per AER RIN definition | Project documentation<br><br>No disclosure required for FY19/20. Refer explanation in 'Augmentation Project' above. | No | There is no AUGEX projects that greater than 5 million in this financial year | N/A |
| **2.3.2 AUGEX ASSET DATA - LINES** | | | | | |
| **Expenditure** | | | | | |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Total Direct Expenditure - Non-material projects | Projects reported for purposes of this schedule are in the nature of transmission lines projects and relate to the augmentation of the network in order to improve the quality of the network and to meet regulatory obligations.<br><br>Amounts are rounded to whole dollars.<br><br>There are no projects commissioned in FY2019-20 under this category. | TransGrid financial records reported from Ellipse and Business Reporting based on "portfolio grouping description" and "asset type description".<br><br>Portfolio groupings 'Major Pro-Presc AugMain Grid', "Major Proj-Presc Strat Propty" and "Major Proj-Presc Aug-Sub Sys" are included. | No | Reference is drawn from "asset type description" to classify the projects into three categories "Substations", "Lines" and "Other Assets". The classification is reviewed and verified by Asset Management. It is noted that the AER guidelines require further disclosure of transmission lines ready for service in a reported financial year, if the life to date project costs are above $5 million.<br><br>There are no projects commissioned in FY2019-20 under this category. | N/A |
| **Line and Project Summary** | | | | | |
| **Line ID** | | | | | |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Project Id | Project ID defined by TransGrid | Project planning documents / Project Line schedules. | No | Values captured from project documents and schedules | There were no material or immaterial line augmentation projects closed out in 2019/20. |
| Project Type | The type of augmentation work completed on the transmission line. | Project planning documents / Project Line schedules. | No | Values captured from project documents and schedules | No assumptions were made as data was extracted straight from project plans and schedules.<br><br>There were no material line augmentation projects closed out in 2019/20. |
| Project Trigger | Reason for Augex project | Project planning documents / Project Line schedules. | No | Value captured from project documentation. | No assumptions were made as the answer was extracted straight from project documentation. There were no material or immaterial line augmentation projects closed out in 2019/20. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Voltage (KV) | The type of augmentation work completed on the transmission line. | Project planning documents / Project Line schedules. | No | Values captured from project documents and schedules | No assumptions were made as data was extracted straight from project plans and schedules.<br><br>There were no material line augmentation projects closed out in 2019/20. |
| Route line length added (KM) | The type of augmentation work completed on the transmission line. | Project planning documents / Project Line schedules. | No | Values captured from project documents and schedules | No assumptions were made as data was extracted straight from project plans and schedules.<br><br>There were no material line augmentation projects closed out in 2019/20. |
| **Plant & Equipment Expenditure & Volume** | | | | | |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Towers/Poles (including Structures and civil works) [Configuration] | The type of augmentation work completed on the transmission line. | Project planning documents / Project Line schedules. | No | Values captured from project documents and schedules | No assumptions were made as data was extracted straight from project plans and schedules.<br><br>There were no material line augmentation projects closed out in 2019/20. |
| Towers/Poles (including Structures and civil works) [Towers/Poles Added] | The type of augmentation work completed on the transmission line. | Project planning documents / Project Line schedules. | No | Values captured from project documents and schedules | No assumptions were made as data was extracted straight from project plans and schedules.<br><br>There were no material line augmentation projects closed out in 2019/20. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Towers/Poles (including Structures and civil works) [Towers/Poles Upgraded | The type of augmentation work completed on the transmission line. | Project planning documents / Project Line schedules. | No | Values captured from project documents and schedules. | No assumptions were made as data was extracted straight from project plans and schedules.<br><br>There were no material line augmentation projects closed out in 2019/20. |
| Lines and Cables [Type] | The type of augmentation work completed on the transmission line. | Project planning documents / Project Line schedules. | No | Values captured from project documents and schedules | No assumptions were made as data was extracted straight from project plans and schedules.<br><br>There were no material line augmentation projects closed out in 2019/20. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Lines and Cables [Rating (MVA) Pre] | The normal ratings for the transmission line or cable prior to the augmentation being undertaken with the season used based upon the maximum demand time for that year. | Grid operating manuals:<br><br>OM 304 RATINGS OF MAIN GRID CIRCUITS<br><br>OM 305 RATINGS OF SUBSYSTEM CIRCUITS IN NORTHERN REGION<br><br>OM 307 RATINGS OF SUBSYSTEM CIRCUITS IN SOUTHERN REGION<br><br>OM 306 RATINGS OF SUBSYSTEM CIRCUITS IN CENTRAL REGION | No | Values captured from TransGrid operating manuals. | For the pre ratings it is necessary to obtain superseded data from previous versions of the grid operating manuals from System operations.<br><br>There were no material or immaterial line augmentation projects closed out in 2019/20. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Lines and Cables [Rating (MVA) Post] | The normal ratings for the transmission line or cable after the augmentation being undertaken with the season used based upon the maximum demand time for that year. | Grid operating manuals:<br><br>OM 304 RATINGS OF MAIN GRID CIRCUITS<br><br>OM 305 RATINGS OF SUBSYSTEM CIRCUITS IN NORTHERN REGION<br><br>OM 307 RATINGS OF SUBSYSTEM CIRCUITS IN SOUTHERN REGION<br><br>OM 306 RATINGS OF SUBSYSTEM CIRCUITS IN CENTRAL REGION | No | Values captured from TransGrid operating manuals. | There were no material or immaterial line augmentation projects closed out in 2019/20. |
| Lines and Cables [N-1 Emergency Rating (MVA) Pre] | The long-time contingency ratings for the transmission line or cable prior to the augmentation being undertaken with the season used based upon the maximum demand time for that year. | Grid operating manuals:<br><br>OM 304 RATINGS OF MAIN GRID CIRCUITS<br><br>OM 305 RATINGS OF SUBSYSTEM CIRCUITS IN NORTHERN REGION<br><br>OM 307 RATINGS OF SUBSYSTEM CIRCUITS IN SOUTHERN REGION | No | Values captured from TransGrid operating manuals. | For multiple circuit lines of the same voltage the ratings have been added together.<br><br>There were no material or immaterial line augmentation projects closed out in 2019/20. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | OM 306 RATINGS OF SUBSYSTEM CIRCUITS IN CENTRAL REGION | | | |
| Lines and Cables [N-1 Emergency Rating (MVA) Post] | The long-time contingency ratings for the transmission line or cable prior to the augmentation being undertaken with the season used based upon the maximum demand time for that year. | Grid operating manuals:<br><br>OM 304 RATINGS OF MAIN GRID CIRCUITS<br><br>OM 305 RATINGS OF SUBSYSTEM CIRCUITS IN NORTHERN REGION<br><br>OM 307 RATINGS OF SUBSYSTEM CIRCUITS IN SOUTHERN REGION<br><br>OM 306 RATINGS OF SUBSYSTEM CIRCUITS IN CENTRAL REGION | No | Values captured from TransGrid operating manuals. | For multiple circuit lines of the same voltage the ratings have been added together.<br><br>There were no material or immaterial line augmentation projects closed out in 2019/20. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Circuit KM added | The additional circuit length added to the TransGrid's network due to the augmentation project. | Project planning documents / Project Line schedules. | No | Values captured from project documents and schedules. | No assumptions were made as data was extracted straight from project plans and schedules.<br><br>There were no material or immaterial line augmentation projects closed out in 2019/20. |
| Installation (Labour) | The number of hours allocated to labour expenditure | TransGrid financial records reported from Ellipse and Business Reporting. | No | Detailed project transaction report is run for each project, and expenditures for each project are analysed to obtain the labour costs. | Categorisation of costs is based on expense element classification in Ellipse. |
| **2.3.4 AUGEX - TOTAL EXPENDITURE** | | | | | |
| **Expenditure** | | | | | |
| Substations | Projects reported for purposes of this schedule relate to the augmentation of the | TransGrid financial records reported from Ellipse and Business Reporting based on "portfolio grouping | No | Projects are extracted from Ellipse Finance cube. | N/A |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Lines<br><br>Other assets<br><br>Total Augmentation capex | network in order to improve the quality of the network and to meet regulatory obligations.<br><br>Amounts are rounded to whole dollars. | description" and "asset type description".<br><br>AER guidelines require further disclosure of substation and transmission line augex projects' costs incurred in a given financial year, therefore reference is drawn from "asset type description" to classify the total augex projects' costs incurred for the reported financial year into three categories "Substations", "Lines" and "Other Assets". The classification is reviewed and verified by Asset Management.<br><br>The augex costs reported in this schedule exclude contingent capex projects that have not received AER approval. The QNI minor upgrade project was approved by the AER on 28 April 2020 and has been included in this schedule for the 2019-20 period, including those costs incurred in the 2018-19 period. | | Reference is made to the Portfolio Grouping in Ellipse and other relevant sources to determine the project category for reporting in RIN.<br><br>Overheads i..e, support costs are excluded for purposes of this schedule. | |

### 7.3.4 Worksheet 2.5 Connections

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| **2.5.1 EXPENDITURE ON CONNECTION PROJECTS** | | | | | |
| Direct Materials Costs | Raw materials, standard parts, specialised parts and sub-assemblies required in the execution of Connection projects. | Direct costs are extracted using the Finance cube, information is further drilled down to Cost Category "Materials" is used to obtain the Direct Materials Costs.<br><br>Direct material costs are extracted in nominal dollars and adjusted for Dec 19 CPI and reported in real dollars, to the nearest dollar.<br><br>Direct material costs reported are costs capitalised to the respective Connection projects from commencement to completion. | No | Not applicable | Overhead (support cost allocated) and equipment costs are excluded from the amounts reported as per AER requirements. Direct material costs are reported as per recorded in the project ledger. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Direct Labour Expenditure | Labour costs directly charged to the work orders of the Connection projects. | Direct costs are extracted using the Finance cube, information is further drilled down to Cost Category for each Connection project. Cost category "Labour" is used to obtain the Direct Labour Costs.<br><br>Direct labour costs are extracted in nominal dollars and adjusted for Dec 19 CPI and reported in real dollars, to the nearest dollar.<br><br>Direct labour costs reported are costs capitalised to the respective Connection projects from commencement to completion. | No | Not applicable | Overhead (support cost allocated) and equipment are excluded from the amounts reported as per AER requirements. Direct labour costs are reported as per recorded in the project ledger. |
| **2.5.2 DESCRIPTION OF CONNECTION PROJECTS** | | | | | |
| Connection Rating (MVA) | Normal cyclic rating | Operating manuals, ratings advice, or project initiation documents (such as Project Approval Documents (PAD), Needs Statements). | Yes | Information obtained from rating advices, relevant operating manuals and project documents. | The lowest normal rating (for the seasons or months for which ratings were given in an Operating Manual) were used.<br><br>Line rating advice data was used to calculate the |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | | rating if not already in an Operating Manual. |
| Connection Voltage (KV) | Nominal voltage | Operating manuals or project initiation documents (such as Project Approval Documents (PAD), Needs Statements), substation drawings. | No | Information obtained from rating advices, relevant operating manuals, project documents and substation drawings. | N/A |
| Underground/ Overhead | Whether the Connection point (entry or exit) is underground or overhead | Project documentation including Project Approval Documents (PADs), Need Statements, HV Operating Diagrams | No | Information obtained from project documents and substation drawings | The physical point at which the asset ceases to be a TransGrid asset and becomes a customer (e.g. Essential Energy) asset. |
| Year connection project completed | Financial year end date that the project is complete and the asset is in service. | TransGrid financial records reported from Ellipse and Business Reporting.<br><br>Project documentation. | No | "Actual Finish Date" is obtained from the Project Management tool (PPM) via PPM Reporting, in conjunction with the Close Out Report which is signed off by Head of Infrastructure Delivery. | N/A |

### 7.3.5 Worksheet 2.6 Non-network expenditure

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| **2.6.1 NON-NETWORK EXPENDITURE** | | | | | |
| **OPEX** | | | | | |
| **IT & Communications** | | | | | |
| Client device expenditure | Expenditure on access devices including (virtual) desktops, laptops, tablets and smartphones<br><br>Amounts are rounded to whole dollars | TransGrid financial records reported from Ellipse | No | Summation of all financial transactions for expense element 287 - Computer equipment expenses | All Client device expenditure is recorded against (expense element 287 - Computer equipment expenses) |
| Recurrent expenditure | Expenditure that is periodic and required to support continuing IT Service delivery.<br><br>Amounts are rounded to whole dollars | | | All operating expenditure not recorded against account 287 - Computer equipment expenses; or work orders associated with one off business initiatives | Operating expenditure not specifically categorised against work orders raised for business initiatives is recurrent in nature. |
| Non-recurrent expenditure | Expenditure of a one-off nature associated with a business initiative that is not a capital project and reclassification adjustments<br><br>Amounts are rounded to whole dollars | | | All operating expenditure recorded against work orders associated with one off business initiatives and reclassification adjustments | Non-recurrent - expenditure on business initiative related activities and reclassification adjustments |
| **Motor Vehicles** | | | | | |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Car | Motor Vehicle Opex by vehicle type<br><br>Amounts are rounded to whole dollars | TransGrid's Regulatory Accounts<br><br>SG Fleet Database | No | OPEX costs are based on actual costs incurred in FY19/20.<br><br>Data was obtained from "Regulated" account codes 585 and 756 with expense codes 266 (Fuel), 269 (Tyres), 270 (Spare Parts), 317 (Purchased Services) and 439 (Maintenance).<br><br>Data associated with BS code of 300 - Non Regulated and 301 - Telecommunication has been excluded with only 100 - Prescribed costs used<br><br>Transaction data was extracted from the SG Fleet database to enable the actual costs from TransGrid Accounts to be proportioned by Asset Category. | Depreciation and insurance costs are excluded from the operating costs on the basis that these operating costs are accounted for in the other RIN templates.<br><br>100% Private Use Novated vehicles are excluded. |
| Light commercial vehicle | | | | | |
| Elevated work platform (LCV) | | | | | |
| Elevated work platform (HCV) | | | | | |
| Heavy commercial vehicle | | | | | |
| **Buildings and Property** | | | | | |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Total buildings and property expenditure | Building and Property operating expenditure classified as non-network in TransGrid's regulatory accounting statements.<br><br>Amounts are rounded to whole dollars. | TransGrid financial records reported from Ellipse and Business Reporting.<br><br>For the purposes of RIN 2.6 Non-network and 2.1 Expenditure summary, Buildings and Property operating expenditure is classified as overheads, consistent with prior years' methodology. | No | N/A | N/A |
| **Other** | | | | | |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Other expenditure<br><br>Miscellaneous mobile plant items (e.g Mowers, Excavators and Forklifts) | Miscellaneous mobile plant OPEX by equipment type<br><br>Amounts are rounded to whole dollars | TransGrid financial records reported from Ellipse and Business Reporting based on portfolio grouping "Support - Motor Vehicles".<br><br>Information was extracted from the Finance Data Cube.<br><br>SG Fleet Database | No | OPEX costs are based on actual costs incurred in FY19/20.<br><br>Data was obtained from "Regulated" account codes 585 and 756 with expense codes 266 (Fuel), 269 (Tyres), 270 (Spare Parts), 317 (Purchased Services) and 439 (Maintenance).<br><br>Data associated with BS code of 300 - Non Regulated and 301 - Telecommunication has been excluded with only 100 - Prescribed costs used<br><br>Transaction data was extracted from the SG Fleet database to enable the actual costs from TransGrid Accounts to be proportioned by Asset Category. | Depreciation and insurance costs are excluded from the operating costs on the basis that these operating costs are accounted for in the other RIN templates.<br><br>100% Private Use Novated vehicles are excluded. |
| **CAPEX** | | | | | |
| **IT & Communications** | | | | | |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Client device expenditure<br><br>Recurrent expenditure<br><br>Non-recurrent expenditure | Capital expenditure on Non-Network IT by 'Client Device', 'Recurrent' and 'NonRecurrent' sub-categories.<br><br>Prepared on an "as incurred" basis which is deemed to be "as commissioned", in nominal $. | TransGrid financial records reported from Ellipse and Business Reporting.<br><br>Information was extracted from Ellipse Finance Data Cube based on portfolio grouping "Support - IT" by finance. | No | Information was extracted from the Finance Data Cube.<br><br>Figures are actual balances and exclude capitalised support cost (element 400).<br><br>Each project was classified to the recurrent, non-recurrent or client device categories. | Each project is allocated to an ICT category based on the nature of the project. The ICT categories map to a RIN category as per the table below:<br><br>• End User Infrastructure - Client Device Expenditure<br>• Midrange - Recurrent Expenditure<br>• Applications - NonRecurrent<br>• LAN / RAS - Recurrent Expenditure<br>• Gateway - Recurrent Expenditure<br>• WAN - Recurrent Expenditure |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | | • ICT Management - NonRecurrent<br>• Mainframe - Recurrent Expenditure<br>• Storage - Recurrent Expenditure<br><br>Application projects and ICT Management were classified as nonrecurrent expenditure as these projects establish new IT services. End user infrastructure is Client Device Expenditure.<br><br>Remainder are Recurrent Expenditure as these are cyclical replacement projects (i.e. upgrades/replacements |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | | of the existing IT Infrastructure). |
| **Motor Vehicles** | | | | | |
| Car<br>Light commercial vehicle<br>Elevated work platform (LCV)<br>Elevated work platform (HCV) | Motor Vehicle Capex by vehicle type<br><br>Amounts are rounded to whole dollars | TransGrid's Regulatory Accounts<br><br>SG Fleet Database | No | Capital expenditure for FY19/20 was obtained from the Regulatory Accounts for "TG BUSINESS VEHICLES n MOBILE PLANT (P0011003)" categories. The value of motor vehicles are then adjusted to reduce the rebates received from suppliers.<br><br>Only 100 - Prescribed costs are used. 'Motor Vehicles' includes the Asset Categories Car and Light Commercial Vehicle, and 'Mobile Plant' includes | Assets identified as an Elevated Work Platform (LCV and HCV) or Heavy Commercial Vehicle are separated with all other assets deemed to be a Miscellaneous Plant and defined as "Other".<br><br>Transactions with a valid purchase order number |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Heavy commercial vehicle | | | | Asset Categories Elevated Work Platform (LCV and HCV) and Heavy Commercial Vehicle.<br><br>Support costs are excluded. | are treated as actual capital purchase with journals or accruals excluded from the listing. Assets with a Vehicle Class of "Light Commercial" or a Vehicle Model of "Ranger", "Amarok" or "Landcruiser" are deemed to be a Light Commercial Vehicle with all other assets treated as a Car.<br><br>Where it is not feasible to allocate costs to the respective Asset Category, the cost is allocated to Miscellaneous Plant "Other". |
| **Buildings and Property** | | | | | |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Total buildings and property expenditure | Buildings and Property capital expenditure is classified as non-network in TransGrid's regulatory accounting statements. This is reported under the portfolio grouping "Support-Facilities & Depots".<br><br>Amounts are rounded to whole dollars. | TransGrid financial records reported from Ellipse and Business Reporting.<br><br>Information was extracted from the Finance Data Cube based on portfolio grouping "Support-Facilities & Depots". | No | N/A | No assumptions are made<br><br>Building and Property capital expenditure classified as non-network in TransGrid's regulatory accounting statements. This is reported under portfolio grouping "Support-Facilities & Depots".<br><br>Amounts are rounded to whole dollars. |
| **Other** | | | | | |
| Other expenditure<br><br>Miscellaneous Plant | Capex for the 'Miscellaneous Plant' category is classified as non-network in TransGrid's regulatory accounting statements.<br><br>Amounts are rounded to whole dollars. | TransGrid financial records reported from Ellipse and Business Reporting based on portfolio groupings "Support - Plant & Equipment" and "Presc - Other".<br><br>Information was extracted from the Finance Data Cube. | | The capex reported for the 'Miscellaneous Plant' category comprises the sum of the actual capex for the portfolio groupings "Support - Plant & Equipment" and "Presc - Other" sourced from TransGrid's financial records.<br><br>Overheads i.e., support costs are excluded.Classification of items in the "Miscellaneous mobile plant (e.g. | N/A<br><br>Classification of assets in the "Miscellaneous mobile plant (e.g. Mowers, Excavators, Forklifts)" sub-category under "Other Capex" is based on assessment of |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | Mowers, Excavators, Forklifts)" sub-category under "Other Capex" is based on assessment by the Fleet team using the methodology described in "Motor Vehicles - CAPEX" section. | the "Support-Motor Vehicles" portfolio grouping, and captures those assets that are not allocated to the "Motor Vehicles" category in RIN 2.6.<br><br>Classification of motor vehicles as "Other expenditure" are based on assessment by Fleet team using methodology described in "Motor Vehicles - CAPEX" section above. |
| Other expenditure<br><br>Miscellaneous mobile plant items (e.g Mowers, | Capex for the 'Miscellaneous Mobile Plant (e.g. Mowers, Excavators, Forklifts)' is classified as non-network in TransGrid's regulatory accounting statements.<br><br>Amounts are rounded to whole dollars. | TransGrid financial records reported from Ellipse and Business Reporting based on portfolio grouping "Support - Motor Vehicles".<br><br>Information was extracted from the Finance Data Cube. | No | Classification of Capex in the 'Miscellaneous mobile plant (e.g. Mowers, Excavators, Forklifts)' category is based on assessment of the "Support-Motor Vehicles" portfolio grouping, and captures those Capex items that are not allocated to the "Motor Vehicles" category. | |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Excavators and Forklifts) | | | | Support costs are excluded. | |
| **2.6.2 ANNUAL DESCRIPTOR METRICS - IT & COMMUNICATIONS EXPENDITURE** | | | | | |
| **IT & COMMUNICATIONS** | | | | | |
| Employee Numbers | Employees engaged in prescribed Transmission services work | Ellipse ERP system | No | Sum of Employee's FTE excluding those who have the AER Category 'Not included in submission' recorded on their position. | The value is estimated as the actual allocations of staff between prescribed and non-prescribed is variable. Headcount is not appropriate as part time employees can not be directly compared across organisations. |
| User Numbers | Personnel with access to TransGrid IT Services engaged in prescribed Transmission services work | Identity Access Management - Active Directory | No | Users includes active Permanent and Contractor (Labour Hire and Procured Services) accounts and is reduced to exclude non-prescribed users. | The value is estimated as the actual allocations of staff between prescribed and non-prescribed is variable. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Number of devices | An automated report is available in the TransGrid Configuration Management Database located within ServiceNow | TransGrid Configuration Management Database - ServiceNow | No | Only deployed devices are counted for prescribed staff. | Data is sourced from a live database and is updated through manual and automated methods. |
| **2.6.3 ANNUAL DESCRIPTOR METRICS - MOTOR VEHICLES** | | | | | |
| Asset Category<br><br>(Motor Vehicles) | Standalone Elevated Work Platforms are defined as Elevated Work Platform (LCV), whereas elevated work platforms mounted to a truck are defined as an Elevated Work Platform (HCV)<br>Mobile plant items such as trailers, excavators, mowers, tractors, forklifts etc. are defined as "Other" and are shown separately.<br><br>**Average kilometres travelled**<br>Average Kilometres travelled by vehicle type<br><br>**Number purchased**<br>Total number of vehicles purchased<br><br>**Number leased**<br>Total number of vehicles leased N<br><br>**Number in fleet**<br>Total number of vehicles in the fleet by vehicle type<br><br>**Proportion of total fleet expenditure allocated as regulatory expenditure**<br><br>Proportion of the fleet (by vehicle type) that are allocated to regulatory expenditure | SG Fleet Database | No | Data was obtained from the SG Fleet database for active vehicles as at 30/06/20.<br><br>**Average kilometres travelled**<br><br>Average kilometres for vehicle types from SG Fleet Database during FY20.<br><br>**Number purchased**<br><br>Number of vehicle purchases by vehicle type recorded in SG Fleet Database.<br><br>**Number in fleet**<br><br>Total vehicles by vehicle type recorded in SG Fleet Database and active as at the 30th June 2020.<br><br>**Proportion of total fleet expenditure allocated as regulatory expenditure**<br><br>100% cost allocation has been assumed on the basis that 100% | Includes replaced vehicles that were active or on short term loan.<br><br>Mobile plant items such as trailers, excavators, mowers, tractors, forklifts etc. plus lifting appliances (cranes and hoists) and other vehicle mounted plant items are defined as "Other" and are have been excluded from all metrics. Capital and Operating costs for "Other" items have been provided as a separate line item.<br><br>100% Private Use Contract Officer vehicles are excluded from all data as these are unregulated assets. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | Private Use vehicles have been excluded (Non Regulated Assets) | **Average kilometres travelled**<br><br>Annual kilometres are based on vehicles fitted with an odometer.<br><br>100% Private Use Novated lease vehicles are excluded.<br><br>Plant items like EWP's are fitted with an Hour meter not an odometer, so we have used Hours not Kms for usage.<br><br>**Number purchased**<br><br>100% Private Use Novated lease vehicles are excluded.<br><br>Assets that have had their useable life extended due to a refurbishment are not shown as new vehicle purchase although a capital cost has been included for this asset type (Elevated Work Platform - LCV and HCV, Heavy Commercial Vehicle) |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | | **Number in fleet**<br><br>100% Private Use Novated Lease vehicles are excluded.<br><br>Vehicles that have been removed from the TransGrid Fleet and sent for sale have been included in the numbers as they are still active in the Fleet database.<br><br>**Proportion of total fleet expenditure allocated as regulatory expenditure**<br><br>100% Private Use Novated Lease vehicles are excluded.<br><br>As there is no means of determining the type of work performed whilst using a motor vehicle and that as the majority of the work performed is prescribed, the assumption was made that all vehicle usage is related to prescribed work. |

### 7.3.6 Worksheet 2.7 Vegetation Management

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| **2.7.1 DESCRIPTOR METRICS BY ZONE** | | | | | |
| Zones | | | | | |
| Route line length within zone | Where there is a double circuit or split phase line, that section of the route line length counted once. | Span length data sourced from TransGrid's spatial system (TSS). | No | Report generated from TSS listing the span lengths for all circuits.<br><br>Route length for dual circuit spans taken as the average length of both spans and then added to the route length for single circuit spans. | Only a single vegetation zone used as TransGrid's network is not subject to different systems or regulations for different areas of the state. No underground cable route length included.<br><br>TSS report data provided by TransGrid's spatial team. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Number of maintenance spans | Where the vegetation maintenance contractor has claimed and paid for maintenance work in a span, or where self-performed work undertaken during the financial year, it is counted as a maintenance span. Only maintenance items under the schedule rates are included: items 1A-1E, 3A-3F, all of items 4, 5, all of items 6, all of items 7 and 11A, 11B and 12. | The list of maintenance spans sourced from the invoice input spreadsheet that the vegetation maintenance contractor submits as part of their invoice documentation each month.<br><br>Any self-performed work by TransGrid's easements staff, where vegetation maintenance activities carried out, is also logged on Ellipse work orders and/or in diary entries. | No | A list created of all the maintenance spans noted on the invoice input spreadsheets where the vegetation maintenance contractor has claimed against the contract schedule of rates for work carried out.<br><br>Where TransGrid's easements staff have pruned, removed, mulched or sprayed vegetation is recorded on the associated Ellipse work order and/or in their diaries. These spans included in the overall list of maintenance spans for the financial year.<br><br>The overall list of maintenance spans is then analysed to ensure that a span counted once when | N/A<br><br>A report on the vegetation maintenance contract can provide a list of all the invoices paid during the financial year, and then reconciled against the list of invoices used to generate the RIN data. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | generating the final count of maintenance spans. | |
| Total length of maintenance spans | Only the total length of the spans counted as maintenance spans included. | Span lengths sourced from TransGrid's spatial system (TSS).<br><br>The list of maintenance spans sourced from the | No | A list created of all the maintenance spans noted on the invoice input spreadsheets where the vegetation maintenance contractor has claimed | The whole span length counted for each maintenance span. TransGrid does not directly record the length of the area(s) maintained in each span.<br><br>TSS report data provided by TransGrid's spatial team. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | invoice input spreadsheet that the vegetation maintenance contractor submits as part of their invoice documentation each month.<br><br>Any self-performed work by TransGrid's easements staff, where vegetation maintenance activities carried out, is also logged on Ellipse work orders and/or in diary entries. | | against the contract schedule of rates for work carried out.<br><br>Where TransGrid's easements staff have pruned, removed, mulched or sprayed vegetation is recorded on the associated Ellipse work order and/or in their diaries. These spans included in the overall list of maintenance spans for the financial year.<br><br>The overall list of maintenance spans is then analysed to ensure that a span counted once when adding the span lengths together. | |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Average number of trees per maintenance span | An average number of trees per maintenance span is the number of trees maintained in that span, as trees not maintained is not counted. | Tree count estimates recorded on the work plans during the scoping phase of work. After the completion of works, the tree count estimates verified, and required changes made.<br><br>The data source is from the invoice input spreadsheet that the vegetation maintenance contractor submits as part of their invoice documentation each month. These invoice input spreadsheets contain the tree counts noted on the work plans.<br><br>Where TransGrid's easement staff have maintained vegetation, it is recorded and included in the tree counts. The basis for the internal counts is | Yes | TransGrid's easements staff or the vegetation maintenance contractor scopes vegetation works. When scoping vegetation works, the scoper gauges the number of trees requires pruning, removal, mulching and spraying. The scoper estimates based on selecting an indicative square metre area that best represents the average vegetation cover within the span and then counting the number of trees within the area chosen. The number of trees then multiplied by the total number of square metres maintained to obtain the total number of trees to be managed in the span. When a small number of trees are maintained, the individual | The nature of vegetation maintenance makes providing actual tree counts not practical, areas of dense vegetation maintained can amount to thousands of trees per span.<br><br>A report on the vegetation maintenance contract can provide a list of all the invoices paid during the financial year, and this can be reconciled against the list of invoices used to generate the RIN data. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | based on records made on Ellipse work orders and/or in diary entries. | | trees get counted. It is then recorded on a span by span basis and noted on the work plan used by the contractor to perform the maintenance activity. Before the contractor can formally submit an invoice a draft copy of the invoice input spreadsheet must be reviewed and approved by the relevant TransGrid's easements works or program lead. This invoice input spreadsheet includes the agreed tree counts. After approval, an invoice submitted by the contractor along with any supporting documentation required to a central contract coordinator within the TransGrid's procurement team. When the invoice gets loaded into TransGrid's corporate | |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | systems, a notification issued to TransGrid's Easements Manager for approval. | |
| Length of vegetation corridors | The length of land upon which vegetation is maintained not including grassland/farmland and gullies where vegetation is not maintained. | TransGrid Spatial System (TSS).<br><br>Vegetation, ground and conductor survey data identified from Aerial Laser Surveys LiDAR. | Yes | This data is loaded against TransGrid's easements in the TSS GIS application and the total length is calculated.<br><br>Vegetation can exist in gullies without encroaching clearances so where a gully exists (from LPI data) in a span then the whole span is excluded from the vegetated length (unable to determine where vegetation maintenance zone ends). This would somewhat offset the lengths of vegetated | TransGrid does not currently directly record vegetation types on easements or spans where no vegetation management is required. Vegetation that will not encroach clearances is unable to be excluded. As estimate is therefore provided based on LIDAR and NSW LPI data.<br><br>It is assumed that a Gully is an area where the span length is larger than 300m and the approximate ground height is lower than approximate conductor sag + 10m.<br><br>It is assumed that a "vegetated zone" is any area which has at least 1 vegetation survey point within 1m2 |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | corridors with low growing vegetation that does not require maintenance. | |
| Average width of vegetation corridors | The average width of land along which vegetation is maintained. | TransGrid Spatial System (TSS). | Yes | The average width of vegetation corridors is calculated as the total area of TransGrid's standard easement widths for each voltage level divided by the route line length for the vegetated areas above. | TransGrid does not directly record vegetation corridor widths for every section of lines.<br><br>It is assumed that combined easements which occur generally in the vicinity of substations does not materially affect the average width of vegetation corridors and has not been considered in the calculation. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Average frequency of cutting cycle | The straight average of the vegetation maintenance period for each transmission line for the appropriate year. | Easement Maintenance Plan contains the maintenance frequency tables. | Yes | The vegetation maintenance cycle in years (noted on a line by line basis) was taken from the Maintenance Plan and a weighted average (number of spans based) was calculated. | TransGrid does not currently directly record spans where no vegetation management is required. Scheduled maintenance occurs for lines or line section level, however, this parameter would also need to consider non-routine (defect) works. This makes providing an actuals average frequency down to the span level onerous. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| **2.7.2 EXPENDITURE METRICS BY ZONE** | | | | | |
| Tree Trimming | Expenditure that occurs in the management of individual trees. | TransGrid's Regulatory Accounts 'Land & Easement Maintenance'<br><br>Ellipse Financial Data<br><br>Ellipse Work Order Data<br><br>Ellipse Standard Job Data<br><br>Easement Contractor Invoices<br><br>The data used to disaggregate the total is sourced from Materials and expenses recorded against vegetation management work orders in Ellipse. | Yes | The vegetation maintenance contractors prepare an invoice input spreadsheet as part of their invoices submitted for vegetation maintenance. The schedule of rates within these invoices are then used to calculate the split between Tree trimming and Vegetation corridor clearance for all vegetation management expenses recorded in the TransGrid Ellipse system. The schedule of rates reflect the underlying activities performed by the contractors - work carried out on individual trees (generally hand clearing) or on an area of trees (generally machine clearing). This tree trimming / corridor ratio is | The total 'Land and Easements' category reported in the Regulatory Accounts needs to be split to complete the RIN template. It has been disaggregated based on analysis of the work orders. The total Routine and Non-Routine Materials and Expense for easement maintenance work is the Contractor costs for managing easement vegetation. Standard Jobs on the work order have been used to identify the categorisation (inspection, other or maintenance (both tree trimming and vegetation corridor clearance)). There is no element to further separate tree trimming and corridor clearance. A maintenance work order can cover multiple spans which have both trimming and corridor clearance requirements. This parameter is therefore an estimate.<br><br>Where the TransGrid line inspector has identified and consequently trimmed/removed one or more trees during a line inspection (internal works), it is not a significant tree trimming cost.<br><br>The proportion of work classified as tree trimming is 2.67 times that of the vegetation corridor clearance based on the proportion of the split of dollars per the underlying activities performed by the contractors. This was used to appropriately split the costs from the Regulatory Accounts and Ellipse. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | applied to the maintenance total spend to report the RIN tree trimming parameter. | |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Vegetation Corridor Clearance | Expenditure that occurs in the management of areas of the easement other than individual trees. | TransGrid's Regulatory Accounts 'Land & Easement Maintenance'<br><br>Ellipse Financial Data<br><br>Ellipse Work Order Data<br><br>Ellipse Standard Job Data<br><br>Easement Contractor Invoices<br><br>The data used to disaggregate the total is sourced from Materials and expenses recorded against vegetation management work orders in Ellipse. | Yes | The vegetation maintenance contractors prepare an invoice input spreadsheet as part of their invoices submitted for vegetation maintenance. The schedule of rates within these invoices are then used to calculate the split between Tree trimming and Vegetation corridor clearance for all vegetation management expenses recorded in the TransGrid Ellipse system. The schedule of rates reflect the underlying activities performed by the contractors - work carried out on individual trees (generally hand clearing) or on an area of trees (generally machine clearing). This tree trimming / corridor ratio is applied to the maintenance | The total 'Land and Easements' category reported in the Regulatory Accounts needs to be split to complete the RIN template. It has been disaggregated based on analysis of the work orders. The total Routine and Non-Routine Materials and Expense for easement maintenance work is the Contractor costs for managing easement vegetation. Standard Jobs on the work order have been used to identify the categorisation (inspection, other or maintenance (both tree trimming and vegetation corridor clearance)). There is no element to further separate tree trimming and corridor clearance. A maintenance work order can cover multiple spans which have both trimming and corridor clearance requirements. This parameter is therefore an estimate.<br><br>Where the TransGrid line inspector has identified and consequently trimmed/removed one or more trees during a line inspection (internal works), it is not a significant tree trimming cost.<br><br>The proportion of work classified as tree trimming is 2.67 times that of the vegetation corridor clearance based on the proportion of the split of dollars per the underlying activities |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | total spend to report the RIN tree vegetation corridor clearance parameter. | performed by the contractors. This was used to appropriately split the costs from the Regulatory Accounts and Ellipse. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Inspection | Expenditure solely for the inspections for vegetation management. | TransGrid's Regulatory Accounts 'Land & Easement Maintenance'<br><br>Ellipse Financial Data<br><br>Ellipse Work Order Data<br><br>Ellipse Standard Job Data | No | All costs recorded against vegetation inspection work orders. | These inspection jobs include a small portion of contractor liaison costs as some inspection jobs are completed in conjunction with the contractor. |
| Audit | Expenditure solely for the purpose of auditing | TransGrid does not record the proportion of its costs on Audit separately from the Contractor liaison expenditure | N/A | Auditing on contractor work occurs at the same time as supervision of the contractor on site. TransGrid does not record expenditure on audits of vegetation separately so the costs are unable to be split. Costs will be included in contractor liaison expenditure. | N/A |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Contractor Liaison Expenditure | Expenditure that occurred during the management of external contractors for vegetation management | TransGrid's Regulatory Accounts 'Land & Easement Maintenance'<br><br>Ellipse Financial Data<br><br>Ellipse Work Order Data<br><br>Ellipse Standard Job Data<br><br>The data used to disaggregate the total is sourced from Labour recorded against vegetation management work orders in Ellipse. | Yes | This value is any labour and expenditure costs recorded by TransGrid staff against vegetation maintenance work orders. | This parameter is an estimate as it includes costs of auditing contractor work, which occurs at the same time as the supervision of the contractor on site. TransGrid does not record expenditure on audits of vegetation separately so the costs are unable to be split.<br><br>This does not include any contractor liaison costs incurred during inspection work. |
| Other vegetation management expenditure | Other vegetation management expenditure which has not been captured by the previous fields, for example, Aerial Laser Survey costs for the TransGrid network. | TransGrid's Regulatory Accounts 'Land & Easement Maintenance' and Ellipse reports. Costs recorded against Aerial Laser Survey work orders. | No | Any labour and expenditure costs recorded by TransGrid staff against aerial laser survey work orders. | All vegetation maintenance expenditure outside the Routine LiDAR scanning has been captured in the other fields. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Other vegetation management expenditure<br><br>Zone 2 | All 2019/20 bushfire easements inspections and vegetation maintenance is captured here. | ZONE 2 are the costs for the 2019/20 bushfires easement inspection, vegetation maintenance and NSW RFS liaison identified by Business Segment. Number of trees and maintenance spans are not available for Zone 2 works. These are work orders associated with a parent work order/ project number associated with the 2019/20 bushfires with 'easements" asset type. | No | Any labour and expenditure costs recorded by TransGrid staff against work orders with 'easements" asset type that also have a parent work order/ project number associated with the 2019/20 bushfires. | All easement inspection and any required vegetation maintenance is all captured here. Data is not available to split inspection and maintenance costs.. |
| **2.7.3 - DESCRIPTOR METRICS ACROSS ALL ZONES - UNPLANNED VEGETATION EVENTS** | | | | | |
| Number of fire starts caused by vegetation grow-ins (NSP responsibility) | Fires caused by electrical faults due to growth of vegetation within TransGrid's vegetation management corridor. | THEOS - TransGrid's Outage Management System. | No | Every fault of the TransGrid's transmission line is investigated and reported on.<br><br>All outages recorded against category "TREE", "Fire" or "Bushfire" in THEOS have been extracted. From follow up | No assumptions are necessary as each fault was investigated.<br><br>One of the two incidents occurred during a planned outage. Had that planned outage not been in place an unplanned outage would have resulted. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | reports it is identified whether the fault was due to grow-in, fall-in or blow-in. All TransGrid line outages were reviewed to check for misallocation of outage reason. | |
| Number of fire starts caused by vegetation blow-ins and fall-ins (NSP responsibility) | Fires caused by electrical faults due to vegetation within TransGrid's vegetation management corridor falling or blowing into the transmission line. | THEOS - TransGrid's Outage Management System. | No | Every fault of the TransGrid's transmission line is investigated and reported on.<br><br>All outages recorded against category "TREE", "Fire" or "Bushfire" in THEOS have been extracted. From follow up reports it is identified whether the fault was due to grow-in, fall-in or blow-in. All TransGrid line outages were reviewed to | No assumptions are necessary as each fault was investigated.<br><br>One of the two incidents occurred during a planned outage. Had that planned outage not been in place an unplanned outage would have resulted. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | check for misallocation of outage reason. | |
| Number of outages caused by vegetation grow-ins (NSP responsibility) | Outages caused by electrical faults due to growth of vegetation within TransGrid's vegetation management corridor. | THEOS - TransGrid's Outage Management System. | No | Every fault of the TransGrid's transmission line is investigated and reported on.<br><br>All outages recorded against category "TREE", "Fire" or "Bushfire" in THEOS have been extracted. From follow up reports it is identified whether the fault was due to grow-in, fall-in or blow-in. All TransGrid line outages were reviewed to check for misallocation of outage reason. | No assumptions are necessary as each fault was investigated.<br><br>One of the two incidents occurred during a planned outage. Had that planned outage not been in place an unplanned outage would have resulted. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Number of outages caused by vegetation blow-ins and fall-ins (NSP responsibility) | Outages caused by electrical faults due to vegetation within TransGrid's vegetation management corridor falling or blowing into the transmission line. | THEOS - TransGrid's Outage Management System. | No | Every fault of the TransGrid's transmission line is investigated and reported on.<br><br>All outages recorded against category "TREE", "Fire" or "Bushfire" in THEOS have been extracted. From follow up reports it is identified whether the fault was due to grow-in, fall-in or blow-in. All TransGrid line outages were reviewed to check for misallocation of outage reason. | No assumptions are necessary as each fault was investigated.<br><br>One of the two incidents occurred during a planned outage. Had that planned outage not been in place an unplanned outage would have resulted. |
| Number of fire starts caused by vegetation grow-ins (other party responsibility) | Fires caused by electrical faults due to growth of vegetation outside of TransGrid's vegetation management corridor. | THEOS - TransGrid's Outage Management System. | No | Every fault of the TransGrid's transmission line is investigated and reported on.<br><br>All outages recorded against category "TREE", | No assumptions are necessary as each fault was investigated.<br><br>One of the two incidents occurred during a planned outage. Had that planned outage not been in place an unplanned outage would have resulted. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | "Fire" or "Bushfire" in THEOS have been extracted. From follow up reports it is identified whether the fault was due to grow-in, fall-in or blow-in. All TransGrid line outages were reviewed to check for misallocation of outage reason. | |
| Number of fire starts caused by vegetation blow-ins and fall-ins (other party responsibility) | Fires caused by electrical faults due to vegetation outside of TransGrid's vegetation management corridor falling or blowing into the transmission line. | THEOS - TransGrid's Outage Management System. | No | Every fault of the TransGrid's transmission line is investigated and reported on.<br><br>All outages recorded against category "TREE", "Fire" or "Bushfire" in THEOS have been extracted. From follow up reports it is identified whether the fault was due to grow-in, fall-in or blow-in. All TransGrid line | No assumptions are necessary as each fault was investigated.<br><br>One of the two incidents occurred during a planned outage. Had that planned outage not been in place an unplanned outage would have resulted. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | outages were reviewed to check for misallocation of outage reason. | |
| Number of outages caused by vegetation grow-ins (other party responsibility) | Outages caused by electrical faults due to growth of vegetation outside of TransGrid's vegetation management corridor. | THEOS - TransGrid's Outage Management System. | No | Every fault of the TransGrid's transmission line is investigated and reported on.<br><br>All outages recorded against category "TREE", "Fire" or "Bushfire" in THEOS have been extracted. From follow up reports it is identified whether the fault was due to grow-in, fall-in or blow-in. All TransGrid line outages were reviewed to check for misallocation of outage reason. | No assumptions are necessary as each fault was investigated.<br><br>One of the two incidents occurred during a planned outage. Had that planned outage not been in place an unplanned outage would have resulted. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Number of outages caused by vegetation blow-ins and fall-ins (other party responsibility) | Outages caused by electrical faults due to vegetation outside of TransGrid's vegetation management corridor falling or blowing into the transmission line. | THEOS - TransGrid's Outage Management System. | No | Every fault of the TransGrid's transmission line is investigated and reported on.<br><br>All outages recorded against category "TREE", "Fire" or "Bushfire" in THEOS have been extracted. From follow up reports it is identified whether the fault was due to grow-in, fall-in or blow-in. All TransGrid line outages were reviewed to check for misallocation of outage reason. | No assumptions are necessary as each fault was investigated.<br><br>One of the two incidents occurred during a planned outage. Had that planned outage not been in place an unplanned outage would have resulted. |

### 7.3.7 Worksheet 2.8 Maintenance

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| **2.8.1 DESCRIPTOR METRICS FOR ROUTINE & NON-ROUTINE MAINTENANCE** | | | | | |
| **TRANSMISSION LINES MAINTENANCE** | | | | | |
| Transmission Towers Asset Quantity at year end 2019-20 | The number of transmission structures (including steel towers, wood poles, concrete poles and steel poles) on TransGrid's network. | Power BI report | No | Structure counts were totalled from the Power BI report | There are no support structures on TransGrid's network that are recorded or maintained separately to the structures. |
| Transmission Towers Asset Quantity Inspected /Maintained 2019-20 | The number of transmission structures (including steel towers, wood poles, concrete poles and steel poles) inspected / maintained on TransGrid's network. | Asset Inspection Manager (AIM) Extract for TransGrid performed inspections, Report from service provider for other inspections. | No | A count of unique records for each source is obtained. Corrections are made for structures inspected by both parties and non-prescribed structures. | TransGrid conducts aerial inspections of every structure annually.<br><br>For the purpose of this RIN, structure inspections are only counted for ground, climbing or underground wood pole structure inspections.<br><br>Inspections and maintenance conducted as part of the 2019/20 bushfire response have not been included in these counts. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Transmission Towers Average Age of Asset Group 2019-20 | The average age of transmission structures on TransGrid's network. | Power BI report | Yes | The age of each structure is calculated, then the sum of these is divided by the number of structures. | The age of structures noted in Ellipse is based on a previous review of various sources (such as Line schedules, Line Data Cards, Electrical Databook, Easement Plan registered dates). On some lines (generally older), construction data was not well recorded and best guess was used based on available previously mentioned documents.<br><br>Generally, maintenance replacements of a wood pole in a two pole structure are not included in the age of the structure. Where a new structure is known to have been installed, it is included.<br><br>Dates are stored on a calendar year basis, not financial year. For the purposes of this RIN it was assumed build year was equal to the commissioning financial year.<br><br>. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Transmission Towers Inspection Cycle | The average frequency of inspection on transmission structures in TransGrid's network. | The Transmission Line Maintenance Plan contains the inspection frequency tables for transmission line structures. | No | The inspection cycle in years was listed for each circuit, then the average of the ground inspection was taken.<br><br>This is a weighted average based on the number of structures. | It is assumed that cycle of climbing inspection was the AER's required parameter. These inspections capture condition data and on a per structure basis the more costly compared to aerial inspections.<br><br>TransGrid conducts aerial inspections of every structure annually. The aerial inspections are not incorporated in the calculation of this RIN parameter. |
| Transmission Towers Maintenance Cycle | The average frequency of maintenance on transmission structures in TransGrid's network. | The Transmission Line Maintenance Plan contains the maintenance frequency tables for transmission line structures and conductors. | Yes | The Maintenance cycle in years was listed for each line section, and then a weighted average (based on structure quantity) was calculated.<br><br>Lines which are inspection only (eg, steel/concrete poles structures, non-grillage towers) do not contribute to the average maintenance cycle calculation. | Where line is mixed construction insufficient detail was available to appropriately weight calculation. It was assumed a maintenance was performed on every structure of that line section.<br><br>Only routine maintenance is considered (inspection ignored). For Transmission Lines there are only routine maintenance conducted on: |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | | • Wood Poles (Underground Inspection and maintenance)<br>• Steel Towers with grillage foundations |
| Transmission towers support structures Asset Quantity at year end 2019-20 | The number of transmission structures (including steel towers, wood poles, concrete poles and steel poles) on TransGrid's network.<br><br>The number of transmission support structures on TransGrid's network. | N/A - Parameter not provided | No | Parameter not provided. | N/A |
| Transmission towers support structures Asset Quantity Inspected /Maintained 2019-20 | The number of transmission towers support structures (eg crossarms or insulator sets) inspected / maintained on TransGrid's network. | N/A - Parameter not provided | N/A | Parameter not provided. | There are no support structures on TransGrid's network that are recorded or maintained separately to the structures. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Transmission towers support structures Average Age of Asset Group 2019-20 | The average age of transmission tower support structures on TransGrid's network. | N/A - Parameter not provided | N/A | Parameter not provided. | There are no support structures on TransGrid's network that are recorded or maintained separately to the structures. |
| Transmission towers support structures Inspection Cycle | The average frequency of inspection on transmission structures in TransGrid's network. | N/A - Parameter not provided | N/A | Parameter not provided. | There are no support structures on TransGrid's network that are recorded or maintained separately to the structures. |
| Transmission towers support structures Maintenance Cycle | The average frequency of maintenance on transmission tower support structures in TransGrid's network. | N/A - Parameter not provided | N/A | Parameter not provided. | There are no support structures on TransGrid's network that are recorded or maintained separately to the structures. |
| Conductors Asset Quantity at year end 2019-20 | The route length of conductors on TransGrid's transmission network. | Power BI report. PowerBI gets its length details from TSS. | No | Span lengths for all circuits were extracted from PowerBI. Route length was averaged from the two spans attached to dual circuit structures and added to single circuit spans. | N/A |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Conductors Asset Quantity Inspected /Maintained 2019-20 | The route length of conductors inspected on TransGrid's transmission network. | List of completed thermovision work orders from PowerBI Report (Asset Management Works Program). PowerBI extracts this information from Ellipse. | No | Where a work order existed for a thermovision inspection the length of this line (from PowerBI report) was included in the conductor inspected count.<br><br>2019/20 bushfire response conductor inspections and replacements have not been included here. | TransGrid conducts aerial inspections of every structure annually.<br><br>For the purpose of this RIN conductor inspections are only counted if the line was subject to a thermovision inspection. |
| Conductors Average Age of Asset Group 2019-20 | The average age of conductors on TransGrid's transmission network. | Power BI report | Yes | For conductors and cables, the average age is calculated on a per kilometre basis. | On some lines (generally older), construction data was not well recorded and best guess was used based on available previously mentioned documents.<br><br>For cables and conductors, average age per kilometre is assumed as the requested value by the AER.<br><br>Dates are stored on a calendar year basis, not financial year. For the purposes of this RIN it was assumed |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | | build year was equal to the commissioning financial year.<br><br>The age of conductors is based on a previous review of various sources (such as Line schedules, Line Data Cards, Electrical Databook, Easement Plan registed dates). |
| Conductors Inspection Cycle | The average frequency of inspection on conductors in TransGrid's network. Only specific conductor inspections included | The Transmission Line Maintenance Plan contains the inspection frequency tables for conductors. | Yes | The inspection cycle in years was listed for each circuit, then the average was taken.<br><br>This is a weighted average based on the number of structures. | This value was an estimate as the calculation is weighted on a span count, not by conductor length (not consistent with Asset Quantity).<br><br>TransGrid conducts aerial inspections of every structure annually.<br><br>Only conductor specific routine inspections are considered, such as thermovision inspections. Defect |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | | (non-routine) inspections are not included. |
| Conductors Maintenance Cycle | The average frequency of maintenance on conductors in TransGrid's network. | The Transmission Line Maintenance Plan contains the maintenance frequency tables for transmission line structures and conductors. | No | There is no maintenance activity carried out on transmission line conductors. | Only routine maintenance is considered (defect, or condition based excluded). Value reported therefore zero. |
| Transmission Cables Asset Quantity at year end 2019-20 | The route length of transmission cables on TransGrid's network based on operating voltage. | Electrical Data Book (HV Cables).<br>Survey (Cable 39)<br>Drawings (132kV HV Cables within substations). | Yes | Each cable circuit installation was listed in a spreadsheet along with its length. The total route length was then calculated. | 132 kV underground cables within substations are estimated off substation layout drawings. Accurate length of circuit is not available (hence estimated information).<br><br>The Electrical Data Book is used for lengths of 330 kV cables.<br><br>Note that Cables 43/44 share the same route, so the length has only been included once. When this |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | | assets were first commissioned and reported in 2015FY RIN 2.3 AUGEX it was classified as a dual circuit underground cable. It is therefore assumed that the AER requires this method of reporting. The same approach mas made for the Cable 39 (two cables per phase)<br><br>Note that in the 5.3 age profile Cable 43 and 44 are counted as separate circuits (so there will not be alignment with this RIN schedule.<br><br>Cable 9S4 shares its route with a section of Cable 42. It was installed separately and is a discrete circuit and was included in a previous RIN in section 2.3 AUGEX. Its route has been included here. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Transmission Cables Asset Quantity Inspected /Maintained 2019-20 | The route length inspected / maintained of transmission cables on TransGrid's network. | Cable data summary spreadsheet (data from various sources, refer EB RIN 3.5 Physical Assets) | No | 100% of the underground cable network is inspected yearly, so the quantity inspected is equivalent to the total amount of UG cable assets. However one cable was commissioned in April 2019. It is inspected on a 3 monthly basis, so was not inspected in 2019FY. | N/A |
| Transmission Cables Average Age of Asset Group 2019-20 | The average age of transmission cables on TransGrid's network. This is a weighted average based on circuit length | Electrical Databook (HV Cables).<br><br>Drawings (132kV HV Cables within substations). | No | Each cable circuit installation was listed in a spreadsheet along with its length and commissioning year.<br><br>The average age is calculated on a per kilometre basis. | Route length weighted average age is assumed as the requested value by the AER.<br><br>Date commissioned is stored as calendar year. Birthday assumed 1st Jan. Average age is at June 30. |
| Transmission Cables Inspection Cycle | The average frequency of inspection on cables in TransGrid's network on a length based weighted average. | The Underground Cable Assets Maintenance Plan contains the inspection frequency tables for cables and associated infrastructure | No | For underground cables the whole route inspection for each cable was listed. Inspection cycle was given as a weighted sum of the circuit length. | Cables – Inspection was assumed as the whole route patrol.<br><br>Cable 43/44, which shares the same route is only counted once in the weighted sum. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Transmission Cables Maintenance Cycle | The average frequency of maintenance on cables in TransGrid's network on a length based weighted average. | The Underground Cable Assets Maintenance Plan contains the maintenance frequency tables for cables and associated infrastructure. | Yes | For cable maintenance the most expensive maintenance (on an annual basis) type for each circuit was used.<br><br>Maintenance cycle was given as a weighted sum of the circuit length. | Only routine maintenance is considered (hence estimate).<br><br>There are several different cable maintenance tasks. Without specific AER direction, the most expensive annualised item was chosen in an attempt to best represent cable maintenance requirements. |
| **SUBSTATIONS EQUIPMENT & PROPERTY MAINTENANCE** | | | | | |
| Substation switchbays (incl Reactive Plant) Asset Quantity at year end 2019-20 | Total number of in-service switchbays within TransGrid's substation TransGrid has interpreted this data requirement to be similar to that used for RIN 5.2 – ie: as a requirement to identify the population age profile of the switchbays installed as at the end of the financial year. | Switchbay list from "Asset Management Substations" PowerBI report | No | Sum of all in-service Ellipse bays shown as in service as at the end of the specified financial year. Parent bays are excluded. | The following switchbays are excluded :<br>• Switchbays in negotiated (third party) substations (or part of the substation);<br>• spare switchbays<br>• out of service switchbays |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Substation switchbays (incl Reactive Plant) Asset Quantity Inspected/Maintained 2019-20 | Total number of switchbays (excluding transformer bays) maintained routinely in the last financial year | Power BI report extracting all work orders closed in relevant FY, | No | Sum of all switchbays which have been included in the list produced above and have routine maintenance work orders completed (closed) in the last financial year. Inspection work orders are excluded. | Only work orders that are related to major plant in substations (Busbar, Capacitor Bank, Circuit Breaker, Current Transformer, Isolator (Disconnector), Reactor, SVC and Voltage Transformer) which are classified as routine maintenance are used |
| Substation switchbays (incl Reactive Plant) Average age of asset group 2019-20 | Average age of asset group 2019-20 | 1. Switchbay list from Power BI via the report "Equipment Data Quality" sub report "Substations under Management"<br><br>2. Extracted high voltage equipment fitment tracing information from Ellipse 5<br><br>3. Appendix B - Schedule of Substations and Switching Stations in TransGrid Network Management Plan 2013-2018 | No | Sum of total in service years of all switchbays divided by total number of switchbays which are commissioned prior to the end of the specified financial year | Assumptions:<br><br>1. Commissioning dates for all Switchbays recorded in Ellipse are accurate, except with the below exceptions:<br><br>2. If HV assets have been replaced in the Switchbay, it does not change the actual age of the Switchbay.<br><br>3. There is a data error for Switchbays with a first tracing date of 1st of Jan 1994. This have been corrected to the commission year of the substation, based on Appendix B - Schedule of Substations and Switching Stations in TransGrid's |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | | Network Management Plan 2013-2018.<br><br>4. Also, when the corporate ERM was upgraded from Ellipse 5 to Ellipse 8 some tracing information was lost due to a data error. Where there is a difference between first tracing date between the Ellipse 8 (current) and Ellipse<br><br>5. Ellipse 5 tracing date has been used as this is assumed to reflect the true age of Switchbay. |
| Substation switchbays (incl Reactive Plant) Inspection Cycle | Average number of inspections per year per switchbay. | Corporate document - D2003/2312 Maintenance Plan - Substations Assets | No | Standard inspection interval of 6 months taken from the Substation Maintenance Plan. | NA |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Substation switchbays (incl Reactive Plant) Maintenance Cycle | Average frequency of routine maintenance of any high voltage asset within all valid switchbays included in FY19/20 | 1. MAINTENANCE PLAN - SUBSTATION ASSETS Section 8.4 Service Interval for Circuit Breaker & Section 11.6.1 Service Intervals for Instrument Transformers<br><br>2. MST report via Power BI. | No | For each valid switchbay, filter all non high voltage equipment related scheduled maintenance.<br><br>Produce a pivot table to find the shortest maintenance cycle scheduled for each switchbay and calculate the average maintenance frequency for all included switchbays. | Only routine maintenance of high voltage equipment have been accounted for. Secondary system maintenance such as calibration of CVT unbalance relay, VT burden checks, relay maintenance have been excluded.<br><br>All operation based maintenances are excluded from average maintenance frequency calculation. |
| Substation power transformers Asset Quantity at year end 2019-20 | Total number of in-service transformers within TransGrid's substation | 1. Ellipse TRB 601 report;<br>2. The Excel file '2019_Transformer_Worksheet_RIN_2019.xlsm' | No | Sum of all in-service non spare transformers as at the end of the specified financial year. Customer and negotiated transformers are excluded. | As explained in the BoP – Transformer Capacity parts 3.5.1.5 and 3.5.1.6 |
| Substation power transformers Asset Quantity Inspected/Maintained 2019-20 | Total number of transformers maintained routinely in the last financial year | Power BI report to extract the data. | No | Sum of all transformers which have been included in the list produced above and have routine maintenance work orders completed (closed) in the last financial year | Only work orders that are related to power transformers in substations (exclude Auxiliary Transformers) which are classified as routine maintenance are used |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Substation power transformers Average age of asset group 2019-20 | Average age of asset group 2019- 20 | 11. Ellipse TRB 601 report;<br><br>2. The Excel file '2020_Transformer_Worksheet_ RIN_v1.xlsx' | No | '2020_Transformer_Worksheet_RIN_v1.xls x ' used previously for Economic Benchmarking RIN, was reused for Substation Power Transformers. | As explained in the BoP – Transformer Capacity parts 3.5.1.5 and 3.5.1.6 |
| Substation power transformers Inspection Cycle | Average number of inspections per year per transformer. | Corporate document - D2003/2312 Maintenance Plan - Substations Assets | No | Standard inspection interval of 6 months taken from the Substation Maintenance Plan. | NA |
| Substation power transformers Maintenance Cycle | Average frequency of routine maintenance of all transformers (Both in service and cold spare) included in FY19/20 | 1. MAINTENANCE PLAN - SUBSTATION ASSETS Section 10.5.3 Power Transformer, Auxiliary Transformer and Oil Reactor Service Intervals<br><br>2. Maintenance schedules report from Power BI Report | No | Major transformers have either 4 yearly or 6 yearly maintenance<br><br>For each valid transformer, filter major maintenances. Use pivot table to extract maintenance cycle and calculate the average frequency | Only major maintenance of transformers are included in the calculation. The annual operation of on-load tap changers and oil sampling are excluded from maintenance cycles calculation.<br><br>All operation based maintenances are excluded from average maintenance frequency calculation.<br><br>Diverter Switch maintenance is not counted separately as it is aligned with major maintenance. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Substation property Asset Quantity at year end 2019-20 | All prescribed substations under TransGrid's ownership | Power BI report to extract the data. | No | Sum of all in-service prescribed substations as at the end of the specified financial year.<br><br>Future, Out Of Service, and negotiated substations are excluded. | N/A |
| Substation property Asset Quantity Inspected/Maintained 2019-20 | Total number of substations maintained routinely in the last financial year | Power BI report to extract the data. | No | Sum of all substations property which have been included in the list produced above and have routine maintenance work orders completed (closed) in the last financial year | TransGrid notes that for some assets, such as substation property, different types of maintenance are conducted several times per year under different work orders. Where this has occurred, TransGrid only counted the asset as having been maintained once. |
| Substation property Average age of asset group 2019-20 | Average age of asset group for reported FY | Substation list from "Asset Management Substations" PowerBI report | No | Average age of substations | N/A |
| Substation property Inspection Cycle | Average number of inspections per year per site | Corporate document - D2003/2312 Maintenance Plan - Substations Assets | No | Average inspection cycle of all substations | NA |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Substation property Maintenance Cycle | Average frequency of routine maintenance of all substations property and fire systems | MAINTENANCE PLAN – SUBSTATION ASSETS – Section 14.3 Fire Protection Systems and equipment. | No | As per maintenance policy – all substations require quarterly fire system maintenance. Maintenance cycles in years: 0.25 | N/A |
| **SCADA & NETWORK CONTROL MAINTENANCE** | | | | | |
| SCADA & network control maintenance Asset Quantity at year end 2019-20 | The number of Control devices in the Network (RTUs, HMIs, IEDs), Independent of combined devices. | Information is extracted from Ellipse and copied from RIN 5.2 - Age Profile | No | Sum of same classification in RIN 5.2 | N/A |
| SCADA & network control maintenance Asset Quantity Inspected/Maintained 2019-20 | Number of Inspection, Preventative, Corrective, Condition Based maintenance tasks carried out to maintain the operation of the individual assets | Information is extracted from Ellipse and filtered according to correct classification | No | Direct extract from Ellipse system and appropriate filters applied then summation of totals | N/A |
| SCADA & network control maintenance Average age of asset group 2019-20 | Average age based on financial years | Information is extracted from Ellipse and calculated from RIN 5.2 - Age Profile | Yes | Average age of same classification from RIN 5.2 - Age Profile. | Marked estimate due to potentially some assets with unknown commissioning dates being estimated. Refer to RIN 5.2 Age Profile for further information. |
| SCADA & network control maintenance Inspection Cycle | No Inspections | D2014/12155 SSA Plan - Maintenance - Routine and Non- | No | N/A | N/A |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | routine - Substation Automation Systems | | | |
| SCADA & network control maintenance Maintenance Cycle | No preventative maintenance | D2014/12155 SSA Plan - Maintenance - Routine and Non-routine - Substation Automation Systems | No | N/A | N/A |
| **PROTECTION SYSTEMS MAINTENANCE** | | | | | |
| Protection systems maintenance Asset Quantity at year end 2019-20 | The number of main Protection relays in the network | Information is extracted from Ellipse and copied from RIN 5.2 - Age Profile | No | Sum of same classification in RIN 5.2 | Assumed data is correctly entered into TransGrid systems. |
| Protection systems maintenance Asset Quantity Inspected/Maintained 2019-20 | Number of Inspection, Preventative, Corrective, Condition Based maintenance tasks carried out to maintain the operation of the individual assets | Information is extracted from Ellipse and filtered according to correct classification | No | Direct extract from Ellipse system and appropriate filters applied then summation of totals | |
| Protection systems maintenance Average age of asset group 2019-20 | Average age based on financial years | Information is extracted from Ellipse and calculated from RIN 5.2 - Age Profile | No | Average age of same classification from RIN 5.2 - Age Profile | N/A |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Protection systems maintenance Inspection Cycle | Average time in years for a single protection asset to be tested | D2014/12155 SSA Plan - Maintenance - Routine and Non-routine - Substation Automation Systems | No | The relay population broken down by population and asset type was measured against the maintenance frequency as stated in the Maintenance Plan to establish a single figure for Maintenance frequency | N/A |
| Protection systems maintenance Cycle | Average time in years for a single protection scheme to be tested | D2014/12155 SSA Plan - Maintenance - Routine and Non-routine - Substation Automation Systems | No | The relay population broken down by population and asset type was measured against the maintenance frequency as stated in the Maintenance Plan to establish a single figure for Maintenance frequency | N/A |
| **OTHER MAINTENANCE ACTIVITY** | | | | | |
| Other maintenance activity Asset Quantity at year end 2019-20 | Metering - The number of meters in the network<br><br>Telecommunications - The Number of Terminal Equipment, MUXs, Base Stations, PLC, VF Intertrips, and MW Assets on the Network | Data copied from RIN Schedule 5.2 | No | Sum of same classification in RIN 5.2 | N/A |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Other maintenance activity<br>Asset Quantity Inspected/Maintained 2019-20 | Number of Inspection, Preventative, Corrective, Condition Based maintenance tasks carried out to maintain the operation of the individual assets | Information is extracted from Ellipse and filtered according to correct classification | No | Direct extract from Ellipse system and appropriate filters applied then summation of totals | N/A |
| Other maintenance activity<br>Average age of asset group 2019-20 | Average age based on financial years | Information is extracted from Ellipse and calculated from RIN 5.2 - Age Profile | Metering - No<br><br>Telecommunications - Yes | Metering - Direct extract from Ellipse<br><br>Telecommunications - Average age of same classification from RIN 5.2 - Age Profile | Telecommunications - Marked estimate due to potentially some assets with unknown commissioning dates being estimated. Refer to RIN 5.2 Age Profile for further information. |
| Other maintenance activity<br>Inspection Cycle | Metering - Average time interval in years for a single metering asset to be tested<br><br>Telecommunications - Average time interval in years for a telecommunciations system to be inspected. | Metering - D2016/10668 SSA Plan - Maintenance - Market Metering Systems<br><br>Telecommunciations - D2014/12155 SSA Plan - Maintenance - Telecommunciations Systems | Metering - No<br><br>Telecommunications - Yes | Metering -Figures come directly from Maintenance Plan (Inspections)<br><br>Telecommunications - Inspection figures averaged per site basis in Appendices B & C of the Maintenance Plan. Figures for Maintenance taken directly from the plan | Metering - N/A<br><br>Telecommunications - inspection intervals taken as 6monthly to represent site inspections which are generally at this interval with some exceptions. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Other maintenance activity Maintenance Cycle | Metering - Average time interval in years for a single metering asset to be tested<br><br>Telecommunications - Average time interval in years for a telecommunications system to be maintained. | Metering - D2016/10668 SSA Plan - Maintenance - Market Metering Systems<br><br>Telecommunications - D2014/12155 SSA Plan - Maintenance - Telecommunications Systems | Metering - No<br><br>Telecommunications - Yes | Metering -Figures come directly from Maintenance Plan "Revenue and Check Meters - Electronic"<br><br>Telecommunications - Inspection figures averaged per site basis in Appendices B & C of the Maintenance Plan. Figures for Maintenance taken directly from the plan | Metering - N/A<br><br>Telecommunications - Majority of assets requiring maintenance have a 3/4 year cycle. As such, 3 years was taken as the estimate as some assets have a shorter maintenance cycle (1-2 years). Based on best judgement, 3 years frequency is a confident estimate. |
| **2.8.2 COST METRICS FOR ROUTINE AND NON-ROUTINE MAINTENANCE** | | | | | |
| **TRANSMISSION LINES MAINTENANCE** | | | | | |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Transmission towers Routine Maintenance<br><br>Transmission tower support structures Routine Maintenance<br><br>Conductors Routine Maintenance | Labour and expense costs on routine inspection and maintenance of Transmission Towers consistent with the definitions used in the Opex model. | TransGrid Regulatory Accounts<br><br>Ellipse Financial Data<br><br>Ellipse Work Order Data<br><br>Ellipse Standard Job Data<br><br>Operating Expenditures model | No | Labour, materials and expenditure costs recorded by TransGrid staff against routine maintenance and inspection work orders.<br><br>Standard Jobs and Component Codes on the work order have been used to identify the asset classification.<br><br>Where the asset classification cannot be determined from the standard job or component code, the individual work orders costs have been classified.<br><br>. | It is assumed that Inspection costs are included under Routine Maintenance Direct Costs.<br><br>Standard Job and Component Code table is used to define the classifications.<br><br>Insulator and fittings have been included as part of routine maintenance on structure costs. |
| Transmission towers Non-Routine Maintenance<br><br>Transmission tower support structures | Labour and Expense costs on defect maintenance and MOPS (Major Operating Projects) of transmission towers consistent with the definitions used in the Opex model | TransGrid Regulatory Accounts<br><br>Ellipse Financial Data<br><br>Ellipse Work Order Data<br><br>Ellipse Standard Job Data<br><br>Operating Expenditures model | No | Labour, materials and expenditure costs recorded by TransGrid staff against defect work orders.<br><br>Standard Job and Component Code table is used to define the classifications. | Major Operating Projects (MOPS) have been included as part of Defect expenses.<br><br>Insulator and fittings have been included as part of defect maintenance on structure costs. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Non-Routine Maintenance<br><br>Conductors Non-Routine Maintenance | | | | 2019/20 Bushfire response has been captured separately under "Bushfire Remediation". | |
| Transmission cables Routine Maintenance | Labour and expense costs on routine inspection and maintenance of Transmission Cables consistent with the definitions used in the Opex model. | TransGrid Regulatory Accounts<br>Ellipse Financial Data<br>Ellipse Work Order Data<br>Ellipse Standard Job Data<br>Operating Expenditures model | No | Labour, materials and expenditure costs recorded by TransGrid staff against routine maintenance and inspection work orders. | It is assumed that Inspection costs are included under Routine Maintenance Direct Costs.<br><br>Standard Job and Component Code table is used to define the classifications. |
| Transmission cables Non-Routine Maintenance | Labour and Expense costs on defect and MOPS maintenance of Transmission Cables consistent with the definitions used in the Opex model | TransGrid Regulatory Accounts<br><br>Ellipse Financial Data<br><br>Ellipse Work Order Data<br><br>Ellipse Standard Job Data<br><br>Operating Expenditures model | No | Labour, materials and expenditure costs recorded by TransGrid staff against defect work orders.<br><br>Standard Job and Component Code table is used to define the classifications. | Major operating projects (MOPS) have been included as part of Defect expenses. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| **SUBSTATIONS EQUIPMENT & PROPERTY MAINTENANCE** | | | | | |
| Substation switchbays (incl Reactive plant) Routine Maintenance<br><br>Substation power transformers Routine Maintenance<br><br>Substation property Routine Maintenance | Labour and expense costs on routine inspection and maintenance of switchbay including all ancillary equipment to complete schemes consistent with the definitions used in the Opex model. | TransGrid Regulatory Accounts<br><br>Ellipse Financial Data<br><br>Ellipse Work Order Data<br><br>Ellipse Standard Job Data<br><br>Operating Expenditures model | No | Labour, materials and expenditure costs recorded by TransGrid staff against routine maintenance and inspection work orders.<br><br>Standard Jobs and Component Codes on the work order have been used to identify the asset classification.<br><br>Where the asset classification cannot be determined from the standard job or component code, the individual work orders costs have been classified. | It is assumed that all records are correctly entered into works management system (Ellipse) |
| Substation switchbays (incl Reactive plant) Non-Routine Maintenance<br><br>Substation power transformers | Labour and Expense costs on defect and MOPS maintenance of substations property including all ancillary equipment to complete schemes consistent with | TransGrid Regulatory Accounts<br>Ellipse Financial Data<br>Ellipse Work Order Data<br>Ellipse Standard Job Data<br>Operating Expenditures model | No | Labour, materials and expenditure costs recorded by TransGrid staff against defect work orders.<br>Standard Job and Component Code table is used to define the classifications. | It is assumed that all records are correctly entered into works management system (Ellipse) |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Non-Routine Maintenance<br><br>Substation property Non-Routine Maintenance | the definitions used in the Opex model | | | | |
| **SCADA & NETWORK CONTROL MAINTENANCE** | | | | | |
| SCADA & network control maintenance Routine Maintenance | Labour and expense costs on routine inspection and maintenance of Control and SCAD systems including all ancillary equipment to complete schemes consistent with the definitions used in the Opex model. | TransGrid Regulatory Accounts<br>Ellipse Financial Data<br>Ellipse Work Order Data<br>Ellipse Standard Job Data<br>Operating Expenditures model | No | Labour, materials and expenditure costs recorded by TransGrid staff against routine maintenance and inspection work orders.<br><br>Standard Jobs and Component Codes on the work order have been used to identify the asset classification.<br><br>Where the asset classification cannot be determined from the standard job or component code, the individual work orders costs have been classified. | It is assumed that all records are correctly entered into works management system (Ellipse) |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| SCADA & network control maintenance Non-Routine Maintenance | Labour and Expense costs on defect and MOPS maintenance of Control and SCADA systems including all ancillary equipment to complete schemes consistent with the definitions used in the Opex model | TransGrid Regulatory Accounts<br>Ellipse Financial Data<br>Ellipse Work Order Data<br>Ellipse Standard Job Data<br>Operating Expenditures model | No | Labour, materials and expenditure costs recorded by TransGrid staff against defect work orders.<br><br>Standard Job and Component Code table is used to define the classifications.<br><br>Maintenance carried out in response to the 2019/20 Bushfires have been captured separately under "Bushfire Remediation". | It is assumed that all records are correctly entered into works management system (Ellipse) |
| **PROTECTION SYSTEMS MAINTENANCE** | | | | | |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Protection systems maintenance Routine Maintenance | Labour and expense costs on routine inspection and maintenance of protection systems including all ancillary equipment to complete schemes consistent with the definitions used in the Opex model. | TransGrid Regulatory Accounts<br>Ellipse Financial Data<br>Ellipse Work Order Data<br>Ellipse Standard Job Data<br>Operating Expenditures model | No | Labour, materials and expenditure costs recorded by TransGrid staff against routine maintenance and inspection work orders.<br><br>Standard Jobs and Component Codes on the work order have been used to identify the asset classification.<br><br>Where the asset classification cannot be determined from the standard job or component code, the individual work orders costs have been classified. | It is assumed that all records are correctly entered into works management system (Ellipse) |
| Protection systems maintenance Non-Routine Maintenance | Labour and Expense costs on defect and MOPS maintenance of protection systems including all ancillary equipment to complete schemes consistent with the definitions used in the Opex model | TransGrid Regulatory Accounts<br>Ellipse Financial Data<br>Ellipse Work Order Data<br>Ellipse Standard Job Data<br>Operating Expenditures model | No | Labour, materials and expenditure costs recorded by TransGrid staff against defect work orders.<br><br>Standard Job and Component Code table is used to define the classifications. | It is assumed that all records are correctly entered into works management system (Ellipse) |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | Maintenance carried out in response to the 2019/20 Bushfires have been captured separately under "Bushfire Remediation". | |
| **OTHER MAINTENANCE ACTIVITY** | | | | | |
| Metering and Communications maintenance activity Routine Maintenance | Labour and expense costs on routine inspection and maintenance of Telecommunications and Metering systems including all ancillary equipment to complete schemes consistent with the definitions used in the Opex model. | Renewal and Maintenance Strategies (Automation and Telecommunications)<br>TransGrid Regulatory Accounts<br>Ellipse Financial Data<br>Ellipse Work Order Data<br>Ellipse Standard Job Data<br>Operating Expenditures model | No | Standard Job and Component Code table is used to define the classifications.<br><br>Labour, materials and expenditure costs recorded by TransGrid staff against routine maintenance and inspection work orders. Standard Jobs and Component Codes on the work order have been used to identify the asset classification. Where the asset classification cannot be determined from the standard job or component code, the individual work orders costs have been classified. | It is assumed that all records are correctly entered into works management system (Ellipse) |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? (Y/N) | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Metering and Communications maintenance activity Non-Routine Maintenance | Labour and Expense costs on defect and MOPS maintenance of Telecommunications and Metering systems including all ancillary equipment to complete schemes consistent with the definitions used in the Opex model | Renewal and Maintenance Strategies (Automation and Telecommunications)<br>TransGrid Regulatory Accounts<br>Ellipse Financial Data<br>Ellipse Work Order Data<br>Ellipse Standard Job Data<br>Operating Expenditures model | No | Labour, materials and expenditure costs recorded by TransGrid staff against defect work orders.<br><br>Standard Job and Component Code table is used to define the classifications.<br><br>Maintenance carried out in response to the 2019/20 Bushfires have been captured separately under "Bushfire Remediation". | It is assumed that all records are correctly entered into works management system (Ellipse) |

### 7.3.8 Worksheet 2.10 Overheads

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| **2.10.1 NETWORK OVERHEADS EXPENDITURE** | | | | | |
| Table 2.10.1 Network Overheads Expenditure<br><br>Overhead amounts for Prescribed Services | Network overhead expenditure is classified consistent with the following categories from EB RIN 3.2:<br>• Maintenance Support and Asset Management TOPEX0106<br>• Operations / Control Room TOPEX0107<br>• Grid Planning TOPEX0108<br>The Opex line items reported are consistent with TransGrid's Revenue proposal Opex line items and definitions.<br>Amounts are rounded to whole dollars. | TransGrid financial records reported from Ellipse and Business Reporting.<br>The prescribed opex component of overheads in RIN 2.10 equals the Network Operations component in the 2019-20 Regulatory Account (DISAGG Inc and DISAGG Opex).<br>The schedule is prepared using TransGrid financial records on which the Regulatory accounts are based. Overhead costs allocated and capitalised are added back to determine the total overhead costs. Maintenance Support and Asset Management Support costs have been allocated based on nature of cost incurred, primarily with reference to the Responsibility Centres.<br>Capitalised overheads for the purposes of this schedule exclude contingent capex projects that have not received AER approval. The QNI minor upgrade project was approved by the AER on 28 April 2020 and has been included in the 2019-20 period, including those overhead costs incurred in the 2018-19 period. | Yes | Overheads for Asset Management and Maintenance Support are disaggregated into the reported categories by using proportionate allocations.<br>Network overheads related to capital work are calculated based on the overhead recovery (expense element 402) within each regulatory category. The prescribed portion is derived by the proportion of the total overhead recovery (expense element 402) by regulatory category against the overhead charge (expense element 400) for prescribed capital projects. | TransGrid's cost allocation process does not break down network overheads into maintenance support and asset management. Similarly, TransGrid also does not maintain a split of capitalised network overhead into the categories as per this RIN schedule.<br>The allocation of capitalised overhead expenditure is consistent with the classification of costs in its corresponding overhead recovery account (expense element 402). |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Table 2.10.1 Network Overhead expenditure<br><br>Overhead amounts for Negotiated Services | Total Negotiated Overhead expenditure is equal to actual expenditure costed to negotiated Activity Centres and EE400 - Support Cost Allocation charge. This expenditure represents the support cost allocated to negotiated projects.<br>Total Negotiated Overhead expenditure is allocated to the following categories based on the proportion split of Prescribed Opex and Capex Overhead between these categories:<br>• Network Overheads, and<br>• Corporate Overheads<br>Amounts are rounded to whole dollars. | TransGrid financial records reported from Ellipse and Business Reporting.<br>The negotiated opex component of overheads in RIN 2.10 equals the negotiated overhead component of Other Controllable Costs in the 2019-20 Regulatory Accounts (DISAGG Inc and DISAGG Opex).<br>The negotiated services overhead costs are obtained from account extract filtered by AC, which align with the amounts reported in Regulatory accounts. | Yes | Total negotiated overhead expenditures are allocated prorata based on the composition of the prescribed overhead expenditure. | TransGrid does not maintain a split of negotiated overhead into the categories as per this RIN schedule.<br><br>The allocation of negotiated overhead expenditure is consistent with the allocation of prescribed overhead costs to the categories of this RIN schedule. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Table 2.10.1 Network Overhead expenditure<br><br>Overhead amounts for Unregulated Services | Total Unregulated Overhead expenditure is equal to actual expenditure costed to unregulated Activity Centres and EE400 - Support Cost Allocation charge. This expenditure represents the support cost allocated to unregulated projects.<br>Total Unregulated Overhead expenditure is allocated to the following categories based on the proportion split of Prescribed Opex and Capex Overhead between these categories:<br>• Network Overheads, and<br>• Corporate Overheads.<br>Amounts are rounded to whole dollars. | TransGrid financial records reported from Ellipse and Business Reporting.<br>The Unregulated opex component of overheads in RIN 2.10 equals the Unregulated overhead component of Other Controllable Costs in the 2019-20 Regulatory Accounts (DISAGG Inc and DISAGG Opex).<br>The unregulated services overhead costs are obtained from account extract filtered by AC, which align with the amounts reported in Regulatory accounts. | Yes | Total unregulated overhead expenditures are allocated prorata based on the composition of the prescribed overhead expenditure. | TransGrid does not maintain a split of unregulated overhead into the categories as per this RIN schedule.<br><br>The allocation of unregulated overhead expenditure is consistent with the allocation of prescribed overhead costs to the categories of this RIN schedule. |
| **2.10.2 CORPORATE OVERHEADS EXPENDITURE** | | | | | |
| **Corporate overheads** | | | | | |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Table 2.10.2 Corporate Overheads expenditure<br><br>Overhead amounts for Prescribed Services | Corporate Overhead expenditure is classified consistent with the following categories from the EB RIN 3.2:<br>• Insurance TOPEX0109<br>• Rates & Taxes TOPEX0110<br>• Property Management TOPEX0111<br>• Environmental TOPEX0112<br>• Corporate Governance TOPEX0113<br>• Customer Relations TOPEX0114<br>• Regulatory TOPEX0115<br>• Finance TOPEX0116<br>• Information technology TOPEX 0117<br>• HR & Payroll TOPEX0118<br>• Defined Benefit Superannuation AdjustmentTOPEX0119 | TransGrid financial records reported from Ellipse and Business Reporting.<br>The prescribed Opex component of corporate overheads in RIN 2.10 equals the Other Controllable Costs, Network Support Pass-through Costs and Defined Benefit Superannuation Adjustment in the 2019-20 Regulatory Accounts (DISAGG Inc and DISAGG Opex).<br>The schedule is prepared using TransGrid financial records, on which the Regulatory accounts are based.<br>Capitalised Corporate overheads are obtained by account extract filtered by AC. Capitalised overheads for the purposes of this schedule exclude contingent capex projects that have not received AER approval. The QNI minor upgrade project was approved by the AER on 28 April 2020 and has been included in the 2019-20 period, including those overhead costs incurred in the 2018-19 period. | Yes | Corporate overheads related to capital work are calculated based on the overhead recovery (expense element 402) within each regulatory category. The prescribed portion is derived by the proportion of the total overhead recovery (expense element 402) by regulatory category against the overhead charge (expense element 400) for prescribed capital projects. | TransGrid does not maintain a split of capitalised corporate overhead into the categories as per this RIN schedule.<br><br>The allocation of capitalised overhead expenditure is consistent with the classification of costs in its corresponding overhead recovery account (expense element 402).. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | • Network Support TOPEX0120<br>The Opex line items reported are consistent with TransGrid's Revenue proposal Opex line items and definitions, with the exception of TOPEX0119 Defined Benefit Superannuation Adjustment.<br>TOPEX0119 relates to an adjustment made to reverse out the Defined Benefit superannuation cash contribution in Prescribed Opex and added back the Defined Benefit superannuation accounting expense for compliance with Australian Accounting Standard AASB 119.<br>TOPEX0113 Corporate Governance includes an adjustment to back out the non-cash impact of Australian Accounting Standard AASB 16 Leases from Prescribed Opex. | | | | |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | The adjustment amounted to $832k.<br>As required by the "Economic Benchmarking RIN for TNSP Instructions and Definitions Nov 2013", Opex line items reported in Table 2.10.2 align with the Opex line items reported in the Regulatory Accounting Statements.<br>Network Support is classified under Corporate Overheads consistent with AER CA RIN Guidelines "Regulatory Information Notice issued under Division 4 of Part 3 of the National Electricity (New South Wales) Law" dated 7 March 2014.<br><br>Amounts are rounded to whole dollars. | | | | |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Table 2.10.2 Corporate Overheads expenditure<br><br>Overhead amounts for Negotiated Services | Total Negotiated Overhead expenditure is equal to actual expenditure costed to negotiated Activity Centres and EE400 - Support Cost Allocation charge. This expenditure represents the support cost allocated to negotiated projects.<br>Total Negotiated Overhead expenditure is allocated to the following categories based on the proportion split of Prescribed Opex and Capex Overhead between these categories:<br>• Network Overheads, and<br>• Corporate Overheads.<br>Amounts are rounded to whole dollars. | TransGrid financial records reported from Ellipse and Business Reporting.<br>The negotiated services Opex component of Corporate Overhead in RIN 2.10 equals the negotiated overhead component of Other Controllable Costs in the 2019-20 Regulatory Accounts (DISAGG Inc and DISAGG Opex).<br>Using TransGrid financial records, on which the Regulatory accounts are based, the schedule is prepared.<br>Capitalised Corporate overheads are obtained by account extract filtered by AC. | Yes | Total negotiated overhead expenditures are allocated prorata based on the composition of the prescribed overhead expenditure. | TransGrid does not maintain a split of negotiated overhead into the categories as per this RIN schedule.<br><br>The allocation of negotiated overhead expenditure is consistent with the allocation of prescribed overhead costs to the categories of this RIN schedule. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Table 2.10.2 Corporate Overheads expenditure<br><br>Overhead amounts for Unregulated Services | Total Unregulated Overhead expenditure is equal to actual expenditure costed to unregulated Activity Centres and EE400 - Support Cost Allocation charge. This expenditure represents the support cost allocated to unregulated projects.<br>Total Unregulated Overhead expenditure is allocated to the following categories based on the proportion split of Prescribed Opex and Capex Overhead between these categories:<br>• Network Overheads, and<br>• Corporate Overheads.<br>Amounts are rounded to whole dollars. | TransGrid financial records reported from Ellipse and Business Reporting.<br>The unregulated services opex component of Corporate Overhead in RIN 2.10 equals the unregulated overhead component of Other Controllable Costs in the 2019-20 Regulatory Accounts (DISAGG Inc and DISAGG Opex).<br>Using TransGrid financial records, on which the Regulatory accounts are based, the schedule is prepared.<br>Capitalised Corporate overheads are obtained by account extract filtered by AC. | Yes | Total unregulated overhead expenditures are allocated prorata based on the composition of the prescribed overhead expenditure. | TransGrid does not maintain a split of unregulated overhead into the categories as per this RIN schedule.<br><br>The allocation of unregulated overhead expenditure is consistent with the allocation of prescribed overhead costs to the categories of this RIN schedule. |

Note to Overheads

Overhead expenditures incurred that are attributable to capital works but not directly recorded against individual capital projects are capitalised. Examples of these overhead costs include review of design standards, management of overall capital program (not directly charged to individual capital project), formulating environmental, property and power system procurement policy and procedures. Typically these costs are incurred in the Planning and Operations, and Works Delivery business units. These costs are re-allocated to the capital projects through the Support Cost Allocation process.

### 7.3.9 Worksheet 2.11 Labour

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| Corporate overheads | | | | | |
| ASL | In accordance with the Workforce Profile Report Data Specification.<br>Total Hours Paid for the year times by 7. Then divide by standard work hours per week for a full time job times by the number of days in the reference period.<br>Data for Executive managers from outsource provider Boardroom.<br>Reference period refers to the payment summary period of 22/6/19 to 26/06/2020<br>Ordinary Hours portion of Total Paid Hours are adjusted by % of labour costs allocated to non-prescribed ordinary time work activities. | Workforce Profile Report (TRBWFP) from Ellipse for the reporting period (22/6/19 to 26/06/2020)<br>Ellipse for position data for period July-August (pre HRIS go-live)<br>HRIS (SAP SuccessFactors) for position data for period September-June<br>Data for Executive managers from outsource provider Boardroom.<br>. | Yes | Calculation: (Total Paid Hours*7)/(364*35)<br><br>Total Paid hours: Value from TRBWFP Total Number of hours paid reference period minus flex time taken (SQL of MSF888 to sum flex hours taken)<br><br>Ordinary Hours portion of Paid Hours are adjusted by % of labour costs allocated to non-prescribed ordinary time work activities. | As the report is run for the period to match payment summaries with the dates of 22/6/19 to 26/06/2020 classed as estimate for employees.<br>Data for executives is for period 1/7/19 - 30/6/20 as they are paid monthly<br><br>In accordance with the Workforce Profile Report Data Specification. Total Hours Paid for the year times by 7. Then divide by standard work hours per week for a full time job times by the number of days in the reference period.<br><br>Ordinary Hours portion of Paid Hours are adjusted by % of labour costs allocated to non- |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | prescribed ordinary time work activities<br>AER Category:<br>Corporate Overheads - roles in below Business Units:<br>• Corporate Affairs<br>• Corporate Services<br>• Finance and Regulation<br>• Legal, Governance and Risk<br>• Strategy, Innovation and Technology<br>Network Overheads - roles in below Business Units:<br>• Network Planning and Operations except Network Operations > Control Centre<br>• Major Projects<br>• Works Delivery except Field Resources<br>Total Direct Network - roles in business Units |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | • Network Planning and Operations<br>  ○ Network Operations > Control Centre<br>• Works Delivery > Field Resources<br>AER Level:<br>Executive Manager: roles with Manager Category = Executive Manager<br>Senior Manager: roles with Manager Category = Senior Leader<br>Manager: roles with Manager Category = Department Manager or Team leader<br>Professional: roles with Manager Category = Individual contributor; Pay Range SP24-28 and above<br>Semi-Professional: roles with Manager Category = Individual |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | contributor; not support; Pay Range < SP24-28<br>Support staff: roles with Manager Category = individual contributor and support/admin function<br>Intern, junior staff, apprentice: interns and graduates<br>Skilled Electrical Worker: WGEA Classification = Trades and Operations; Electrical Fitter, Lines Worker, Operator<br>Skilled Non Electrical Worker: WGEA Classification = Trades and Operations and not Electrical Fitter, Lines Worker or Operator<br>Apprentice: WGEA Classification = Apprentice<br>Unskilled Worker: WGEA Classification = Labourer |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| Average productive work hours per ASL | Total Paid hours: Value from TRBWFP Total Number of hours paid reference period (plus the sum of hours from Boardroom report for executive mangers) minus flex time taken (SQL of MSF888 to sum flex hours taken).<br>Overtime Hours is the number of hours of paid overtime worked by the employee during the reference period.<br>Total Leave Taken refers to the sum of leave taken by the employee including annual, paid sick leave, unpaid sick leave, carers leave, long service leave, maternity leave, paternity leave, family and community services leave and unpaid leave.<br>Adjusted by % of costs allocated to training<br>Adjusted by % of labour costs allocated to nonprescribed work activities (ordinary time and overtime)<br>Reference period refers to the payment summary period of 22/6/19 to 26/06/2020. | Workforce Profile Report (TRBWFP) from Ellipse for the reporting period<br>As the report is run for the period to match payment summaries with the dates of 22/6/19 to 26/06/2020 and is adjusted by training rate and a non-prescribed labour costed rate this is classed as estimate | Yes | (Total Hours Paid + Overtime Hours) - Total Leave Taken<br>Adjusted by % of costs allocated to training<br>Adjusted by % of labour costs allocated to non-prescribed work activities | As the report is run for the period to match payment summaries with the dates of 22/6/19 to 26/06/2020 classed as estimate for employees. Data for executives is for period 1/7/19 - 30/6/20 as they are paid monthly<br><br>Total Number of Hours Paid Annual Reference Period includes paid leave and excludes workers paid by third party, unpaid leave, overtime, allowances, additional hours worked under flex-time.<br><br>Overtime Hours is the number of hours of paid overtime worked by the employee during the reference period<br><br>Total Leave Taken refers to the sum of leave taken by the |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | employee including annual, paid sick leave, unpaid sick leave, carers leave, long service leave, maternity leave, paternity leave, family and community services leave and unpaid leave.<br><br>Adjusted by % of costs allocated to training<br><br>Adjusted by % of labour costs allocated to nonprescribed work activities<br><br>AER Category:<br>Corporate Overheads - roles in below Business Units:<br>• Corporate Affairs<br>• Corporate Services<br>• Finance and Regulation<br>• Legal, Governance and Risk |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | • Strategy, Innovation and Technology<br>Network Overheads - roles in below Business Units:<br>• Network Planning and Operations except Network Operations > Control Centre<br>• Major Projects<br>• Works Delivery except Field Resources<br>Total Direct Network - roles in business Units<br>• Network Planning and Operations<br>○ Network Operations > Control Centre<br>• Works Delivery > Field Resources<br>AER Level: |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Executive Manager: roles with Manager Category = Executive Manager<br>Senior Manager: roles with Manager Category = Senior Leader<br>Manager: roles with Manager Category = Department Manager or Team leader<br>Professional: roles with Manager Category = Individual contributor; Pay Range SP24-28 and above<br>Semi-Professional: roles with Manager Category = Individual contributor; not support; Pay Range < SP24-28<br>Support staff: roles with Manager Category = individual contributor and support/admin function<br>Intern, junior staff, apprentice: interns and graduates |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Skilled Electrical Worker: WGEA Classification = Trades and Operations; Electrical Fitter, Lines Worker, Operator<br>Skilled Non Electrical Worker: WGEA Classification = Trades and Operations and not Electrical Fitter, Lines Worker or Operator<br>Apprentice: WGEA Classification = Apprentice<br>Unskilled Worker: WGEA Classification = Labourer |
| Stand down occurrences pers ASL | A count per employee of how many times they used the Stand Down work codes in the timesheet in Ellipse.<br>Classed as estimate as the number of instances of stand down is calculated by the ASL value which is an adjusted figure | SQL of Ellipse work codes in MSF891 | Yes | An SQL query was run on the Work Code F1 from Ellipse 8 go live (April 2013) on the MSF891 file. | As the report is run for the period to match payment summaries with the dates of 22/6/19 to 26/06/2020 classed as estimate for employees.<br>Data for executives is for period 1/7/19 - 30/6/20 as they are paid monthly<br><br>AER Category: |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Corporate Overheads - roles in below Business Units:<br><br>- Corporate Affairs<br>- Corporate Services<br>- Finance and Regulation<br>- Legal, Governance and Risk<br>- Strategy, Innovation and Technology<br><br>Network Overheads - roles in below Business Units:<br><br>- Network Planning and Operations except Network Operations > Control Centre<br>- Major Projects<br>- Works Delivery except Field Resources<br><br>Total Direct Network - roles in business Units |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | - Network Planning and Operations<br>- Network Operations > Control Centre<br><br>- Works Delivery > Field Resources<br><br>AER Level:<br><br>Executive Manager: roles with Manager Category = Executive Manager<br><br>Senior Manager: roles with Manager Category = Senior Leader<br><br>Manager: roles with Manager Category = Department Manager or Team leader<br><br>Professional: roles with Manager Category = Individual |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | contributor; Pay Range SP24-28 and above<br><br>Semi-Professional: roles with Manager Category = Individual contributor; not support; Pay Range < SP24-28<br><br>Support staff: roles with Manager Category = individual contributor and support/admin function<br><br>Intern, junior staff, apprentice: interns and graduates<br><br>Skilled Electrical Worker: WGEA Classification = Trades and Operations; Electrical Fitter, Lines Worker, Operator<br><br>Skilled Non Electrical Worker: WGEA Classification = Trades and Operations and not |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Electrical Fitter, Lines Worker or Operator<br><br>Apprentice: WGEA Classification = Apprentice<br><br>Unskilled Worker: WGEA Classification = Labourer |
| Network overheads | | | | | |
| ASL | In accordance with the Workforce Profile Report Data Specification.<br>Total Hours Paid for the year times by 7. Then divide by standard work hours per week for a full time job times by the number of days in the reference period.<br>Data for Executive managers from outsource provider Boardroom.<br>Reference period refers to the payment summary period of 22/6/19 to 26/06/2020<br>Ordinary Hours portion of Total Paid Hours are adjusted by % of labour costs allocated to non-prescribed ordinary time work activities. | Workforce Profile Report (TRBWFP) from Ellipse for the reporting period (22/6/19 to 26/06/2020)<br>Ellipse for position data for period July-August (pre HRIS go-live)<br>HRIS (SAP SuccessFactors) for position data for period September-June<br>Data for Executive managers from outsource provider Boardroom.<br>. | Yes | Calculation: (Total Paid Hours*7)/(364*35)<br><br>Total Paid hours: Value from TRBWFP Total Number of hours paid reference period minus flex time taken (SQL of MSF888 to sum flex hours taken)<br><br>Ordinary Hours portion of Paid Hours are adjusted by % of labour costs allocated to non-prescribed ordinary time work activities. | As the report is run for the period to match payment summaries with the dates of 22/6/19 to 26/06/2020 classed as estimate for employees. Data for executives is for period 1/7/19 - 30/6/20 as they are paid monthly<br><br>In accordance with the Workforce Profile Report Data Specification. Total Hours Paid for the year times by 7. Then divide by standard work hours per week for a full time job times |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | by the number of days in the reference period.<br><br>Ordinary Hours portion of Paid Hours are adjusted by % of labour costs allocated to non-prescribed ordinary time work activities<br><br>AER Category:<br>Corporate Overheads - roles in below Business Units:<br>• Corporate Affairs<br>• Corporate Services<br>• Finance and Regulation<br>• Legal, Governance and Risk<br>• Strategy, Innovation and Technology<br>Network Overheads - roles in below Business Units:<br>• Network Planning and Operations except |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Network Operations > Control Centre<br>• Major Projects<br>• Works Delivery except Field Resources<br>Total Direct Network - roles in business Units<br>• Network Planning and Operations<br>○ Network Operations > Control Centre<br>• Works Delivery > Field Resources<br>AER Level:<br>Executive Manager: roles with Manager Category = Executive Manager<br>Senior Manager: roles with Manager Category = Senior Leader |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Manager: roles with Manager Category = Department Manager or Team leader<br>Professional: roles with Manager Category = Individual contributor; Pay Range SP24-28 and above<br>Semi-Professional: roles with Manager Category = Individual contributor; not support; Pay Range < SP24-28<br>Support staff: roles with Manager Category = individual contributor and support/admin function<br>Intern, junior staff, apprentice: interns and graduates<br>Skilled Electrical Worker: WGEA Classification = Trades and Operations; Electrical Fitter, Lines Worker, Operator<br>Skilled Non Electrical Worker: WGEA Classification = Trades and Operations and not |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Electrical Fitter, Lines Worker or Operator<br>Apprentice: WGEA Classification = Apprentice<br>Unskilled Worker: WGEA Classification = Labourer |
| Average productive work hours per ASL | Total Paid hours: Value from TRBWFP Total Number of hours paid reference period (plus the sum of hours from Boardroom report for executive mangers) minus flex time taken (SQL of MSF888 to sum flex hours taken).<br><br>Overtime Hours is the number of hours of paid overtime worked by the employee during the reference period. | Workforce Profile Report (TRBWFP) from Ellipse for the reporting period<br><br>As the report is run for the period to match payment summaries with the dates of 22/6/19 to 26/06/2020 and is adjusted by training rate and a non-prescribed labour costed rate this is classed as estimate | Yes | (Total Hours Paid + Overtime Hours) - Total Leave Taken<br>Adjusted by % of costs allocated to training<br>Adjusted by % of labour costs allocated to non-prescribed work activities | As the report is run for the period to match payment summaries with the dates of 22/6/19 to 26/06/2020 classed as estimate for employees.<br>Data for executives is for period 1/7/19 - 30/6/20 as they are paid monthly<br><br>Total Number of Hours Paid Annual Reference Period |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | Total Leave Taken refers to the sum of leave taken by the employee including annual, paid sick leave, unpaid sick leave, carers leave, long service leave, maternity leave, paternity leave, family and community services leave and unpaid leave.<br><br>Adjusted by % of costs allocated to training<br><br>Adjusted by % of labour costs allocated to nonprescribed work activities (ordinary time and overtime)<br><br>Reference period refers to the payment summary period of 22/6/19 to 26/06/2020. | | | | includes paid leave and excludes workers paid by third party, unpaid leave, overtime, allowances, additional hours worked under flex-time.<br><br>Overtime Hours is the number of hours of paid overtime worked by the employee during the reference period<br><br>Total Leave Taken refers to the sum of leave taken by the employee including annual, paid sick leave, unpaid sick leave, carers leave, long service leave, maternity leave, paternity leave, family and community services leave and unpaid leave.<br>Adjusted by % of costs allocated to training |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Adjusted by % of labour costs allocated to nonprescribed work activities<br><br>AER Category:<br>Corporate Overheads - roles in below Business Units:<br>• Corporate Affairs<br>• Corporate Services<br>• Finance and Regulation<br>• Legal, Governance and Risk<br>• Strategy, Innovation and Technology<br>Network Overheads - roles in below Business Units:<br>• Network Planning and Operations except Network Operations > Control Centre<br>• Major Projects<br>• Works Delivery except Field Resources |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Total Direct Network - roles in business Units<br>• Network Planning and Operations<br>  ○ Network Operations > Control Centre<br>• Works Delivery > Field Resources<br>AER Level:<br>Executive Manager: roles with Manager Category = Executive Manager<br>Senior Manager: roles with Manager Category = Senior Leader<br>Manager: roles with Manager Category = Department Manager or Team leader<br>Professional: roles with Manager Category = Individual contributor; Pay Range SP24-28 and above |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Semi-Professional: roles with Manager Category = Individual contributor; not support; Pay Range < SP24-28<br>Support staff: roles with Manager Category = individual contributor and support/admin function<br>Intern, junior staff, apprentice: interns and graduates<br>Skilled Electrical Worker: WGEA Classification = Trades and Operations; Electrical Fitter, Lines Worker, Operator<br>Skilled Non Electrical Worker: WGEA Classification = Trades and Operations and not Electrical Fitter, Lines Worker or Operator<br>Apprentice: WGEA Classification = Apprentice<br>Unskilled Worker: WGEA Classification = Labourer |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| Stand down occurrences pers ASL | A count per employee of how many times they used the Stand Down work codes in the timesheet in Ellipse.<br>Classed as estimate as the number of instances of stand down is calculated by the ASL value which is an adjusted figure | SQL of Ellipse work codes in MSF891 | Yes | An SQL query was run on the Work Code F1 from Ellipse 8 go live (April 2013) on the MSF891 file. | As the report is run for the period to match payment summaries with the dates of 22/6/19 to 26/06/2020 classed as estimate for employees. Data for executives is for period 1/7/19 - 30/6/20 as they are paid monthly<br><br>AER Category:<br><br>Corporate Overheads - roles in below Business Units:<br><br>- Corporate Affairs<br>- Corporate Services<br>- Finance and Regulation<br>- Legal, Governance and Risk<br>- Strategy, Innovation and Technology<br><br>Network Overheads - roles in below Business Units: |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | - Network Planning and Operations except Network Operations > Control Centre<br>- Major Projects<br>- Works Delivery except Field Resources<br><br>Total Direct Network - roles in business Units<br><br>- Network Planning and Operations<br>- Network Operations > Control Centre<br><br>- Works Delivery > Field Resources<br><br>AER Level:<br><br>Executive Manager: roles with Manager Category = Executive Manager |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Senior Manager: roles with Manager Category = Senior Leader<br><br>Manager: roles with Manager Category = Department Manager or Team leader<br><br>Professional: roles with Manager Category = Individual contributor; Pay Range SP24-28 and above<br><br>Semi-Professional: roles with Manager Category = Individual contributor; not support; Pay Range < SP24-28<br><br>Support staff: roles with Manager Category = individual contributor and support/admin function |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Intern, junior staff, apprentice: interns and graduates<br><br>Skilled Electrical Worker: WGEA Classification = Trades and Operations; Electrical Fitter, Lines Worker, Operator<br><br>Skilled Non Electrical Worker: WGEA Classification = Trades and Operations and not Electrical Fitter, Lines Worker or Operator<br><br>Apprentice: WGEA Classification = Apprentice<br><br>Unskilled Worker: WGEA Classification = Labourer |
| Total Labour expenditure | TransGrid notes that the AER's definition of 'Overheads' and 'Direct' labour that is required for the population of this RIN schedule differs to that used in the normal course of business. In particular TransGrid highlights that a significant proportion of labour costs described as 'Network Overheads' relates directly to project work that would ultimately be capitalised. | TransGrid Regulatory Accounts<br>Ellipse Financial Data<br>Operating Expenditures model | Yes | Total corporate and network overhead labour costs are taken from the labour components of the corporate and network overhead | The allocation of the labour components into the corporate overhead, network overhead and direct network labour categories are based on the |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | Total labour costs were extracted from financial records for the business units as listed below.<br>**<u>Corporate Overheads Internal Labour Costs:</u>**<br>Consists of the following business units/categories:<br>**Corporate Services**<br>Executive manager, Senior Manager, Manager, Professional, Semi Professional, Support Staff, Intern, Junior Staff, Apprentice<br>**Finance and Regulation**<br>Executive manager, Senior Manager, Manager, Professional, Semi Professional, Support Staff, Intern, Junior Staff, Apprentice<br>**Legal Governance & Risk**<br>Executive manager, Senior Manager, Manager, Professional, Semi Professional, Support Staff, Intern, Junior Staff, Apprentice<br>**CEO Office**<br>Executive manager, Senior Manager, Manager, Professional, Semi Professional, Support Staff, Intern, Junior Staff<br>**Strategy Innovation and Technology**<br>Executive manager, Senior Manager, Manager, Professional, Semi Professional, Support Staff, Intern, Junior Staff, Apprentice<br>**Corporate Affairs**<br>Executive manager, Senior Manager, Manager, Professional, Semi Professional, Support Staff, Intern, Junior Staff, Apprentice<br>**<u>Network Overheads Internal Labour Costs:</u>** | | | categories in CA RIN 2.10 Overhead.<br>The allocation to each of the employee categories are based on the proportion of gross earnings for the relevant employee category over the total gross earnings.<br>Corporate and network overheads include direct labour costs which were capitalised.<br>Capitalised overheads for the purposes of this schedule exclude contingent capex projects that have not received AER approval. The QNI minor upgrade project was approved by the AER on 28 April 2020 and has been included in the 2019-20 period, including those overhead costs incurred in the 2018-19 period. | standard cost labour charge and recovery mechanism that is applied by TransGrid. This information does not contain details at the employee level. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | Consists of the following business units/categories:<br>**Network Planning & Operations**<br>Executive manager, Senior Manager, Manager, Professional, Semi Professional, Support Staff Intern, Junior Staff, Apprentice<br>**Works Delivery**<br>Executive manager, Senior Manager, Manager, Professional, Semi Professional, Support Staff, Intern, Junior Staff, Apprentice<br><br>Amounts are rounded to whole dollars. | | | | |
| Total direct network labour | | | | | |
| ASL | In accordance with the Workforce Profile Report Data Specification.<br>Total Hours Paid for the year times by 7. Then divide by standard work hours per week for a full time job times by the number of days in the reference period.<br>Data for Executive managers from outsource provider Boardroom.<br>Reference period refers to the payment summary period of 23/6/18 to 23/06/19<br>Ordinary Hours portion of Total Paid Hours are adjusted by % of labour costs allocated to non-prescribed ordinary time work activities. | Workforce Profile Report (TRBWFP) from Ellipse for the reporting period (22/6/19 to 26/06/2020)<br><br>Ellipse for position data for period July-August (pre HRIS go-live)<br><br>HRIS (SAP SuccessFactors) for position data for period September-June<br><br>Data for Executive managers from outsource provider Boardroom. | Yes | Calculation: (Total Paid Hours*7)/(371*35)<br><br>Total Paid hours: Value from TRBWFP Total Number of hours paid reference period minus flex time taken (SQL of MSF888 to sum flex hours taken)<br><br>Ordinary Hours portion of Paid Hours are adjusted by % of labour costs allocated to non- | As the report is run for the period to match payment summaries with the dates of 22/6/19 to 26/06/2020 classed as estimate for employees. Data for executives is for period 1/7/19 - 30/6/20 as they are paid monthly<br><br>In accordance with the Workforce Profile Report Data Specification. Total Hours Paid for the year times by 7. Then divide by standard work hours |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | prescribed ordinary time work activities. | per week for a full time job times by the number of days in the reference period.<br><br>Ordinary Hours portion of Paid Hours are adjusted by % of labour costs allocated to non-prescribed ordinary time work activities<br><br>AER Category:<br><br>Corporate Overheads - roles in below Business Units:<br><br>- Corporate Affairs<br>- Corporate Services<br>- Finance and Regulation<br>- Legal, Governance and Risk<br>- Strategy, Innovation and Technology<br><br>Network Overheads - roles in below Business Units: |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | - Network Planning and Operations except Network Operations > Control Centre<br>- Major Projects<br>- Works Delivery except Field Resources<br><br>Total Direct Network - roles in business Units<br><br>- Network Planning and Operations<br>- Network Operations > Control Centre<br><br>- Works Delivery > Field Resources<br><br>AER Level:<br><br>Executive Manager: roles with Manager Category = Executive Manager |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Senior Manager: roles with Manager Category = Senior Leader<br><br>Manager: roles with Manager Category = Department Manager or Team leader<br><br>Professional: roles with Manager Category = Individual contributor; Pay Range SP24-28 and above<br><br>Semi-Professional: roles with Manager Category = Individual contributor; not support; Pay Range < SP24-28<br><br>Support staff: roles with Manager Category = individual contributor and support/admin function |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Intern, junior staff, apprentice: interns and graduates<br><br>Skilled Electrical Worker: WGEA Classification = Trades and Operations; Electrical Fitter, Lines Worker, Operator<br><br>Skilled Non Electrical Worker: WGEA Classification = Trades and Operations and not Electrical Fitter, Lines Worker or Operator<br><br>Apprentice: WGEA Classification = Apprentice<br><br>Unskilled Worker: WGEA Classification = Labourer |
| Average productive work hours per ASL | Total Paid hours: Value from TRBWFP Total Number of hours paid reference period (plus the sum of hours from Boardroom report for executive mangers) minus flex time taken (SQL of MSF888 to sum flex hours taken). | Workforce Profile Report (TRBWFP) from Ellipse for the reporting period Data for Executive managers from two sources - Workforce Profile Report and outsource provider | Yes | (Total Hours Paid + Overtime Hours) - Total Leave Taken Adjusted by % of costs allocated to training | As the report is run for the period to match payment summaries with the dates of 22/6/19 to 26/06/2020 classed as estimate for employees. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | Overtime Hours is the number of hours of paid overtime worked by the employee during the reference period.<br>Total Leave Taken refers to the sum of leave taken by the employee including annual, paid sick leave, unpaid sick leave, carers leave, long service leave, maternity leave, paternity leave, family and community services leave and unpaid leave.<br>Adjusted by % of costs allocated to training<br>Adjusted by % of labour costs allocated to nonprescribed work activities (ordinary time and overtime)<br>Reference period refers to the payment summary period of 22/6/19 to 26/06/2020. | Boardroom. Data was combined to get annual totals. Adjustment made to match to below reference period. As the report is run for the period to match payment summaries with the dates of 22/6/19 to 26/06/2020 and is adjusted by training rate and a non-prescribed labour costed rate this is classed as estimate. | | Adjusted by % of labour costs allocated to non-prescribed work activities | Data for executives is for period 1/7/19 - 30/6/20 as they are paid monthly<br>Total Number of Hours Paid Annual Reference Period includes paid leave and excludes workers paid by third party, unpaid leave, overtime, allowances, additional hours worked under flex-time.<br><br>Overtime Hours is the number of hours of paid overtime worked by the employee during the reference period<br><br>Total Leave Taken refers to the sum of leave taken by the employee including annual, paid sick leave, unpaid sick leave, carers leave, long service leave, maternity leave, paternity leave, family and community services leave and unpaid leave. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Adjusted by % of costs allocated to training<br>Adjusted by % of labour costs allocated to nonprescribed work activities<br><br>AER Category:<br>Corporate Overheads - roles in below Business Units:<br>• Corporate Affairs<br>• Corporate Services<br>• Finance and Regulation<br>• Legal, Governance and Risk<br>• Strategy, Innovation and Technology<br>Network Overheads - roles in below Business Units:<br>• Network Planning and Operations except Network Operations > Control Centre |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | • Major Projects<br>• Works Delivery except Field Resources<br>Total Direct Network - roles in business Units<br>• Network Planning and Operations<br>○ Network Operations > Control Centre<br>• Works Delivery > Field Resources<br>AER Level:<br>Executive Manager: roles with Manager Category = Executive Manager<br>Senior Manager: roles with Manager Category = Senior Leader<br>Manager: roles with Manager Category = Department Manager or Team leader |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Professional: roles with Manager Category = Individual contributor; Pay Range SP24-28 and above<br>Semi-Professional: roles with Manager Category = Individual contributor; not support; Pay Range < SP24-28<br>Support staff: roles with Manager Category = individual contributor and support/admin function<br>Intern, junior staff, apprentice: interns and graduates<br>Skilled Electrical Worker: WGEA Classification = Trades and Operations; Electrical Fitter, Lines Worker, Operator<br>Skilled Non Electrical Worker: WGEA Classification = Trades and Operations and not Electrical Fitter, Lines Worker or Operator |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Apprentice: WGEA Classification = Apprentice<br>Unskilled Worker: WGEA Classification = Labourer |
| Stand down occurrences pers ASL | A count per employee of how many times they used the Stand Down work codes in the timesheet in Ellipse.<br>Classed as estimate as the number of instances of stand down is calculated by the ASL value which is an adjusted figure | SQL of Ellipse work codes in MSF891 | Yes | An SQL query was run on the Work Code F1 from Ellipse 8 go live (April 2013) on the MSF891 file. | As the report is run for the period to match payment summaries with the dates of 22/6/19 to 26/06/2020 classed as estimate for employees.<br><br>Data for executives is for period 1/7/19 - 30/6/20 as they are paid monthly<br><br>AER Category:<br><br>Corporate Overheads - roles in below Business Units: |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | - Corporate Affairs<br><br>- Corporate Services<br><br>- Finance and Regulation<br><br>- Legal, Governance and Risk<br><br>- Strategy, Innovation and Technology<br><br>Network Overheads - roles in below Business Units:<br><br>- Network Planning and Operations except Network Operations > Control Centre<br><br>- Major Projects |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | - Works Delivery except Field Resources<br><br>Total Direct Network - roles in business Units<br><br>- Network Planning and Operations<br><br>- Network Operations > Control Centre<br><br>- Works Delivery > Field Resources<br><br>AER Level: |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Executive Manager: roles with Manager Category = Executive Manager<br><br>Senior Manager: roles with Manager Category = Senior Leader<br><br>Manager: roles with Manager Category = Department Manager or Team leader<br><br>Professional: roles with Manager Category = Individual contributor; Pay Range SP24-28 and above |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Semi-Professional: roles with Manager Category = Individual contributor; not support; Pay Range < SP24-28<br><br>Support staff: roles with Manager Category = individual contributor and support/admin function<br><br>Intern, junior staff, apprentice: interns and graduates<br><br>Skilled Electrical Worker: WGEA Classification = Trades |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | and Operations; Electrical Fitter, Lines Worker, Operator<br><br>Skilled Non Electrical Worker: WGEA Classification = Trades and Operations and not Electrical Fitter, Lines Worker or Operator<br><br>Apprentice: WGEA Classification = Apprentice<br><br>Unskilled Worker: WGEA Classification = Labourer |
| Total Labour expenditure | TransGrid notes that the AER's definition of 'Overheads' and 'Direct' labour that is required for the population of this RIN schedule differs to that | TransGrid Regulatory Accounts<br>Ellipse Financial Data<br>Opex model | Yes | Total direct network labour costs is taken from the labour components of RIN 2.7 | The allocation of the labour components into the corporate overhead, network overhead |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | used in the normal course of business. In particular TransGrid highlights that a significant proportion of labour costs described as 'Network Overheads' relates directly to project work that would ultimately be capitalised.<br>Total labour costs were extracted from financial records for the business units as listed below.<br>Total Direct Network Labour:<br>Consists of the following business units/categories:<br>Works Delivery<br>Skilled Electrical Worker, Skilled non electrical worker, Unskilled worker, Apprentice<br>Amounts are rounded to whole dollars. | | | Vegetation Management and 2.8 Maintenance.<br><br>The allocation to each of the employee categories are based on the proportion of gross earnings for the relevant employee category over the total gross earnings. | and direct network labour categories are based on the standard cost labour charge and recovery mechanism that is applied by TransGrid. This information does not contain details at the employee level.<br><br>The split of total labour costs into individual subcategories for each cell was based on the ASLs split between the different categories. The categories are based on classifications consistent with the opex model. |
| 2.11.2 DESCRIPTOR METRICS | | | | | |
| Corporate overheads | | | | | |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| Ordinary time<br>Per ASL | Total Paid hours: Value from TRBWFP Total Number of hours paid reference period (plus the sum of hours from Boardroom report for executive mangers) minus flex time taken (SQL of MSF888 to sum flex hours taken)<br>Total Leave Taken refers to the sum of leave taken by the employee including annual, paid sick leave, unpaid sick leave, carers leave, long service leave, maternity leave, paternity leave, family and community services leave and unpaid leave.<br>Adjusted by % of costs allocated to training<br>Adjusted by % of labour costs allocated to nonprescribed work activities (ordinary time and overtime)<br>Reference period refers to the payment summary period of 22/6/19 to 26/06/2020 | Workforce Profile Report (TRBWFP) from Ellipse for the reporting period Data for Executive managers from two sources - Workforce Profile Report and outsource provider Boardroom. Data was combined to get annual totals. Adjustment made to match to below reference period. As the report is run for the period to match payment summaries with the dates of 22/6/19 to 26/06/2020 and is adjusted by training rate and a non-prescribed labour costed rate this is classed as estimate. | Yes | Using the value from TRBWFP Total Number of hours paid reference period (plus the sum of hours from Boardroom report for executive mangers) minus flex time taken (SQL of MSF888 to sum flex hours taken) and subtracting the sum of the leave taken in the TRBWFP report and boardroom report<br>Adjusted by % of costs allocated to training Adjusted by % of labour costs allocated to non-prescribed work activities<br>Reference period refers to the payment summary period of 22/6/19 to 26/06/2020 | As the report is run for the period to match payment summaries with the dates of 22/6/19 to 26/06/2020 classed as estimate for employees. Data for executives is for period 1/7/19 - 30/6/20 as they are paid monthly<br><br>Total Number of Hours Paid Annual Reference Period; includes paid leave and excludes workers paid by third party, unpaid leave, overtime, allowances, additional hours worked under flex-time.<br>Total Leave Taken refers to the sum of leave taken by the employee including annual, paid sick leave, unpaid sick leave, carers leave, long service leave, maternity leave, paternity leave, family and community services leave and unpaid leave. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Adjusted by % of costs allocated to training<br><br>Adjusted by % of labour costs allocated to nonprescribed work activities Divide by FTE (ASL) Calculate average by AER level and category<br><br>AER Category:<br>Corporate Overheads - roles in below Business Units:<br>• Corporate Affairs<br>• Corporate Services<br>• Finance and Regulation<br>• Legal, Governance and Risk<br>• Strategy, Innovation and Technology<br>Network Overheads - roles in below Business Units: |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | • Network Planning and Operations except Network Operations > Control Centre<br>• Major Projects<br>• Works Delivery except Field Resources<br>Total Direct Network - roles in business Units<br>• Network Planning and Operations<br>○ Network Operations > Control Centre<br>• Works Delivery > Field Resources<br>AER Level:<br>Executive Manager: roles with Manager Category = Executive Manager<br>Senior Manager: roles with Manager Category = Senior Leader |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Manager: roles with Manager Category = Department Manager or Team leader<br>Professional: roles with Manager Category = Individual contributor; Pay Range SP24-28 and above<br>Semi-Professional: roles with Manager Category = Individual contributor; not support; Pay Range < SP24-28<br>Support staff: roles with Manager Category = individual contributor and support/admin function<br>Intern, junior staff, apprentice: interns and graduates<br>Skilled Electrical Worker: WGEA Classification = Trades and Operations; Electrical Fitter, Lines Worker, Operator<br>Skilled Non Electrical Worker: WGEA Classification = Trades and Operations and not |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Electrical Fitter, Lines Worker or Operator<br>Apprentice: WGEA<br>Classification = Apprentice<br>Unskilled Worker: WGEA<br>Classification = Labourer |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| Ordinary time Hourly rate per ASL | Gross Earnings /FTE<br>Adjusted by % of costs allocated to training<br>Adjusted by % of labour costs allocated to nonprescribed ordinary time work activities<br>Calculate average by AER level and category<br>NOTE: The data can appear to have outliers as termination payments are included in this rate calculation as they are classified as being 'Labour costs - other earnings'<br>Calculate average by AER level and category | Workforce Profile Report (TRBWFP) from Ellipse for the reporting period Data for Executive managers from two sources - Workforce Profile Report and outsource provider Boardroom. Data was combined to get annual totals. Adjustment made to match to below reference period. As the report is run for the period to match payment summaries with the dates of 22/6/19 to 26/06/2020 and is adjusted by training rate and a non-prescribed labour costed rate this is classed as estimate | Yes | Gross Earnings YTD divided by Ordinary Time Hours<br>Adjusted by % of costs allocated to training<br>Adjusted by % of labour costs allocated to non-prescribed ordinary time work activities | As the report is run for the period to match payment summaries with the dates of 22/6/19 to 26/06/2020 classed as estimate for employees. Data for executives is for period 1/7/19 - 30/6/20 as they are paid monthly<br><br>Gross Earnings /FTE<br>Adjusted by % of costs allocated to training<br>Adjusted by % of labour costs allocated to nonprescribed work activities Calculate average by AER level and category<br>NOTE: The data can appear to have outliers as termination payments are included in this rate calculation as they are classified as being 'Labour costs - other earnings'<br><br>AER Category: |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Corporate Overheads - roles in below Business Units:<br>• Corporate Affairs<br>• Corporate Services<br>• Finance and Regulation<br>• Legal, Governance and Risk<br>• Strategy, Innovation and Technology<br>Network Overheads - roles in below Business Units:<br>• Network Planning and Operations except Network Operations > Control Centre<br>• Major Projects<br>• Works Delivery except Field Resources<br>Total Direct Network - roles in business Units<br>• Network Planning and Operations |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | ○ Network Operations > Control Centre<br>• Works Delivery > Field Resources<br>AER Level:<br>Executive Manager: roles with Manager Category = Executive Manager<br>Senior Manager: roles with Manager Category = Senior Leader<br>Manager: roles with Manager Category = Department Manager or Team leader<br>Professional: roles with Manager Category = Individual contributor; Pay Range SP24-28 and above<br>Semi-Professional: roles with Manager Category = Individual contributor; not support; Pay Range < SP24-28 |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Support staff: roles with Manager Category = individual contributor and support/admin function<br>Intern, junior staff, apprentice: interns and graduates<br>Skilled Electrical Worker: WGEA Classification = Trades and Operations; Electrical Fitter, Lines Worker, Operator<br>Skilled Non Electrical Worker: WGEA Classification = Trades and Operations and not Electrical Fitter, Lines Worker or Operator<br>Apprentice: WGEA Classification = Apprentice<br>Unskilled Worker: WGEA Classification = Labourer |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| Overtime Per ASL | Overtime Hours is the number of hours of paid overtime worked by the employee during the reference period<br>Adjusted by % of labour costs allocated to nonprescribed overtime work activities | Workforce Profile Report (TRBWFP) from Ellipse for the reporting period Data for Executive managers from two sources - Workforce Profile Report and outsource provider Boardroom. Data was combined to get annual totals. Adjustment made to match to below reference period. As the report is run for the period to match payment summaries with the dates of 22/6/19 to 26/06/2020 and is adjusted by training rate and a non-prescribed labour costed rate this is classed as estimate. | Yes | Overtime Hours/FTE Averaged by AER Level and category<br><br>Adjusted by % of labour costs allocated to non-prescribed overtime work activities | As the report is run for the period to match payment summaries with the dates of 22/6/19 to 26/06/2020 classed as estimate for employees. Data for executives is for period 1/7/19 - 30/6/20 as they are paid monthly<br><br>Overtime Hours is the number of hours of paid overtime worked by the employee during the reference period<br><br>Adjusted by % of labour costs allocated to nonprescribed overtime work activities<br>AER Category:<br><br>Corporate Overheads - roles in below Business Units:<br><br>- Corporate Affairs<br>- Corporate Services |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | - Finance and Regulation<br>- Legal, Governance and Risk<br>- Strategy, Innovation and Technology<br><br>Network Overheads - roles in below Business Units:<br><br>- Network Planning and Operations except Network Operations > Control Centre<br>- Major Projects<br>- Works Delivery except Field Resources<br><br>Total Direct Network - roles in business Units<br><br>- Network Planning and Operations<br>- Network Operations > Control Centre |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | - Works Delivery > Field Resources<br><br>AER Level:<br><br>Executive Manager: roles with Manager Category = Executive Manager<br><br>Senior Manager: roles with Manager Category = Senior Leader<br><br>Manager: roles with Manager Category = Department Manager or Team leader<br><br>Professional: roles with Manager Category = Individual contributor; Pay Range SP24-28 and above<br><br>Semi-Professional: roles with Manager Category = Individual |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | contributor; not support; Pay Range < SP24-28<br><br>Support staff: roles with Manager Category = individual contributor and support/admin function<br><br>Intern, junior staff, apprentice: interns and graduates<br><br>Skilled Electrical Worker: WGEA Classification = Trades and Operations; Electrical Fitter, Lines Worker, Operator<br><br>Skilled Non Electrical Worker: WGEA Classification = Trades and Operations and not Electrical Fitter, Lines Worker or Operator<br><br>Apprentice: WGEA Classification = Apprentice |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Unskilled Worker: WGEA<br>Classification = Labourer |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| Overtime Hourly rate per ASL | Overtime Earnings/Overtime Hours<br>Calculate average by AER level and category<br><br>Adjusted by % of labour costs allocated to non-prescribed overtime work activities | Workforce Profile Report (TRBWFP) from Ellipse for the reporting period Data for Executive managers from two sources - Workforce Profile Report and outsource provider Boardroom. Data was combined to get annual totals. Adjustment made to match to below reference period. As the report is run for the period to match payment summaries with the dates of 23/6/18 to 23/06/19 and is adjusted by training rate and a non-prescribed labour costed rate this is classed as estimate. | Yes | The Overtime Hourly Rate was calculated by dividing the Total Overtime Earnings by the Overtime Hours.<br><br>Adjusted by % of labour costs allocated to non-prescribed overtime work activities | As the report is run for the period to match payment summaries with the dates of 22/6/19 to 26/06/2020 classed as estimate for employees. Data for executives is for period 1/7/19 - 30/6/20 as they are paid monthly<br><br>Overtime Earnings/Overtime Hours Calculate average by AER level and category<br><br>AER Category:<br>Corporate Overheads - roles in below Business Units:<br>• Corporate Affairs<br>• Corporate Services<br>• Finance and Regulation<br>• Legal, Governance and Risk<br>• Strategy, Innovation and Technology |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Network Overheads - roles in below Business Units:<br>• Network Planning and Operations except Network Operations > Control Centre<br>• Major Projects<br>• Works Delivery except Field Resources<br>Total Direct Network - roles in business Units<br>• Network Planning and Operations<br>  ○ Network Operations > Control Centre<br>• Works Delivery > Field Resources<br>AER Level:<br>Executive Manager: roles with Manager Category = Executive Manager |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Senior Manager: roles with Manager Category = Senior Leader<br>Manager: roles with Manager Category = Department Manager or Team leader<br>Professional: roles with Manager Category = Individual contributor; Pay Range SP24-28 and above<br>Semi-Professional: roles with Manager Category = Individual contributor; not support; Pay Range < SP24-28<br>Support staff: roles with Manager Category = individual contributor and support/admin function<br>Intern, junior staff, apprentice: interns and graduates<br>Skilled Electrical Worker: WGEA Classification = Trades and Operations; Electrical Fitter, Lines Worker, Operator |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| 2.11.1 COST METRICS PER ANNUM | | | | | |
| | | | | | Skilled Non Electrical Worker: WGEA Classification = Trades and Operations and not Electrical Fitter, Lines Worker or Operator<br>Apprentice: WGEA Classification = Apprentice<br>Unskilled Worker: WGEA Classification = Labourer |

**Note to Labour Classification Levels**

To align TransGrid's staff classifications to the required AER template classifications the following assumptions were made:

Executive: Positions at an EGM level

Senior Manager: Positions that have 'Reporting level' as a Group Manager

Manager: Positions that have 'Reporting Level' as Branch Manager, Team Leader or Business Manager – unless Works Delivery Team Leaders. Works delivery Team Leaders are to be classified into Direct Labour Skilled Electrical workers rather than network overheads as their roles supervise electrical workers in the field and contribute directly to work undertaken in the field.

Professional: Positions that are not team leaders or managers but are SP28 or higher or IEAs or SCOs

Semi Professional: Positions that are SP16-SP27 and that are not administrative or business support positions.

Support Staff: Positions that are admin/support roles SP12-SP20

Interns, Junior Staff and Apprentices - Graduates, MD scholars, Industrial Work Experience and Trainee Engineering Officers

Apprentices – Electrical and Lineworker Apprentices

Skilled Electrical Worker - Positions in WD that require electrical/trans line apprenticeship to have been completed or staff classification of operators

Skilled Non Electrical Workers - Positions that specify a trade other than electrical/trans line apprenticeship completed

Unskilled Workers - Positions that have a staff classification in Ellipse as Power Worker

**Note on Definition of Overheads'**

TransGrid notes that the AER's definition of 'Overheads' and 'Direct' labour that is required for the population of this template differs to that used in the normal course of business. In particular TransGrid highlights that a significant proportion of labour costs described as 'Network Overheads' relates directly to project work that would ultimately be capitalised.

**Note on Definition of AER Levels**

AER levels were determined by both the Business Unit the employee belonged to and by their AER Category as follows:

Exclude: Business Growth

**Corporate Overheads Internal Labour Costs:**

Consists of the following business units/categories:

**Corporate Services**

Executive manager
Senior Manager
Manager
Professional
Semi Professional
Support Staff
Intern, Junior Staff, Apprentice

**Finance**

Executive manager
Senior Manager
Manager
Professional
Semi Professional
Support Staff
Intern, Junior Staff, Apprentice

**Legal Governance & Risk**

Executive manager
Senior Manager
Manager
Professional
Semi Professional
Support Staff
Intern, Junior Staff, Apprentice

**CEO Office**

Executive manager
Senior Manager
Manager
Professional
Semi Professional
Support Staff
Intern, Junior Staff, Apprentice

**Strategy Innovation & Technology**

Executive manager
Senior Manager
Manager
Professional
Semi Professional
Support Staff
Intern, Junior Staff, Apprentice

**Network Overheads Internal Labour Costs:**

Consists of the following business units/categories:

**Network Planning & Operations**

Executive manager
Senior Manager
Manager
Professional
Semi Professional
Support Staff
Intern, Junior Staff, Apprentice

**Works Delivery**

Executive manager
Senior Manager
Manager
Professional
Semi Professional
Support Staff
Intern, Junior Staff, Apprentice

**Total Direct Network Labour:**

Consists of the following business units/categories:

**Works Delivery**

Skilled Electrical Worker
Skilled non electrical worker
Unskilled worker
Apprentice

### 7.3.10 Worksheet 2.12 Input tables

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| **2.12 INPUT TABLES** | | | | | |
| **Vegetation Management** | | | | | |
| Direct Material Expenditure | Based on Vegetation Management expenditure reported in CA RIN 2.7 and included in the Network Maintenance category in the Regulatory Accounts.<br>Amounts are rounded to whole dollars. | TransGrid financial records reported from Ellipse and Business Reporting and CA RIN 2.7 Vegetation Management.<br>Information is in line with CA RIN 2.1 Expenditure Summary. | No | Costs for Direct Materials / Direct Labour / Contract Cost / Other Costs are split based on Cost Category and / or Expense Element.<br><br>Contract costs are defined as expenditure in relation to expense elements 436 - Outsourced-Easement Maintenance and 438 - Outsourced-Equipment Installs.<br><br>Zone 2 expenditure relates to labour and other costs recorded against work orders with 'Easements" asset type that also have a parent work order/ project number associated with the 2019/20 bushfires.<br><br>ZONE 2 are the costs for the 2019/20 bushfires easement inspection, vegetation maintenance and NSW | N/A |
| Direct Labour Expenditure | | | | | |
| Contract Expenditure | | | | | |
| Other Expenditure | | | | | |
| Related Party Contract Expenditure | | | | | |
| Related Party Contract Margin | | | | | |
| FINANCIAL TOTALS | | | | | |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | RFS liaison identified by Business Segment. Number of trees and maintenance spans are not available for Zone 2 works. These are work orders associated with a parent work order/ project number associated with the 2019/20 bushfires with 'easements" asset type. | |
| **Routine Maintenance** | | | | | |
| Direct Material Expenditure | Based on Routine Maintenance expenditure reported in CA RIN 2.8 and included in the Network Maintenance category in the Regulatory Accounts. Amounts are rounded to whole dollars. | TransGrid financial records reported from Ellipse and Business Reporting and CA RIN 2.8 Maintenance Information is in line with CA RIN 2.1 Expenditure Summary. | No | Costs for Direct Materials / Direct Labour / Contract Cost / Other Costs are split based on Cost Category and / or Expense Element.<br><br>Contract costs are defined as expenditure in relation to expense elements 436 - Outsourced-Easement Maintenance and 438 - Outsourced-Equipment Installs. | N/A |
| Direct Labour Expenditure | | | | | |
| Contract Expenditure | | | | | |
| Other Expenditure | | | | | |
| Related Party Contract Expenditure | | | | | |
| Related Party Contract Margin | | | | | |
| FINANCIAL TOTALS | | | | | |
| **Non-Routine Maintenance** | | | | | |
| Direct Material Expenditure | | | No | | N/A |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Direct Labour Expenditure<br>Contract Expenditure<br>Other Expenditure<br>Related Party Contract Expenditure<br>Related Party Contract Margin<br>FINANCIAL TOTALS | Based on Non-Routine Maintenance expenditure reported in CA RIN 2.8 and included in the Network Maintenance category in the Regulatory Accounts.<br>Amounts are rounded to whole dollars. | TransGrid financial records reported from Ellipse and Business Reporting and CA RIN 2.8 Maintenance Information is in line with CA RIN 2.1 Expenditure Summary. | | Costs for Direct Materials / Direct Labour / Contract Cost / Other Costs are split based on Cost Category and / or Expense Element.<br>Contract costs are defined as expenditure in relation to expense elements 436 - Outsourced-Easement Maintenance and 438 - Outsourced-Equipment Installs. | |
| **Overheads** | | | | | |
| Direct Material Expenditure<br>Direct Labour Expenditure<br>Contract Expenditure<br>Other Expenditure<br>Related Party Contract Expenditure<br>Related Party Contract Margin | Based on Overheads reported in CA RIN 2.10 and reconciles to the Regulatory Accounts.<br>Amounts are rounded to whole dollars. | TransGrid financial records reported from Ellipse and Business Reporting and CA RIN 2.10 Overheads.<br>Information is in line with CA RIN 2.1 Expenditure Summary. | Yes | Prescribed opex before support cost allocations and excluding maintenance and vegetation management costs is split into Direct Materials / Direct Labour / Contract Cost / Other Costs categories based on the Cost Category and/or Expense Element in TransGrid's chart of accounts.<br>Allocation to the Direct Materials / Direct Labour / Contract Cost / Other Costs categories for Network and Corporate Overheads for this RIN | TransGrid's cost allocation process does not break down the Network and Corporate Overheads into the categories of Direct Materials, Direct Labour, Contract Costs and Other Costs. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| FINANCIAL TOTALS | | | | schedule is then based on a pro-rata allocation of these expenditure categories breakdown for Prescribed opex before support cost allocations and excluding maintenance and vegetation management costs. Contract costs are defined as expenditure in relation to expense elements 436 - Outsourced-Easement Maintenance and 438 - Outsourced-Equipment Installs. | TransGrid's Overhead costs include the standard support cost charge applied on the basis of labour hours incurred, in accordance with the AER-approved Cost Allocation Methodology for TransGrid.<br><br>The breakdown of the Network and Corporate Overheads expenditure categories profile is assumed to be similar to the actual expenditure categories |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | | breakdown for Prescribed opex before support cost allocations and excluding maintenance and vegetation management costs. |
| **Augex** | | | | | |
| Direct Material Expenditure<br>Direct Labour Expenditure<br>Contract Expenditure<br>Other Expenditure<br>Related Party Contract Expenditure<br>Related Party Contract Margin<br>FINANCIAL TOTALS | Projects reported for purposes of this schedule relate to the augmentation of the network in order to improve the quality of the network and to meet regulatory obligations.<br>Amounts are based on CA RIN 2.3 Augex,<br>Amounts are rounded to whole dollars. | TransGrid financial records reported from Ellipse and Business Reporting based on "portfolio grouping description" and "asset type description" and CA RIN 2.3 Augex. AER guidelines require further disclosure of substation and transmission line augex projects' costs incurred in a given financial year, therefore reference is drawn from "asset type description" to classify the total augex projects' costs incurred for the reported financial year into three categories "Substations", "Lines" and "Other Assets". The classification is | No | Costs for Direct Materials / Direct Labour / Contract Cost / Other Costs are split based on Cost Category and / or Expense Element in TransGrid's chart of accounts.<br>Contract costs are defined as expenditure in relation to expense element 438 - Outsourced-Equipment Installs.<br>The augex capex does not include capitalised overheads and is reported on an 'as incurred' basis. No adjustments have been made to capitalised labour oncosts for Defined Benefit Superannuation and from accounting to cash basis for | N/A |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | reviewed and verified by Asset Management.<br>The augex costs reported in this schedule exclude contingent capex projects that have not received AER approval. The QNI minor upgrade project was approved by the AER on 28 April 2020 and has been included in this schedule for the 2019-20 period, including those costs incurred in the 2018-19 period.<br>Information is in line with CA RIN 2.1 Expenditure Summary. | | Employees' Accrued Benefits Provision. | |
| **Connections** | | | | | |
| Direct Material Expenditure<br>Direct Labour Expenditure<br>Contract Expenditure<br>Other Expenditure<br>Related Party Contract Expenditure<br>Related Party Contract Margin<br>FINANCIAL TOTALS | Projects reported for purposes of this schedule relate to the augmentation of the network in order to improve the quality of the network and to meet regulatory obligations.<br>Amounts are based on CA RIN 2.3 Augex,<br>Amounts are rounded to whole dollars. | TransGrid financial records reported from Ellipse and Business Reporting.<br>The supporting information and list of projects for this RIN schedule are in line with CA RIN 2.5 Connections.<br>Information is in line with CA RIN 2.1 Expenditure Summary. | No | Comprises the total expenditure for prescribed connections capital projects for the following Portfolio grouping in Ellipse:<br>• Major Proj-Pres Connections<br>The connections capex for this RIN schedule does not include capitalised overheads and is reported on an 'as incurred' basis. No adjustments have been made to capitalised labour oncosts for Defined Benefit | N/A |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | Superannuation and from accounting to cash basis for Employees' Accrued Benefits Provision.<br>Costs for Direct Materials / Direct Labour / Contract Cost / Other Costs are split based on Cost Category and / or Expense Element in TransGrid's chart of accounts.<br>Contract costs are defined as expenditure in relation to expense element 438 - Outsourced-Equipment Installs. | |
| **Replacement** | | | | | |
| Direct Material Expenditure<br>Direct Labour Expenditure<br>Contract Expenditure<br>Other Expenditure<br>Related Party Contract Expenditure<br>Related Party Contract Margin | The total expenditure for prescribed replacement capital projects, exclusive of capitalised overheads and reported on an 'as incurred' basis. The reported expenditure reconciles to the Regulatory Accounts. | TransGrid financial records reported from Ellipse and Business Reporting. Information is in line with CA RIN 2.1 Expenditure Summary. | No | Comprises the total expenditure for prescribed replacement capital projects for the following Portfolio groupings in Ellipse:<br>• Major Proj-Presc Security Comp | N/A |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | Amounts are rounded to whole dollars. | | | • Major Proj-Presc Replacement<br>• Asset renewal strategies<br>The replacement capex for this RIN schedule does not include capitalised overheads and is reported on an 'as incurred' basis. No adjustments have been made to capitalised labour oncosts for Defined Benefit Superannuation and from accounting to cash basis for Employees' Accrued Benefits Provision.<br>The % of allocation for this RIN schedule is calculated based on a breakdown of actual costs into Direct Materials / Direct Labour / Contract Cost / Other Costs categories for REPEX projects commissioned in FY2019/20 as reported in RIN CA 2.2 REPEX. The calculated % of allocation is then applied to labour/material/expenses of REPEX costs incurred in FY2019/20 to calculate the costs per asset category. | |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | It is noted that the REPEX costs in RIN 2.2 REPEX Costs are split into Direct Materials / Direct Labour / Contract Cost / Other Costs categories based on the Cost Category and / or Expense Element in TransGrid's chart of accounts.<br>There was no related party capital expenditure during FY2019/20. | |
| **Non-network Expenditure** | | | | | |
| Direct Material Expenditure<br>Direct Labour Expenditure<br>Contract Expenditure<br>Other Expenditure<br>Related Party Contract Expenditure<br>Related Party Contract Margin<br>FINANCIAL TOTALS | The total expenditure for prescribed non-network capital projects, exclusive of capitalised overheads and reported on an 'as incurred' basis. The reported expenditure reconciles to the Regulatory Accounts.<br>Amounts are rounded to whole dollars. | TransGrid financial records reported from Ellipse and Business Reporting based on "portfolio grouping description" and "asset type description" and CA RIN 2.6 Non-Network.<br>Information is in line with CA RIN 2.1 Expenditure Summary. | No | Comprises the total expenditure for prescribed non-network capital projects for the following Portfolio groupings in Ellipse:<br>• Support - IT<br>• Support - Motor Vehicles<br>• Support - Plant & Equipment<br>• Support-Facilities and Depots<br>• Presc - other<br>The non-network capex for this RIN schedule does not include capitalised overheads and is reported on an 'as incurred' basis. No adjustments have | N/A |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | been made to capitalised labour oncosts for Defined Benefit Superannuation and from accounting to cash basis for Employees' Accrued Benefits Provision.<br>Costs for Direct Materials / Direct Labour / Contract Cost / Other Costs are split based on Cost Category and / or Expense Element in TransGrid's chart of accounts.<br>Contract costs are defined as expenditures in relation to expense element 438 - Outsourced-Equipment Installs. | |

### 7.3.11 Worksheet 5.2 Asset age profile

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| **5.2.1 ASSET AGE PROFILE** | | | | | |
| **Transmission towers** | | | | | |
| Economic Life - Mean | Average of Economic Life of each asset category. | Renewal and Maintenance Strategies | No | TransGrid's mean economic lives have been based on assumed structure economic life by structure type (wood pole, steel tower, etc.) regardless of location. The economic life was an average of the population for the applicable category. The methodology and structure economic lives applied are the same as in the 2018/19 RIN.<br><br>The calculations performed in Power BI are based on Ellipse asset data extracts. | Economic life is assumed as follows:<br>• Wood Pole - 70 years<br>• Concrete Pole - 70 years<br>• Steel lattice or steel pole structure - 90 years |
| Economic Life - Standard Deviation | Standard Deviation of Economic Life of each asset category. | Renewal and Maintenance Strategies | No | TransGrid's standard deviation of the economic lives in each category have been based on assumed structure economic life by structure type (wood pole, steel tower, etc.), and the size of each | |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | population, regardless of location. The methodology and structure economic lives applied are the same as in the 2018/19 RIN. The calculations performed in Power BI are based on Ellipse asset data extracts. | |
| Installed Assets -> Quantity currently in commission by year [1910-11 to 2019-20] | Transmission Towers by Highest Operating Voltage; Circuit Configuration | Ellipse and TSS Data Extract in Power BI | Yes | The Ellipse Equipment Register records the construction date of all structures on the TransGrid system. The PowerBI report extracts this his data and categories according to voltage and circuit configuration. Some additional adjustments were required to match Ellipse work order details and recently commissioned projects. | Dates are stored on a calendar year basis, not financial year. For the purposes of this RIN it was assumed build year was equal to the commissioning financial year. |
| **Transmission tower support structures** | | | | | |
| Economic Life - Mean | Support Structures by Highest Operating Voltage; Circuit Configuration | N/A - no support structures listed in template. | Yes | TransGrid do not separate asset data for support structures from towers themselves | There have been some past projects to replace wooden crossarms separate to wood poles, and some insulator replacement projects, hence inclusion in previous RIN section 2.2 (Repex) schedules. However these are not significant in the |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | | scheme of separation of these from the tower structures themselves. |
| Economic Life - Standard Deviation | Support Structures by Highest Operating Voltage; Circuit Configuration | N/A - no support structures listed in template. | Yes | TransGrid do not separate asset data for support structures from towers themselves | There have been some past projects to replace wooden crossarms separate to wood poles, and some insulator replacement projects, hence inclusion in previous RIN section 2.2 (Repex) schedules.<br>However these are not significant in the scheme of separation of these from the tower structures themselves. |
| Installed Assets -> Quantity currently in commission by year [1910-11 to 2018 - 19] | Support Structures by Highest Operating Voltage; Circuit Configuration | N/A - no support structures listed in template. | Yes | TransGrid do not separate asset data for support structures from towers themselves | There have been some past projects to replace wooden crossarms separate to wood poles, and some insulator replacement projects, hence inclusion in previous RIN section 2.2 (Repex) schedules.<br>However these are not significant in the scheme of separation of these from the tower structures themselves. |
| **Conductors** | | | | | |
| Economic Life - Mean | Average and Standard Deviation of Economic Life of each asset type. | Renewal and Maintenance Strategies | No | Under the latest REPEX model. All conductors are deemed to have a Mean Economic Life of 90 years | N/A |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Economic Life - Standard Deviation | Average and Standard Deviation of Economic Life of each asset type. | Renewal and Maintenance Strategies | No | As the whole network is deemed to have a 90 economic life there is no standard deviation. | N/A |
| Installed Assets -> Quantity currently in commission by year [1910-11 to 2018 - 19] | Length of transmission conductors in service as at 30/6/17 categorised by construction date. | Ellipse and TSS Data Extract in PowerBI | Yes | The PowerBI reports extracts the span lengths from TSS and assigns the commission year and voltage based on Ellipse nameplate information. The rating category is the summer day unconstrained rating determined in a previous RIN. | The age of conductors is based on a previous review of various sources (such as Line schedules, Line Data Cards, Electrical Databook, Easement Plan register dates). On some lines (generally older), construction data was not well recorded and best guess was used based on available previously mentioned documents.<br><br>The age profile has been calculated using circuit lengths not route length. Also segments of Transmission Lines that are built as split phase will have the length of that segment counted twice (as it has double the amount of conductor).<br><br>Dates are stored on a calendar year basis, not financial year. For the purposes of this RIN it was assumed build year was equal to the commissioning financial year. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | | No account has been made for any sections of conductors replaced for defects or failures. The age profile is based on operating voltage. For example, if a line is built for 330kV operation but only operating at 132kV, it will be categorised as a 132kV line.<br><br>Whilst the ratings have been corrected removing terminal constraints, where a line uses multiple types of conductors the most constraining rating was assumed for the whole length.<br><br>Note that as part of connection agreement revisions TransGrid took ownership of some 66kV and 132kV lines with field coupling points. These circuits are predominately strung on 132kV and 330kV multiple circuit structures respectively. |
| **Transmission cables** | | | | | |
| Economic Life - Mean | Average and Standard Deviation of Economic Life of each asset type. | Renewal and Maintenance Strategies | No | All TransGrid cables have a 45 year economic life. | Based on economic life only |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Economic Life - Standard Deviation | Average and Standard Deviation of Economic Life of each asset type. | Renewal and Maintenance Strategies | No | All TransGrid cables have a 45 year economic life. | Based on economic life only. TransGrid does not specify a standard deviation for each particular asset type. |
| Installed Assets -> Quantity currently in commission by year [1910-11 to 2018 - 19] | Length of transmission cables in service as at 30/6/17 categorised by construction date. | TSS<br>Electrical Data Book<br>Project Records (EDMS)<br>Ellipse fitment information | No | TransGrid's Electrical Database (published as the Electrical Data Book) records the commissioning date of segments of transmission cable circuits. For high voltage cables within substations, the length of the cables has been estimated from project drawings. The commissioning date of these cables comes from Ellipse bay fitments. | For small cable sections exact lengths may not have been recorded and have been estimated from available project data. The age profile is based on operating voltage. For example, if a cable is built for 330kV operation but only operating at 132kV, it will be categorised as a 132kV cable. Small lengths of high voltage cables <=66kV which may exist around / within high voltage substations have not been considered. |
| **Substation switchbays** | | | | | |
| Economic Life - Mean | Average and Standard Deviation of Economic Life of each asset type. | Renewal and Maintenance Strategies | No | All TransGrid switchbay assets have a 40 year economic life. | Based on economic life only |
| Economic Life - Standard Deviation | Standard Deviation of Economic Life of each asset type. | Renewal and Maintenance Strategies | Yes | Square root of the economic life mean | The square root of the economic life mean is used as proxy instead of zero. This is following AER's guideline regarding standard deviation on page 73 under Economic life of an asset section in Explanatory statement Final regulatory information notices to collect information for category analysis published in March 2014. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Installed Assets -> Quantity currently in commission by year [1910-11 to 2018 - 19] | Only those assets that were categorised 'IS' (acronym for 'In Service') were included. Scrapped, spare units not installed and non-prescribed assets were excluded for this review. TransGrid has interpreted the requirement for "INSTALLED ASSETS - QUANTITY CURRENTLY IN COMMISSION BY YEAR" as a requirement to identify the numbers of equipment items installed in each year, from the population of equipment currently in commission. This will allow a population profile to be established. | Last Financial Year's RIN submission<br><br>Ellipse Database : Component Register Summary Report TRB601 Equipment Register, Tracing Data,<br><br>TransGrid System Drawings: High Voltage Operating Diagrams (HVOD's) and WMS Scoping Diagrams. | No | In preparation for the compilation of RIN data an Ellipse report was run at the end of June to obtain a 'snapshot' of equipment data at that time. Population profiles were based on these reports.<br><br>Transformer population data was obtained separately for the Economic RIN and this information was re-used.<br><br>Spot checks were done to correct a small number of errors.<br><br>Any equipment (CB, VT, CT, Isolator, Earth Switch) in GIS was excluded from the respective category count and was included in the GIS module count. | This variable was calculated based on compiled data from Ellipse TRB 601 report.<br><br>It was cross checked (spot checks) using HVOD's and WMS Scoping diagrams.<br><br>Date extracted from Ellipse database was correct.<br><br>Tracing information was correct HVOD's and WMS scoping diagrams were correct. Only their latest versions were used as required. |
| **Substation power transformers** | | | | | |
| Economic Life - Mean | Average and Standard Deviation of Economic Life of each asset type. | Renewal and Maintenance Strategies | Yes | All TransGrid transformer assets have a 45 year economic life. | The actual service life of power transformers depends on the replacement decision which varies due to a number of factors: such as their defects, risk posed, |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | | type issues, network requirements etc. Hence, only standard economic life is used. |
| Economic Life - Standard Deviation | Standard Deviation of Economic Life of power transformers | Renewal and Maintenance Strategies | Yes | Square root of the economic life mean | The square root of the economic life mean is used as proxy instead of zero. This is following AER's guideline regarding standard deviation on page 73 under Economic life of an asset section in Explanatory statement Final regulatory information notices to collect information for category analysis published in March 2014. |
| Installed Assets -> Quantity currently in commission by year [1910-11 to 2018 - 19] | Only those assets that were categorised 'IS' (acronym for 'In Service') were included. Scrapped, spare units not installed and non-prescribed assets were excluded for this review. TransGrid has interpreted the requirement for "INSTALLED ASSETS - QUANTITY CURRENTLY IN COMMISSION BY YEAR" as a requirement to identify the numbers of equipment items installed in each year, from the | "Supporting docs\Substations\RIN 5.2 Power Transformers\2020_Transformer_Worksheet_RIN.xlsx" | No | For consistency, the Excel file '2020_Transformer_Worksheet_RIN' is used for Economic Benchmarking RIN as well as Category Analysis | Improved information on nameplate age has been collected in a field survey. Hence, nameplate 'year of manufacture' is now used for consistent and more easily traceable age-related data. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | population of equipment currently in commission. This will allow a population profile to be established. | | | | |
| **Substation reactive plant** | | | | | |
| Economic Life - Mean | Average and Standard Deviation of Economic Life of each asset type. | Renewal and Maintenance Strategies | No | All TransGrid Capacitor and oil filled Reactor assets have a 30 year economic life. SVC asset have a 20 year economic life | Only those assets that were categorised 'IS' (acronym for 'In Service') were included. Scrapped, spare units not installed and non-prescribed assets were excluded for this review. TransGrid has interpreted the requirement for "INSTALLED ASSETS -Ë QUANTITY CURRENTLY IN COMMISSION BY YEAR" as a requirement to identify the numbers of equipment items installed in each year, from the population of equipment current in commission. This will allow a population profile to be established. |
| Economic Life - Standard Deviation | Standard Deviation of Economic Life of each asset type. | Renewal and Maintenance Strategies | Yes | Square root of the economic life mean | The square root of the economic life mean is used as proxy instead of zero. This is following AER's guideline regarding standard deviation on page 73 under |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | | Economic life of an asset section in Explanatory statement Final regulatory information notices to collect information for category analysis published in March 2014. |
| Installed Assets -> Quantity currently in comission by year [1910-11 to 2018 - 19] | Other means : 132 kV GAS FILLED REACTORS | Last Financial Year's RIN submission<br><br>Ellipse Database : Component Register Summary Report TRB601 Equipment Register, Tracing Data,<br><br>TransGrid System Drawings: High Voltage Operating Diagrams (HVOD's) and WMS Scoping Diagrams. | No | In preparation for the compilation of RIN data an Ellipse report was run at the end of June to obtain a 'snapshot' of equipment data at that time. Population profiles were based on these reports.<br><br>Transformer population data was obtained separately for the Economic RIN and this information was re-used.<br><br>Spot checks were done to correct a small number of errors.<br><br>Any equipment (CB, VT, CT, Isolator, Earth Switch) in GIS was excluded from the respective category count and was included in the GIS module count. | This variable was calculated based on compiled data from Ellipse TRB 601 report.<br><br>It was cross checked (spot checks) using HVOD's and WMS Scoping diagrams.<br><br>Date extracted from Ellipse database was correct.<br><br>Tracing information was correct HVOD's and WMS scoping diagrams were correct. Only their latest versions were used as required |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| **SCADA, network control and protection systems** | | | | | |
| Economic Life - Mean | The expected economic life of each system | Renewal and Maintenance Strategies (Automation, Market Metering and Telecommunications) | No | All assets, straight out of Renewal and Maintenance Strategies.<br><br>Protection taken as weighted average from three types of assets with three different lives. | No assumptions made. |
| Economic Life - Standard Deviation | The standard deviation to the installed asset base with regard to its age | Ellipse | Protection - No<br><br>Control - Yes<br><br>Communications - Yes<br><br>Metering - No | Excel 2016 "STDEV.P()" function applied to all asset categories | Protection - N/A<br><br>Control - Records extracted directly from Ellipse. Where only a year was recorded for replacement date – it is assumed this date is the end of the financial year.<br>As recorded years have a proposed economic life of 15 years, this has been used throughout (e.g. if replacement year proposed is 2025 then assumed install date is 30/06/2010).<br>Where no year is recorded, RIN 2016/17 data was used to fill in the missing installation years.<br><br>Communications - Records extracted directly from Ellipse. Where only a year was recorded for replacement date – it is assumed this date is the end of the financial year. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | | As recorded years have a proposed economic life of 15 years, this has been used throughout (e.g. if replacement year proposed is 2025 then assumed install date is 30/06/2010).<br>Where no year is recorded, RIN 2016/17 data was used to fill in the missing installation years.<br><br>Metering - N/A |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Installed Assets -> Quantity currently in commission by year [1910-11 to 2018 - 19] | All asset counts based on year first commissioned<br><br>Protection - The number of main Protection relays in the network<br><br>Control - The number of Control devices in the Network (RTUs, HMIs, IEDs), Independent of combined devices.<br><br>Communications - The Number of Terminal Equipment, MUXs, Base Stations, PLC, VF Intertrips, and MW Assets on the Network<br><br>Metering - The number of meters in the network | Ellipse - Direct data (covers 90-95% of asset data)<br><br>SSA - Assessments - Technical Performance - Protection and Metering - Defects Up To and Including June 2020.xlsx<br><br>SSA - Assessments - Technical Performance - Telecommunications and Control - Defects Up To and Including June 2020.xlsx | Protection - No<br><br>Control - Yes<br><br>Communications - Yes<br><br>Metering - No | Protection - Direct extract from Ellipse<br><br>Control - Direct extract from Ellipse, where only proposed replacement year available, 15 years are subtracted and applied as 30/Jun of that year.<br><br>Communications - Direct extract from Ellipse, where only proposed replacement year available, 15 years are subtracted and applied as 30/Jun of that year.<br><br>Metering - Direct extract from Ellipse | Protection - N/A<br><br>Control - Records extracted directly from Ellipse. Where only a year was recorded for replacement date – it is assumed this date is the end of the financial year.<br>As recorded years have a proposed economic life of 15 years, this has been used throughout (e.g. if replacement year proposed is 2025 then assumed install date is 30/06/2010).<br><br>Communications - Records extracted directly from Ellipse. Where only a year was recorded for replacement date – it is assumed this date is the end of the financial year.<br>As recorded years have a proposed economic life of 15 years, this has been used throughout (e.g. if replacement year proposed is 2025 then assumed install date is 30/06/2010).<br><br>Metering - N/A |
| **Other - Not Applicable** | | | | | |

### 7.3.12 Worksheet 5.3 Maximum demand – network level

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| **5.3.1 RAW AND WEATHER CORRECTED CONINCIDENT MD AT NEWTORK LEVEL (summed at transmission connection point)** | | | | | |
| Raw network coincident MD | Raw network demand only in TransGrid's bulk supply points (BSPs) over rolling half hour periods on an as-delivered basis considered in identifying MD. | TransGrid's TUOS billing system | No | Raw network coincident MD in TransGrid's network is calculated as the maximum of the summated rolling half hour period demands for each and every BSP and other locations within TransGrid's network. All half hours periods for all days within FY 2019-20 have been considered for calculation of this variable. | Raw network demand only in TransGrid's bulk supply points (BSPs) over rolling half hour periods on an as-delivered basis considered in identifying MD. |
| Date MD occurred | Date the raw network coincident maximum demand occurred | TransGrid's TUOS billing system | No | Date on which the raw network coincident Maximum Demand occurred for the relevant FY. | Date relevant to TransGrid network, as per above for occurred over rolling half |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Half hour time period MD occurred | The half-hourly period during which the raw coincident maximum demand occurred | TransGrid's TUOS billing system | No | This pertains to half hour ended time period within which the MD occurred. As metering data is obtained over 15 minute intervals, rolling half hour average data is used (for example, average of 00:15 and 00:30 is used as the half hourly average demand at 00:30). | The maximum of summated rolling half-hourly averages in TransGrid's bulk supply points (BSPs) over rolling half hour periods on an as-delivered basis considered in identifying MD. The relevant half-hourly period is the reported number. |
| Winter/summer peaking | Determination of whether the TransGrid network peak above has occurred over summer or winter, in order to understand overall network capacity at the time of TransGrid network peak. | TransGrid's TUOS billing system | No | Determined by reference to when the MD occurred by ref months of winter or summer. As per TransGrid Operating Manuals:<br>Months of winter are defined as June, July and August. Months of summer are defined as December, January and February. | The season during which the half-hour time period MD occurred. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Embedded generation | Generation connected to a network (such as distributors' networks) supplied from a particular bulk supply point. The load supplied from TG's network excludes load supplied directly from other sources such as generators embedded within distribution networks. Under this RIN, TransGrid is required to provide data "as delivered by its network". Consequently, embedded generation does not contribute to the load supplied from TransGrid's network. | N/A | N/A | Data is required to be reported on an "as delivered by TransGrid's network basis". Loads supplied by embedded generation are not supplied by TransGrid's network. Consequently, the figures provided by TransGrid have no component of load supplied from embedded generation. | N/A |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Weather corrected (10% POE) network coincident MD | Network coincident maximum demand with weather correction applied (using TransGrid TAPR 2020 NSW Region Forecasts) to the raw maximum demand to obtain a 10% POE maximum demand. | TransGrid's TUOS billing system<br>TransGrid TAPR 2020 NSW Region Forecasts | Yes | (TG NSW Region 10% POE/TG NSW Region RAW MD) x TransGrid RAW MD<br>a) TransGrid RAW MD is the TransGrid raw network coincident MD<br>b) TG NSW Region RAW MD is the NSW+ACT raw MD as reported by TG TAPR 2019, and<br>c) TG NSW Region 10% POE is the 10% POE MD for NSW Region | TransGrid has started producing weather corrected maximum demands for the NSW Region (NSW+ACT). The source data (TransGrid RAW MD) is based on the TUOS billing system, and the weather correction from TransGrid's NSW Region Model.<br>The response is materially dependent on the assumption that there is a consistent relationship between the native maximum demand of the NSW region of the NEM and the gross maximum demand delivered by TransGrid's network. |
| Weather corrected (50% POE) network coincident MD | Network coincident maximum demand with weather correction applied (using TransGrid TAPR 2020 NSW Region Forecasts) to the raw maximum demand to obtain a 50% POE maximum demand. | TransGrid's TUOS billing system<br>TransGrid TAPR 2020 NSW Region Forecasts | Yes | (TG NSW Region 50% POE/TG NSW Region RAW MD) x TransGrid RAW MD<br>a) TransGrid RAW MD is the TransGrid raw network coincident MD | TransGrid has started producing weather corrected maximum demands for the NSW Region (NSW+ACT). The source data (TransGrid RAW MD) is based on the TUOS billing system, and the |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | b) TG NSW Region RAW MD is the NSW+ACT raw MD as reported by TG TAPR 2019, and<br>c) TG NSW Region 50% POE is the 50% POE MD for NSW Region | weather correction from TransGrid's NSW Region Model.<br>The response is materially dependent on the assumption that there is a consistent relationship between the native maximum demand of the NSW region of the NEM and the gross maximum demand delivered by TransGrid's network. |

### 7.3.13 Worksheet 5.4 Maximum demand and utilisation – spatial

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| **5.4.1 NON-COINCIDENT & COINCIDENT MAXIMUM DEMAND** | | | | | |
| Connection Point Rating | Connection Point Rating" is interpreted as the capability of TransGrid's Bulk Supply Points (BSP) to supply current and future customer connections.<br>Transmission systems can be limited by a range of factors including thermal ratings, voltage stability, transient stability and small signal (oscillatory) stability. These factors can be influenced by the magnitude and distribution of loads and generation across the network.<br>They can also vary with time of day (day/night) and between seasons | Operating diagrams and operating manuals.<br>Electrical Data Book. | No | Summation of transformer nameplate ratings &/or transmission line ratings at connection point | The connection point rating is determined as follows:<br>· Where the bulk supply point is the "lower" voltage busbar of a substation, the summated nameplate ratings of the transformers supplying that busbar.<br>· Where the bulk supply point is the "higher" voltage busbar of a substation, a tee connection or a switching station, the lessor of the summated normal summer day rating(s) of either:<br>a) TransGrid's transmission line(s) connected at that point, or<br>b) The customer's transmission line(s) connected at that point, or<br>c) The summated nameplate ratings of the customer's transformer(s) |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | | supplied via the customer's line(s). |
| Raw Adjusted MD (MW) | The maximum demand delivered at the bulk supply point, averaged over a rolling half hour period, adjusted for load transfers where applicable. | TransGrid's TUOS billing system & DNSP | No | The demand over any rolling half-hourly period for each BSP during the relevant FY is calculated, and adjusted for load transfers where applicable. The maximum half-hourly period over the relevant FY is then taken as the adjusted raw MD. | No assumptions. This is based on actual data. |
| Raw Adjusted MD (MVA) | Metered reactive loading data are not available at all bulk supply points. Where they are available, data has been used to calculate the actual MVA loading at the time of the relevant maximum MW loading | TransGrid's TUOS billing system & DNSP | Yes | MVA = sqrt (MW squared + MVAr squared) | Where metered MW and MVAr data are available, they have been used to calculate the MVA loadings. Where MVAr data is not available, the MVA loadings have been used on the system power factors, and as such, the number is an estimate. |
| Date MD occurred | Date the BSP maximum demand occurred | TransGrid's TUOS billing system & DNSPTransGrid's TUOS billing system & DNSP | No | Date on which the raw coincident and non coincident Maximum Demand occurred for the relevant FY. | No assumptions. This is based on actual data. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Half hour time period MD occurred | This variable has been taken to be the half hour period during which the relevant maximum demand (in MW) occurred. This is the half hour period ending at the nominated time. | TransGrid's TUOS billing system & DNSP | No | This pertains to half hour ended time period within which MD occurred. | No assumptions. This is based on actual data. |
| Winter/Summer Peaking | Determination of whether the TransGrid network peak above has occurred over summer or winter, in order to understand overall network capacity at the time of TransGrid network peak. | TransGrid's TUOS billing system & DNSP | No | Determined whether the MD occurred in the months of winter or summer. | No assumptions. This is based on actual data. |
| Adjustments - Embedded generation | Generation connected to a network (such as distributors' networks) supplied from a particular bulk supply point.<br>Under this RIN, TransGrid is required to provide data "as delivered by its network". The load supplied from TG's network excludes load supplied directly from other sources such as generators embedded within distribution networks. Consequently, embedded generation does not contribute to load supplied from TransGrid's network. | N/A | N/A | Data are required to be reported on and "as delivered by TransGrid's network basis". Loads supplied by embedded generation are not supplied by TransGrid's network. Consequently, the figures provided by TransGrid have no component of load | N/A |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | Under this RIN, TransGrid is required to provide data "as delivered by its network".<br><br>The load supplied from TG's network excludes load supplied directly from other sources such as generators embedded within distribution networks. Consequently, embedded generation does not contribute to load supplied from TransGrid's network. | | | supplied from embedded generation.. | |
| Weather Corrected MD 10% POE (MW) | Weather correction applied to the TransGrid adjusted BSP MD to produce TG BSP 10% POE MD. | TransGrid's TUOS billing system<br>AEMO Connection Point forecast 2019 | Yes | (AEMO BSP 10% POE/AEMO BSP RAW MD) x TransGrid adjusted BSP MD<br>Where:<br>a) "TransGrid adjusted BSP MD" refers to the raw adjusted MD for each BSP in the schedule<br>b) AEMO BSP RAW MD is the bulk supply point/connection point raw MD as reported by AEMO; and<br>c) AEMO BSP 10% POE is the bulk supply point/connection point 10% | TransGrid does not produce weather corrected maximum demands for its transmission system. AEMO is accountable for its production. The source data is based on the TUOS billing system, and the weather correction based on AEMO's 2019 Connection Point Forecast data containing raw and weather corrected actuals.<br>The response is materially dependent on the assumption that there is a consistent relationship between the |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | POE MD as reported by AEMO. | native maximum demand of the NSW region of the NEM and the gross maximum demand delivered by TransGrid's network.<br>For industrial loads supplied directly from BSPs, weather correction is not applicable, as load is not weather dependent. |
| Weather Corrected MD 10% POE (MVA) | As for 'Weather corrected MD 10% PoE (MW) | TransGrid's TUOS billing system<br>AEMO Connection Point forecast 2019 | Yes | Where both MW and MVAr data are available, MVA were calculated based on those data.<br>Where MVAr data are not available, the "system average" power factor has been used. | As for 'Weather corrected MD 10% PoE (MW)'.<br><br>In addition, where metered MW and MVAr data are available they have been used to calculate the MVA loadings. Where MVAr data is not available, the MVA loadings have been based on the system power factor; as such, the number is an estimate. |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| Weather corrected Coincident MD 50% PoE (MW) | Weather correction applied to the TransGrid adjusted BSP MD to produce TG BSP 50% POE MD. | TransGrid's TUOS billing system<br>AEMO Connection Point forecast 2019 | Yes | (AEMO BSP 50% POE/AEMO BSP RAW MD) x TransGrid adjusted BSP MD<br>Where:<br>a) "TransGrid adjusted BSP MD" refers to the raw adjusted MD for each BSP in the schedule<br>b) AEMO BSP RAW MD is the bulk supply point/connection point raw MD as reported by AEMO; and<br>c) AEMO BSP 50% POE is the bulk supply point/connection point 50% POE MD as reported by AEMO. | TransGrid does not produce weather corrected maximum demands for its transmission system. AEMO is accountable for its production. The source data is based on the TUOS billing system, and the weather correction based on AEMO's 2019 Connection Point Forecast data containing raw and weather corrected actuals.<br>The response is materially dependent on the assumption that there is a consistent relationship between the native maximum demand of the NSW region of the NEM and the gross maximum demand delivered by TransGrid's network.<br>For industrial loads supplied directly from BSPs, weather correction is not applicable, |

| Data variable & TransGrid's interpretation | | Data sources, locations and 'owners' | Estimation or actual information, calculations and assumptions | | |
|---|---|---|---|---|---|
| Variable reference & AER description | TransGrid's interpretation of data variable | Data sources | Is this variable 'Estimated Information' as per AER definition? | How the values for this variable are calculated | Assumptions made to allow calculation / estimation of the variable |
| | | | | | as load is not weather dependent. |
| Weather corrected Coincident MD 50% PoE (MVA) | As for 'Weather corrected MD 50% PoE (MW) | TransGrid's TUOS billing system<br>AEMO Connection Point forecast 2019 | Yes | Where both MW and MVAr data are available, MVA were calculated based on those data.<br>Where MVAr data are not available, the "system average" power factor has been used. | As for 'Weather corrected MD 50% PoE (MW)'.<br>In addition, where metered MW and MVAr data are available they have been used to calculate the MVA loadings. Where MVAr data is not available, the MVA loadings have been based on the system power factor; as such, the number is an estimate. |