Basis of Preparation Economic Benchmarking RIN

2017/18 Response to Economic Benchmarking RIN

Issued 31 October 2018

Purpose

The RIN requires Ausgrid to prepare a Basis of Preparation. By this, the AER means that for every variable in the Templates, Ausgrid must explain the basis upon which we prepared information to populate the input cells. The Basis of Preparation must be a separate document (or documents) that Ausgrid submits with its completed Templates. The AER will publish Ausgrid's Basis of Preparation along with the Templates.

Structure of this document

The document is structured as follows:

- We outline our general approach to developing our response to the RIN.
- We set out our response to worksheets 3.1 to 3.7, in accordance with the AER's instructions.

General approach

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

Systems used to provide data

Where data has been sourced directly from Ausgrid's financial and other information systems this system has been identified. Similarly, where estimated data is based on data sourced from Ausgrid's systems those systems are identified.

Process used to determine if information is actual or estimated

Where Actual Information is not able to be derived from Ausgrid's financial and information systems, then information has been estimated on the basis which Ausgrid considers provides the best available estimate. In circumstances where the AER has recommended an approach for estimating, that approach has been followed as far as practicable and reasons for variations have been identified and explained.

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
3.1 Revenue TABLE 3.1.1 - REVENUE GROUPING BY CHARGEABLE QUANTITY	Actual	Table 3.1.1 Revenue Grouping by chargeable Quantities - Variables DREV101 to DREV0113 have been sourced from SAP Financials and SAP Business Intelligence (BI) Network Tariff Reports.		Revenue reported in Table 3.1.1 is as per the definition of Standard Control Services and Alternative Control Services as set out in the in the AER Final Decision - Ausgrid Distribution Determination 2015-16 to 2018-19, April 2015; Attachment 13 - Classification of Services April 2015. *Standard Control Services* - are those services central to the supply of electricity and are relied on by the majority of our customers which is essentially the delivery of electricity. The cost of providing these services is recovered through DUoS tariffs paid by all or most of our customers. As Ausgrid operates both distribution and dual function assets, the revenue requirements for standard control services is split between Distribution Standard Control Services and Transmission Standard Control Services. ***Alternative Control Services*** - are services that are customer specific or customer requested services. Alternative control services include public lighting, type 5-6 metering services and ancillary network services. In line with the AER Final Decision there are two types of charges for the provision of Type 5 & 6 metering services for the 2015-19 Regulatory control period. The charges are an upfront capital charge and an annual metering service charge (MSC). For Type 5 & 6 metering services, effective from 1 July 2015 the annual metering service charge was unbundled from the Distribution Standard Control Services. In addition, the upfront capital charge was applied to all new and upgraded meters installed from 1 July 2015. It should also be noted that as set out in Stage 1 Framework and Approach paper, Ausgrid, Endeavour Energy and Essential Energy - the transitional regulatory control period 1 July 2014 to 30 June 2015 and subsequent regulatory control period 1 July 2015 to 30 June 2019, March 2013, the AER has reclassified some of Ausgrid's services from standard control to alternative control. Total Revenue reported in Table 3.1.1 for the financial year 2017-18 includes both billed and accrued data.	***The Variables DREV0101 to DREV0109 categorises Distribution Use of System Revenue into tariff component charges.*** Each Ausgrid Network DUoS tariff is comprised of more than one component except for unmetered loads which has only a single component. DREV0101 — This represents the Network Access Charge (NAC) of the Ausgrid Network Tariff. This is a fixed (c/day) applied to each energised connection point at which energy or demand is recorded. DREV0102 — This represents Non Time of Use charge (c/kWh) applied to the total energy determined from an energy only meter. Step pricing structures applies to selected Non Time of Use energy charges. DREV0103 — Revenue from customer consumption of electricity during peak period. DREV0104 — Revenue from customer consumption of electricity during shoulder period DREV0105 — Revenue from customer consumption of electricity during off peak period DREV0106 — Controlled Load is applicable to electricity which is separately metered and controlled. It is used for operating storage water heaters, thermal storage space heaters, and other approved fixed wired appliances. Control Load Tariffs are secondary tariffs and can only be applied at installations with selected	The information reported in Table 3.1.1 is consistent with the requirements of the Notice, the AER's RIN Benchmarking Explanatory Statement and the AER's Instructions and Definitions Manual. In particular, the Revenue reported in Table 3.1.1: ● has been reported in accordance with the definition of Standard Control Services and Alternative Control Services as set out in the AER Final Decision - Ausgrid Distribution Determination 2015-16 to 2018-19, April 2015; Attachment 13 - Classification of Services April 2015. ● has been grouped into chargeable quantity categories in accordance with the definitions provided in the RIN Economic Benchmarking Instructions and Definitions Manual, November 2013. In accordance with the instructions provided, Total Revenue by Chargeable Quantities reported in Table 3.1.1 equals the Total Revenue by Customer Class reported in Table 3.1.2. Also Revenue from Unmetered Supplies reported in Table 3.1.1 agrees to Unmetered Supplies reported in Table 3.1.2. The completion of Table 3.1.1 for the 2017-18 year has been prepared in a consistent manner to the completion of the 2005-06 to 2016-17 Revenue Templates previously submitted to the AER. The Revenue reported in Table 3.1.1 is in accordance with the Regulatory Accounting Statements as per the Annual Reporting Requirements and reconciles to Direct Control Services revenues reported in the Regulatory Accounting Statements (Annual reporting RIN). On the 24 May, the full Federal Court partly upheld the AER's appeal in relation to the Australian Competition Tribunal's decision to set aside the AER's April 2015 Revenue Determination and Allowable Annual Revenue for the period July 2014 to June 2019. In the absence of an applicable 2014-2019 distribution determination, Ausgrid has entered into an enforceable undertaking in agreement with the AER under section 59A of the National Electricity (NSW) Law for 2017-18. This undertaking expired on 30 June 2018. Ausgrid has used the AER Final Decision and the enforceable undertaking as the basis for the preparation of the information.	There has been no material accounting changes during the financial period 2017-18 that has had an impact on Revenue reported in Table 3.1.1.

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
				BI Network Tariff report collates billed and accrued revenue by Network Tariff and Tariff component. This has been used to enable the completion of Table 3.1.1 Variables DREV0101 to DREV0109.	Primary Tariffs. DREV0107: Unmetered Supplies are metering installations that do not have a physical meter attached to the installation. DREV0108: For the financial period 2017-18 Contracted Maximum Demand Charges was not a component of the Ausgrid Network Tariff DREV0109: This variant includes charges calculated on maximum demand that is either reset on a monthly basis or ratcheted. ***Variables DRE0110 to DREV0113 categorises the remaining Standard Control Revenues and Alternative Control Revenues.*** Standard Control DREV0113: Ausgrid Prescribed Transmission Standard Control Services Revenue NER (version 111) Chapter Part N 6.24.2 - any service provided by a DNSP by means of the DNSP's dual function assets that, but for this Part, would be prescribed transmission service for the purposes of Chapter 6A is deemed to be a standard control service.		

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
					Alternative Control Revenue DREV0110: In line with Stage 1 Framework & Approach paper and Transitional Distribution decision, Ancillary Network Services and Type 5 & 6 metering services have been reclassified as Alternative Control. Those services reported as metering related services have been identified in line with Attachment 8.08 Revisions to the Ancillary Network Services Proposal Appendix 1. DREV0111: In line with Stage 1 Framework & Approach paper and Transitional Distribution decision, -Ancillary Network Services and Type 5 & 6 metering services have been reclassified as Alternative Control. Those services reported as connection related services have been identified in line with Attachment 8.08 Revisions to the Ancillary Network Services Proposal Appendix 1. DREV0112: The construction and maintenance of Public Lighting Infrastructure Customer specific services		
3.1 Revenue TABLE 3.1.2 REVENUE GROUPING	Actual	Table 3.1.2 Revenue groupings by customer type or	There is no estimated information for Revenue	Revenue reported in Table 3.1.2 is as per the definition of Standard Control Services and Alternative Control Services as set out in the in the AER Final Decision - Ausgrid Distribution Determination 2015-16	***The Variables DREV0201 to DREV0205 categorises Distribution Use of System by Customer class***	The information reported in Table 3.1.2 is consistent with the requirements of the Notice, the AER's RIN Benchmarking Explanatory Statement and the AER's Instructions and Definitions Manual. In particular, the Revenue reported in Table 3.1.2;	There has been no material accounting changes during the

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
BY CUSTOMER TYPE OR CLASS		class - Variables DREV0201 to DREV0206 have been sourced from SAP Financials and SAP Business Intelligence (BI) Network Tariff Reports.	groupings by Customer Type or Class	to 2018-19, April 2015; Attachment 13 - Classification of Services April 2015. *Standard Control Services* - are those services central to the supply of electricity and are relied on by by the majority of our customers which is essentially the delivery of electricity. The cost of providing these services is recovered through DUoS tariffs paid by all or most of our customers. As Ausgrid operates both distribution and dual function assets, the revenue requirements for standard control services is split between Distribution Standard Control Services and Transmission Standard Control Services. ***Alternative Control Services*** - are services that are customer specific or customer requested services. Alternative control services include public lighting, type 5-6 metering services and ancillary network services. In line with the AER Final Decision there are two types of charges for the provision of Type 5 & 6 metering services for the 2015-19 Regulatory control period. The charges are an upfront capital charge and an annual metering service charge (MSC). For Type 5 & 6 metering services, effective from 1 July 2015 the annual metering service charge was unbundled from the Distribution Standard Control Services. In addition, the upfront capital charge was applied to all new and upgraded meters installed from 1 July 2015. It should also be noted that as set out in Stage 1 Framework and approach paper, Ausgrid, Endeavour Energy and Essential Energy - the transitional regulatory control period 1 July 2014 to 30 June 2015 and subsequent regulatory control period 1 July 2015 to 30 June 2019, March 2013, the AER has reclassified some of Ausgrid's services from standard control to alternative control. Total Revenue reported in Table 3.1.2 for the financial year 2017-18 includes both billed and accrued data. BI Network Tariff report collates billed and accrued revenue by Network Tariff and Tariff component. This	Each Ausgrid Network DUoS tariff is comprised of more than one component except for unmetered loads which has only a single component. DREV0201 — Residential Tariffs are assigned to premises where electricity use is principally for private domestic purposes. For Ausgrid this includes (but is not limited to) Residential Tariffs such as EA010 Residential Inclining Block, EA025 Residential ToU and Controlled Loads 1 & 2. DREV0202 — Revenue from Non Residential Customers not on demand includes (but is not limited to) Small Business Tariffs such as EA050 Small Business Inclining Block and EA225 Small Business ToU. DREV0203 — Revenue from Non Residential Low Voltage Demand Tariff Customers is assigned to those customers where the usage is from 40MWh up to 750MWh per annum. This includes (but is not limited to) the following Tariffs EA302 LV 40-160MWh Tariff, EA305 LV 160-750MWh Tariff and EA310 >750MWh. DREV0204 — Revenue from Non Residential High Voltage Demand Tariff Customers includes EA370 and EA380 HV Connection Network Tariffs, EA390 Sub-transmission Connection Network Tariff and CRNP Tariffs. DREV0205 — Unmetered Supplies are metering installations that do not have a physical meter attached to the installation. These include Network Tariffs EA401 Public Lighting, EA402 Constant Unmetered and EA403 EnergyLight.	● has been reported in accordance with the definition of Standard Control Services and Alternative Control Services as set out in the AER Final Decision - Ausgrid Distribution Determination 2015-16 to 2018-19, April 2015; Attachment 13 - Classification of Services April 2015. ● has been grouped into customer type or class categories in accordance with the definitions provided in the RIN Economic Benchmarking Instructions and Definitions Manual, November 2013. In accordance with the instructions provided Total Revenue by Chargeable Quantities reported in Table 3.1.1 equals the Total Revenue by Customer Class reported in Table 3.1.2. Also Revenue from Unmetered Supplies reported in Table 3.1.1 agrees to Unmetered Supplies reported in Table 3.1.2. The completion of Table 3.1.2 for the 2017-18 year has been prepared in a consistent manner to the completion of the 2005-06 to 2016-17 Revenue Templates previously submitted to the AER. On the 24 May, the full Federal Court partly upheld AER's appeal in relation to the Australian Competition Tribunal's decision to set aside the AER's April 2015 Revenue Determination and Allowable Annual Revenue for the period July 2014 to June 2019. In the absence of an applicable 2014-2019 distribution determination, Ausgrid has entered into an enforceable undertaking in agreement with the AER under section 59A of the National Electricity (NSW) Law for 2017-18. This undertaking expired on 30 June 2018. Ausgrid has used the AER Final Decision and the enforceable undertaking as the basis for the preparation of the information.	financial period 2017-18 that has had an impact on Revenue reported in Table 3.1.2

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
				has been used to enable to completion of Table 3.1.2 Variables DREV0201 to DREV0205.			

Variables DRE0206 categorises other Standard Control Revenue and Alternative Control Revenue

Standard Control

DREV0206	Ausgrid Prescribed Transmission Standard Control Services Revenue NER (version 111) Chapter Part N 6.24.2 - any service provided by a DNSP by means of the DNSP's dual function assets that, but for this Part, would be prescribed transmission service for the purposes of Chapter 6A is deemed to be a standard control service.

Alternative Control Revenue

DREV0206	Type 5 & 6 metering services Ancillary Network Services - metering and connection service fees The construction and maintenance of Public Lighting Infrastructure Customer specific services

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
3.1 Revenue TABLE 3.1.3 REVENUE (penalties) ALLOWED (deducted) THROUGH INCENTIVE SCHEMES	Estimated	AER Placeholder determination for the transitional regulatory control period 2014-15, April 2014 AER Final Decision - Ausgrid Distribution Determination 2015-16 to 2018-19, April 2015; Attachment 12 - Demand management incentive schemes April 2015 AER Final Decision - Ausgrid Distribution Determination 2015-16 to 2018-19, April 2015; Attachment 11 - Service target performance incentive scheme April 2015 AER Final Decision - Ausgrid Distribution Determination 2015-16 to 2018-19, April 2015; Attachment 1 - Annual revenue requirement April 2015 AER, Stage 1 Framework and	Under the AER final decision, both the DMIA & EBSS are included in the Distribution and Transmission annual revenue requirements for the period 2015-19. As a result, the DMIA allowance and EBSS are recovered as part of the actual DUOS and TUOS prices and cannot be unbundled from the actual revenue to allow for the reporting of 'actual' revenue from incentive schemes. Consequently, we have reported the amount allowed by the AER in its final decisions for incentive schemes in this template. For these reasons the amount provided is considered to be the best estimate of the information	Revenue reported in Table 3.1.3 has been populated as follows: Variant DREV0301 - *Efficiency Benefit Sharing Scheme (EBSS).* The reward resulting from the application of the EBSS was $44.2 million (nominal) for 2017-18. The approved amount of $41.2 million, as documented in the AER Final Ausgrid Determination 'Attachment 9 - Efficiency Benefit Sharing Scheme' report, was converted to nominal dollars by applying a factor derived from the relevant CPI rates for each year (as listed in the table below) to the distribution and transmission components of the EBSS amount. EBSS is calculated in accordance with 'Attachment 14 - Control mechanisms' (section 14.5.3) from the AER's final decision. Actual CPI: Distribution 2.49% (FY15), 1.51% (FY16), 1.28% (FY17), 1.95% (FY18); Transmission 1.72% (FY15), 1.69% (FY16), 1.48% (FY17), 1.91% (FY18) Variant DREV0302 - *Service Target Performance Incentive Scheme (STPIS).* Due to the enforceable undertaking Ausgrid has entered into for the 2017-18, no adjustment for STPIS has been applied. Note: If not for the enforceable undertaking a STPIS adjustment calculated in relation to financial year 2015-16 would have applied in 2017-18. Variant DREV0303 - F-Factor does not apply to NSW for 2017-18. Variant DREV0304 - S-Factor True up does not apply to NSW for 2017-18. Variant DREV0305 - The amount of $1.07 million (nominal) relates to DMIA, which is allowed by the	N/A	The information reported in Table 3.1.3 is consistent with the requirements of the Notice, the AER's RIN Benchmarking Explanatory Statement and the AER's Instructions and Definitions Manual, November 2013. The completion of Table 3.1.3 for the 2017-18 year has been prepared in a consistent manner to the completion of the 2005-06 to 2016-17 Revenue Templates previously submitted to the AER. On the 24 May, the full Federal Court partly upheld AER's appeal in relation to the Australian Competition Tribunal's decision to set aside the AER's April 2015 Revenue Determination and Allowable Annual Revenue for the period July 2014 to June 2019. In the absence of an applicable 2014-2019 distribution determination, Ausgrid has entered into an enforceable undertaking in agreement with the AER under section 59A of the National Electricity (NSW) Law for 2017-18. This undertaking expired on 30 June 2018. Ausgrid has used the AER Final Decision and the enforceable undertaking as the basis for the preparation of information.	There has been no material accounting changes during the financial period 2017-18 that has had an impact on Revenue reported in Table 3.1.3.

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
		Approach paper, Ausgrid, Endeavour Energy and Essential Energy - Transitional Regulatory Control Period 1 July 2014 to 30 June 2015 and Subsequent Regulatory Control Period 1 July 2015 to 30 June 2019, March 2013 AER, Stage 2 Framework and Approach paper, Ausgrid, Endeavour Energy and Essential Energy - Transitional Regulatory Control Period 1 July 2014 to 30 June 2015 and Subsequent Regulatory Control Period 1 July 2015 to 30 June 2019, January 2014	required by the RIN. The basis for completing Table 3.1.3 is reliant on sources outlined above under Sources of information.	AER for 2017-18 as per its final decision for the 2015-19 regulatory period. The approved annual DMIA amount of $1 million was converted to nominal dollars by applying a factor derived from relevant CPI rates for each year as listed in the below table. DMIA is calculated in accordance with 'Attachment 14 - Control Mechanisms' (section 14.5.3) from the AER's final decision. Actual CPI / FY15 / FY16 / FY17 / FY18 Distribution / 2.49% / 1.51% / 1.28% / 1.95% It should be noted that Ausgrid has deferred submitting an application for recovering expenditure made under the DMIA until the AER has made its determination for the current regulatory period. The DMIA adjustment amount calculated in relation to the 2009-2014 regulatory period totalled (-$2.56m). Recoupment of this amount will form part of the true-up required as part of this process. The D-factor amount for 2017-18 is zero. As noted previously, the AER has decided not to continue with the D-factor for the 2015-19 period and that any remaining expenditure from the application of this scheme in the 2009-14 period has been recovered in the 2015-16 revenue (via the annual pricing proposal and as part of the control mechanism).			
3.2 Operating Expenditure TABLE 3.2.1 Current opex categories and cost allocations	Actual	Actual data for 2017/18 has been based on an extraction of actual financial data directly or via TM1 from our SAP financial system (Ausgrid's financial accounting and reporting system). The TM1 system is used to report the line of business view of the financial information. Ausgrid also has in	Actual information has been obtained.	Operating expenditure reported in Table 3.2.1 has been prepared in accordance with the definition of Standard Control Services and Alternative Control Services as set out in the AER Final Decision - Ausgrid Distribution Determination 2015-16 to 2018-19, April 2015; Attachment 13 - Classification of Services, April 2015, and Ausgrid's CAM and aligns to the operating expenditure categories used in the 2014-19 Ausgrid Regulatory Proposal. The operating expenditure categories are consistent between the SCS, ACS and Unregulated Services and agree to 2014-19 Ausgrid Regulatory Proposal. The financial numbers align to the financial data extracted from SAP and TM1 (Ausgrid's financial accounting and reporting systems).	N/A	Information reported in Table 3.2.1 is in accordance with the audited statutory financial statements, the requirements of the Notice, AER's RIN Economic Benchmarking Explanatory Statement and Instructions and Definitions Manual November 2013, the Regulatory Accounting Statements (Annual Reporting RIN), and Ausgrid's Cost Allocation Methodology (CAM). Table 3.2.1 has been reported following the accounting principles and policies specified in the Annual Reporting RIN requirements. Ausgrid's statutory financial statements comply with Australian Accounting Standards. Ausgrid has reported operating expenditure line items in a manner that is consistent with the 2014-19 Ausgrid Regulatory Proposal. Ausgrid allocates costs to each business service on either a direct attribution basis or by the application of allocators. A comprehensive review of the allocations between Standard Control Services (SCS), Alternative Control Services (ACS), and Unregulated Services occurs each year. Compliance is in line with the CAM. The current CAM is on Ausgrid's Website. Operating expenditure reconciles to the 2017/18 Annual Reporting RIN.	There have not been any material changes in accounting policies.

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
		place finance policies and procedures, a centralised finance function and qualified employees who are able to manage the requirements. The financial data provided in this submission is for the full year ended 30 June 2018.		Costs relating to operating expenditure categories listed above have been extracted from SAP via the TM1 cube for FY 2017/18 according to profit centre mapping for each operating expenditure category for standard control and alternative control services. Profit centres are grouped into different divisions that reflect Ausgrid's organisational structure and are used for reporting purposes only. Costs incurred for operations work are directly attributed to, or allocated between, standard control services, alternative control services and/or unregulated services respectively. This is based on the nature of the expenditure and in accordance with the CAM. Costs are allocated between categories of service according to cost objects in SAP. Cost objects are the lowest at which transactions are aggregated in SAP. Cost objects aggregate to form a profit centre which identifies the division in Ausgrid.		
3.2 Operating Expenditure TABLE 3.2.2 - Opex consistency - current cost allocation approach	Actual	Financial data included in Table 3.2.2 is sourced from SAP and TM1 (Ausgrid's financial accounting and reporting systems).	All financial data reported in Table 3.2.2 is actual and can be verified in SAP and TM1	Operating expenditure reported in Table 3.2.2 has been prepared in accordance with Ausgrid's Cost Allocation Methodology. Financial data included in Template 3.2.2. is sourced from SAP and TM1. Ausgrid has determined standard control services "operating expenditure for network services" as the aggregate of operating expenditure for the year less the operating expenditure for metering. Ausgrid has aligned the Alternative Control Services operating expenditure for metering, connection services, public lighting and network services to the Category Analysis RIN, Annual Regulatory Reporting RIN and cost objects in TM1. There are no numbers for "Operating expenditure for amounts payable for easement levy or similar direct charges on DNSP" as Ausgrid capitalises these amounts.	N/A	Information reported in Table 3.2.2 is in accordance with the Ausgrid's Cost Allocation Methodology and the requirements of the Notice, AER's RIN Economic Benchmarking Explanatory Statement and Instructions and Definitions Manual, November 2013. Operating expenditure reconciles to the 2017/18 Annual Reporting RIN.	There have not been any material changes in accounting policies.

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
				There are no numbers for "Operating expenditure for transmission connection point planning" as Ausgrid's costs are capitalised as a part of the planning of our transmission network with discussions with Transgrid.			
3.2.3 Provisions TABLE 3.2.3 - PROVISIONS	Actual	Information provided is based on: ● Audited Statutory Accounting statements; ● TM1 and SAP (Ausgrid's financial accounting and reporting systems) and ● External actuarial reports.	Actual information has been obtained.	Ausgrid applied the Cost Allocation Methodology in providing the required information for 2017/18. The financial data provided in this submission is for the year ended 30 June 2018. Adjustments to the provision components have been made in order to disclose the discount rate. These adjustments have impacted the provision values reported in the Regulatory Accounting Statements for each Regulatory Year in the component categories of "The increase during the period in the discounted amount arising from the passage of time and the effect of any change in the discount rate". The discount rate assumptions applied to the provisions are outlined below: ● Defined Benefits Superannuation (included in the Employee Benefits Provisions) The defined benefits superannuation position has been assessed by an actuary. The impact and value of this assessment is recognised by Ausgrid. ● Long Service Leave, Supplementary Superannuation and Severance allowance, and Preserved Sick leave (included in the Employee Benefits Provisions) The position of these provisions has been assessed by an actuary. The impact and value of this assessment is recognised by Ausgrid. ● Workers' Compensation (included in the Insurance Provisions) The position of this provision has been assessed by an actuary. The impact and value of this assessment is recognised by Ausgrid. ● PCB, Site Remediation, Assets Decommissioning and Make Good provisions (included in the Other Provisions)	N/A	Information reported in Table 3.2.3 is in accordance with the audited statutory financial statements, the requirements of the Notice, AER's RIN Economic Benchmarking Explanatory Statement and Instructions and Definitions Manual November 2013, the Regulatory Accounting Statements (Annual Reporting RIN), and Ausgrid's Cost Allocation Methodology (CAM). Table 3.2.3 has been reported following the accounting principles and policies specified in the Annual Reporting RIN requirements. Ausgrid's statutory financial statements comply with Australian Accounting Standards. Ausgrid allocates costs to each business service on either a direct attribution basis or by the application of allocators. A comprehensive review of the allocations between Standard Control Services, Alternative Control Services, and Unregulated services occurs each year. Compliance is in line with the CAM. The current CAM is on Ausgrid's Website. The financial information in the template represents Standard Control Services (Distribution) and Standard Control Services (Transmission) only as per advice received from Scott Haig from the AER on 27 August 2014. The financial information provided is for each grouping of provisions identified as follows: ● Employee Benefits ● Restructuring costs ● Insurance ● Other Other provisions consist of provision for asbestos and contaminated land remediation, polychlorinated biphenyls (PCB) disposal costs for end of life equipment provision, make good provision and asset decommissioning provision. Each individual provision has been specified by name and the variable codes for the line items have been separately identified as required.	No accounting policy changes for 2017/18 have had a material impact on provisions.

<table>
<tr><th>Sheet/Table /Rule</th><th>Estimated/Actual</th><th>Data Source</th><th>Why Estimated</th><th>Methodology</th><th>Assumptions</th><th>Consistency Information</th><th>Additional Comments</th></tr>
<tr><td></td><td></td><td></td><td></td><td>For the regulated distribution business, the Other Provision is related to site remediation, removal and disposal of equipment and decommissioning of assets to meet the legal and constructive obligation of Ausgrid. The discount rate applied to the above provisions was based on Corporate bond rate as at 30 June.

Ausgrid has populated the opex and other categories in the provision movements. Relevant employee costs including employee benefits are capitalised into projects when employees work on capital projects by crediting the profit & loss account and debiting the impacted projects. Movement of the assets related provisions are also capitalised into the related capital projects.

In determining the allocation for the Employee Remuneration Entitlement (ERE) provisions and Insurance provision, Ausgrid has applied the latest allocation.</td><td></td><td></td><td></td></tr>
<tr><td>3.2 Operating Expenditure TABLE 3.2.4 - OPEX FOR HIGH VOLTAGE CUSTOMERS</td><td>Estimated</td><td>High Voltage customer numbers and loads are sourced from Ausgrid's Metering Systems being Meter Data Agency Databased (MDA) and Maintenance Costs are sourced from SAP ECC.</td><td>Ausgrid has used estimated information for Table 3.2.4 Opex for High Voltage Customers.

Since this is a cost is incurred by customers, Ausgrid has no actual information on these costs. As a result, it is necessary to estimate this cost on the basis of available information. This is the best estimate available as the methodology used is based on information relevant and</td><td>The process adopted was as follows;

1. Identify HV Customers and their current loads. HV Customers and their loads were identified from our metering systems.

2. Allocate HV customers' to substation types on the basis of capacity characteristics of substation types. HV loads were then allocated to various substation types on the basis of the following substation capacities;

<table><tr><th>Substation Type</th><th>Substation Capacity</th></tr><tr><td>Small Distribution Substations (Kiosks)</td><td>< 2MVA</td></tr><tr><td>Large Distribution</td><td>2-5 MVA</td></tr></table></td><td>N/A</td><td>The information reported in Table 3.2.4 is consistent with the requirements of the Notice, AER's RIN Economic Benchmarking Explanatory Statement and Instructions and Definitions Manual, November 2013.</td><td>There have not been any material changes in accounting policies.</td></tr>
</table>

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
			available. These estimates are significantly limited in their application. Ausgrid has not been able to evaluate the age, condition or state of these assets. Ausgrid's actual maintenance costs, if Ausgrid owned these assets, may significantly vary from these estimates.	<table><tr><td>Substations (Chambers)</td><td></td></tr><tr><td>Large Substations Zones)</td><td>=> 15 MVA</td></tr></table> 1. Estimate Ausgrid's average maintenance cost by substation type. Ausgrid's average maintenance costs by substation type were calculated by dividing total maintenance costs for the year by the number of commissioned substations. Maintenance costs are assumed to be correlated with the capital cost of the substation type i.e. maintenance costs for large substations are approximately 30 times that for a small distribution substation. 2. Derive estimated maintenance costs Maintenance costs were then estimated by multiplying the average internal maintenance costs by the number of HV substations.			
3.3 Assets (RAB) TABLE 3.3.1 - REGULATORY ASSET BASE VALUES	Actual	In preparation of Ausgrid's 2017/18 EBRIN, the following sources have been used. *2016/17 EBRIN* The closing balances for 2016/17 in the 2016/17 EBRIN were used as the opening balances for Type 5-6 Metering and Public Lighting. There has been an update to the FY16/17 closing RAB which has impacted the FY18 opening RAB. See additional	In years prior to 2014/15, the Network Services lines in Table 3.3.1 had been classified as estimated information as a result of the allocation methodology used to extract metering related assets from the SCS. Now that the opening RAB value as at 1 July 2014 has been determined by the AER and the allocation approach is no longer	The methodology for this section involved the following: 1. Standard Control Services (SCS) The line items 'Inflation addition', 'Actual additions' (recognised in RAB) and 'Disposals' were sourced or calculated from the Distribution RFM 1419 and Transmission RFM 1419. The 'Opening Value' was set equal to the closing value of the 2016-17 EBRIN. The values shown in these line items represent the total values of all asset classes used in the provision of SCS (as they are classified for the 2014-19 period). <u>Network Services (NS)</u> In prior years, Network Services was obtained by removing the Metering Service RAB components from each SCS asset categories. As Metering Services are now classified by the AER as ACS from 1 July 2014,	N/A	Worksheet 3.3 Asset (RAB) (hereafter RAB worksheet) required the allocation of the Regulatory Asset Base (RAB) data into aggregated categories of capital inputs: namely overhead lines, underground cables, transformers and other capital. Furthermore, a split between Network Services, Standard Control Services and Alternative Control Services as per the definitions in Chapter 9 of the Economic Benchmarking Instructions was required. This overarching requirement has been met with information provided in all three templates: the Worksheet 3.3 Actual Information template, Worksheet 3.3 Estimated Information template, and the Worksheet 3.3 Consolidated Information template. These worksheets show the various asset categories for which Ausgrid must provide the relevant RAB values. These asset categories are referred to in this section as 'RIN asset categories'. Additionally, compliance with the RIN also involved the requirements detailed in Table 1, which also details the actions Ausgrid completed to meet these requirements.	The Opening Value for FY18 has been adjusted to include capitalisation of a finance lease on the land component of the Chullora subtransmission switching station. This lease was reclassified from an operating lease to a finance lease in FY15 at the request by the auditor (Audit Office NSW), to comply with the NSW Treasury policy. The amount brought onto the balance sheet as a finance lease liability was

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
		comments for further clarification. *Public lighting model* For Public Lighting ACS, the closing RAB value for 2016/17 was established using an approach consistent with the RFM, noting that there is no new capex for Public Lighting ACS as this is captured via a different control mechanism. This will be referred to as the 'Public Lighting model'. *AER's Final Decision for 2015-19* As mentioned above, Ausgrid has used forecast depreciation approved by the AER in its final decision for on the post-tax revenue model (PTRMs) for Ausgrid's SCS assets for 2015-19. Ausgrid has also used inputs (e.g. WACC, forecast CPI, standard asset lives,	necessary to derive the Metering RAB value, instead a separate RFM is now used for metering services and all information is classified as 'actual' from 2014/15 onwards. This is because the RAB values for SCS and ACS are derived from RFMs.	this removal is no longer necessary. Metering Services RAB is now reported as part of ACS. <u>Alternative Control Services (ACS)</u> Alternative Control Services Table 3.3.1 has been generated using information from the public lighting model and the Metering RFM 1519. *Net actual capex* We note that the AER's RFM recognised net actual capex which is the capex incurred by Ausgrid less the proceeds from sale of assets and capex that was funded by a capital contribution. In order to comply with the EBRIN requirements to show the actual additions and disposals separately, Ausgrid has disaggregated the 'actual net capex' amounts in the RFMs into actual additions (i.e. gross capex minus capital contributions) and disposals and reported these in Tables 3.3.1 and 3.3.2. We have adopted this approach to ensure compliance with the requirements of the RIN as well as ensuring that the closing values (which are protected cells) are calculated correctly. Also in accordance with the RFM, a half year WACC application is applied to the net actual capex. *Opening RAB balance* Ausgrid has carried forward the closing balances of the RAB from 2016/17 to be the opening balances for 2017/18 for Type 5-6 Metering and Public Lighting ACS and SCS. *Depreciation* The amended RFM allows for the option of using actual straight-line depreciation (based on actual capex) or forecast straight-line depreciation (consistent		Compliance Requirement Ausgrid's Compliance All cells filled where highlighted yellow in the templates Ausgrid has provided information in all yellow highlighted cells. RAB values reported in accordance to the Standard Approach (section 4.1.1) detailed in the Instructions provided by the AER. Ausgrid has complied with the Standard Approach provided in Chapter 4 of the Instructions. Assets have been directly attributed to the RIN asset categories where appropriate, and have applied the more detailed allocation approach where direct attribution was not possible. Details are provided in following sections of this Basis of Preparation document. RAB Standard Control Services (SCS) values reported in accordance with the Financial Reporting Framework in Box 7 of section 4.1 of the Instructions provided by the AER. Where possible, Ausgrid provided RAB SCS in the templates making the opening balance for 2017/18 consistent with the closing balance of the 2016/17 economic benchmarking RIN (EBRIN). The opening balance is then updated for actual capital expenditure, disposals and CPI to arrive at the closing balance. We note that the AER is due to make a new decision on Ausgrid's revenue allowance based on the Federal Court decision. However, as this new decision is not yet available, we have continued to apply the same methodology that the AER has used in its final decision published in April 2015 to calculate a WACC that is used for the underlying RFMs in this version of the EBRIN. In the sections below, we explain and provide further details on the calculation of the 2017/18 RAB values, calculated using the AER's RFMs. The provision of a Basis of Preparation to accompany the filled worksheets (this document); in particular detailing the allocation methodology used (see 'Methodology and Assumptions' below). Ausgrid has complied with this requirement through the provision of this Basis of Preparation document. Substation land to be included in the 'substation asset' category Ausgrid has complied with this requirement by allocating all substation land to the 'substation asset' category. Reporting of Alternative Control Services (ACS) where the AER has approved a RAB or RAB equivalent for the services, or alternatively the reporting of '0' in the absence of any approved RAB. Ausgrid has complied with this requirement with the provision of Public Lighting RAB information as well as Type 5-6 Metering Services which the AER has classified as ACS from 1 July 2014. All financial information are reported in thousands of dollars, rounded to the nearest dollar, and Non-Financial Information reported to 3 significant figures Ausgrid has complied with this requirement. Please see each RAB Template. Details of the steps Ausgrid has taken to comply with this RIN are detailed in sections below. Moreover, as detailed in the instructions, Table 3.3.1 must reconcile to Table 3.3.2. This requirement has been met for actual, estimated and consolidated information. The total in table 3.3.1 equates to the sum of the RIN asset categories in table 3.3.2.	$17.7 million in FY15, representing the net present value (**NPV**) of the future lease payments. The Chullora finance lease asset was recognised as an addition to property, plant and equipment (**PP&E**) in the financial statements in FY15. However, the leased asset was not recognised through the capital expenditure (**CAPEX**) process and therefore was not included in the RAB in FY15. Future lease payments were recognised as finance costs and reduction of finance lease liability, i.e. no impact to operating expenditure (**OPEX**) or CAPEX. As a result, Ausgrid did not receive any return or allowance from the finance lease asset. Ausgrid will increase RAB for the $17.7 million Chullora finance lease that was omitted from the RAB in FY15 to ensure a return is generated on this financial outlay. This will be recognised as an opening balance

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
		remaining asset lives) from the PTRMs for 2015-19 for SCS and ACS. We note that this final decision made by the AER in April 2015 has now been set aside due to the Federal Court ruling and the AER is due to make a new decision on Ausgrid's revenue allowance. However, as this new decision is not yet available, we have continued to apply the same methodology that the AER has used in its final decision published in April 2015 to calculate a WACC that is used for this version of the EBRIN. *Ausgrid's actual capex, disposals and capital contributions for 2017/18* In order to derive Ausgrid's net actual capex for 2017/18, which is the capex incurred by Ausgrid less the proceeds from sale of assets and capex that was funded by capital contribution,		with the forecast straight-line depreciation from the PTRM). For the purpose of establishing the closing RAB for 2016/17, we have taken into account forecast depreciation (i.e. forecast straight line depreciation in the PTRM from the AER's final decision) for SCS metering assets. This is consistent with the AER's Final Decision for Ausgrid in April 2015[1] where the AER has decided to use the forecast depreciation to establish the RAB at the commencement of the 2019-24 regulatory control period. [1] We note that this decision is to be remade by the AER on the order of the Australian Competition Tribunal; however, this aspect is not expected to change.			adjustment to the RAB to ensure the RAB closing balance correctly included the Chullora leased asset. This is in line with this AASB 16 proposed treatment on transition, which allows the recognition of a leased asset equal to the value of the NPV of the future lease payments. The adjustment to the Opening RAB was calculated by applying CPI escalation to bring the $17.7m in to $FY18 terms, and applying a 1/2 WACC adjustment to this value and adding this to capex for Transmission & Zone land and easements.

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
		Ausgrid has disaggregated the 'actual net capex' amounts in the RFMs into actual additions (i.e. gross capex minus capital contributions) and disposals and reported these in Tables 3.3.1 and 3.3.2.					
3.3 Assets (RAB) TABLE 3.3.2 - ASSET VALUE ROLL FORWARD Opening value[0], Opening value[1], Opening value[2], Inflation addition[0], Inflation addition[1], Inflation addition[2], Straight line depreciation[0], Straight line depreciation[1], Straight line depreciation[2], Actual additions (recognised in RAB)[0], Actual additions (recognised in RAB)[1], Actual additions (recognised in RAB)[2], Disposals[0], Disposals[1], Disposals[2],	Estimated	The source information for RIN table 3.3.2 is the same as for RIN table 3.3.1, with the additional inclusion of data from Ausgrid's Fixed Asset Register (FAR) to create a method to allocate the existing RAB values into RIN asset categories. The Fixed Asset Register has disaggregated replacement cost data for 2017/18 with details of splits between distribution and transmission system assets. Ausgrid has relied on the 2017/18 "Book Value Land by Property Usage" report from Ausgrid's FAR to determine the split of Ausgrid's "Land and Easements" RAB class. This was required to	Ausgrid has treated allocated RAB data as estimated, which is explained in greater detail above. As per the Instructions, the allocation method was necessary where RAB assets could not be directly attributed to a single RIN asset category. The allocation methodology provided by the AER alters the underlying actual data, and therefore cannot be treated as actual data. As indicated above, the approach produced the best estimate of the	<u>Allocation to RIN asset categories</u> Consistent with the prior year, the methodology used for RIN table 3.3.2 included a detailed allocation of RAB asset classes to the RIN asset categories. This is consistently applied to the opening RAB values, inflation additions, straight line depreciation, actual additions and disposals. Direct allocation was utilised where possible in line with the Standard Approach. RAB assets that could not be directly allocated utilised the depreciated replacement cost approach described in the Instructions. As such, this approach produced the best estimate of the information being sought in the RIN within the confines of the Standard Approach. This overall methodology is detailed as follows: 1. Assets that could be directly allocated to RIN categories were allocated in full. 2. For the remaining assets that required allocation across a number of RIN classes, in particular between overhead and underground classifications or zone and distribution substations, these were assigned an allocator based on depreciated replacement costs. The allocators were created as follows: 1. Ausgrid's Fixed Asset Register (FAR) was used to estimate weightings for 2017/18. The FAR was used to determine the depreciated replacement cost of assets	Not applicable.	In this section we demonstrate how the information provided is consistent with the requirements of this Notice. The RAB worksheet required Regulatory Asset Base data to be allocated into aggregated categories of capital inputs: namely overhead lines, underground cables, transformers and other capital. Furthermore, a split between Network Services, Standard Control Services and Alternative Control Services as per the definitions in Chapter 9 of the Economic Benchmarking Instructions was required. This overarching requirement has been met with information provided in all three templates: the Worksheet 3.3 Actual Information template, Worksheet 3.3 Estimated Information template, and the Worksheet 3.3 Consolidated Information template. These worksheets show the various asset categories for which Ausgrid must provide the relevant RAB values. These asset categories are referred to in this section as 'RIN asset categories'. Additionally, compliance with the RIN also involved the requirements detailed above in Table 1, as well as requirements specific to RIN table 3.3.2. These are detailed in Table 2 below which also specifies the actions Ausgrid completed to meet these requirements. . **Table 2: Compliance with the RIN for RIN table 3.3.2**	Not applicable.

<table>
<tr><th>Sheet/Table/Rule</th><th>Estimated/Actual</th><th>Data Source</th><th>Why Estimated</th><th>Methodology</th><th>Assumptions</th><th>Consistency Information</th><th>Additional Comments</th></tr>
<tr>
<td>Opening value[0], Opening value[1], Opening value[2], Inflation addition[0], Inflation addition[1], Inflation addition[2], Straight line depreciation[0], Straight line depreciation[1], Straight line depreciation[2], Actual additions (recognised in RAB)[0], Actual additions (recognised in RAB)[1], Actual additions (recognised in RAB)[2], Disposals[0], Disposals[1], Disposals[2], Opening value[0], Opening value[1], Opening value[2], Inflation addition[0], Inflation addition[1], Inflation addition[2], Straight line depreciation[0], Straight line depreciation[1], Straight line depreciation[2], Actual additions</td>
<td></td>
<td>meet the AER's requirement to allocate system land to the respective substation RIN category as required.</td>
<td>information being sought in the RIN within the confines of the Standard Approach.

Notwithstanding the estimated nature of the data in RIN table 3.3.2, at an aggregated level this data reconciles to the data in RIN table 3.3.1.</td>
<td>by financial class. Assets by financial classes aggregate to form RAB assets for the RFM. This method is in line with the Instructions; part (c) of the RAB allocation approach section. The FAR data provided a more accurate basis for estimation of the depreciated replacement cost in comparison to using the physical asset data (Template 6), the unit rate replacement cost and the weighted average asset age as recommended by the AER in part (c).

Each disaggregated RAB asset was allocated a specific RIN asset category, being:

1. overhead assets less than 33kV

2. underground assets less than 33kV

3. zone substations

4. distribution substations

5. overhead assets greater than 33kV

6. underground assets greater than 33kV

7. The weightings were applied to the RAB Asset values calculated using the AER's RFM. This approach allowed for reconciliation to RIN Table 3.3.1 as required.

8. Steps 1 and 2 were repeated for each RFM (distribution, transmission and metering RFMs).

9. In line with RIN table 3.3.1, Metering Services related assets (i.e. direct metering assets, direct IT metering assets and non-system assets allocated to Metering), together with public lighting asset values, form part of ACS.

10. Public Lighting data was sourced from the Public Lighting model. This was categorised into the "Other Assets with Long Lives" class.

11. As Ausgrid's RAB has system land and easements in a single asset class ("Land and Easements"), zone system land and distribution system land was segregated from easements. This was undertaken using the FAR to initially isolate the easements, and then separate the system land into zone and distribution proportions using book values of land by property usage.</td>
<td></td>
<td>
<table>
<tr><th>Compliance Requirement</th><th>Ausgrid's Compliance</th></tr>
<tr><td>Ausgrid must report RAB Asset Financial Information broken down in accordance with the RAB Assets as per definitions of the categories specified in Chapter 9.</td><td>Ausgrid has used the definitions specified in Chapter 9 as required. All assumptions and variations from these definitions are detailed in 'Methodology and Assumptions' below.</td></tr>
<tr><td>Where previously reported, Ausgrid must provide values separately for Easements. Otherwise, this should be included in the remaining categories. Data that includes Easements should be identified.</td><td>Easements have been reported separately. Data that contains easements has been identified.</td></tr>
<tr><td>Provision of Actual information where applicable</td><td>Ausgrid has attempted to provide as much actual information as possible. In some cases the RFM requires forecast information (e.g. forecast CPIs) and these are sourced from the AER's final approved RFMs or PTRMs. Actual capex and proceeds from sale of assets are sourced from Ausgrid's financial system and some of these information (e.g. capex) are also reported to the AER via annual RIN. Actual CPI are calculated using the AER's approved methodology based on actual data published by the ABS.</td></tr>
</table>

Details of the steps Ausgrid has taken to comply with this RIN are detailed in sections below.
</td>
<td></td>
</tr>
</table>

Sheet/Table/Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
(recognised in RAB)[0], Actual additions (recognised in RAB)[1], Actual additions (recognised in RAB)[2], Disposals[0], Disposals[1], Disposals[2], Opening value[0], Opening value[1], Opening value[2], Inflation addition[0], Inflation addition[1], Inflation addition[2], Straight line depreciation[0], Straight line depreciation[1], Straight line depreciation[2], Actual additions (recognised in RAB)[0], Actual additions (recognised in RAB)[1], Actual additions (recognised in RAB)[2], Disposals[0], Disposals[1], Disposals[2], Opening value[0], Opening value[1], Opening value[2], Inflation				12. RAB assets that could not clearly be attributed to a RIN category were assigned to an 'Other' category based on standard life. The majority were "Other Assets with Long Lives" which includes the following: 1. Communications equipment 2. Public lighting 3. Emergency spares 4. Furniture, fittings, plant and equipment 5. Motor vehicles 6. Non system buildings and land 7. Other non-system assets 8. Equity Raising Costs (for 2010-2013) 9. Load control assets 10. The "Other Assets with Short Lives" mainly consists of IT related assets. Assets attributable to overhead categories may include assets associated with underground assets (e.g. underground to overhead connections (UGOHs)). These have not been segregated. Easement assets have not been included outside of the easements category. 11. Zone Substations includes ancillary assets, as well as zone buildings and zone land 12. As a final step, the consolidated template was separated into actual and estimated information. This was based on direct attribution (step 1 above) or allocation (step 2). It was assumed that all RAB data that could directly be applied to a RIN category was deemed as accurate and therefore actual, whereas allocated RAB was less accurate and therefore estimated. <u>Opening RAB balance</u> The opening RAB balances have been sourced from the 2017/18 EBRIN closing balances. <u>Depreciation</u>			

Sheet/Table/Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
addition[0], Inflation addition[1], Inflation addition[2], Straight line depreciation[0], Straight line depreciation[1], Straight line depreciation[2], Actual additions (recognised in RAB)[0], Actual additions (recognised in RAB)[1], Actual additions (recognised in RAB)[2], Disposals[0], Disposals[1], Disposals[2], Opening value[0], Opening value[1], Opening value[2], Inflation addition[0], Inflation addition[1], Inflation addition[2], Straight line depreciation[0], Straight line depreciation[1], Straight line depreciation[2], Actual additions (recognised in RAB)[0], Actual additions (recognised in RAB)[1], Actual				Consistent with the approach for RIN table 3.3.1, we have taken into account forecast depreciation (i.e. forecast straight line depreciation in the PTRM from the AER's final decision) for SCS and metering assets. Public lighting model Consistent with prior years, public lighting data was sourced from the Public Lighting model and categorised into the "Other Assets with Long Live" class. Every year, a certain amount of remaining public lighting assets are replaced earlier than the end of their asset lives at the request of customers. For those assets Ausgrid requests that the remaining asset value is paid by the customer. The amount is then deducted from the residual RAB at the end of the financial year, i.e. the closing RAB. We have reflected these deductions in the closing RAB for 2016/17, which becomes the opening RAB for 2017/18, as well as the closing RAB for 2017/18.			

Sheet/Table/Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
additions (recognised in RAB)[2], Disposals[0], Disposals[1], Disposals[2], Opening value[0], Opening value[1], Opening value[2], Inflation addition[0], Inflation addition[1], Inflation addition[2], Actual additions (recognised in RAB)[0], Actual additions (recognised in RAB)[1], Actual additions (recognised in RAB)[2], Disposals[0], Disposals[1], Disposals[2],							
3.3 Assets (RAB) TABLE 3.3.3 - TOTAL DISAGGREGATED RAB ASSET VALUES	Estimated	The source for RIN table 3.3.3 is RIN table 3.3.2.	Where an allocation to a RIN asset category has taken place, the resulting value is classified as estimated values. Therefore, where the asset balances in Table 3.3.2 have been identified as estimated, the corresponding balance in Table 3.3.3 is	In this section we explain the methodology Ausgrid applied to provide the required information, including any assumptions Ausgrid made. Ausgrid has calculated the disaggregated RAB values by averaging the opening and closing values. The Value of Capital Contributions or Contributed Assets included in the RAB is zero, as these amounts are excluded from the RAB in the RFMs. However, we note that there was capital expenditure of $110.6m in 2017-18 on these items under network services and standard control services.	Not applicable.	The RAB worksheet required Regulatory Asset Base data to be allocated into aggregated categories of capital inputs: namely overhead lines, underground cables, transformers and other capital. Furthermore, a split between NS, SCS and ACS as per the definitions in Chapter 9 of the Economic Benchmarking Instructions was required. This overarching requirement has been met with information provided in all three templates: the Worksheet 3.3 Actual Information template, Worksheet 3.3 Estimated Information template, and the Worksheet 3.3 Consolidated Information template. These worksheets show the various asset categories for which Ausgrid must provide the relevant RAB values. These asset categories are referred to in this section as 'RIN asset categories'. Additionally, compliance with the RIN also involved the requirements detailed above in Table 1 as well as requirements specific to RIN table 3.3.3. These are detailed in Table 3 below which also specifies the actions Ausgrid completed to meet these requirements.	Not applicable.

<table>
<tr><th>Sheet/Table /Rule</th><th>Estimated/Actual</th><th>Data Source</th><th>Why Estimated</th><th>Methodology</th><th>Assumptions</th><th>Consistency Information</th><th>Additional Comments</th></tr>
<tr><td></td><td></td><td></td><td>considered estimated and similarly for those balances identified as actual.</td><td></td><td></td><td>Table 3 Compliance with the RIN for RIN table 3.3.3
<table><tr><th>Compliance Requirement</th><th>Ausgrid's Compliance</th></tr><tr><td>Calculation based on the average of opening and closing RAB values.</td><td>Ausgrid has averaged the opening and closing RAB values from Table 3.3.2.</td></tr><tr><td>Data must be directly reconcilable to opening and closing values in RIN table 3.3.2 for the relevant RIN asset categories.</td><td>The data directly reconciles to the opening and closing values for the relevant RIN asset categories in table 3.3.2</td></tr></table>Details of the steps Ausgrid has taken to comply with this RIN are detailed in sections below.</td><td></td></tr>
<tr><td>3.3 Assets (RAB) TABLE 3.3.4 - ASSET LIVES</td><td>Estimated</td><td>The asset lives for each category for 2017/18 were derived from the RFMs as approved by the AER in its final determination for 2015-19.

Public lighting information for 2017/18 was obtained from the 2015-2019 AER's decision with respect to public lighting.

The allocators used to allocate RAB asset classes into RIN asset categories (for RIN table 3.3.2) are also used in deriving the asset lives of each RIN asset category.</td><td>Ausgrid has used estimated information based on the premise that the weighting method has been provided by the AER and cannot be deemed as actual information from Ausgrid.

The Standard Approach set out in the RIN instructions necessitates the data to be estimated. The estimated data is considered to be the best estimate as the method used to derive it is consistent with the RIN</td><td>The asset lives for each year in the RIN template have been reported in line with the AER's RIN asset categories. Asset lives values for the RAB have been reported in accordance with the Standard Approach detailed in the Instructions.

Where RIN categories comprise a number of RAB assets, asset lives for the whole category are calculated by weighting the lives of individual assets within that category, as explained in the Instructions. Weightings were calculated on the basis of the assets' share of the RAB for that RIN category, in line with the example provided in the Instructions.

The standard and remaining asset lives for each Ausgrid asset category in each year were derived from the RFMs; details on the inputs used in these RFMs are explained above. The first step was to collect the standard lives for each RAB asset class, and apply this as the standard life for the year 2017/18.

1. The next step was to derive the weighted average standard lives and remaining lives for 2017/18 for each RAB asset class.

2. Remaining lives for existing opening RAB as at 1 July 2017 as well as net capex in 2017/18 were</td><td>N/A</td><td>The RAB worksheet required Regulatory Asset Base data into aggregated categories of capital inputs: namely overhead lines, underground cables, transformers and other capital. Furthermore, a split between NS, SCS and ACS as per the definitions in Chapter 9 of the Economic Benchmarking Instructions was required. This overarching requirement has been with information provided in through all three templates: the Worksheet 4 Actual Information template, Worksheet 4 Estimated Information template, and the Worksheet 4 Consolidated Information template.

Additionally, compliance with the RIN also involved the requirements detailed above in Table 1, as well as requirements specific to Table 4.3. These are detailed in Table 4 below which also specifies the actions Ausgrid completed to meet these requirements.

Table 4 Compliance with the RIN for RIN table 3.3.4
<table><tr><th>Compliance Requirement</th><th>Ausgrid's Compliance</th></tr><tr><td>Asset lives must be reported in accordance with definitions in Chapter 9</td><td>Ausgrid has used the definitions as per Chapter 9.</td></tr><tr><td>Weightings must be calculated as specified in the Instructions, in order of preference.</td><td>Ausgrid has utilised option 1: based on the asset's share of the RAB for the category and expected lives.</td></tr></table></td><td>N/A</td></tr>
</table>

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information		Additional Comments
			instruction and provides an outcome considered to most closely align with that being sought by the RIN.	weighted based on their real depreciated values within the relevant RFM. 3. After the weighted average standard and remaining lives had been collected for each RAB asset class for 2017/18, the next step was to allocate them into RIN asset categories. In some instances, one RIN category consisted of a number of RFM RAB asset classes. The standard and remaining lives in these cases were derived by weighting each life by its asset dollar value, and summing the weighted averages as they apply to each RIN category. 4. In other instances, one RFM RAB asset class was split into a number of RIN categories. These weightings were derived from weighting explained above using the Fixed Asset Register (see methodology in Basis of Preparation for RIN table3.3.2). For example, the Ausgrid asset class of 'Sub-transmission lines' was allocated into two RIN categories; 'Overhead assets 33kV and above' and 'Underground assets 33kV and above'. Assumptions: ● The RFM RAB asset classes of 'Substations' and 'Transformers' have been allocated across the RIN categories of 'Distribution substations including transformers' and 'Zone substations'. Given that the AER asset category of Distribution Substations included transformers, Ausgrid considers it is reasonable to assume that the 'Zone substations' category should also include its share of transformers. ● Any asset classes that reported a standard or remaining life of "n/a" in the RAB RFM were given no weighting in calculating the weighted average remaining life when allocated to the RIN categories. Therefore, the standard and remaining lives as well as the dollar values for these asset classes were not included in the calculation of the weighted averages for RIN categories.				
						Ausgrid must provide actual information where possible; otherwise Ausgrid must provide estimated information.	Ausgrid has utilised a weighting approach and therefore has deemed Table 3.3.4 data as estimated, even though some of the asset values were reported as actual. That is, information pertaining to asset classes that were directly attributed to a RIN asset class (therefore classified as actual) underwent an allocation process to derive the reports to be reported in table 3.3.4. Consequently, these values are reported as estimated.	
						Details of the steps Ausgrid has taken to comply with this RIN are detailed in sections below.		
3.4 Operational Data TABLE 3.4.1 - ENERGY DELIVERY Total energy delivered[0], Energy Delivery where time of use is not a	Actual	Table 3.4.1 requests both energy delivered and energy received. Ausgrid relies on separate data sources for both measures. The energy	Due to financial year end reporting and RIN reporting deadlines the 2018 Embedded Generation energy delivered associated with	Table 3.4.1 is primarily based on metered data from the SAP BI system and BSP system, but does include elements of accrued/estimation data - see "Why Estimated - Provide Justification" for details.	N/A	**Compliance Requirement** ***Table 5.1 Energy Delivery*** Energy delivered is the amount of electricity transported out of Ausgrid's network in the relevant Regulatory Year (measured in GWh). It must be the energy metered or estimated at	**Ausgrid's Compliance** ***Table 3.4.1 Energy Delivery*** Ausgrid has reported the electricity delivered for 2018 which underlies the 2018 revenues reported in Worksheet "3.1 Revenue" of the	N/A

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information		Additional Comments
determinant[0], Energy Delivery at On-peak times[0], Energy Delivery at Shoulder times[0], Energy Delivery at Off-peak times[0], Controlled load energy deliveries[0], Energy Delivery to unmetered supplies[0], Energy into DNSP network at On-peak times[0], Energy into DNSP network at Shoulder times[0], Energy into DNSP network at Off-peak times[0], Energy received from TNSP and other DNSPs not included in the above categories[0], Residential customers energy deliveries[0], Non residential customers not on demand tariffs energy deliveries[0], Non-residential low voltage demand tariff customers energy deliveries[0], Non-residential		delivered data in Tables 3.4.1, 3.4.1.1 and 3.4.1.4 is sourced from SAP via the Business Intelligence (BI) system which collates customer volume consumption for billing purposes. The reported energy delivered is a combination of billed and accrued information. The energy received data in Tables 3.4.1.2. and 3.4.1.3 is a combination of actual and accrued information, and is sourced from a combination of: ● Ausgrid's Bulk Supply Point (BSP) data processing system, which relies on market-standard metered data to calculate the half-hourly energy flows into the network from TransGrid, other DNSPs and non-residential/non-solar embedded generators; and ● The SAP BI system which is the source for the requested data on exports to the network from	roof-top solar generation necessarily includes accrued electricity generation. The methodology adopted for these estimates, which is considered to be the best estimate of the information sought in this template, involves the following steps: 1. Estimate what 2018 roof-top solar generation will be when billed meter-reading for 2018 is finally completed. This estimate was based on the available 2018 billed meter-reading as at June 2018 from the SAP BI system, as well as accrued 2018 energy as at June 2018, also from the SAP BI system. 2. A SAP BW system query was run on 2018 billed meter-reading as at 17 August			the customer charging location rather than the import location from the TNSP. Energy delivered must be actual energy delivered data, unless this is unavailable. Where Actual Information is not available for the most recent reporting period, Energy Delivery data for that period may be reported on an accrual basis. Peak, shoulder and off-peak periods relate to Ausgrid's own charging periods.	RIN. Due to financial year end reporting deadlines the 2018 revenues necessarily rely partly on accrued electricity consumption. Accordingly energy delivered has been reported on an accrual basis (as per the compliance requirement) and entered in the "Actual information" RIN template. This will necessarily be the case in all future benchmarking RINs.	
						Table 5.1.1 Energy grouping - delivery by chargeable quantity Ausgrid must report energy delivered in accordance with the category breakdowns as per the definitions provided in chapter 9. Ausgrid must only report 'Energy Delivery where time of use is not a determinant' (DOPED0201) for Energy Delivery that was not charged for peak, shoulder or off-peak periods.	***3.4.1.1 - Energy Grouping - Delivery by Chargeable Quantity*** The reported electricity delivered is in accordance with the RIN definitions and instructions.	
						Table 5.1.2 Energy - received from TNSP and other DNSPs by time of receipt Ausgrid must report energy input into its network as measured at supply points from the TNSP and other DNSPs in accordance with the definitions provided in chapter 9. Ausgrid must only report energy against 'Energy received from TNSP and other DNSPs not included in the above categories' (DOPED0304) where it is not possible to allocate the energy received into on-peak, shoulder and off-peak times.	***3.4.1.2 - Energy - Received from TNSP and Other DNSPs by Time of Receipt*** The reported electricity received is in accordance with the RIN definitions and instructions. The energy reported is that measured at Ausgrid's boundary. The energy can be allocated to peak, shoulder and off-peak periods.	
						Table 5.1.3 Energy - received into DNSP system from Embedded Generation by time of receipt	***3.4.1.3 - Energy - Received into DNSP System from Embedded Generation by Time of Receipt***	

Sheet/Table/Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information		Additional Comments
high voltage demand tariff customers energy deliveries[0], Other Customer Class Energy Deliveries[0],		small embedded generators (most notably solar PV exports).	2018 to extract the detailed time-of-use breakdown of solar generation required for the RIN. The relative proportions of energy by residential and non-residential and by time-of-use from the BI system query results were then applied to the GWh volumes estimated from step 1.			Ausgrid is required to report energy received from Non-residential Embedded Generation by time of receipt. Ausgrid is required to report back cast energy received from Residential Embedded Generation only if it records data for these variables (DOPED0405-DOPED0408), however Ausgrid is required to provide this data for future Regulatory Years. 'Energy received from Embedded Generation not included in above categories' (DOPED0404 and DOPED0408) includes energy received from Embedded Generation on an accumulation basis and not measured by the time of receipt. Ausgrid must only report energy received in DOPED0404 where it is not possible to allocate the energy received into on-peak, shoulder and off-peak times (DOPED0401-DOPED0403 and DOPED0405-DOPED0407). When completing the templates for Regulatory Years subsequent to the 2013 Regulatory Year, if Ausgrid can provide Actual Information for the Residential Embedded Generation variables (DOPED0405-DOPED0408) it must do so; otherwise Ausgrid must provide Estimated Information.	The reported electricity received is in accordance with the RIN definitions and instructions. Due to financial year end reporting and RIN reporting deadlines the 2018 Embedded Generation energy delivered associated with roof-top solar generation (both residential and non-residential) necessarily relies partly on accrued electricity generation. Accordingly the 2018 Embedded Generation energy delivered associated with roof-top solar generation (both residential and non-residential) has been reported on an accrual basis (as per the energy delivered compliance requirement and in line with the specific compliance requirement that "if Ausgrid can provide Actual Information for the Residential Embedded Generation variables it must do so; otherwise Ausgrid must provide Estimated Information") and entered in the "Estimated information" RIN template. This will necessarily be the case in all future benchmarking RINs.	
						Table 5.1.4 Energy grouping - customer type or class	***3.4.1.4 - Energy Grouping - Customer Type or Class***	

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information		Additional Comments
						Ausgrid must report energy delivered in accordance with the category breakdown as per the definitions provided in chapter 9. The category breakdown must be consistent with the customer types reported in table 5.2.1.	Ausgrid notes that the RIN template does not contain a Table 5.2.1. Ausgrid assumes that the intended reference is to Table 3.4.2.1. Ausgrid further notes that, as has been the case with prior benchmarking RINs, the category breakdown in Table 3.4.1.4 is different to that in Table 3.4.2.1, the latter of which includes DOPCN0105 (Unmetered customer numbers), while no row for "unmetered" exists in Table 3.4.1.4. This makes it impossible to comply with the requirement that "The category breakdown must be consistent with the customer types reported in Table 5.2.1". Consistent with the approach taken in prior benchmarking RINs, in Table 3.4.1.4 Ausgrid has entered unmetered energy deliveries into DOPED0505 (Other customer class energy deliveries).	
3.4 Operational Data TABLE 3.4.2 - CUSTOMER NUMBERS	Estimated	Table 3.4.2 requests separate breakdowns of customer numbers into customer class categories and into location-based categories. Ausgrid relies on separate data sources for both measures. The customer class breakdown in Table 3.4.2.1 is sourced from the SAP Business Warehouse (BW) system query "Accrual Tariff Usage - Installation Count". The customer count represents	The data in Table 3.4.2.2 is estimated information. Actual information could not be provided in relation to this table because in the process of reconciling data for use in complying with the Economic Benchmarking RIN, a difference in customer totals was identified between SAP's Business Warehouse query "Accrual Tariff Usage - Installation Count" and	Table 3.4.2.1 Outputs from SAP via the Business Warehouse query "Accrual Tariff Usage - Installation Count" form the basis for the data in Table 3.4.2.1. Table 3.42.2 Once the data is extracted into the reporting environment it is combined with the reference feeder category and NMI status (active vs. inactive) to generate the required performance measures. A Business Objects report provides the summarised results for customer numbers by feeder category as required for the tables described. It is recognised that the feeder category and number of customers may change throughout the year and therefore that data is as at the end of the financial year. Key assumptions used in method: ● All outage events are correctly recorded in OMS	N/A	**Compliance Requirement** ***Table 5.2 Customer Numbers*** Distribution Customers for a Regulatory Year are the average number of active National Meter Identifiers (NMIs) in Ausgrid's network in that year (except for Unmetered Customer Numbers). Each NMI is counted as a separate customer. The average is calculated as the average of the number of NMIs on the first day of the Regulatory Year and on the last day of the Regulatory Year. Both energised and de-energised NMIs must be counted. Extinct NMIs must not be counted. For unmetered customers, the Customer Numbers are the sum of connections (excluding public lighting connections) in Ausgrid's network that do not have a NMI and the energy usage for billing purposes is calculated using an assumed load profile	**Ausgrid's Compliance** ***Table 3.4.2 - Customer Numbers*** The reported customer numbers are in accordance with the RIN definitions and instructions. In relation to unmetered customers Ausgrid does not allocate a NMI to all unmetered connections, however it does group connections together on a customer basis and allocate NMIs to those customers for billing purposes. Those connections whose consumption is measured by reference to a load table approved by AEMO are grouped together for each customer for billing purposes and allocated a NMI which is active in the market. Those connections whose consumption is not measured by reference to a load profile table approved by AEMO for use in the market are not allocated an active market	N/A

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information		Additional Comments
		the number of distinct accrued installations as at the end of each month. The default parameter for this report includes sites with a status of occupied or vacant. The location-based breakdown in Table 3.4.2.2 is sourced from Ausgrid's Outage Management System (OMS) which contains customer numbers on the location-based breakdown requested by the RIN. The following provides additional contextual information on the data contained within OMS. There are applications (directly linked to OMS) and reference tables outside OMS that hold information relevant to performance reporting. Specifically: ● Electrical connectivity details (including where NMIs are	Ausgrid's Outage Management System (OMS). Consequently Ausgrid has estimated the values of DOPCN0201 to DOPCN0204 as shown below. To calculate the feeder category allocation, reports were extracted on 30/6/2018 and the percentage breakdowns by location were calculated. The global percentages are expected to have been minimally impacted by the reporting problem and for this reason are considered to produce the best estimate of the customer numbers in the categories being sought by the RIN. The estimation process for DOPCN0201 to DOPCN0204 was as follows: 1. Use the total customer count value from DOPCN01	(times, NMIs affected, Trigger, et al) ● All reference tables are accurate (feeder categories).		(examples include bus shelters, security lighting and traffic signals where not metered). Public lighting connections must not be counted as unmetered customers.	NMI but are allocated a non-active NMI by Ausgrid and consumption is measured by reference to a daily average load calculation.	
						Table 5.2.1 Distribution Customer Numbers by customer type or class Ausgrid must report Customer Numbers in accordance with the categorisation as per the definitions provided in chapter 9. Ausgrid must report customers against 'Other Customer Numbers' (DOPCN0106) only when customers cannot be allocated to the other customer classes (DOPCN0101-DOPCN0105).	***Table 3.4.2.1 - Distribution Customer Numbers by Customer Type or Class*** The reported customer numbers are in accordance with the RIN definitions and instructions.	
						Table 5.2.2 Distribution Customer Numbers by location on the network Ausgrid must report Customer Numbers in accordance with the category definitions provided in chapter 9. The locations are: CBD, urban, short rural and long rural.	***Table 3.4.2.2 - Distribution Customer Numbers by Location on the Network*** The reported customer numbers are in accordance with the RIN definitions and instructions.	

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
		attached to the network): source is GIS. ● NMI details: SAP Customer Care System (CCS) & B2B. ● Reporting Reference tables: Feeder categorisation (CBD, urban etc) and annual Tmed threshold values. The reporting reference tables provide the capability of separating outage events, NMIs affected and NMIs fed by Feeder Category.	(that is, the customer count from the SAP Business Warehouse customer count query). 2. Then, apportion the splits across feeder categories in DOPCN0201 to DOPCN0204 on the basis of the splits obtained on the 30/6/2018 OMS data extract. The estimation process adopted for the 2018 RIN is the same as was applied for previous Benchmarking RINs.				
3.4 Operational Data TABLE 3.4.3 - SYSTEM DEMAND Non-coincident Summated Raw System Annual Maximum Demand[0], Coincident Raw System Annual Maximum Demand[0], Non-coincident Summated Raw System Annual	Actual	Tables 3.4.3.1 to 3.4.3.4: The Raw demand values (coincident and non-coincident) in Tables 3.4.3.1, 3.4.3.2, 3.4.3.3 and 3.4.3.4 are actual values calculated from actual raw data. Table 3.4.3.5: Overall power factor (DOPSD0301) is an actual derived from	N/A	The notes below detail the methodology for both actual and estimated values. Tables 3.4.3.1 to 3.4.3.4 The Raw demand values (coincident and non-coincident) in Tables 3.4.3.1, 3.4.3.2, 3.4.3.3 and 3.4.3.4 are actual values calculated from actual raw data. The 10% POE and 50% POE values (coincident and non-coincident) in Tables 3.4.3.1, 3.4.3.2, 3.4.3.3 and 3.4.3.4 are estimates of the POE demand calculated using actual raw data and simulation techniques. ● All load data is obtained from Ausgrid's	N/A		N/A

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
Maximum Demand[0], Coincident Raw System Annual Maximum Demand[0], Non-coincident Summated Raw System Annual Maximum Demand[0], Coincident Raw System Annual Maximum Demand[0], Non-coincident Summated Raw System Annual Maximum Demand[0], Coincident Raw System Annual Maximum Demand[0], Average overall network power factor conversion between MVA and MW[0],		measurements from Ausgrid's SCADA or metering points. <u>Sources of Information:</u> All data sourced from Ausgrid's SCADA or metering points.		SCADA system or metering points. All weather data is obtained from Bureau of Meteorology weather stations. ● Maximum demand for the financial year includes period 1 May - 30 June from the previous financial year. Ausgrid's winter season covers period 1 May - 31 August. ● Ausgrid interprets "transmission connection point" as any "subtransmission substation", "zone substation" and "High Voltage Customer (HVC)" connected at 132kV within Ausgrid's network area. ● Power factors and diversity factors are measured and calculated as close to the system peak as possible to enable conversion between MW and MVA and calculation of coincident system maximum demand. ● Note there are three Ausgrid zone substations not connected at 132kV within Ausgrid's network, but supplied from Endeavour Energy at 66kV and 33kV. Note also that Endeavour Energy does not have a transmission licence and that demand from these zone substations would be included in Endeavour's RIN data. Consequently, demand from these zone substations is <u>not</u> included in the aggregate data at the transmission connection point, but is included in the aggregate data at the zone substation level. These zone substations are Epping 66/11kV, Leightonfield 33/11kV and Hunters Hill 66/11kV zone substations. Tables 3.4.3.1 and 3.4.3.3 are the summation of individual zone substation maximum demands, irrespective of the primary voltage of the zone substation. ● A further note to future system maximum demand calculations, in financial year 2017/18 a project was approved that will see 2 further existing substations supplied by the Endeavour Energy 33kV network. As a result of this approved project the Ausgrid operated Auburn 33/11kV and Lidcombe 33/11kV zone substations will change supply from the Ausgrid operated Homebush 132/33kV subtransmission substation to the Endeavour operated Camelia 132/33kV subtransmission substation. The project is expected to take four years to complete and once complete will see Auburn 33/11kV and Lidcombe 33/11kV zone substations accounted for in the same manner in system maximum demand totals as Epping 66/11kV, Leightonfield 33/11kV and Hunters Hill 66/11kV zone substations in future RIN submissions. ● Ausgrid performs weather normalisation			

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
				at 10% and 50% POE using simulation technique at the zone substation level on a yearly basis. ● 10% and 50% POE maximum demand is obtained by selecting the corresponding percentile of the maximum demand from 2000 simulated summer & winter seasons. Simulation is based on the daily maximum demand and daily average temperature relationship observed for the corresponding season. ● Where a particular substation is not weather dependent, then no weather adjustment is applied and therefore their 10% and 50% POE maximum demand will be the same as their raw maximum demand. ● All HVCs and generators connected at 33kV or above do not have weather adjustment applied and therefore their 10% and 50% POE maximum demand will be the same as their raw maximum demand. ● The values for the Non-coincident Summated Raw System Annual Maximum Demand in Tables 3.4.3.1, 3.4.3.2, 3.4.3.3 and 3.4.3.4 are based on the greater of the summer or winter raw MW for the individual substations and HVCs. Therefore, these values will be comprised of individual summer and winter raw MW from individual substations and HVCs summated together (i.e. summation of demand from different seasons). ● The values for the Coincident Summated Raw System Annual Maximum Demand in Tables 3.4.3.1, 3.4.3.2, 3.4.3.3 and 3.4.3.4 are based on the season where the overall Ausgrid network maximum demand was greater. Therefore, these coincident summated raw totals will summate together the individual MW from individual substations and HVCs from the same season. ● In tables 3.4.3.1 and 3.4.3.3, annual system maximum demand at the zone substation level, the values are derived from a summation of the individual zone nodes as measured at the secondary voltage. Where there are sources of embedded generation connected below zone substation level, values are net of impacts. ● In tables 3.4.3.2 and 3.4.3.4, annual system maximum demand at the transmission connection point (TCP) level, the values are derived from a summation of the individual TCP nodes as measured at the secondary voltage. These measured values include both the supply from TransGrid and			

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
				from 132kV connected embedded generators. Where there are other sources of embedded generation connected below transmission connection point level, values are net of impacts. Tables 3.4.3.5 Overall power factor (DOPSD0301) is an actual derived from measurements from Ausgrid's SCADA or metering points. All remaining power factor values are estimates based on actual measurements. Ausgrid has used estimated information for the following data points: 1. SAS data (11kV - 132 kV lines): The SAS database holds, among others, metering data from individual transformers and feeders in substations. The data was used to calculate an estimate of the average power factor for 11kV, 33kV, 66kV and 132kV lines. 1. Power Quality meter data (Low Voltage distribution lines): Real and reactive power data for low voltage feeders was obtained from the Active and Reactive Power data recorded at DM&C (Distributed Monitoring and Control) units which are attached to a significant subset (about 10%) of Ausgrid's distribution centres. This data was used to calculate an estimate of the average power factor for low voltage distribution lines. 2. 22kV and SWER lines: No data exists for 22kV feeders or SWER lines (12.7kV), given the very small quantities of these within the Ausgrid Network. Experience shows that an estimated value of 0.9 is usually a good fit. Power Factor derivation method: Average PF is calculated from summing the 15 min or 30 min recorded real (MW = P) and reactive (MVAr = Q) power readings and calculating the PF using the following formula: [PF = abs(P)/sqrtP^{2}+Q^{2}]			

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
				The overall network wide PF (DOPSD0301) is calculated using the coincident raw system annual maximum demand MW (DOPSD0110) and MVA (DOPSD0210) values at the transmission connection point level. Data sources for the individual line sub items were estimated as follows: DOPSD0302 — Average power factor conversion for low voltage distribution lines ● Total Active and Reactive Power Data obtained on System Peak Day at every Distributed Monitoring and Control (DM&C) units across the network, which represents roughly 10% of Distribution Centres. Data obtained using PI Historian interface to DM&C measurement database. DOPSD0303 — Average power factor conversion for 11 kV lines DOPSD0306 — Average power factor conversion for 33 kV lines DOPSD0307 — Average power factor conversion for 66 kV lines DOPSD0308 — Average power factor conversion for 132 kV lines ● Total Annual Active and Reactive Power Data at obtained from a representative set of internal Ausgrid Revenue meters across the network. Revenue metering data obtained from Meter Data Warehouse using SAS data extraction			

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
				DOPSD0304 — Average power factor conversion for SWER lines DOPSD0305 — Average power factor conversion for 22 kV lines ● For 22kV and SWER, there are no systems in place to measure the real and reactive power. The PF was estimated by Ausgrid distribution planning. Note: *The data has been sourced from various databases some of which are implemented for purposes other than power quality (e.g. Revenue metering).*			
3.5 Physical Assets TABLE 3.5.1 - NETWORK CAPACITIES	Actual	Tables 3.5.1.1 and 3.5.1.2 The data for table 3.5.1.1 and table 3.5.1.2 is sourced from Ausgrid's Geographical Information System (GIS) - the repository for spatial asset data. This spatial data report contains lengths of mains by conductor/cable code. Tables 3.5.1.3 and 3.5.1.4 The data for table 3.5.1.3 and table 3.5.1.4 is sourced from Ausgrid's Geographical Information	Tables 3.5.1.1 and 3.5.1.2 No estimates were used in the completion of these tables. Tables 3.5.1.3 and 3.5.1.4 Mostly actual ratings were used, where actual ratings were not available a rating of a similar conductor was used.	Tables 3.5.1.1 and 3.5.1.2 Using the GIS source data, different filters are applied based on the different voltages required. The below table shows the different filters used for the different RIN variables, and the length field summated to acquire the overall total length.	Table 3.5.1.3 and Table 3.5.1.4 All voltages used in MVA calculations are nominal voltages. All ratings are based on normal summer day ratings. Unless inherent in rating data supplied, all limitations are thermal. Voltage drop considerations are not contained within the data sets available for use in these calculations.	The information in this section is compliant in that actual values are used where possible, and best estimates are provided where actual data is not available.	N/A

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
		System (GIS) and Ausgrid's Ratings and Impedance Calculator (RIC).					

Variable	Asset Category	Operating Voltage	Length Data Used
Overhead Low Voltage	LV Line	LV	Length Total ODRC (k
Overhead 11kV	HV Line	11kV	Length Total ODRC (k
Overhead SWER	HV Line	12.7kV	Length Total ODRC (k
Overhead 22kV	HV Line	22kV	Length Total ODRC (k
Overhead 33kV	OH	33kV	Length Conductor Tot
Overhead 66kV	OH	66kV	Length Conductor Tot
Overhead 132kV	OH	132kV	Length Conductor Tot
Underground Low Voltage	LV Cable	LV	Length Total ODRC (k
Underground 5kV	HV Cable	5kV	Length Total ODRC (k
Underground 11kV	HV Cable	11kV	Length Total ODRC (k
Underground 22kV	HV Cable	22kV	Length Total ODRC (k
Underground 33kV	UG	33kV	Length Conductor Tot
Underground 66kV	UG	66kV	Length Conductor Tot
Underground 132kV	UG	132kV	Length Conductor Tot

Tables 3.5.1.3 and 3.5.1.4

DPA301 Overhead low voltage distribution

Used the ODRC_FINYEAR_2018_NETWORK_AGE_01_07_2018 report from GIS. From this report, selected rows (lines) that have Asset category= "LV Line" and Primary operating voltage="LV". For each line, the rating to use was fetched from RIC. Following rules were applied to determine which rating value from RIC to use:

- normal summer day rating at 75 degrees celcius is used.

- If normal summer day rating at 75 degrees celcius is not available, then use the normal summer day rating for the first temperature shown in Overhead feeder ratings section on the RIC conductor code accumulated characteristics screen.

- if rating information is available in RIC for the conductor code associated with the OH line, then use

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
				the rating associated with the conductor code - if rating information is not available in RIC for the conductor code associated with the OH line, then use the rating associated with another conductor with same material. Rules applied to decide which other conductor code to use are: - if a conductor which has same material and conductor size exists, then use the rating corresponding to this conductor code. If multiple ratings exist, then select the lowest rating. - if a conductor which has same material and conductor size does not exist, then find a conductor which has same material and closest conductor size. Use the rating corresponding to this conductor code. If multiple ratings exist, then select the lowest rating Conductor segments categorised as conductor code 600 which represents unknown conductor details have been excluded Once rating for each OH line (row) is assigned, the weighted MVA is calculated across all lines, with the assumption that all lines are multiphase and standard single phase voltage is 240V. ***DPA0401 Underground low voltage distribution*** All LV underground data was extracted from GIS with a new program. All cables with usage as "mains" or "mains connector", and status = "in service" and private is "no" or "unknown" were extracted from GIS in a CSV format. For each cable, the rating to use was fetched from RIC (Ratings and Impedance calculator application). Following rules were applied to determine which rating value from RIC to use: - if lay type is duct, then use ducted rating. Else if lay type is direct, use direct rating. - Summer rating for soil thermal resistivity of 1.2K.m/W is used. - if rating information is available in RIC for the conductor code associated with the cable, then use the rating associated with the conductor code - if rating information is not available in RIC for the conductor code associated with the cable, then use		

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
				the rating associated with another conductor with same material. Rules applied to decide which other conductor code to use are: - if a conductor which has same material and cable size exists, then use the rating corresponding to this conductor code. If multiple ratings exist, then select the lowest rating. - if a conductor which has same material and cable size does not exist, then find a conductor which has same material and closest cable size. Use the rating corresponding to this conductor code. If multiple ratings exist, then select the lowest rating Once rating for each cable (row) is assigned, the weighted MVA is calculated across all cables, with assumption that all cables are multiphase and standard single phase voltage is 240V. ***DPA0402 Underground 5kV*** All 5kV feeder portion sections along with its overhead length, underground length, and summer day normal rating was extracted from RIC (Ratings and Impedance calculator application). This was done automatically using RIC utility application developed. Only underground 5kV portion sections are present. The weighted MVA was calculated across all 5kV underground portion sections, with assumption that all sections are multiphase and circuit voltage is 5kV. ***DPA0304 and DPA0405 Overhead and Underground 11kV*** All 11kV feeder portion sections along with its overhead length, underground length, and summer day normal rating was extracted from RIC (Ratings and Impedance Calculator application). This was done automatically using RIC utility application developed. SWER and 22kV feeder sections were extracted from GIS in CSV format. The 11kV feeder portion section list (extracted from RIC) was filtered to remove the SWER and 22kV feeder extracted from GIS. The weighted MVA was calculated across the filtered 11kV overhead and underground portion sections, with assumption that all sections are multiphase and circuit voltage is 11kV. ***DPA0305 Overhead SWER (12.7kV)***			

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
				All 12.7kV (SWER) feeder portion sections along with its overhead length and underground length was extracted from GIS. The Summer day normal rating from RIC was fetched and applied to these sections. Export ratings functionality in RIC UI (feeder screen) was used to get the ratings for all portion sections. The weighted MVA was calculated across all 12.7kV overhead and underground portion sections, with assumption that all sections are single phase and circuit voltage is 12.7kV. ***DPA0306 Overhead 22kV*** All 22kV feeder portion sections along with its overhead length and underground length was extracted from GIS. Summer day normal rating from RIC were fetched and applied to these sections. Export ratings functionality in RIC UI (feeder screen) was used to get the ratings for all portion sections. Where the conductor operating temperature is unknown a temperature of 50 degrees celcius has been used. The weighted MVA was calculated across all 22kV overhead and underground portion sections, with assumption that all sections are multiphase and circuit voltage is 22kV. ***DPA0307, DPA0309, and DPA0311 - Overhead 33kV, 66kV and 132kV & DPA0409, DPA0410 and DPA0412 - Underground 33kV, 66kV and 132kV*** All 33kV, 66kV and 132kV feeders along with its overhead length, underground length and summer day normal rating was extracted from RIC (Ratings and Impedance Calculator application). This was done automatically using RIC utility application developed. The weighted MVA was calculated across all overhead and underground portion sections, with the assumption that all sections are multiphase and circuit voltage is 33kV, 66kV & 132kV.		
3.5 Physical Assets TABLE 3.5.2 - TRANSFORMER CAPACITIES	Estimated	Table 3.5.2.1 ● Variable DPA0501 - Distribution transformer capacity owned by utility The	Variable DPA0502 - Distribution transformer capacity owned by High Voltage Customers No estimations have been	Table 3.5.2.1 Variable DPA0501 - Distribution transformer capacity owned by utility Distribution transformer data has been extracted from SAP PM via Business Objects. Filters are applied during the extraction to select only distribution transformers with an Owner = Ausgrid or blank. The data in the file has then been processed to	N/A	The information in this section is compliant in that actual values are used where possible, and best estimates are provided where actual data is not available.	N/A

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
		information used for this variable is sourced from data in SAP PM (Plant Maintenance). ● Variable DPA0502 - Distribution transformer capacity owned by High Voltage Customers As transformer capacity owned by HV customers is not stored by Ausgrid, the secondary method of using the summation of individual customer maximum demands has been used. This interval data is sourced from the Meter Data Warehouse (MDW), using Business Warehouse network billing data. ● Variable DPA0503 - Cold spare capacity included in DPA0501 Data for this variable has been sourced from SAP PM (Plant Maintenance). Table 3.5.2.2 ● Variables DPA0601, DPA0602 and DPA0603 - Total installed capacity for first step	used for this variable, beyond the option given in the RIN instructions as below: "If the transformer capacity owned by customers connected at high voltage is not available, report summation of individual Maximum Demands of high voltage customers whenever they occur (i.e. the summation of single annual Maximum Demand for each customer) as a proxy for delivery capacity within the high voltage customers." This is by nature an approximation, since the demand can fluctuate from year to year and is not indicative of the total installed capacity at each customer connection point.	highlight records for transformers that were in commission in the financial year ('Include' = Y). The 'Rated Power Nameplate (kVA)' value is then summated for all of these transformers, and converted to MVA. Variable DPA0502 - Distribution transformer capacity owned by High Voltage Customers Half-hourly interval data for each NMI is obtained from the Meter Data Warehouse (MDW) for the 12 month regulatory year. This data is processed to determine the maximum demand (30 minute average) interval (in kW) for each NMI. Further analysis is undertaken to calculate the kVA, summation and converted to a total MVA figure. Variable DPA0503 - Cold spare capacity included in DPA0501 The method used was to extract all distribution transformers within SAP PM that are allocated as spares in the Ausgrid corporate system. The total rated power nameplate in MVA was calculated. Table 3.5.2.2 Variable DPA0601 - Total installed capacity for first step transformation where there are two steps to reach distribution voltage Data has been extracted from SAP PM via Business Objects. Filters are applied during the extraction to select only transformers with an Owner = Ausgrid or blank. The data in the file has then been processed to highlight records for transformers that were in commissioned in the financial year ('Include' = Y). Equipment with an 'Object Type' = TX_SUBTRAN are then selected, and the maximum MVA rating then summated to produce the overall figure for DPA0601. Variable DPA0602 - Total installed capacity for second step transformation where there are two steps to reach distribution voltage Data has been extracted from SAP PM via Business Objects. Filters are applied during the extraction to select only transformers with an Owner = Ausgrid or blank. The data in the file has then been processed to highlight records for transformers that were commissioned in the financial year ('Include' = Y). Equipment with an 'Object Type' = TX_ZONE and 'Operating Voltage' = 66000 or 33000 are then			

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
		transformation where there are two steps to reach distribution voltage, Total installed capacity for second step transformation where there are two steps to reach distribution voltage & Total zone substation transformer capacity where there is only a single step transformation to reach distribution voltage The information used for this variable is sourced from data in SAP PM (Plant Maintenance). ● Variable DPA0604 - Total zone substation transformer capacity Sum of variables DPA0601, DPA0602, DPA0603 and DPA0605. ● Variable DPA0605 - Cold spare capacity of zone substation transformers included in DPA0604 The information used for this variable is sourced from data in SAP PM (Plant Maintenance).		selected, and the maximum MVA rating then summated to produce the overall figure for DPA0602. Variable DPA0603 - Total zone substation transformer capacity where there is only a single step transformation to reach distribution voltage Data has been extracted from SAP PM via Business Objects. Filters are applied during the extraction to select only transformers with an Owner = Ausgrid or blank. The data in the file has then been processed to highlight records for transformers that were in commissioned in the financial year ('Include' = Y). Equipment with an 'Object Type' = TX_ZONE and 'Operating Voltage' = 132000 are then selected, and the maximum MVA rating then summated to produce the overall figure for DPA0603. Variable DPA0604 - Total zone substation transformer capacity As specified, the summation of variables DPA0601, DPA0602, DPA0603 and DPA0605. Variable DPA0605 - Cold spare capacity of zone substation transformers included in DPA0604 Data has been extracted from SAP PM via Business Objects. Filters are applied during the extraction to select only transformers with an Owner = Ausgrid or blank. The data in the file has then been processed to highlight records for transformers that were spare as of the end of the financial year ('Include' = Spare). The maximum MVA rating for these records is then summated to produce the overall figure for DPA0605.			
3.5 Physical Assets TABLE 3.5.3 - PUBLIC LIGHTING	Actual	Data for this section is obtained from SAP PM, extracted via	N/A	Variable DPA0701 - Public lighting luminaires The query used in the extraction of this data from SAP PM contains the following logic: Object Type = LIGHT; AND SL Rate = 1 or 2; AND Creation Error = N; AND	N/A	The information in this section is compliant in that actual values are used where possible, and best estimates are provided where actual data is not available.	N/A

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
		Business Objects using reports built specifically for this request and completion of the RIN.		Date First Commissioned 'End of Regulatory Year Date') This is to ensure that only valid records for Ausgrid maintained luminaires that were in commission at the end of the respective regulatory year are counted. As this data is back calculated off the current data set, master data attribute changes made affect all historical data. As such it is assumed that the current master data against these assets is to be considered accurate for all historical years. Variable DPA0702 - Public lighting poles This data is obtained from SAP PM and GIS. Poles are classified as public lighting in this database according to the following criteria: Object Type = POLE; AND Creation Error = N; AND Owner = Ausgrid OR Rural Subsidy Scheme OR 'blank' Asset Group = Distribution Mains Streetlighting Date First Commissioned 'End of Regulatory Year Date') This is to ensure that only valid records for Ausgrid owned poles exclusively used for public lighting in commission at the end of the respective regulatory year are counted. As this data is back calculated off the current data set, master data attribute changes made affect all historical data. As such it is assumed that the current master data against these assets is to be considered accurate for all historical years.			
3.6 Quality of Service TABLE 3.6.1 - RELIABILITY	Actual	Data used to populate Tables 3.6.1.1 and 3.6.1.2 has been taken from outage event records located in Ausgrid's Outage Management System (OMS) and its related reporting environment. Final outage event records are manually entered into OMS after outage events. Fields within each record are entered both automatically and manually and are subject to quality assurance	N/A	Key elements of the methodology: 1. A Business Objects report (AER RIN 2017 - 18 Sustained Interruption to Supply V1.0) is extracted from the reporting environment (on 31/08/2018) for the 2018 regulatory year. The report contains the following key information (Events are classified as "excluded" in accordance with Clause 3.3 of the STPIS which aligns with the definitions in the Instructions and Definitions): a. An unplanned event list that details the CI, CMI and whole of network SAIDI / SAIFI contribution for each event b. An excluded event list that details the CI, CMI and whole of network SAIDI / SAIFI contribution for each event (The exclusion reason of each event is verified against STPIS clause 3.3 (a)) 2. The table below details the calculation of each of the variables in Table 3.6.1.1 (Inclusive of MEDs): Variable_Code Variable Calculation DQS0101 Whole of network unplanned SAIDI For the regulatory year: 1. Calculate the sum of whole of network SAIDI for unplanned events (a) 2. Calculate the sum of whole of network SAIDI for excluded events (b) 3. Calculate the sum of steps 1 and 2 DQS0102 Whole of network unplanned SAIDI excluding excluded outages For the regulatory	Key assumptions used in the methodology: 1. All outage event attributes are correctly entered in OMS. 2. The NMI connectivity details in GIS are correct at the time of outages, or that any errors are managed through manual processes to determine the actual customers affected by an event, or by holding out outage event records in the OUTAGES_NOT_IN_OMS table until GIS updates are received. 3. Ausgrid calculates reliability metrics differently from Appendix A of the STPIS due to technical constraints. Reliability metrics are calculated as follows: STPIS Appendix A, Note 1: All reliability metrics are calculated using daily customer counts. Ausgrid has consistently adopted this approach because average customer counts do not result in stable metrics suitable for trend analysis due to the constant adding, removing and reconfiguring of feeders. (Different) STPIS Appendix A, Note 2: All unmetered supplies are excluded from the calculation of reliability metrics. (Compliant) STPIS Appendix A, Note 3: All active customers are included in the calculation of reliability metrics. All inactive customers are excluded in the calculation of	The information provided is consistent with the requirements of this Notice unless specified in the methodology and assumptions.	N/A

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
		checks. Information for interruptions affecting single premises is sourced from Ausgrid's Customer Aided Service System (CASS). For other network events, supply restoration and other information is recorded by System Operators in the Sydney control room on Interruption Report Forms (blue forms), or by System Operators in the Newcastle control room on Line Impedance Data (LID) system reports, and on switching sheets. This information is reconciled into OMS post event. Following an outage, an Ausgrid officer validates the existing OMS record against the blue form or LID system report and customer call data. If the existing outage event record can be made to accurately reflect interruption details it is completed. Otherwise, the event is recreated in OMS based on switching details such that the record accurately reflects the		year: 1. Calculate the sum of whole of network SAIDI for unplanned events (a) DQS0103 Whole of network unplanned SAIFI For the regulatory year: 1. Calculate the sum of whole of network SAIFI for unplanned events (a) 2. Calculate the sum of whole of network SAIFI for excluded events (b) 3. Calculate the sum of steps 1 and 2 DQS0104 Whole of network unplanned SAIFI excluding excluded outages For the regulatory year: 1. Calculate the sum of whole of network SAIFI for unplanned events (a) 3. Calculate the daily unplanned whole of network SAIDI for each day in the 2017 regulatory year. 4. In order to calculate the variables in Table 3.6.1.2 it is first necessary to calculate the 2017 TMED. The TMED is calculated for 2018 in accordance with Appendix D of the STPIS. 5. Flag all events that occur on a day where the daily SAIDI from step 3 is greater than the TMED calculated in step 4 (MED). 6. The table below details the calculation of each of the variables in Table 3.6.1.2 (Exclusive of MEDs): Variable_Code Variable Calculation DQS0105 Whole of network unplanned SAIDI For the regulatory year: 1. Calculate the sum of whole of network SAIDI for unplanned events (a) (Excluding events occurring on a day flagged as a MED in step 5) 2. Calculate the sum of whole of network SAIDI for excluded events (b) (Excluding events occurring on a day flagged as a MED in step 5) 3. Calculate the sum of steps 1 and 2 DQS0106 Whole of network unplanned SAIDI excluding excluded outages For the regulatory year: 1. Calculate the sum of whole of network SAIDI for unplanned events (a) (Excluding events occurring on a day flagged as a MED in step 5) DQS0107 Whole of network unplanned SAIFI For the regulatory year: 1. Calculate the sum of whole of network SAIFI for unplanned events (a) (Excluding events occurring on a day flagged as a MED in step 5) 2. Calculate the sum of whole of network SAIFI for excluded events (b) (Excluding events occurring on a day flagged as a MED in step 5) 3. Calculate the sum of steps 1 and 2 DQS0108 Whole of network unplanned SAIFI excluding excluded outages For the regulatory year: 1. Calculate the sum of whole of network SAIFI for unplanned events (a) (Excluding events occurring on a day flagged as a MED in step 5)	reliability metrics. The following assumptions regarding customer counting have been made: Active = Energised + De-energised Inactive = Extinct = Deactivated De-energised (AER) = Temporary disconnection (AUSGRID) Inactive (AER) = Permanent disconnection (AUSGRID) (Compliant) 4. All customers connected to a three phase low voltage supply are interrupted for the entire duration of an event. This approach is adopted because the accurate determination of customers connected to each phase of a low voltage supply is currently not possible. 5. The reliability metrics reported in this worksheet differ from previous metrics provided to the AER for the following reasons: The 2018 TMED has been applied to 2018 regulatory year in Table 3.6.1.2 as per the requirements of this notice.		

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
		restoration switching. OMS outage event records include the following fields: Date of event, Time of interruption, Time of restoration, Event trigger, Number of Customers Interrupted (CI), Number of Customer Minutes Interrupted (CMI) Feeder ID Event Hierarchy Exclusion Flag Exclusion Reason. OMS automatically calculates CI and CMI by combining the following information: Electrical connectivity details from Ausgrid's Graphical Information System (GIS), Interruption and restoration steps as recorded by System Operators, National Metering Identifier (NMI) information from SAP, Customer Care Solution (CCS) and Business to Business (B2B). The automatic calculation of CI and CMI is based on NMIs and therefore excludes all unmetered supplies. CI and CMI calculations are automatic on the basis of					

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
		manually entered interruption and switching steps. SAP, CCS and B2B are used to exclude inactive customers permanently disconnected) from the calculation of CI and CMI. The reporting environment contains data extracted from OMS that has been cleansed to remove redundant data. Relevant calculations such as SAIDI and SAIFI are also added to records within the reporting environment. The reporting environment facilitates the extraction of information into to a range of Business Objects reports. The reporting environment also contains reference tables developed within the Tool for Oracle Application Developers (TOAD). One reference table contains feeder categorisation on an annual basis. A report (*AER RIN 2017 – 18 Sustained Interruption to Supply V1.0*) for the 2017/18 regulatory year was generated					

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
		from the reporting environment on 31/08/2018. Separate entries appear in the list if a single event affected multiple feeders. The report contains separate sections for unplanned, planned and excluded outage events. The report does not contain momentary interruptions of duration one minute or less.					
3.6 Quality of Service TABLE 3.6.2 - ENERGY NOT SUPPLIED	Actual	Data used to complete Table 3.6.2 has been taken from outage event records located in Ausgrid's Outage Management System (OMS) and the related reporting extracts and reference tables. See section 3.6.1 for further information about the OMS system. All other data separation required for this notice (i.e. reporting category) is determined from the attributes of each OMS outage event record. Revenue meters on our network measure consumption. Each meter is assigned a Network Meter Identifier (NMI).	N/A	Key elements of the Methodology An extract from OMS reporting environment for the 2018 regulatory containing outage events for each NMI. The extract contains the following key information for each NMI instance that details the event time, outage job number and reporting category (planned, unplanned, momentary, excluded). For any outage event a set of NMIs will be affected. A single NMI can be affected multiple times in any one year due to unique outage events and as such the extract include multiple entries for some NMIs. For each set of planned or unplanned data the NMI data is consolidated by summing all the unique outage events and their duration for each NMI. The result is a data set of all NMIs and their total time not supplied for the regulatory year. The full set of NMI data for the prior financial year is consolidated into one spreadsheet with the following columns: e. NMI f. Total outage duration for the year in minutes g. Annual measured consumption (kWh) h. Days connected i. Minutes connected j. Energy Not Supplied. This data is provided separately for planned and unplanned data. 5. The table below details the calculation of each of the variables in Table 3.6.2 DQS0201 Energy not supplied (planned) For each NMI in the planned outage list: 1.Calculate minutes connected per NMI e. = d. x 24 x 60 2. Calculate Energy not supplied per NMI f. = c. x. (b. / e.) 3. Summate column f. to calculate the energy not supplied for the year and divide this summation by 1,000,000 to present in GWh DQS0202 Energy not supplied (unplanned) For each NMI in the unplanned outage list: 1. Calculate minutes connected per NMI e. = d. x 24 x 60 2. Calculate	N/A	The information provided is consistent with the requirements of this Notice unless specified in the methodology and assumptions.	N/A

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
		For reporting purposes, each NMI is considered as a customer. Ausgrid uses the Business Warehouse Billing Data system to obtain annual consumption data for each NMI for the prior year measured in kilowatt-hours (kWh). This system also provides the total days connected for each NMI. Data from the prior year is used as the current reporting year data is not yet available in full due to the quarterly billing cycle of small customers.		Energy not supplied per NMI f. = c. x. (b. / e.) 3. Summate column f. to calculate the energy not supplied for the year and divide this summation by 1,000,000 to present in GWh			
3.6 Quality of Service TABLE 3.6.3 - SYSTEM LOSSES	Estimated	The data within this table is calculated based on energy data provided in tables 3.4.1, 3.4.1.2 and 3.4.1.3 of the Notice.	The data in this table is based on data from other tables of the Notice that are estimates; therefore data in this table is also estimated.	Ausgrid use the formula provided in the Economic Benchmarking RIN for distribution network service providers - Instructions and Definitions section 7.3.	N/A	The information provided is consistent with the requirements of the Notice.	N/A
3.6 Quality of Service TABLE 3.6.4 - CAPACITY UTILISATION	Actual	The overall utilisation is calculated from the sum of non-coincident Maximum Demand at the zone substation level divided by the summation of each zone substation's capacity. The zone	The data in this table is based on: ● The Annual system maximum demand at the zone substation level - DOPSD0201	Capacity utilisation (DQS04) is a measure of the capacity of zone substation transformers that is utilised each year across the entire Ausgrid network. DQS04 is calculated from the sum of non-coincident Maximum Demand at the zone substation level divided by the summation of each zone substation's capacity. The zone substation capacity is the lesser of the transformer throughput capacity and the feeder exit capacity, evaluated for each zone substation. For ease of data collection and in order to avoid splitting summer or winter seasons over two different years an adjusted review period was used. In the case of 2018,	N/A	The information provided is consistent with the requirements of this Notice.	N/A

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
		substation capacity is the lesser of the transformer throughput capacity and the feeder exit capacity, evaluated for each zone substation as follows: 1. Non-Coincident Maximum Demand This value is sourced from RIN table section 3.4.3.3 - Annual system maximum demand characteristics at the zone substation level - DOPSD0201 - Non-coincident summated raw system annual maximum demand. 2. Zone Throughput Capacity Ausgrid's SAP based asset management system contains details on substation assets, such as transformers, circuit breakers, current transformers, etc. Along with the lifecycle status and functional location of these assets, they contain stored characteristics which include information relating to the asset thermal rating.	which is being provided as actual information; ● The zone substation feeder exit capacity which is based on feeder ratings that are obtained from actual data; and ● Zone substation transformer throughput ratings are based on actual ratings obtained from Ausgrid's business systems. Accordingly, the data in this table has been provided as actual information	the year review period starts on 1 May 2017 and continues through to 30 April 2018. Zone substations are included in the calculations for a particular year if they have been commissioned before or during the yearly review period and have not yet been decommissioned. Decommissioned zones are not removed from calculations in the yearly review period in which the zone was decommissioned but are removed from the following year. In the event that there was only one of the capacity values (throughput or exit) available for a particular zone for a particular yearly review period then the known value was used as default. Specific Data Collection Methodologies: 1. Non-Coincident Maximum Demand Ausgrid uses the formula and methodology provided in the Economic Benchmarking RIN for distribution network service providers - Instructions and Definitions Section 5.3. This measure is calculated by taking the arithmetic sum of the raw unadjusted (i.e. not weather normalised) maximum demand for each zone substation, irrespective of when it occurred. This maximum demand is not adjusted for embedded generation. 2. Zone Throughput Capacity For the purpose of this measure, thermal capacity is the rated continuous load capacity of the zone substation (with forced cooling or other capacity improving factors included if relevant). Ausgrid has assumed through the inclusion of the "capacity improving factors" wording in the above statement that the AER is interested in the normal cyclic rating of the transformer, as opposed to the transformer nameplate rating. The normal cyclic rating is based on the individual transformer thermal performance from temperature rise tests and the transformers load cycle which will generally not be continuous (constant load), however once the typical load cycle has been allocated to the transformer the normal cyclic rating is available every day of the year, but not every hour of the day. Ausgrid does not use nameplate ratings for operational or planning purpose. Ausgrid zone transformers have a summer normal rating, summer maintenance rating, summer emergency rating, winter normal rating, winter maintenance rating and a winter emergency rating. These are all cyclic ratings. Ausgrid has assumed that			

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
		This data is used by an Ausgrid IT system known as the Ratings and Impedance Calculator (RIC) to perform ratings calculations based on ratings rules. RIC generates a report known as "R01 - Present Zone and STS Firm Ratings". This report is used as the base data for the zone substation transformer thermal capacity calculation for each year. The RIC system was introduced 7 years ago. Prior to 2011 similar reports known as TF45 were available from a mainframe application known as TIS. The substation capacity information used to calculate capacity is sourced from archived R01 and TF45 reports dating back to 2006. 3. Zone Feeder Exit Capacity The exit capacity was determined by summating the ratings of all outgoing 11kV feeders at each zone substation (i.e. capacity those feeders supplying load or providing a		the AER is actually interested in the transformer throughput rating which considers the rateable equipment such as circuit breakers and other equipment that is in series with the transformer and limits its load carrying capability. Ausgrid has therefore capped the transformer ratings to the applicable throughput rating. Where a substation has a missing zone throughput capacity data for 2018, the available capacity value from the previous year was used. 3. Zone Feeder Exit Capacity Sydney Data - the total zone substation distribution feeder exit capacity was based on the summation of the trunk section ratings of the feeders that supply network load connected to a zone substation. Due to the data availability and quantity of zones to check, efforts were put into the validation of feeders where it was known that the exit capacity was the limitation not the Zone transformer throughputs. The following was taken into account in providing for the simulation: Zone Feeder Exit Capacity Sydney Data - the total zone substation distribution feeder exit capacity was based on the summation of the trunk section ratings of the feeders that supply network load connected to a zone substation. Due to the data availability and quantity of zones to check, efforts were put into the validation of feeders where it was known that the exit capacity was the limitation not the Zone transformer throughputs. The following was taken into account in providing for the simulation: Trunk section limitation was based on the minimum rating to the first tee-off of load on the feeder. All feeders were limited to 400A to match switchgear/protection systems. Thermal ratings are cyclic ratings based on cable type, load cycle, thermal resistivity, mutual heating, OH construction operating temperature. Where a substation has missing feeder exit capacity data for 2018, data was sourced from the current system diagram.			

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
		back-up supply and including those supplying high-voltage customers). Accordingly, spare panels, and panels supplying auxiliary supplies, capacitor banks or load control equipment, were excluded. Generally the feeder panel rating is used; however, a lower rating may be substituted where a downstream element is known to be limiting the load that can be supplied on a feeder. Figures were checked against previous years and any step changes were investigated and confirmed taking into account network alterations implemented during the previous year.		Conversion from 11kV amps to MVA used the following formula based on nominal voltages: MVA= $\sqrt{3}$ x 0.011 x AMPS_11kV, Conversion from 5kV amps to MVA used the following formula based on nominal voltages: MVA= $\sqrt{3}$ x 0.005 x AMPS_5kV Where possible, double banked feeders were captured as 2 feeders. Feeders that were normally open at the circuit breaker and connected to feeders supplying the network were included. Network models for each year were created based on archived connectivity data as at the end of December of each calendar year. It was assumed that the December model snapshot represented that summer's configuration and the previous winter's configuration. Ausgrid owned feeders that exited the zone substation were only summated. Feeders that did not exit the zone such as ones supplying only FIU, Aux subs, capacitor banks, or inter group ties were excluded. Where HV customers own the cables connected to our substations, they have been excluded such as Graving Dock, ANSTO, CALTEX etc. Hunter Data - the total zone substation distribution feeder exit capacity was based on the summation of the trunk section ratings of the feeders that supply network load connected to a zone substation. The following was taken into account when running the simulation: ● Feeders are included if they normally supply load			

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
				or could be used to supply load. ● The trunk ratings of 11kV feeders for the Hunter area are based on the section of feeder that carries 90% or more of the total feeder load. ● The trunk ratings for the Hunter are recorded on a yearly basis in an 11kV feeder forecast which exists to 2004. ● Where ratings were unavailable for a certain year the ratings from the previous year and subsequent year were used. ● Throughout the period many new zones were commissioned with several commissioned in stages. As a zone is commissioned in stages the zone exit capacity changes on a regular basis as new 11kV feeders are connected.		
3.7 Operating Environment Table 3.7.1 - Density Factors Customer Density[0],	Actual	Customer numbers were used from Table 3.4.2. See related basis of preparation section. Route Line length utilised the Route Line Lengths calculated in DOEF0301. Basis of preparation 3.7.2 defines the source of this information.	For Customer Density there is no estimated information	Customer Density is a direct calculation from the results of DOEF0301 and Customer numbers in Table 3.4.2 (Number of customers divided by Route km) therefore all assumptions defined for this data are applicable to Customer Density.			
3.7 Operating Environment Table 3.7.1 - Density Factors Energy Density[0],	Actual	Energy density information was sourced from Tables 3.4.1.1 (for energy) and 3.4.2.1 (for customer numbers).	The data in this table is based on data from other tables of the Notice that are estimates; therefore data in this table is also estimated.	The Energy Density is the energy delivered from Table 3.4.1.1 divided by the customer numbers from Table 3.4.2.1.	N/A	The information provided is consistent with the requirements of the Notice.	N/A

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
3.7 Operating Environment Table 3.7.1 - Density Factors Demand Density[0],	Actual	Refer Tables 3.4.3.3 - DOPSD0201 (for demand) and 3.4.2.1 - DOPCN01 (for total customer numbers).	There is no estimated information.	The Demand Density is the total kVA non-coincident demand data (summed at zone substation level) from Table 3.4.3.3 divided by the total customer numbers from Table 3.4.2.1 of the benchmarking RIN.			
3.7 Operating Environment Table 3.7.2 - Terrain Factors	Actual	DOEF0205 Total Number of Spans was calculated using Ausgrid's Geographical Information System (GIS) data. Ausgrid's GIS data is not represented as spans or singular routes, but represents the network as individual circuits; therefore significant manipulation of the existing data model was required to provide the information consistent with "Economic benchmarking RIN Instructions and Definitions", this has been defined in Methodology and Assumptions. The constructed span data was used to calculate: ● DOEF0204 Total Vegetation Maintenance Spans ● DOEF0202	**Use of estimated information** ● DOEF0213 - Standard vehicle access Ausgrid does not record information with regard to length of network accessible in relation to vehicular capability or terrain. The estimated values for Standard Vehicle Access have been calculated as follows: Spans which are not within a 10m buffer of a designated road corridor formed or unformed were identified using GIS spatial analytical software. The spans output of this query were	<u>Span Calculation and Feeder Classification</u> The span connected to Ausgrid's network where it is connected to the point of attachment, or the first span to a private pole is known as "Service Mains" and is considered part of Ausgrid's network therefore it has been counted as one span. The LiDAR data used to calculate average number of trees and defects did not cover service lines or their related defects. For this reason, services have been excluded in these calculations for DOEF0208, DOEF0209, DOEF0210, and DOEF0211, otherwise it would result in an inaccurate result. To calculate the number of spans Ausgrid spatially manipulated the data using the following methodology: ● The circuit data was split into individual line segments at every pole. ● Where the line segments ran parallel to each other they were snapped together. ● For spans which contained multiple conductors with different feeder classifications (Rural portion, Urban, and CBD), the highest voltage's classification was attributed to the span, with all other line segments ignored. If the span represented conductors with different feeder classifications and of the same voltage the following hierarchy was applied to the span: 1. CBD 2. Urban 3. Rural. ● The AER has requested the span data be provided by feeder classification, however Transmission feeders (feeders > 22kV) and Street Light circuits do not have a feeder classification of CBD, Urban, or Rural. A Transmission feeder typically supplies multiple feeders	***Standard Vehicle Access*** It was assumed that Standard Vehicle Access DOEF0213 is length of spans not accessed by a standard vehicle as defined in the definition.		

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
		Urban and CBD Vegetation Maintenance Spans ● Combined with August 2017 reliability feeder classifications. ● DOEF0203 Rural Vegetation Maintenance Spans ● Combined with August 2017 reliability feeder classifications. ● DOEF0201 Rural Proportion ● Combined with August 2017 reliability feeder classifications. ● DOEF0212 Tropical Proportion ● Combined with Bureau of Meteorology Climate Classification Maps based on standard 30 year climatology (1961 - 1990). ● DOEF0213 Standard Vehicle Access ● Combined with current (July 2018) road corridor data from the Land and Property Information. ● DOEF0214 Bushfire Risk ● Combined with Rural Fire Service	then removed if the continuous line segment length was less than 100m, thus removing small segments which in most cases run parallel with the road corridor (assumed to be also accessible via a standard vehicle). ● DOEF0206 - Average urban and CBD vegetation maintenance span cycle, and ● DOEF0207 - Average rural vegetation maintenance span cycle There is no clause or requirement in the contract to carry out vegetation maintenance activities in a cyclic manner. However, the typical maintenance review cycle is 1 year.	with different classifications. As a consequence, spans which are Transmission only feeders are not assigned a CBD, Urban, or Rural category. If a span only consisted of Transmission it received a classification of Transmission. If there was also a conductor of lesser voltage in the span, Transmission voltage was ignored and the classification of the lower voltage was applied to the span. ● The RIN templates only show spans associated with low voltage and high voltage mains. Transmission only and Street Light only spans were not included in the RIN Template. The template could not be modified to include these spans so the results have been provided below; Transmission only spans (16,494) and Street Light only spans (19,549) are included in "total number of maintenance spans" (DOEF0204), and "total number of spans" (DOEF0205). <u>Average Number of Trees and Defects</u> Ausgrid utilised LiDAR acquired data for 2013, 2014, 2015, 2016 and 2017 to calculate vegetation within the vicinity of its network covered by vegetation management activities. The spread or coverage of the LiDAR data and tree identification was within the LiDAR swath width which was up to 8 meters from the network. Trees and vegetation outside of this corridor were ignored and deemed not to be within the vicinity of the network for vegetation management activities. The LiDAR data acquired by Ausgrid does not identify individual trees, however the data extracted from the point cloud data, acquired onwards from 2015 identifies areas or canopies of vegetation. These areas are more representative of tree branches and canopies than individual trees therefore, these individual segments have been amalgamated together based on a 3 metre radius and counted as one tree. The detail of this data has been improved and is therefore more refined than previous years. The source data did not fully cover the Ausgrid's network, nor was it an equal sample of construction types, environmental, and demographic variations within its supply area. The coverage area for LiDAR acquisition has been modified each year to obtain a greater coverage over the network area. This results in			

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
		2018 Bushfire Prone Land data. ● DOEF0210 Average Number of Defects per Urban and CBD Vegetation Maintenance Span ● Combined with August 2017 reliability feeder classifications, ● Ausgrid acquired 2017 Light Detection And Ranging (LiDAR) vegetation defect data. ● DOEF0211 Average Number of Defects per Rural Vegetation Maintenance Span ● Combined with August 2017 reliability feeder classifications, ● Ausgrid acquired 2017 LiDAR vegetation defect data. ● DOEF0208 Average Number of trees per Urban and CBD Vegetation Maintenance Span ● Combined with 2017 reliability feeder classifications, ● Ausgrid acquired 2012, 2014, 2015, 2016 and 2017 LiDAR vegetation data.		a difference in sample data used year on year between 2012 and 2017 shown in the table 3.7.2.3 below; **Sample Data Representation of Total Network** | **Feeder Classification** | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** | | Transmission | 66% | 63% | 65% | 45% | 69% | 80% | | Rural | 34% | 94% | 53% | 58% | 76% | 94% | | Urban/CBD | 1% | 10% | 18% | 14% | 23% | 37% | ***Table 3.7.2.3*** *- Sample Data Representation of Total Network* To increase the sample data for the 2017 average number of trees and therefore reporting accuracy; data coverage from the 2017 LiDAR acquisition has been combined with the 2016 LiDAR areas omitted from the 2017 flights. Data coverage from 2012, 2013, 2014 and 2015 LiDAR acquisition was included where it has been omitted from both 2016 and 2017 LiDAR acquisition areas. Note that this was not used to calculate the average number of defects; average number of defects only used the 2017 LiDAR data. The network covered by summing the 2013 2014, 2015, 2016 and 2017 LiDAR coverage areas together is shown below in table 3.7.2.4 **Sample Data Representation of**			

Sheet/Table/Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
		● DOEF0209 Average Number of trees per Rural Vegetation Maintenance Span ● Combined with 2017 reliability feeder classifications, ● Ausgrid acquired 2012, 2014, 2015, 2016 and 2017 LiDAR vegetation data. ● DOEF0206 and DOEF0207 ● Was obtained from the Contract Operations group in Ausgrid and is based on the typical network maintenance cycle. . Ausgrid's Reliability Supply Quality & Ratings team performs an annual feeder re-categorisation which is based on the loading and length of the feeder as per STPIS definitions. The feeder categorisation process is stored on HP Records Manager Record Number D16/350664. The annual review process is undertaken prior to the commencement of each financial year, to ensure feeder		**Total Network** **Feeder Classification** / **2012** / **2013** / **2014** / **2015** / **2016** / **2017** / **Total LiDAR Coverage** Transmission: 66% / 63% / 65% / 45% / 69% / 80% / 90% Rural: 34% / 94% / 53% / 58% / 76% / 94% / 97% Urban/CBD: 1% / 10% / 18% / 14% / 23% / 37% / 49% ***Table 3.7.2.4*** *- Sample Data Representation of Total Network* The AER has requested the defects and trees be categorised by feeder classification, however Transmission feeders (feeders > 22kV) do not have a feeder classification of CBD, Urban, or Rural. A transmission feeder typically supplies multiple feeders with different classifications. As a consequence, spans which are transmission only feeders are not assigned a CBD, Urban, or Rural category. If a span only consisted of transmission it received a classification of transmission, and therefore the defect and trees along the same span received the same classification. If there was also a conductor of lesser voltage in the span, transmission voltage was ignored and the classification of the lower voltage was applied to the span, associated defects, and trees. The RIN templates only accommodate the reporting of trees and defects associated with low voltage and high voltage mains, therefore Transmission only trees and defects were not included in the RIN Template. The transmission defect and tree quantities are as follows for 2017;		

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
		classifications are as accurate as possible. It is dependent on the established definitions of the four feeder categories (CBD, Urban, Short Rural and Long Rural) as defined in the Licence Conditions (revised in July 14) Clause 19 and detailed below: **CBD Sydney Feeder** – A feeder forming part of the triplex 11kv cable system supplying predominately commercial high-rise buildings, within the City of Sydney. **Urban Feeder** – A feeder, which is not a CBD Sydney feeder, with actual maximum demand over the reporting period per total feeder route length greater than 0.3 MVA/km. **Short Rural Feeder** – A feeder which is not a CBD Sydney feeder or Urban feeder with total feeder route length less than 200km. **Long Rural**		● The average number of trees per Transmission span equals 2.918 ● The average number of defects per Transmission span equals 1.201 ***Vegetation Maintenance Spans*** In parts of Ausgrid's network the Service Mains *(Service Mains - The low voltage overhead mains belonging to the company between the company's Distribution Mains and the Point of Supply. Point of Supply - The point of delineation i.e. junction between the company owned overhead mains and the Consumer's Mains)* span is subject to vegetation management practises and it has been counted as a span. The increase in number of maintenance spans between 2015/16 and 2016/17 is accounted for the increased scope of vegetation managed service spans in 2016/17. In previous years, the number of vegetation service spans has been limited to discrete geographic areas, but has since been expanded to include all service spans in the Ausgrid network. Due to the source data structure used to calculate the feeder classifications, street lighting data was not able to be assigned a classification and therefore omitted from the feeder category split results. For this reason, and the omission of the Transmission only spans, the sum of the "Urban and CBD" (DOEF0202) and "Rural" (DOEF0203) number of maintenance spans will not equal the "total number of maintenance spans" (DOEF0204). Transmission only spans (17, 153) and street light only spans (21.877) are included in "total number of maintenance spans" (DOEF0204), and "total number of spans" (DOEF0205). ***Tropical Proportion*** Service lines have been excluded. ***Standard Vehicle Access*** It was assumed that Standard Vehicle Access		

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
		Feeder – A feeder which is not a CBD Sydney feeder or Urban feeder with total feeder route length greater than 200km. The feeder categories are updated and stored in TOAD which flows to the Business Objects reporting environment. Changes in feeder categories occur every year. This is because the two key inputs for classification - feeder length and demand – continue to vary over time. For example feeder length varies as a result of network open point changes or augmentation, and feeder load can vary due to changes in demand from existing or new customers on the feeder - such as weather factors, customers installing PV, or an apartment building constructed where a house was. Therefore the annual feeder classification review is undertaken to determine each		DOEF0213 is length of spans not accessed by a standard vehicle as defined in the definition. Standard Vehicle Access is defined by the AER in the RIN Instructions and Definitions (page 50) as: *"Distribution route Line Length that does not have Standard Vehicle Access. Areas with Standard Vehicle Access are serviced through main roads, gravel roads and open paddocks (including gated and fenced paddocks). An area with no standard Vehicle Access would not be accessible by a two wheel drive vehicle."* Ausgrid does not record information with regard to length of network accessible in relation to vehicular capability or terrain. The estimated values for Standard Vehicle Access have been calculated as follows: Spans which are not within a 10m buffer of a designated road corridor formed or unformed were identified using GIS spatial analytical software. The spans output of this query were then removed if the continuous line segment length was less than 100m, thus removing small segments which in most cases run parallel with the road corridor (assumed to be also accessible via a standard vehicle). Service Mains[1] have been excluded because (length is not measured) Ausgrid applies an arbitrary length of 10m towards the centre of the supplied land parcel. Actual lengths could extend much further than 10m and Ausgrid has no way of determining this length. Using an arbitrary length would compromise the validity of the actual route length calculated. The total number of service mains consists of 717,258 spans in total. Underground network has been excluded from this calculation. Note: because underground is included in the route line length; "Standard Vehicle Access" divided by the "Route Line		

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
		feeders appropriate feeder category, in line with our distribution licence conditions. Classification changes flow on to any other metrics based on those categories including sections of 3.7.2.		length" is not an accurate measure of "proportion of network not accessible via a standard vehicle". ***Bushfire Risk*** Includes Service Mains[5] where they are subject to vegetation management. ***Rural proportion*** Services Mains[5] lengths are an arbitrary length of 10m towards the centre of the supplied land parcel, therefore they have been excluded. Underground cables are excluded for calculating the Route length classified as short or long rural in km, and the Total network Line. Therefore, the figures reporting the Rural proportion excludes underground network cables. ***Average Vegetation Management Cycles*** Ausgrid ensures vegetation management activities are executed under a contract arrangement whereby the contractor is required to maintain clearances throughout the term of the contract. The frequency in which the contractor carries out activities to fulfil their responsibilities is not known by Ausgrid and would vary depending on the vegetation type, area, and contractor. There is no clause or requirement in the contract to carry out vegetation maintenance activities in a cyclic manner. However, the typical maintenance review cycle is 1 year. *The low voltage overhead mains belonging to the company between the company's Distribution Mains and the Point of Supply*			

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
3.7 Operating Environment Table 3.7.3 - Service Area Factors	Actual	DOEF0301 Route Line Length was calculated using Ausgrid's Geographical Information System (GIS) data. Ausgrid's GIS data is not represented as spans or singular routes, but represents the network as individual circuits; therefore significant manipulation of the existing data model was required to provide the information consistent with "Economic benchmarking RIN Instructions and Definitions", this has been defined in Methodology and Assumptions.	There is no estimated information.	To calculate the route line length Ausgrid spatially manipulated the data using the following methodology; ● The circuit data was split into individual line segments at every pole. ● Where the line segments ran parallel to each other they were snapped together. ● For spans which contained multiple conductors duplicates were removed and the length calculated. Services Mains[1] lengths are an arbitrary length of 10m towards the centre of the supplied land parcel, therefore they have been excluded. The total number of service mains consists of 717,258 overhead services and approximately 176,128 underground services. The definition of Route Line Length (DOEF0301) as defined by the AER to include underground cables has been accommodated. "*This email concerns the "Route Line Length""variable (DOEF0301)* *We have received a question as to whether Route Line Length captures the length of underground cables. We confirm that the intention of this variable is to capture the length of both underground cables and overhead lines. However we note that the wording of the definition in the economic benchmarking RIN isn't clear regarding this.* *We request that you include the route length of underground cables in route line length. This will ensure that this measure is consistent across NSPs and will appropriately account for the route length of all conductors should this be used as a benchmarking metric."* (email from the AER titled "EBT RIN - Route Line Length" on 07/04/2014 at 02:50pm)			

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information		Additional Comments
				The original definition of Route Line Length to be "measured as the length of each span between poles and/or towers" is not relevant to underground cables; therefore length for each underground conductor circuit was added to the overhead route line length which was calculated in accordance with the original definition. That is for overhead lines; "each span is considered only once irrespective of how many circuits it contains". [1] *The low voltage overhead mains belonging to the company between the company's Distribution Mains and the Point of Supply*				
3.4 Operational Data TABLE 3.4.3 - SYSTEM DEMAND Summated Chargeable Contracted Maximum Demand[0], Summated Chargeable Measured Maximum Demand[0], Summated Chargeable Contracted Maximum Demand[0], Summated Chargeable Measured Maximum Demand[0],	Estimated	The demand supplied data is sourced from SAP via the Business Intelligence (BI) system which collates customer volume consumption for billing purposes. The reported demand is a combination of billed and accrued information.	N/A	The volumes which are relevant to Tables 3.4.3.6 and 3.4.3.7 are the sum of the twelve individually monthly billed kW or kVA (depending on the tariff structure) volumes for each tariff. For the purposes of completing this Notice, the value entered is the WAPC volume divided by twelve. This is done to put the "chargeable maximum demand" amounts reported in the same context as the rest of the Tables in Table 3.4.	N/A	**Compliance Requirement** ***Table 5.3.6 Demand supplied (for customers charged on this basis) - MW measure*** Ausgrid is only required to complete this table if it charges customers for Maximum Demand supplied. If Ausgrid does not charge customers on this basis then Ausgrid should enter '0'. Ausgrid must report Maximum Demand amounts for customers that are charged based upon their Maximum Demand as measured in MW. Where Ausgrid cannot distinguish between contracted and measured Maximum Demand, demand supplied must be allocated to contracted Maximum Demand. **Table 5.3.7 Demand supplied (for customers charged on this basis) - MVA measure**	**Ausgrid's Compliance** ***3.4.3.6 - Demand Supplied (For Customers Charged on this Basis) - MW Measure*** Ausgrid does not charge customers for "contracted" maximum demand. Ausgrid has reported the "measured" maximum demand for 2018 which underlies the 2018 revenues reported in Worksheet 3.1 of the RIN. Due to financial year end reporting deadlines the 2018 revenues necessarily rely partly on accrued demand. **3.4.3.7 - Demand Supplied (For Customers Charged on this Basis) - MVA Measure**	N/A

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information		Additional Comments
						Ausgrid is only required to complete this table if it charges customers for demand supplied. If Ausgrid does not charge customers on this basis then Ausgrid must enter '0'. Ausgrid must report Maximum Demand amounts for customers that are charged based upon their Maximum Demand as measured in MVA. Where Ausgrid cannot distinguish between contracted and measured Maximum Demand, demand supplied must be allocated to contracted Maximum Demand.	Ausgrid does not charge customers for "contracted" maximum demand. Ausgrid has reported the "measured" maximum demand for 2018 which underlies the 2018 revenues reported in Worksheet 3.1 of the RIN. Due to financial year end reporting deadlines the 2018 revenues necessarily rely partly on accrued demand.	
3.4 Operational Data TABLE 3.4.1 - ENERGY DELIVERY Energy into DNSP network at On-peak times from non-residential embedded generation[0], Energy into DNSP network at Shoulder times from non-residential embedded generation[0], Energy into DNSP network at Off-peak times from non-residential embedded generation[0], Energy received from embedded generation not included in above categories from non-residential embedded generation[0],	Estimated							

Sheet/Table/Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
Energy into DNSP network at On-peak times from residential embedded generation[0], Energy into DNSP network at Shoulder times from residential embedded generation[0], Energy into DNSP network at Off-peak times from residential embedded generation[0], Energy received from embedded generation not included in above categories from residential embedded generation[0],							
3.4 Operational Data TABLE 3.4.3 - SYSTEM DEMAND Non-coincident Summated Weather Adjusted System Annual Maximum Demand 10% POE[0], Non-coincident Summated Weather Adjusted System Annual Maximum Demand 50% POE[0], Coincident	Estimated	Tables 3.4.3.1 to 3.4.3.4: The 10% POE and 50% POE values (coincident and non-coincident) in Tables 3.4.3.1, 3.4.3.2, 3.4.3.3 and 3.4.3.4 are estimates of the POE demand calculated using actual raw data and simulation techniques. Table 3.4.3.5: With the exception of the overall power factor	Tables 3.4.3.1 to 3.4.3.4 The 10% POE and 50% POE values (coincident and non-coincident) in Tables 3.4.3.1, 3.4.3.2, 3.4.3.3 and 3.4.3.4 are not measured values and so must be calculated. The estimates of the POE demand are calculated	The notes below detail the methodology for both actual and estimated values. Tables 3.4.3.1 to 3.4.3.4 The Raw demand values (coincident and non-coincident) in Tables 3.4.3.1, 3.4.3.2, 3.4.3.3 and 3.4.3.4 are actual values calculated from actual raw data. The 10% POE and 50% POE values (coincident and non-coincident) in Tables 3.4.3.1, 3.4.3.2, 3.4.3.3 and 3.4.3.4 are estimates of the POE demand calculated using actual raw data and simulation techniques. ● All load data is obtained from Ausgrid's SCADA system or metering points. All weather data is obtained from Bureau of Meteorology weather stations.	N/A		

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
Weather Adjusted System Annual Maximum Demand 10% POE[0], Coincident Weather Adjusted System Annual Maximum Demand 50% POE[0], Non-coincident Summated Weather Adjusted System Annual Maximum Demand 10% POE[0], Non-coincident Summated Weather Adjusted System Annual Maximum Demand 50% POE[0], Coincident Weather Adjusted System Annual Maximum Demand 10% POE[0], Coincident Weather Adjusted System Annual Maximum Demand 50% POE[0], Non-coincident Summated Weather Adjusted System Annual Maximum Demand 10% POE[0], Non-coincident Summated		(DOPSD0301), all remaining power factor values are estimates based on actual measurements. <u>Sources of Information:</u> The 10% POE and 50% POE values (coincident and non-coincident) in Tables 3.4.3.1, 3.4.3.2, 3.4.3.3 and 3.4.3.4 are calculated using electricity use data sourced from Ausgrid's SCADA or metering points and weather data sourced from the Australian Bureau of Meteorology. The power factor values in 3.4.3.5 are calculated using the following sources: ● SAS data (11kV - 132 kV lines): Real and reactive power from transformers or feeders in zones in the SAS database. The SAS database holds metering data from individual transformers and feeders at zone substations. The	using actual raw metered data and established simulation techniques. <u>Table 3.4.3.5</u> With the exception of the overall power factor (DOPSD0301), all remaining power factor values are based upon network elements that are not measured and so must be estimated from a population of network elements where actual measured data exists. Note that no data exists for 22kV feeders or SWER lines (12.7kV), given the very small quantities of these within the Ausgrid Network. Experience shows that an estimated value of 0.9 is usually a good estimate.	● Maximum demand for the financial year includes period 1 May - 30 June from the previous financial year. Ausgrid's winter season covers period 1 May - 31 August. ● Ausgrid interprets "transmission connection point" as any "subtransmission substation", "zone substation" and "High Voltage Customer (HVC)" connected at 132kV within Ausgrid's network area. ● Power factors and diversity factors are measured and calculated as close to the system peak as possible to enable conversion between MW and MVA and calculation of coincident system maximum demand. ● Note there are three Ausgrid zone substations not connected at 132kV within Ausgrid's network, but supplied from Endeavour Energy at 66kV and 33kV. Note also that Endeavour Energy does not have a transmission licence and that demand from these zone substations would be included in Endeavour's RIN data. Consequently, demand from these zone substations is <u>not</u> included in the aggregate data at the transmission connection point, but is included in the aggregate data at the zone substation level. These zone substations are Epping 66/11kV, Leightonfield 33/11kV and Hunters Hill 66/11kV zone substations. Tables 3.4.3.1 and 3.4.3.3 are the summation of individual zone substation maximum demands, irrespective of the primary voltage of the zone substation. ● A further note to future system maximum demand calculations, in financial year 2017/18 a project was approved that will see 2 further existing substations supplied by the Endeavour Energy 33kV network. As a result of this approved project the Ausgrid operated Auburn 33/11kV and Lidcombe 33/11kV zone substations will change supply from the Ausgrid operated Homebush 132/33kV subtransmission substation to the Endeavour operated Camelia 132/33kV subtransmission substation. The project is expected to take four years to complete and once complete will see Auburn 33/11kV and Lidcombe 33/11kV zone substations accounted for in the same manner in system maximum demand totals as Epping 66/11kV, Leightonfield 33/11kV and Hunters Hill 66/11kV zone substations in future RIN submissions. ● Ausgrid performs weather normalisation at 10% and 50% POE using simulation technique at the zone substation level on a yearly basis. ● 10% and 50% POE maximum demand is obtained			

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
Weather Adjusted System Annual Maximum Demand 50% POE[0], Coincident Weather Adjusted System Annual Maximum Demand 10% POE[0], Coincident Weather Adjusted System Annual Maximum Demand 50% POE[0], Non-coincident Summated Weather Adjusted System Annual Maximum Demand 10% POE[0], Non-coincident Summated Weather Adjusted System Annual Maximum Demand 50% POE[0], Coincident Weather Adjusted System Annual Maximum Demand 10% POE[0], Coincident Weather Adjusted System Annual Maximum Demand 50% POE[0], Average power factor conversion for		data was used to calculate an estimate of the average power factor for 11kV, 33kV, 66kV and 132kV lines. ● Power Quality meter data (Low Voltage distribution lines): Real and reactive power data for low voltage feeders was obtained from the Active and Reactive Power data recorded at DM&C (Distributed Monitoring and Control) units which are attached to a significant subset (about 10%) of Ausgrid's distribution centres. This data was used to calculate an estimate of the average power factor for low voltage distribution lines.	Exclusions Ausgrid maintains a legacy 5kV distribution network out of two Zone Substations (Camperdown and Blackwattle Bay). Camperdown Zone has converted to an 11kV capable distribution network, with a small amount still operating at 5kV to provide backup to Blackwattle Bay. The Blackwattle Bay feeder network is planned for conversion to an 11kV capable distribution network in the period 2017-2019. Neither zone records MW so it is not possible to provide Power Factor for the 5kV level.	by selecting the corresponding percentile of the maximum demand from 2000 simulated summer & winter seasons. Simulation is based on the daily maximum demand and daily average temperature relationship observed for the corresponding season. ● Where a particular substation is not weather dependent, then no weather adjustment is applied and therefore their 10% and 50% POE maximum demand will be the same as their raw maximum demand. ● All HVCs and generators connected at 33kV or above do not have weather adjustment applied and therefore their 10% and 50% POE maximum demand will be the same as their raw maximum demand. ● The values for the Non-coincident Summated Raw System Annual Maximum Demand in Tables 3.4.3.1, 3.4.3.2, 3.4.3.3 and 3.4.3.4 are based on the greater of the summer or winter raw MW for the individual substations and HVCs. Therefore, these values will be comprised of individual summer and winter raw MW from individual substations and HVCs summated together (i.e. summation of demand from different seasons). ● The values for the Coincident Summated Raw System Annual Maximum Demand in Tables 3.4.3.1, 3.4.3.2, 3.4.3.3 and 3.4.3.4 are based on the season where the overall Ausgrid network maximum demand was greater. Therefore, these coincident summated raw totals will summate together the individual MW from individual substations and HVCs from the same season. ● In tables 3.4.3.1 and 3.4.3.3, annual system maximum demand at the zone substation level, the values are derived from a summation of the individual zone nodes as measured at the secondary voltage. Where there are sources of embedded generation connected below zone substation level, values are net of impacts. ● In tables 3.4.3.2 and 3.4.3.4, annual system maximum demand at the transmission connection point (TCP) level, the values are derived from a summation of the individual TCP nodes as measured at the secondary voltage. These measured values include both the supply from TransGrid and from 132kV connected embedded generators. Where there are other sources of embedded generation connected below transmission connection point level, values are net of impacts. Tables 3.4.3.5			

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
low voltage distribution lines[0], Average power factor conversion for 3.3 kV lines[0], Average power factor conversion for 6.6 kV lines[0], Average power factor conversion for 7.6 kV lines[0], Average power factor conversion for 11 kV lines[0], Average power factor conversion for SWER lines[0], Average power factor conversion for 22 kV lines[0], Average power factor conversion for 33 kV lines[0], Average power factor conversion for 44 kV lines[0], Average power factor conversion for 66 kV lines[0], Average power factor conversion for 110 kV lines[0], Average power factor conversion for 132 kV lines[0], Average power factor conversion for 220 kV lines[0],				Overall power factor (DOPSD0301) is an actual derived from measurements from Ausgrid's SCADA or metering points. All remaining power factor values are estimates based on actual measurements. Ausgrid has used estimated information for the following data points: 1. SAS data (11kV - 132 kV lines): The SAS database holds, among others, metering data from individual transformers and feeders in substations. The data was used to calculate an estimate of the average power factor for 11kV, 33kV, 66kV and 132kV lines. 1. Power Quality meter data (Low Voltage distribution lines): Real and reactive power data for low voltage feeders was obtained from the Active and Reactive Power data recorded at DM&C (Distributed Monitoring and Control) units which are attached to a significant subset (about 10%) of Ausgrid's distribution centres. This data was used to calculate an estimate of the average power factor for low voltage distribution lines. 2. 22kV and SWER lines: No data exists for 22kV feeders or SWER lines (12.7kV), given the very small quantities of these within the Ausgrid Network. Experience shows that an estimated value of 0.9 is usually a good fit. Power Factor derivation method: Average PF is calculated from summing the 15 min or 30 min recorded real (MW = P) and reactive (MVAr = Q) power readings and calculating the PF using the following formula: [PF = abs(P)/sqrtP^{2}+Q^{2}] The overall network wide PF (DOPSD0301) is calculated using the coincident raw system annual maximum demand MW (DOPSD0110) and MVA (DOPSD0210) values at the transmission connection point level. Data sources for the individual line sub items were estimated as follows: DOPSD0302 — Average power factor conversion for low voltage			

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
				<table><tr><td></td><td>distribution lines</td></tr></table> ● Total Active and Reactive Power Data obtained on System Peak Day at every Distributed Monitoring and Control (DM&C) units across the network, which represents roughly 10% of Distribution Centres. Data obtained using PI Historian interface to DM&C measurement database. <table><tr><td>DOPSD0303</td><td>Average power factor conversion for 11 kV lines</td></tr><tr><td>DOPSD0306</td><td>Average power factor conversion for 33 kV lines</td></tr><tr><td>DOPSD0307</td><td>Average power factor conversion for 66 kV lines</td></tr><tr><td>DOPSD0308</td><td>Average power factor conversion for 132 kV lines</td></tr></table> ● Total Annual Active and Reactive Power Data at obtained from a representative set of internal Ausgrid Revenue meters across the network. Revenue metering data obtained from Meter Data Warehouse using SAS data extraction <table><tr><td>DOPSD0304</td><td>Average power factor conversion for SWER lines</td></tr><tr><td>DOPSD0305</td><td>Average power factor conversion for 22 kV lines</td></tr></table> ● For 22kV and SWER, there are no systems in place to measure the real and reactive power. The PF was estimated by Ausgrid distribution planning.			

<table>
<tr><th>Sheet/Table /Rule</th><th>Estimated/Actual</th><th>Data Source</th><th>Why Estimated</th><th>Methodology</th><th>Assumptions</th><th>Consistency Information</th><th>Additional Comments</th></tr>
<tr><td></td><td></td><td></td><td></td><td>Note: The data has been sourced from various databases some of which are implemented for purposes other than power quality (e.g. Revenue metering).</td><td></td><td></td><td></td></tr>
<tr><td>3.3 Assets (RAB) TABLE 3.3.2 - ASSET VALUE ROLL FORWARD Opening value[0], Opening value[1], Opening value[2], Inflation addition[0], Inflation addition[1], Inflation addition[2], Straight line depreciation[0], Straight line depreciation[1], Straight line depreciation[2], Actual additions (recognised in RAB)[0], Actual additions (recognised in RAB)[1], Actual additions (recognised in RAB)[2], Disposals[0], Disposals[1], Disposals[2], Opening value[0], Opening value[1], Opening value[2], Inflation addition[0], Inflation</td><td>Actual</td><td>The source information for RIN table 3.3.2 is the same as for RIN table 3.3.1, with the additional inclusion of data from Ausgrid's Fixed Asset Register (FAR) to create a method to allocate the existing RAB values into RIN asset categories. The Fixed Asset Register has disaggregated replacement cost data for 2017/18 with details of splits between distribution and transmission system assets.

Ausgrid has relied on the 2017/18 "Book Value Land by Property Usage" report from Ausgrid's FAR to determine the split of Ausgrid's "Land and Easements" RAB class. This was required to meet the AER's requirement to allocate system land to the respective substation RIN category as required.</td><td>Not Applicable. This BOP relates to the Actual values in the table.</td><td>The consolidated template was separated into actual and estimated information. This was based on direct attribution or allocation. It was assumed that all RAB data that could directly be applied to a RIN category was deemed as accurate and therefore actual, whereas allocated RAB was less accurate and therefore estimated.</td><td>Not applicable.</td><td>In this section we demonstrate how the information provided is consistent with the requirements of this Notice.

The RAB worksheet required Regulatory Asset Base data to be allocated into aggregated categories of capital inputs: namely overhead lines, underground cables, transformers and other capital. Furthermore, a split between Network Services, Standard Control Services and Alternative Control Services as per the definitions in Chapter 9 of the Economic Benchmarking Instructions was required.

This overarching requirement has been met with information provided in all three templates: the Worksheet 3.3 Actual Information template, Worksheet 3.3 Estimated Information template, and the Worksheet 3.3 Consolidated Information template. These worksheets show the various asset categories for which Ausgrid must provide the relevant RAB values. These asset categories are referred to in this section as 'RIN asset categories'.

Additionally, compliance with the RIN also involved the requirements detailed above in Table 1, as well as requirements specific to RIN table 3.3.2. These are detailed in Table 2 below which also specifies the actions Ausgrid completed to meet these requirements.

Table 2: Compliance with the RIN for RIN table 3.3.2

<table><tr><th>Compliance Requirement</th><th>Ausgrid's Compliance</th></tr><tr><td>Ausgrid must report RAB Asset Financial Information broken down in accordance with the RAB Assets as per definitions of the categories specified in Chapter 9.</td><td>Ausgrid has used the definitions specified in Chapter 9 as required. All assumptions and variations from these definitions are detailed in 'Methodology and Assumptions' below.</td></tr><tr><td>Where previously reported, Ausgrid must provide values separately for Easements. Otherwise, this should be included in the remaining categories. Data that includes</td><td>Easements have been reported separately. Data that contains easements has been identified.</td></tr></table></td><td>Not applicable.</td></tr>
</table>

Sheet/Table/Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information		Additional Comments
addition[1], Inflation addition[2], Straight line depreciation[0], Straight line depreciation[1], Straight line depreciation[2], Actual additions (recognised in RAB)[0], Actual additions (recognised in RAB)[1], Actual additions (recognised in RAB)[2], Disposals[0], Disposals[1], Disposals[2], Opening value[0], Opening value[1], Opening value[2], Inflation addition[0], Inflation addition[1], Inflation addition[2], Straight line depreciation[0], Straight line depreciation[1], Straight line depreciation[2], Actual additions (recognised in RAB)[0], Actual additions (recognised in RAB)[1], Actual additions (recognised in						Easements should be identified.		
						Provision of Actual information where applicable	Ausgrid has attempted to provide as much actual information as possible. In some cases the RFM requires forecast information (e.g. forecast CPIs) and these are sourced from the AER's final approved RFMs or PTRMs. Actual capex and proceeds from sale of assets are sourced from Ausgrid's financial system and some of these information (e.g. capex) are also reported to the AER via annual RIN. Actual CPI are calculated using the AER's approved methodology based on actual data published by the ABS.	
						Details of the steps Ausgrid has taken to comply with this RIN are detailed in sections below.		

Sheet/Table /Rule	Estimated/Actual	Data Source	Why Estimated	Methodology	Assumptions	Consistency Information	Additional Comments
RAB)[2], Disposals[0], Disposals[1], Disposals[2],							