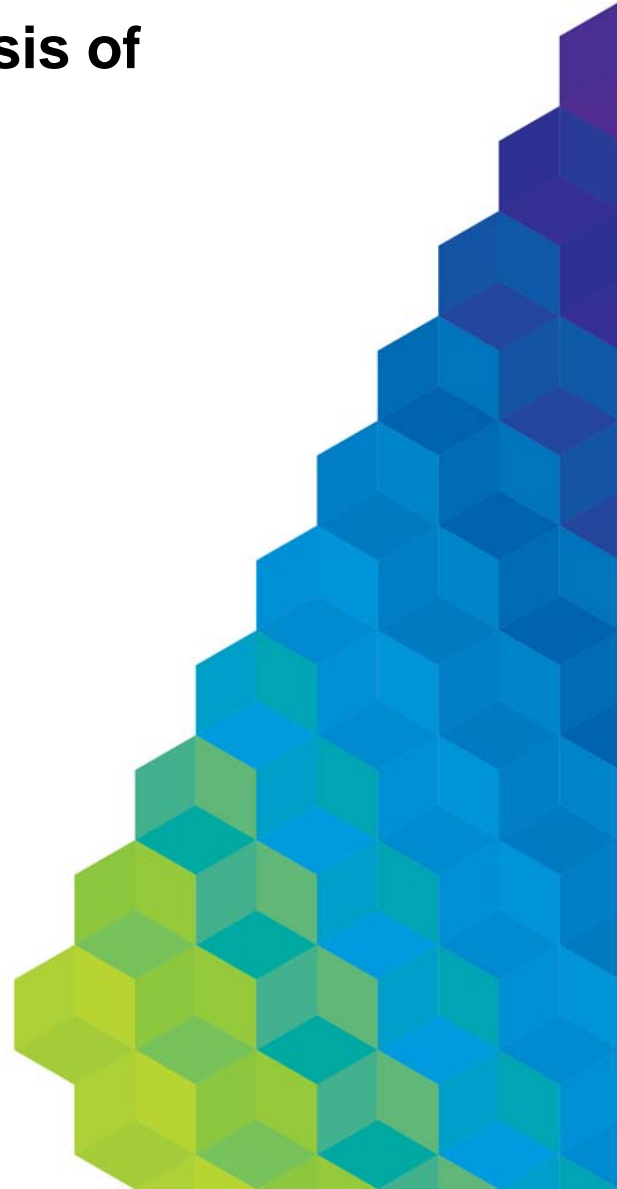




AusNet Transmission Group Pty Ltd

**AER Economic Benchmarking
Regulatory Information Notice**

**2015/16 Regulatory Year Basis of
Preparation**



Basis of Preparation – Economic Benchmarking

2016 Regulatory Year

1. Overview

This Basis of Preparation document supports the preparation and reporting of the 2016 Regulatory Year data presented in AusNet Transmission Group Pty Ltd's ("AusNet Transmission" or the "Company") reports entitled '2015-16 AusNet Services Economic Benchmarking - Actual Information', '2015-16 AusNet Services Economic Benchmarking - Estimated Information', and '2015-16 AusNet Services Economic Benchmarking - Consolidated Information' ("the Reports"). The Reports provide data solely for the use of the Australian Energy Regulator ("the AER") to perform benchmarking activities under the AER's Better Regulation program.

The immediate Australian parent entity of the Company is AusNet Services (Transmission) Ltd, a company incorporated in Australia, which, on the 31 March 2015, was part of a listed stapled group trading as AusNet Services. On 18 June 2015, AusNet Services completed a legal entity restructure under which the existing stapled entities became wholly owned by a new listed company (AusNet Services Ltd). As a result of the restructure, the ultimate parent of the Company is AusNet Services Ltd.

The Reports have been prepared in accordance with the 'Regulatory Information Notice issued under section Division 4 of Part 3 of the *National Electricity (Victoria) Law*' ("RIN") issued by the AER on 28 November 2013, the accompanying 'Economic Benchmarking RIN for transmission network service providers - Instructions and Definitions' and other authoritative pronouncements of the AER.

Some information required in the reports is data managed by the Australian Energy Market Operator ("AEMO"). AusNet Transmission, in conjunction with the AER, has identified within the Reports which data is maintained by AEMO and these cells have been left blank in the Reports. Therefore, AusNet Transmission has also not provided any details in relation to the Basis of Preparation of these variables.

AusNet Transmission's 2016 Regulatory Year is the period 1 April 2015 to 31 March 2016 ("Regulatory Year"). All financial data included in the Reports is presented in Australian dollars. Non-financial data is stated as per the measures specified in the Reports.

The AusNet Services' Group owns and operates 3 regulated networks – an electricity distribution network, a gas distribution network, and an electricity transmission network. Employees of the AusNet Services Group work across the 3 regulated networks and there are shared costs and overhead and other corporate costs that cannot be directly allocated to a particular network. These costs are proportioned amongst AusNet Services' 3 regulated networks, as well as unregulated businesses, based on an Activity Based Costing ("ABC") survey process completed by all cost centre managers and in accordance with AusNet Services' Cost Allocation Methodology ("CAM").

Materiality has been applied throughout the Reports and Basis of Preparation. Materiality is defined as information that if omitted, misstated or not disclosed has the potential, individually or collectively to influence the economic decisions of users.

Based on the RIN instructions and other supplementary guidance received from the AER, AusNet Services must report all variables as 'Actual Information', unless it is unable to do so.

'Actual Information' is defined as information materially dependent on information recorded in historical accounting records or other records used in the normal course of business, and whose presentation is not

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contingent on judgments and assumptions for which there are valid alternatives, which could lead to a materially different presentation. Based on this definition, 'Actual Information' may include management judgments and assumptions (providing it does not result in a presentation that could be materially incorrect). Any information or allocation which has been calculated via the ABC survey process is considered 'Actual Information', as this is in accordance with the AER-approved CAM, even though management judgments are used in the completion of the survey.

'Estimated Information' is information not materially dependent on information recorded in the AusNet Services' historical accounting records or other records used in the normal course of business, and whose presentation for the purposes of the RIN is contingent on judgments and assumptions for which there are valid alternatives, which could lead to a materially different presentation in the response to the Notice.

Interpretation of the AER's definition of Actual and Estimated information requires management judgments to be made as to the appropriate classification of information including:

- the extent to which the information is sourced from accounting or other records used in the normal course of business; and
- the degree of estimation involved and whether the information is materially dependent on judgments and assumptions for which there are valid alternatives, which could lead to a materially different presentation.

The methodologies, assumptions and judgments made by management in respect of variables are described within the relevant sections of this Basis of Preparation.

Based on the RIN instructions and other supplementary guidance received from the AER, in circumstances where AusNet Services is unable to provide 'Actual Information', the information is required to be estimated and an explanation included in this Basis of Preparation document as to why AusNet Services was unable to provide 'Actual Information', how the estimate was derived and why it is the best estimate in the circumstances. Based on supplementary guidance received from the AER, in the absence of evidence that AusNet is unable to provide 'Actual Information' the AER may regard the provision of 'Estimated Information' as non-compliant with the RIN.

Where 'Estimated Information' has been presented, the circumstances and the basis for the estimate, including the approach used, assumptions made, reasons why an estimate was required and why the estimate is AusNet Transmission's best estimate has also been set out below. On this basis, AusNet Services consider data provided is in compliance with the RIN Instructions.

By definition, estimates seldom equal the related actual results and estimates have only been made for the purpose of disclosing the information requested. Considerations of the cost and efficiency of preparation as well as the reliability and accuracy of data available have been taken into account in determining the best methodology to determine the estimates.

AusNet Services implemented a new Enterprise Resource Planning system (SAP) effective 4 May 2015. Therefore, in many instances, the data presented in the Templates has been sourced (for the month of April 2015) from the same systems as used for the 2015 Annual Regulatory Accounts submission; and the May to March months period data has been sourced from the new system. The new system

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consolidates a number of systems and was designed to record more accurate data in a manner to support the preparation of the Regulatory Accounts. The implementation of this new system has had no impact on the CAM. When referring to Financial Systems, the first 1 month refers to Oracle and the remaining 11 months refers to SAP. These circumstances have been explained in the Basis of Preparation where applicable.

To the extent applicable, the information reported has been prepared in a manner consistent with the policies and methodologies applied in preparing the Annual Regulatory Accounts. There were no changes in Accounting Policies during the 2016 Regulatory Year (in comparison with the previous Regulatory Year) which had a material impact on the information presented.

The preparation methodologies and information sources adopted in the preparation of the Reports are set out below.

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3.1 Revenue

Prescribed Transmission Services Revenue (“Revenue”) is measured at the fair value of the consideration received or receivable, net of the amount of Goods and Services Tax payable to the taxation authority. Revenue is recognised as the services are rendered and is reported inclusive of incentive scheme penalties and rewards. Total Revenue is disaggregated by chargeable quantity and also by type of connected equipment.

There have been no material changes to the accounting policies adopted by AusNet Transmission in relation to Revenue during the 2016 Regulatory Year in comparison with Regulatory Years previously reported.

Table 3.1.1 Revenue Grouping by Chargeable Quantity

Revenue reported has been classified into the Chargeable Quantity which most closely reflects the basis upon which the revenue was charged to customers. Where it has been determined that Revenues cannot be allocated to the specified chargeable quantities in TREV0101 to TREV0109, Revenue has been reported against ‘Revenue from other Sources’ (TREV0110).

The Annual Regulatory Accounts require gross proceeds from the sale of assets to be included in the Prescribed Transmission Services (“PTS”) revenue reported in the Income Statement worksheet. Per the RIN instructions, the Revenues in Table 3.1.1 need to reconcile to the Prescribed Transmission Services (“PTS”) Revenues reported in the Annual Regulatory Accounts. Therefore, gross proceeds from the sale of assets have been included in ‘Revenue from other Sources’ (TREV0110) which is consistent with the presentation of data in the 2015 Regulatory Year.

Preparation Methodology:

Data obtained from the Annual Transmission Customer Charges schedule, AusNet Transmission’s internal Transmission Revenue Tracking Tool and information from the Financial System was allocated into the required categories as determined by the customer. These customers are clearly identifiable in the Annual Transmission Customer Charges schedule, which includes Prescribed Services revenue (i.e. revenue included in AusNet Transmission’s revenue cap, plus Group 3 revenue).

Revenue from the Australian Energy Market Operator (“AEMO”), gross proceeds from the sale of assets and Easement Tax have been included in ‘Revenue from other Sources’ (TREV0110).

Estimated Information:

The information provided is considered ‘Actual Information’ as no estimates were required.

Table 3.1.2 Revenue Grouping by Type of Connected Equipment

Revenue reported has been classified into the Type of Connected Equipment. Gross proceeds from the sale of assets which relate to Prescribed Transmission Services have been included in ‘Other Revenue’ (TREV0205).

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Preparation Methodology:

Data obtained from the Annual Transmission Customer Charges schedule, AusNet Transmission's internal Transmission Revenue Tracking Tool and information from the Financial System was allocated into the required categories based on the nature of the revenue.

Revenue from the AEMO, gross proceeds from the sale of assets and Easement Tax was allocated to 'Other Revenue' (TREV0205).

Estimated Information:

The information provided is considered 'Actual Information' as no estimates were required.

Table 3.1.3 Revenue (Penalties) Allowed (Deducted) Through Incentive Schemes

The penalties or rewards from the service target performance incentive scheme ("STPIS") or efficiency benefit sharing scheme ("EBSS") have been reported based on the year that the penalty or reward was applied, not the year in which it was earned.

Preparation Methodology:

Information used in the preparation of Table 3.1.3 has been sourced from the AER Final Determination 2014/15 - 2016/17 Transmission Revenue Reset, AER STPIS Determinations (data is extracted and included in AusNet Transmission's internal Transmission Revenue Estimator Tool) and the Post Tax Revenue Model.

EBSS

The EBSS allowance as per the AER determination was obtained and the associated nominal revenue calculated. Since the Annual Transmission Customer Charges reflect the smoothed Maximum Allowed Revenue ("MAR") and the EBSS allowance is part of the build-up of the MAR, it is possible to allocate the EBSS allowance to revenue in each year of the regulatory period.

STPIS

Revenue attributable to the STPIS was obtained from the AER STPIS Determinations for the 2016 Regulatory Year.

Estimated Information:

The information provided is considered 'Actual Information' as no estimates were required.

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3.2 Operating Expenses

Operating Expenses (“Opex”) are the costs of operating and maintaining the network (excluding all capital costs and capital construction costs) and relate to Prescribed Transmission Services.

The AusNet Services Group owns and operates 3 regulated networks – an electricity distribution network, a gas distribution network, and an electricity transmission network. Opex that is incurred for a particular network is allocated directly to that network. Overhead costs that cannot be directly allocated to a particular network are proportioned amongst AusNet Services’ 3 regulated and unregulated networks via an Activity Based Costing survey process completed by all cost centre managers and in accordance with AusNet Services’ CAM.

The accounting policies adopted by AusNet Transmission in relation to Opex have not materially changed during the 2016 Regulatory Year in comparison with Regulatory Years previously reported.

Table 3.2.1 Opex Categories: Current Opex Categories and Cost Allocations

Preparation Methodology:

Information reported was extracted directly from the 2015/16 Annual Regulatory Accounts which were prepared using data sourced from the Financial Systems (SAP - for the 11 month period from May 2015 to March 2016 and Oracle - for the month of April 2015).

Opex categories and allocations have been presented in accordance with the requirements of the CAM, the Annual Regulatory Accounts and the Annual Reporting Requirements that were in effect for the individual Regulatory Year. Opex reconciles to Prescribed Transmission Services opex as disclosed in the Annual Regulatory Accounts.

Estimated Information:

The information provided is considered ‘Actual Information’ as no estimates were required.

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3.2.3 Provisions

Provisions are recognised when AusNet Transmission has a present legal or constructive obligation as a result of past events, it is more likely than not that an outflow of resources will be required to settle the obligation, and the amount of the provision can be measured reliably. Provisions are not recognised for future operating losses.

The amount recognised as a provision is the best estimate of the consideration required to settle the present obligation at the relevant reporting date, taking into account the risks and uncertainties surrounding the obligations. Where a provision is measured using the cash flows estimated to settle the present obligation, its carrying amount is the present value of those cash flows.

Financial information on provisions for Prescribed Transmission Services has been reported in accordance with the requirements of the CAM and the Annual Regulatory Accounts that were in effect for the 2016 Regulatory Year.

The accounting policies adopted by AusNet Transmission in relation to Provisions have not materially changed during the 2016 Regulatory Year in comparison with Regulatory Years previously reported.

Provisions have been separately presented based on the nature of the provision and allocated between an Opex component, a Capital Expenditure (“Capex”) component and an Other component based on the classification of the underlying cost associated with the provision. Financial information on provisions reconciles to the reported amounts for provisions in the Annual Regulatory Accounts for the 2016 Regulatory Year.

Preparation Methodology:

Provision for Corporate Restructuring and Provision for Make Good

Data in relation to Provisions was extracted from the Financial Systems (Oracle and SAP).

The PTS component of the total Provision for Make Good was calculated based the percentage of total PTS operating and maintenance expenditure in the 2015/16 Annual Regulatory Accounts.

The Provision for Corporate Restructuring was 100% directly allocated to PTS.

Provision for Employee Entitlements and Provision for Superannuation

The amounts reported in the ‘Provision for Employee Entitlements’ table relate to liabilities for wages and salaries, including non-monetary benefits, long service leave and annual leave recognised in respect of employees’ services up to the reporting date and are measured at the amounts expected to be paid when the liabilities are settled.

Data in relation to Provisions was extracted from the Financial Systems (Oracle and SAP).

The PTS component of the total Provision for Employee Entitlements and Provision for Superannuation was calculated based on headcount drivers (88% PTS, 12% Non-Regulated). The headcount driver was determined by using a report generated in the HR/Payroll system. The HR/Payroll system report included

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all employees across AusNet Services' businesses. Using ABC surveys, the headcount report was allocated between the Electricity Distribution, Gas Distribution and Transmission businesses. The Transmission business headcount was further allocated into employees involved in PTS related work based on ABC survey information.

The total 'Additional provisions made during the period', 'Amounts used during the period' and 'Unused amounts reversed during the period' disclosed are considered 'Actual Information' as the data was extracted from the Financial Systems (SAP and Oracle).

For Provision for Employee Entitlements and Provision for Superannuation, the split between the Opex component and the Capex component was estimated. To determine the proportion of these provisions that should be classified as Capex, AusNet Transmission has used the results from the AusNet Services capitalised overhead model (for the 11 months in SAP) which calculates the proportion of labour costs to be capitalised. The capitalised overhead model uses results from the ABC surveys which provide the percentage split of management effort between all of AusNet Services' regulated and unregulated networks as well as between Opex and Capex.

Estimated Information:

In relation to Provision for Employee Entitlements and Provision for Superannuation, the split between the Opex component and the Capex component was estimated as the data is not separately captured in the Financial Systems. This is considered to be Management's best estimate based on the data available.

All other information provided is considered 'Actual Information' as no estimates were required.

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3.3 Assets (RAB)

The Regulated Asset Base (“RAB”) values have been prepared and reported as per AusNet Services’ interpretation of the AER instructions set out in Section 4 of the RIN Instructions and Definitions (“RIN I&Ds”).

Consistent with the instructions outlined in the RIN I&DS, the AER Final Decision SP AusNet Transmission determination 2014–15 to 2016–17 (and specifically the published roll forward model) has been used as the basis for the RAB values as this is the latest AER Decision to incorporate ‘Actual Information’.

The accounting policies adopted by AusNet Transmission in relation to Capex (the only regulatory accounting input into the RAB) have not materially changed during the 2016 Regulatory Year (in comparison to prior Regulatory Years reported).

Table 3.1.1 Regulatory Asset Base Values

The RAB values have been prepared and reported as per AusNet Transmission’s interpretation of the AER instructions set out in Section 4 of the RIN I&Ds.

Preparation Methodology:

Information was sourced from the AER Final Decision SP AusNet Transmission determination 2014–15 to 2016–17 and underlying workings to the Annual Regulatory Accounts.

The AER Final Decision SP AusNet Transmission determination 2014–15 to 2016–17 roll forward model was used as the basis for the RAB Values, on an ‘As-Commissioned’ basis, as that was the latest AER Decision to incorporate actual information. Information for each subsequent Regulatory Year after 2013-14 is updated for actual Capex values (reconciled to the Annual Regulatory Accounts) and re-calculated for regulatory depreciation based on actual Capex.

Due to a prior period error, the opening RAB Value as at 31 March 2015 was adjusted by 0.3%. This prior error forms part of the amended historical Capex schedules (reported on an ‘as incurred’ basis) in the AusNet Services’ 2015-16 Annual Regulatory Accounts.

Estimated Information:

The information provided is considered ‘Actual Information’ as no estimates were required.

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Table 3.2.2 Asset Value Roll Forward

The disaggregated RAB values have been prepared and reported as per AusNet Transmission's interpretation of the AER instructions set out in Section 4 of the RIN I&Ds.

AusNet Transmission has recorded assets in the RAB in asset classes that allow a direct attribution into the AER's Economic Benchmarking RAB Asset classes. The exception is that there is no split in the transmission RAB between overhead and underground assets. The existing disaggregated RAB consists of the following asset categories:

- Lines (Towers and Conductors)
- Transformers
- Switchgear
- Reactive
- Establishment
- Secondary
- Communications
- Land
- Easements
- Inventory
- IT
- Vehicles
- Premises
- Other (non-system)
- Equity Raising Costs (2008-13)

For each category above, Opening value, Inflation addition, Straight line depreciation, Regulatory depreciation, Actual additions (recognised in RAB), Disposals and Closing value for overhead transmission asset value is determined.

Preparation Methodology:

Information was sourced from the AER Final Decision SP AusNet Transmission determination 2014–15 to 2016–17 and underlying workings to the Annual Regulatory Accounts. As discussed above, there are some prior period adjustments which affect the opening RAB Value as at 31 March 2015. These adjustments are included in the RAB roll forward by Benchmark category.

Each line of the RAB information Opening value, Inflation addition, Straight line depreciation, and Regulatory depreciation, Actual additions (recognised in RAB), Disposals and Closing value for transmission asset value is aggregated as per the table below:

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Benchmarking Asset Classes	RAB Asset Classes
Overhead transmission assets (wires and towers/poles etc.)	Towers and Conductors*
Underground transmission assets (cables, ducts etc.)	Proportional estimate*
Substations, switchyards	Switchgear Transformers Reactive Establishment Land
Easements	Easements
Other assets with long lives (please specify)	Secondary Communications Premises Other Equity Raising Costs
Other assets with short lives (please specify)	Inventory IT Vehicles

*To determine the split between overhead and underground assets for 2016, the RAB Asset Class 'Towers and Conductors' (Inflation, Straight line depreciation, Regulatory depreciation) was allocated proportionally based on their share of the 2016 opening RAB values.

All additions relate to overhead transmission assets.

Consistent with the prior year, Engineering assessments were used as the basis for determining the aggregation of the RAB Asset Classes into the prescribed Benchmarking Asset Classes.

Estimated Information:

Overhead transmission assets and Underground transmission assets is considered 'Estimated Information'. Refer to discussion above. The information provided was estimated based on an assessment by a suitable subject matter expert ("SME") and is considered Management's best estimate based on the information available. Information regarding the other categories is considered 'Actual Information'.

Based on the RIN Instructions and Definitions, this information is permitted to be 'Estimated Information' on an ongoing basis.

Table 3.3.3 Total Disaggregated RAB Asset Values

Preparation Methodology:

The total disaggregated RAB values are taken directly from Table 3.3.2 and are calculated as the average of the opening and closing RAB values from Table 3.3.2.

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Estimated Information:

Consistent with Table 3.3.2, the data presented in relation to Overhead transmission assets and Underground transmission assets is considered 'Estimated Information' and all other categories are considered actual. Based on the RIN Instructions and Definitions, this information is permitted to be 'Estimated Information' on an ongoing basis.

Table 3.3.4 Asset Lives

Preparation Methodology:

Estimated service life of new assets

Data reported as the 'Estimated service life of new assets' is consistent with the information reported in the 2014/15 3.3 Assets (RAB) Template, with the exception of TRAB0904 and TRAB0905. The data reported in 'Estimated service life of new assets' was reviewed by a SME and, with the exception of TRAB0904 and TRAB0905, no changes were required for the 2016 Regulatory Year.

In the 2015 Regulatory Year, the 'Estimated service life of new assets' was calculated based on assets held (as per the Asset Management System) and the Age Profiles generated for the 2015 Category Analysis RIN. Unit rates and asset lives were calculated on a per asset basis using data supplied for the Transmission Revenue Reset ("TRR") submitted in 2012-2013 and the AER's Replacement Expenditure ("REPEX") model. An internal document "AMS 10-101 Asset Life Evaluation" defines the useful lives utilised.

The 'Estimated standard service life' for TRAB0904 and TRAB0905 was calculated based on each asset category's share of the Closing RAB for the 2016 Regulatory Year.

Estimated residual service life

The 'Estimated residual service life' for TRAB1001, TRAB1002 and TRAB1003 was calculated based on data reported in Template 5.2 Asset Age. The Asset Installation dates included in Template 5.2 Asset Age were used to calculate the Average Asset Lives in each of the Asset Categories. The 'Estimated Residual Service Life' was calculated as the difference between the 'Estimated Service Life of New Assets' and the Average Asset Lives.

The 'Estimated residual service life' for TRAB1004 and TRAB1005 was calculated based on each asset category's share of the Closing RAB for the 2016 Regulatory Year.

Estimated Information:

Data for 'Estimated service life of new assets' is considered 'Estimated Information'. The preparation methodology and the assumptions applied have been outlined above. This information was required to be estimated as the data is not captured in the Asset Management System.

As the 'Estimated service life of new assets' is considered 'Estimated Information', the 'Estimated residual service life' is considered 'Estimated Information' – as the calculation to derive these metrics relies on the 'Estimated service life of new assets'. Information provided is considered to be Management's best

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estimate based on the data available. Based on the RIN Instructions and Definitions, this information is permitted to be 'Estimated Information' on an ongoing basis.

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3.4 Operational Data

Table 3.4.1 Energy Delivery

Table 3.4.2 Connection Points

Table 3.4.3 System Demand

The above tables have not been completed as the required information is maintained by AEMO.

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3.5 Physical Assets

Table 3.5.1 Transmission System Capacities

Table 3.5.1.1 Overhead Network Length of Circuit at Each Voltage

The overhead network length of circuit at each voltage level has been reported. The network length of circuit is the circuit length (measured in kilometres) of lines in service. A double circuit line counts as twice the length. Length does not take into account vertical components such as sag.

Preparation Methodology:

Information reported was directly sourced using a query script run in SDME.

Estimated Information:

The information provided is considered 'Actual Information' as no estimates were required.

Table 3.5.1.2 Underground Cable Circuit Length at Each Voltage

The underground cable circuit length at each voltage level has been reported. The underground cable circuit length is the circuit length (measured in kilometres) of lines in service.

Preparation Methodology:

The information reported was directly sourced using a query script run in Maximo 5 (as the information in SAP does not provide all the characteristics needed to classify the cable data and SDME does not capture underground cable under the terminal stations).

Estimated Information:

The information provided is considered 'Actual Information' as no estimates were required.

Table 3.5.1.3 Estimated Overhead Network Weighted Average MVA Capacity by Voltage Class and Table 3.5.1.4 Estimated Underground Network Weighted Average MVA Capacity by Voltage Class

Weighted average capacities have been reported for both the overhead and underground network for each of the listed voltage classes. The data provided is based on weighted average carrying capacities under normal circumstances taking account of limits imposed by thermal ratings and voltage drop or voltage stability considerations for the longer high voltage (330 kV and 500 kV) transmission lines.

Preparation Methodology:

Data for the 2016 Regulatory Year was sourced from the Asset Management Systems.

Overhead lines information was sourced from SAP and Underground cable information was sourced from SDME for each span of transmission circuit. Data extracted included details of the conductor voltage ("Volts") and current rating ("Amps").

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The line length in kilometres (“length”) for each section of line was sourced from SDME for Overhead lines and Maximo 5 for Underground cable.

The weighted average was calculated based on the following methodology:

$$\frac{\text{Line 1: (length * Volts * Amps)} + \text{Line 2: (length * Volts * Amps)} + \text{Line 3: (length * Volts * Amps) etc.}}{(\text{Line 1 length} + \text{Line 2 length} + \text{Line 3 length etc.}) * 1,000,000}$$

For three phase lines each group in the numerator has also been multiplied by $\sqrt{3}$.

Eleven of AusNet Services’ 500 kV and 330 kV overhead transmission lines are limited by voltage and stability constraints. The loadability of these eleven 500 kV and 330 kV transmission lines has been calculated by using an industry recognised methodology that uses the “St. Clair Curve”. This methodology recognises that transmission lines that are longer than 80 km are generally limited by voltage and stability constraints rather than thermal ratings. This methodology has been agreed with AEMO and uses the following assumptions to calculate transmission line loadability based on the respective transmission line’s Surge Impedance Loading (SIL):

- The loadability of transmission lines that are between 80 km and 150 km has been calculated as 2.5 times the SIL
- The loadability of transmission lines that are between 150 km and 230 km has been calculated as 2.0 times the SIL
- The loadability of transmission lines that are between 230 km and 300 km has been calculated as 1.5 times the SIL.

Loadability, instead of summer MVA thermal rating ($\sqrt{3} * \text{Volts} * \text{Amps}$), is used in the numerator of the above formula for these eleven transmission lines.

Estimated Information:

The information provided is considered ‘Actual Information’ as it is materially dependent on information used in the normal course of business and is not contingent on judgments and assumptions for which there are valid alternatives which could lead to materially different information being reported.

The carrying capacities included in the above weighted average calculation assume all assets have summer peaking Maximum Demands, which is a reasonable assumption given summer capacity is lower as the network is more constrained during this period compared to winter.

Capacity voltage drop considerations were not taken into account for the 2015 Regulatory Year but have been taken into account for the 2016 Regulatory Year. There are eleven 500 kV and 330 kV overhead transmission lines that cannot be operated up to their thermal ratings due to voltage and stability constraints on the transmission system. Approximate line loadability ratings have been calculated for these eleven overhead transmission lines. The methodology that has been used to calculate the capacity of the eleven 500 kV and 330 kV transmission lines that are limited by voltage or stability constraints has been agreed with AEMO and is an industry recognized methodology to estimate the loadability of longer transmission lines.

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Table 3.5.1.5 Installed Transmission System Transformer Capacity and Table 3.5.1.6 Cold Spare Capacity

Transformer capacity involved in the prescribed transformation levels has been reported. The transformer capacities reported in Table 3.5.1.5 are inclusive of Cold Spare Capacity which has been separately disclosed in Table 3.5.1.6. Data presented relates to assets providing Prescribed Transmission Services.

For each category, the summation of normal assigned continuous rating has been reported (including forced cooling or other capacity improving factors where relevant). Assigned ratings have been determined by the nameplate rating. Only regulated transformers (included in the Regulatory Asset Base) have been included. Step-up transformers at generation connection locations have been excluded. Oil insulated or cooled reactors and station service transformers which provide auxiliary AC and DC for secondary systems in terminal stations have also been excluded.

Preparation Methodology:

Data for both in-service and disposed-of transformers was calculated based on prior year information used in the RIN (from the Asset Management System) adjusted for transformer movements in the 2016 Regulatory Year. Movements in the 2016 Regulatory Year were extracted from a database maintained to track transformer movements.

Estimated Information:

For variable TPA0504 'Transformer capacity for directly connected end-users owned by the end-user' AusNet Transmission has used nameplate ratings records held in its own Asset Management Systems and verified them where possible with AEMO. Nonetheless, these ratings are valid only under certain assumptions with regards to cooling equipment. As AusNet Transmission has no direct knowledge of the cooling equipment installed by these end users, these ratings should be considered estimates only. The remaining variables are all considered actual data.

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3.6 Quality of Services

‘Outage’ means ‘loss of connection’ rather than loss of supply by a connected system or customer. To allow summation into an overall Average Circuit outage rate, both numerator (number of events with defined circuits unavailable per annum) and denominator (total number of defined circuits) have been provided as well as the calculated percentage rate for each item.

The parameter variables TQS0101 to TQS02 have been provided based on a calendar year (from 1 January 2015 to 31 December 2015) as STPIS performance reporting is undertaken on a calendar year basis.

Table 3.6.1 Service Component

Table 3.6.1.1 Service Parameter 1 – Average Circuit Outage Rate

Preparation Methodology:

Assets and outage data is recorded in the Asset Management System and periodically included in internal reports and also AER submissions. The reports from the Asset Management System were reviewed and amended to align with requested information (e.g. unregulated asset information excluded).

The data reported aligns with the AER’s decision on 2015 STPIS performance as confirmed in correspondence from the AER dated 15 March 2016.

The reported ‘Number of lines fault outages’ (TQS0102) and ‘Number of defined lines’ (TQS0103) was used to calculate the ‘Lines outage rate – fault’ percentage (TQS0101).

The reported ‘Number of Transformer fault outages’ (TQS0105) and ‘Number of defined Transformers’ (TQS0106) was used to calculate the ‘Transformers outage rate - fault’ percentage (TQS0104).

The reported ‘Number of Reactive plant fault outages’ (TQS0108) and ‘Number of defined reactive plant’ (TQS0109) was used to calculate ‘Reactive plant outage rate - fault’ percentage (TQS0107).

The reported ‘Number of defined lines’ (TQS0103) and ‘Number of Lines forced outages’ (TQS0111) was used to calculate the ‘Lines outage rate – forced outage’ (TQS0110).

The reported ‘Number of defined Transformers’ (TQS0106) and ‘Number of Transformers forced outages’ (TQS0113) was used to calculate the ‘transformer outage rate – forced outage’ (TQS0112).

The reported ‘Number of defined reactive plant’ (TQS0109) and ‘Number of reactive plant forced outages’ (TQS0115) was used to calculate ‘Reactive plant outage rate – forced outage’ (TQS0114).

Data presented relates to assets providing Prescribed Transmission Services.

Estimated Information:

The information provided is considered ‘Actual Information’ as no estimates were required.

Basis of Preparation – Economic Benchmarking

2016 Regulatory Year

Table 3.6.1.2 Service Parameter 2 – Loss of Supply Event Frequency – Number in Ranges Specified

The loss of supply event frequency thresholds of 0.05 and 0.30 system minutes per annum have been applied based on the AER Transmission Network Service Provider (“TNSP”) STPIS.

The data reported aligns with the AER’s decision on 2015 STPIS performance as confirmed in correspondence from the AER dated 15 March 2016.

Preparation Methodology:

The required parameters were obtained from the AER TNSP STPIS. Information reported was based on data reported in the annual AER 2015 Transmission Service Standard Compliance Report which was ultimately sourced from the Asset Management System.

Estimated Information:

The information provided is considered ‘Actual Information’ as no estimates were required.

Table 3.6.1.3 Service Parameter 3 – Average Outage Duration

Preparation Methodology:

Data was extracted from the Asset Management System as reported in the 2014 submission made to the AER (“TRR”).

Average Outage Duration was derived by performing a simple average calculation of the total number of minutes for outages divided by the number of outages.

The data reported aligns with the AER’s decision on 2015 STPIS performance as confirmed in correspondence from the AER dated 15 March 2016.

Estimated Information:

The information provided is considered ‘Actual Information’ as no estimates were required.

Table 3.6.1.4 System Parameter 4 – Proper Operation of Equipment – Number of Failure Events

Preparation Methodology:

‘Failure of protection system’ (TQS0119) and ‘Incorrect operational isolation of primary or secondary equipment’ (TQS0121): Information on system incidents was extracted from the Asset Management System. A detailed analysis was performed of this information and based on this review, the relevant data requested was captured and summed.

‘Material failure of Supervisory Control and Data Acquisition (“SCADA”) system’ (TQS0120): Information in relation to material SCADA failures was obtained directly from AEMO.

Basis of Preparation – Economic Benchmarking

2016 Regulatory Year

Estimated Information:

The number of material failures of SCADA system (TQS0120) is considered 'Estimated Information' as it is based on data provided by AEMO and is not materially dependent on information recorded in AusNet Services' records used in the normal course of business.

In relation to 'Incorrect operational isolation of primary or secondary equipment' (TQS0121), Incorrect operational isolation is defined in the AER TNSP STPIS as incidents "irrespective of whether an outage occurred". AusNet Services does not capture incidents where no outage results. Based on this, the number of incidents of Incorrect operational isolation of primary or secondary equipment which resulted in an outage has been used as a proxy for the data requested. Therefore, the information provided is considered 'Estimated Information'.

The data provided is considered Management's best estimate based on the information available.

Table 3.6.2 – Market Impact Component

Quality of services is reported in accordance with the definitions specified in the December 2012 TNSP STPIS (version 4) document per the AER RIN Instructions and Definitions.

AusNet Services' 2015 Market Impact Component performance has been audited by the AER and the data reported is consistent with the results of this audit.

Preparation Methodology:

Data reported was sourced from AEMO's Markets Management System using software packages (e.g. Ezi View provided by Global Roam).

The entire NEM data set was initially filtered to exclude constraints with a marginal value less than \$10/MWhr. The cause of each constraint was manually allocated including outages caused by AusNet Services.

Estimated Information:

The information provided is considered 'Actual Information' as no estimates were required.

Table 3.6.3 System Losses

System losses (TQS03) were calculated as the difference between electricity inflows and outflows as a percentage of electricity inflows.

Electricity inflows is the total electricity inflow into the transmission network including from generation, other connected Transmission Network Service Providers ("TNSPs") at the connection point, and connected Distribution Network Service Providers ("DNSPs") as measured by revenue meters.

Electricity outflows is the total electricity outflow into the networks of connected distribution network service providers, other transmission networks and directly connected end-users as measured by revenue meters.

Basis of Preparation – Economic Benchmarking

2016 Regulatory Year

Preparation Methodology:

Data metering systems collect and process energy metering data for all terminal stations. At each terminal station, the total cumulative received energy (inflows) and transferred energy (outflows) in Watt hour (“Wh”) associated with connections are collected and recorded in Data Metering Systems.

Using this information, the System Loss percentage was calculated for the 2016 Regulatory Year by calculating the difference between inflows and outflows for the months April 2015 to March 2016, and dividing by the total inflows for this same period.

Information captured and reported relates to both the Regulated and Unregulated Network. The methodology used to calculate the losses associated with the supply of electricity through AusNet Services’ electricity transmission network is outlined in SOP35-20 Transmission Network Energy Loss.

Estimated Information:

The information provided is considered ‘Actual Information’ as no estimates were required.

Basis of Preparation – Economic Benchmarking

2016 Regulatory Year

3.7 Operating Environment

Table 3.7.1 Terrain Factors

Total number of vegetation maintenance spans (TEF0101)

‘Total number of maintenance spans’ is the total count of spans in the network that are subject to active vegetation management practices in the 2016 Regulatory Year.

Preparation Methodology:

Information in relation to the total number of vegetation maintenance spans was sourced from work orders (PT1, PT30, PT90, PT180, PT365 and PT900) recorded in the Financial System (SAP), where each span is assigned to a work order. These types of work orders represent maintenance spans which require vegetation maintenance within a certain timeframe, that is, PT30 means vegetation maintenance is required within 30 days, PT90 means vegetation maintenance is required within 90 days etc. The maintenance spans reported in the calculation are the spans which were actioned during the 1 April 2015 – 31 March 2016 period.

Estimated Information:

The information provided is considered ‘Actual Information’ as no estimates were required.

Average vegetation maintenance span cycle (TEF0102)

Maintenance span cycle refers to the planned number of years (including fractions of years) between which cyclic vegetation maintenance is performed for the relevant area.

Preparation Methodology:

Information in relation to the average vegetation maintenance span cycles was obtained from the Asset Management System and also per the vegetation management plan whereby 3 patrols are conducted per annum, with an aim to clear these segments on a 900 day cycle.

Estimated Information:

The information provided is considered ‘Actual Information’ as no estimates were required.

Average number of trees per vegetation maintenance span (TEF0103)

The ‘average number of trees per maintenance span’ includes only trees that require active vegetation management to meet its vegetation management obligations. It excludes trees that only require inspections and no other vegetation management activities required to comply with AusNet Transmission’s vegetation management obligations.

Basis of Preparation – Economic Benchmarking

2016 Regulatory Year

Preparation Methodology:

Vegetation Management field staff record the number of trees to be actioned (PT1, PT30, PT90, PT180, PT365, PT900) in each span, into the Asset Management Systems. Systems analysts then run a query to quantify average numbers of actioned trees per maintenance span.

Estimated Information:

The information provided is considered an estimate as the average is calculated based on 398 maintenance spans recorded in the Asset Management Systems. This represents approximately 24% of the total Number of Maintenance Spans - as AusNet Services commenced capturing this data during the 2016 Regulatory Year. Based on the RIN Instructions and Definitions, this information is permitted to be 'Estimated Information' on an ongoing basis.

Average number of defects per vegetation maintenance span (TEF0104)

Defects are any recorded incidence of noncompliance with the vegetation clearance standard. This also includes vegetation outside a TNSP's standard clearance zone that is recognised as hazardous vegetation and which would normally be reported as requiring management under inspection practices.

Preparation Methodology:

The total number of defects is calculated as the number of PT1 and PT30 Cut spans per work orders recorded in the Financial System (SAP), plus any rating 1, 2, 3, 4 & 5 Hazard Tree (meaning Trees which required action due to defects) as recorded in the Hazard Tree Database.

To calculate the average number of defects, the total number of defects was divided by the total number of vegetation maintenance spans above.

Estimated Information:

The information provided is considered 'Actual Information' as no estimates were required.

Tropical Proportion (TEF0105)

Tropical spans are the approximate total number of urban and rural Maintenance Spans in the Hot Humid Summer and Warm Humid Summer regions as defined by the Australian Bureau of Meteorology Australian Climatic Zones map (based on temperature and humidity).

Preparation Methodology:

There are no Tropical Spans in AusNet Transmission's Maintenance Spans.

Estimated Information:

The information provided is considered 'Actual Information' as no estimates were required.

Basis of Preparation – Economic Benchmarking

2016 Regulatory Year

Standard Vehicle Access (TEF0106)

Standard vehicle access refers to areas which are serviced through made roads, gravel roads and open paddocks (including gated and fenced paddocks). It excludes areas only accessible by a four wheel drive vehicle.

Preparation Methodology:

It has been assumed the percentage of spans which were actioned by climbing parties (as opposed to Elevated Work Platforms/ground parties) are determined as to not have standard vehicle access. Therefore the remainder is considered to have standard vehicle access.

To calculate the percentage of spans which were actioned by climbing parties, the number of priority spans (PT1, PT30, PT180, PT365 and PT900) were identified and how many required climbers to action them during the Regulatory Year. This figure is divided by the total number of priority spans (i.e. converted into a percentage). As this is not possible currently within SAP we have used the same split which was applied in previous years; climbing spans 11%, standard spans 89% (standard vehicle access)

This standard vehicle access percentage is multiplied by the total route line length in kilometres to derive an estimated area in kilometres which is accessible by a standard vehicle.

Estimated Information:

Data provided is considered 'Estimated Information' as the information required was not separately captured by the existing systems. The estimation process as described is considered Management's best estimate of the data required based on the information available.

Altitude (TEF0107)

Altitude is the route line length 600 meters above sea level.

Preparation Methodology:

Information in relation to altitude was obtained by reviewing profile drawings and PLS-Cadd line terrain models to identify levels for tower bases at the start and end of route sections above 600 meters above sea level.

Estimated Information:

The information provided is considered 'Actual Information' as no estimates were required.

Bushfire Risk (TEF0108)

Bushfire risk is the number of Maintenance Spans in high bushfire risk areas.

Preparation Methodology:

An 'IW64 report' was generated in SAP which shows the fire zone each maintenance spans is recorded in. The number of HBRA spans are then combined to yield the total maintenance spans in HBRA.

Basis of Preparation – Economic Benchmarking

2016 Regulatory Year

Estimated Information:

The information provided is considered 'Actual Information' as no estimates were required.

Table 3.7.2 Network Characteristics

Route line length (TEF0201) and Total number of spans (TEF0204)

The route line length is the aggregate length in kilometers of lines, measured as the length of each conductor span between poles and/or towers and does not include vertical components such as line sag. Each easement span is considered only once irrespective of how many circuits it contains.

Preparation Methodology:

Data reported for Route Line Length in the 2016 Regulatory Year includes both Overhead Route Line Length and Underground Route Line Length. In previous Regulatory Years, this metric only included Overhead Route Line Length.

Information in relation to overhead route line length and total number of easement spans was obtained from the SDME Asset Management System. The data extracted provided wire segment and functional location information. Using the coordinates of in-service towers, overhead route line length was determined. Based on this data, the number of spans was calculated.

Underground route line length data was sourced from the SDME and Maximo 5 Asset Management Systems (SAP did not provide all the required data characteristics).

Estimated Information:

The information provided is considered 'Actual Information' as no estimates were required.

Variability of dispatch (TEF0202) and Concentrated load distance (TEF0203)

The data relevant to TEF0202 and TEF0203 is maintained by AEMO, therefore not required to be disclosed in the Template.