Transmission Category Analysis RIN, 2013-14

Basis of Preparation

As submitted to the AER

31 October 2014

CONTACT

This document is the responsibility of the Strategy and Stakeholder Relations Group within Tasmanian Networks Pty Ltd (ABN 24 167 357 299). Please contact the indicated owner of the document with any queries or suggestions.

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Introduction

From 1 July 2014, TasNetworks (ABN 24 167 357 299) assumed the responsibilities of Transend Networks Pty Ltd, the owner and operator of the transmission system in Tasmania.

This document (RIN Response) represents the response of TasNetworks to the Regulatory Information Notice (RIN) issued in March 2014 by the Australian Energy Regulator (AER), under Division 4 of Part 3 of the National Electricity (Tasmania) Law, for the purposes of collecting information for category analysis.

The information and explanatory material included in this RIN Response relate to Transend's activities as Tasmania's licensed Transmission Network Service Provider (TNSP) during the 2013-14 Regulatory Year.

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Template 2.1 Expenditure summary

Table 2.1.1 Prescribed transmission services capital expenditure

(a) Consistency of information with the requirements of the RIN

The information is calculated from worksheets within the RIN with a separate balancing items spreadsheet included per the requirements of the RIN.

(b) Source of information

Worksheets 2.2 – 2.5 of the RIN.

(c) Methodology applied to determine information, including assumptions made

Reconciliation of information provided in worksheets 2.2-2.5 of the RIN to the amounts reported in the Regulatory financial statements. Preparation of a list of balancing items to clarify differences in the RIN and the Regulatory financial statements.

(d) Use of estimates

No estimations have been required in the collation and presentation of this information. Information is based on actual information, historical accounting records or other records used in the ordinary course of business.

(e) Compliance with financial reporting framework

- Non-compliance

  There has been no non-compliance with the financial reporting framework.

- Reason for non-compliance

  Not applicable.

- Changes in accounting policies

  There have been no changes in accounting policies for the expenditure summary.

Table 2.1.2 Prescribed transmission services operating expenditure

(a) Consistency of information with the requirements of the RIN

The information is calculated from worksheets within the RIN per the requirements of the RIN.

(b) Source of information

Worksheets 2.5 - 2.8 of the RIN.

(c) Methodology applied to determine information, including assumptions made

Reconciliation of information provided in worksheets 2.2-2.5 of the RIN to the amounts reported in to the Regulatory financial statements. Preparation of a list of balancing items to clarify differences in the RIN and the Regulatory financial statements.

(d) Use of estimates

No estimations have been required in the collation and presentation of this information. Information is based on actual information, historical accounting records or other records used in the ordinary course of business.

(e) Compliance with financial reporting framework

- Non-compliance

  There has been no non-compliance with the financial reporting framework.

- Reason for non-compliance

  Not applicable.

- Changes in accounting policies

  There have been no changes in accounting policies for the expenditure summary.

Template 2.2 Replacement expenditure

Table 2.2.1 Expenditure and replacement volumes by asset category

(a) Consistency of information with the requirements of the RIN

Information presented has been split in accordance with the categories in the Templates. The corresponding asset age profile has been provided as required.

(b) Source of information

Financial

All financial information was sourced from the regulatory asset register; TasNetworks' WASP asset data, and the Regulatory financial statements.

Technical

Telecommunications

- Information has been sourced from the telecommunications operational drawings, telecommunications work order database, telecommunications asset register, the Telecommunications RIN Data MS Excel spreadsheet, and the trial balance in the Sun finance system.

Secondary Systems

- Asset replacement and failure information has been sourced from the WASP asset register using Business Intelligence reporting. The counts are per scheme where protection is a combination of Bus Coupler, Bus Zone, Capacitor Bank, HV Feeder, System Protection, Transformer and Transmission Circuit schemes. SCADA and Network Control are based on SCADA schemes only.

Substations Primary Systems

- Asset replacement information has been sourced from the WASP asset register using Business Intelligence reporting and has been recorded in several excel spreadsheets covering asset classes. Asset failure information has been extracted from WASP asset 'defect' register using Business Intelligence reporting and confirmed against failure reporting and discussion with substation engineers.

Transmission Lines

- Asset replacements were sourced from TasNetworks' asset register. Asset failure information has been taken from the AMIS system.

(c) Methodology applied to determine information, including assumptions made

Financial

- An extract of all assets commissioned in the 2013-14 year was taken from the regulatory asset register and attributed with Investment Category data based on ND numbers taken from TasNetworks' internal Quarterly Report. The data view was restricted to only those assets which related to replacement capex (investment category being 'asset renewal'). These assets were then further attributed with RIN Category data based on the WASP Asset ID and a lookup from WASP (eg. 110 kV SF6 circuit breaker equated to the RIN Category "> 66 kV & < ≈ 132 kV ; SF6 INSULATED CIRCUIT BREAKER"). Any assets which did not map were subjected to manual RIN Category classification. A pivot table was then applied to this dataset to generate the base repex data.
- Due to the regulatory asset register being on an 'as commissioned' basis, all data was pro-rated with actual spend data (as incurred) on a financial year basis. This provided the final expenditure data for historical spend.

Technical

Telecommunications

- Historical information has been sourced from the telecommunications work order database, telecommunications asset register, and the trial balance in the Sun finance system.
- The number of asset failures has been taken from the telecommunications work order database as the average annual failures for the period from 2008-09 to 2011-12. After this time, no meaningful information has been available due to a change in the fault reporting process.
- Details of capital projects were sourced from the capital works program management system to determine whether asset installations were covered as asset replacements or augmentations. This classification was entered in the communications RIN data spreadsheet and filtered to provide the numbers for the asset replacements.
- Data from the above sources has been collated into an Excel spreadsheet to enable calculation of asset replacements, asset failures and age profile. All asset data for telecommunications is currently considered to be estimated due to the ad-hoc nature of the collation with data verification usually being tacit knowledge of the network.

Secondary Systems

- SCADA schemes are counted at station level and do not include SCADA schemes allocated at bay level.
- Protection failures are derived from defects or corrective work allocated to Bus Coupler, Bus Zone, Capacitor Bank, HV Feeder, System Protection, Transformer and Transmission Circuit schemes.
- SCADA and Network Control failures are derived from defects or corrective work allocated to SCADA schemes and includes the failure of a device that will fully or partially deplete the functionality of the station level SCADA scheme.

Asset Replacements

A report has been developed to display the date that the status of the device changed to commissioned and the date that the associated scheme was first recorded in the asset register. The device commissioning date is filtered for the reporting financial year and is compared to the date that the scheme was first recorded in the asset register. If the date that the scheme was created is well before the date that the associated devices were commissioned, this indicates an asset replacement. If the date the scheme was created in the asset register is close to the date the devices were commissioned, this indicates an augmentation. The list of scheme replacements is then assessed against known scheme replacement projects to confirm the accuracy of the asset register data.

Asset Failures

A report is available to provide a count of failures of the protection and SCADA devices with the date of the registered failure filtered for the reporting financial year.

Substations Primary Systems

- Historical information has been sourced from WASP asset register using Business Intelligence reporting sorted for assets that had been commissioned in the time period being reviewed. Several excel spreadsheets covering asset classes have been created to support information lodged. Commissioned assets are a mix of new, augmented and replacement and a review of all the commissioned assets was undertaken and only those that were identified as replacement were included in the asset count. This was confirmed against section 2.3 and 5.2.
- In the previous RIN submission the following industry standard asset categories were reported separately to align with physical assets installed and asset counts included. Based on the AER's categorisation, these asset categories are not reported separately for 2013-14. These assets categories are reported against the "other" category. The table below details the asset count that has been used to determine the "other" count.

Asset Category	Asset replacements 2013/14
< ≈ 33 kV; VACUUM INSULATED CIRCUIT BREAKER	
< ≈ 33 kV; OIL INSULATED CIRCUIT BREAKER	
< ≈ 33 kV; SF6 INSULATED CIRCUIT BREAKER	
> 33 kV & < ≈ 66 kV ; OIL INSULATED CIRCUIT BREAKER	
> 33 kV & < ≈ 66 kV ; SF6 INSULATED CIRCUIT BREAKER	
> 66 kV & < ≈ 132 kV ; SF6 INSULATED CIRCUIT BREAKER	8
> 66 kV & < ≈ 132 kV ; OIL INSULATED CIRCUIT BREAKER	
> 132 kV & < ≈ 275 kV ; SF6 INSULATED CIRCUIT BREAKER	
> 132 kV & < ≈ 275 kV ; OIL INSULATED CIRCUIT BREAKER	

- In the previous RIN submission the asset categories of "> 66 kV & < = 132 kV ; < = 30 MVA – REFURBISHED" was added to cover commissioned assets that where not new, ie being re-used within the system. This 2013-14 reporting statement has not included this previously reported assets class. Any data applicable to this asset class has been collated and reported in their original date of manufacturer (assumed original commission date). For this RIN the applicable transformers are Boyer T1 (commissioned 2014 with Date of Manufacture 1968) and Newton T1 & T2 (commissioned 2013 with Date of Manufacture 1970).
- Where an asset has been replaced by its modern equivalent, eg for 11 kV oil circuit breaker its modern equivalent has been used in the asset count, ie if 11 kV oil circuit breakers have/are being replaced with11 kV vacuum circuit breakers then the count is included in <33kV Vacuum insulated circuit breakers.
- The number of asset failures has been taken from information extracted from WASP asset 'defects' register using Business Intelligence reporting and confirmed against failure reporting and discussion with substation engineers. The raw data was reviewed to ensure that the defect resulted in an asset failure, ie an outage resulted. An asset failure definition was sourced from RIN preparation document and was summarised to be an event which results in an un-planned outage of plant.

Transmission Lines

TasNetworks' owned asset replacements were sourced from the asset register, filtering by assets with a commissioning date in 2013-14.

Asset replacements resulting from augmentation projects were excluded.

Where TasNetworks has strung a single circuit in a double circuit configuration, this has been classified as double circuit, due to the increased operational cost resulting from such an arrangement.

The transmission tower category included expenditure on an asset renewal project which related to the enhancement of existing assets. Consequently there is no associated asset replacement number.

The support structures category includes the replacement of anodes, foundations, insulators and danger signs. It was assumed that each tower danger sign replacement included the replacement of two signs.

OPGW data was taken from TasNetworks' geographical information systems.

Assets of categories not owned by TasNetworks has been marked as '0' as required by the RIN instructions.

(d) Use of estimates

Financial

No estimations have been required in the collation and presentation of this information. Information is based on actual information, historical accounting records or other records used in the ordinary course of business.

Technical

The provision of fault information for the telecommunications assets was estimated for 2013-14 due to the inability to obtain accurate information for failures. The estimations were based on the average figures for the 2008-09 to 2011-12 years.

The remaining information is based on actual information, historical accounting records or other records used in the ordinary course of business.

(e) Compliance with financial reporting framework

- Non-compliance

  There has been no non-compliance with the financial reporting framework.

- Reason for non-compliance

  Not applicable.

- Changes in accounting policies

  There have been no changes in accounting policies for replacement expenditure.

Table 2.2.2 Selected assets characteristics

(a) Consistency of information with the requirements of the RIN

Information presented has been split in accordance with the categories in the Templates consistent with the requirements of the RIN.

(b) Source of information

- Substations Primary Systems.
- Current commissioned assets numbers have been sourced from TasNetworks' WASP asset register.
- Transmission Lines.
- Current commissioned assets numbers have been sourced from TasNetworks' WASP asset register.

(c) Methodology applied to determine information, including assumptions made

Substations Primary Systems

- Current asset numbers were determined by restricting the search criteria to only existing commissioned assets. Asset replacement numbers were determined with the knowledge that only new installations have been completed over the required time period.

Transmission Lines

- Historical asset replacements were sourced from TasNetworks' asset register, filtering by assets with a commissioning date within the year in question.
- Asset replacements resulting from augmentation projects were excluded.

- The following transmission lines were excluded from calculations as they are not owned by TasNetworks:
- TL473 – Bluff Point-Smithton
- TL474 – Studland Bay Spur
- TL485 – Musselroe Bay-Derby

Assets of categories not owned by TasNetworks has been marked as '0' as required by the RIN instructions.

(d) Use of estimates

No estimations have been required in the collation and presentation of this information. Information is based on actual information, historical accounting records or other records used in the ordinary course of business.

(e) Compliance with financial reporting framework.

- Non-compliance

  There has been no non-compliance with the financial reporting framework.

- Reason for non-compliance

  Not applicable.

- Changes in accounting policies

  There have been no changes in accounting policies for replacement expenditure.

Template 2.3 Augmentation expenditure

Related Projects

Waddamana-Lindisfarne (WA-LF) 220 kV transmission line project (NDs 0845 and 0920)

The following entries in tables 2.3.1 and 2.3.2 all relate to the Waddamana-Lindisfarne (WA-LF) 220 kV transmission line project (No. 1 circuit - ND0845, No. 2 circuit – ND0920):

- Waddamana-Lindisfarne 220 kV first circuit of double circuit transmission line (ND0845
- Waddamana 220 kV Substation - Connection of first 220 kV circuit WA–LF (ND0845)
- Lindisfarne 220/110 kV Substation - Connection of first 220 kV circuit WA–LF (ND0845)
- Waddamana–Lindisfarne 220 kV second circuit of double circuit transmission line (ND0920)
- Waddamana 220 kV Substation - Connection of second 220 kV circuit WA–LF (ND0920)
- Lindisfarne 220/110 kV Substation - Connection of second 220 kV circuit WA–LF (ND0920)

Project Type "Other – specify"

With reference to RINS Appendix E, clauses 7.2 (g) and (i), and Tables 2.3.1 and 2.3.2, the following describes the substation type, project type, project trigger and voltage for the major projects listed as "Other – specify".

Project Name	Project ID	Substation Type where "Other Specify"	Project Type where "Other Specify"	Project Trigger where "Other Specify"	Voltage where "Other Specify"
George Town 220 kV Substation	ND0657		Security upgrade / compliance with Electricity Supply Industry (Network Performance Requirements) Regulations 2007	More than 850 MW of load at risk of interruption due to a credible contingency	
Rosebery Substation	ND0944		Security upgrade / compliance with Electricity Supply Industry (Network Performance Requirements) Regulations 2007	More than 25 MW of load at risk of interruption due to a credible contingency	
Waddamana 220 kV Substation - Connection of first 220 kV circuit WA-LF	ND0845		Security upgrade / compliance with Electricity Supply Industry (Network Performance Requirements) Regulations 2007		
Lindisfarne 220/110 kV Substation - Connection of first 220 kV circuit WA-LF	ND0845		Security upgrade / compliance with Electricity Supply Industry (Network Performance Requirements) Regulations 2007		
Waddamana 220 kV Substation - Connection of second 220 kV circuit WA-LF	ND0920		Security upgrade / compliance with Electricity Supply Industry (Network Performance Requirements) Regulations 2007		
Lindisfarne 220/110 kV Substation - Connection of second 220 kV circuit WA-LF	ND0920		Security upgrade / compliance with Electricity Supply Industry (Network Performance Requirements) Regulations 2007		

Table 2.3.1 Augmentation expenditure asset data – substations

(a) Consistency of information with the requirements of the RIN

Information has been presented for augmentation expenditure as required under the RIN. No gifted assets have been included. Only projects with total cumulative expenditure over the life of the project of greater than $5 million have been included. Expenditure data has been included on an "as incurred" basis.

Due to incorrect formats in template sheet 2.3, information for the following tables and cells have been provided in the additional sheet titled *2.3(v2) Augex additional data*.

Table 2.3.1 – Cell AC133; and

Table 2.3.2 – Cells Y200 and Z200

(b) Source of information

Information has been sourced from the asset management information system regarding the substation IDs, types and voltages.

Actual incurred augmentation expenditure has been extracted from the trial balance in the Sun finance system.

(c) Methodology applied to determine information, including assumptions made

Actual incurred augmentation expenditure has been extracted from the trial balance in the Sun finance system, and supplemented by the cost breakdown structure in the work orders and invoices of contractors.

All project data in this table was provided 'on a project close basis in real dollars ($2012–13)' as per clause 7.2(c) and 7.3(c) of Appendix E of the RIN; and excludes applied overheads as per clause 1.14 of Appendix E of the RIN.

Due to the fact that augmentation projects span several financial years, it was not possible to convert individual component costs in this table (plant and equipment; other expenditure; related party cost; and land and easement) from nominal to $2012–13.

Instead an approach was adopted whereby the mid-point (financial year) of construction was identified for the individual projects listed and all component costs were converted from nominal to $2012–13 based on that mid-point.

The following table based on historic CPI was then used to escalate/de-escalate to $2012–13:

	Dec-08	Dec-09	Dec-10	Dec-11	Dec-12	Jun-13	Dec-13
CPI	92.4	94.3	96.9	99.8	102.0	102.8	104.8

Dec 08 to Jun 13 ($2008-09 to $2012-13)	11.26%
Dec 09 to Jun 13 ($2009-10 to $2012-13)	9.01%
Dec 10 to Jun 13 ($2010-11 to $2012-13)	6.09%
Dec 11 to Jun 13 ($2011-12 to $2012-13)	3.01%
Dec 12 to Jun 13 ($2012-13 to $2012-13)	0.78%
Dec 13 to Jun 13 ($2013-14 to $2012-13)	-1.91%

Assumptions

Dollars expressed in $2012-13 means $June 2013

Nominal dollars in a year are mid-year and therefore in $Dec of the relevant year

There are no Related Parties in the delivery of TasNetworks projects.

Non-material project totals

Direct Expenditure

- The **Total Direct Expenditure for non-material Substation projects** for the relevant period (2008-14) was determined by:
  - summing the expenditure on Substation projects for each relevant year from Table 2.3.3 (as provided in the previous transmission RIN and correcting for actual 2013-14 expenditure – total expenditure over the relevant period);
  - subtracting the average percentage overhead for augmentation projects for the relevant period (2.94%); and
  - subtracting the sum of the total direct expenditure of material substation projects for the relevant period (as included in table 2.3.1).

(d) Use of estimates

No estimations have been required in the collation and presentation of this information. Information is based on actual information, historical accounting records or other records used in the ordinary course of business.

(e) Compliance with financial reporting framework

- Non-compliance

  There has been no non-compliance with the financial reporting framework.

- Reason for non-compliance

  Not applicable.

- Changes in accounting policies

  There have been no changes in accounting policies for augmentation expenditure.

Table 2.3.2 Augmentation expenditure asset data – lines

(a) Consistency of information with the requirements of the RIN

Information has been presented for augmentation expenditure as required under the RIN. No gifted assets have been included. Only projects with total cumulative expenditure over the life of the project of greater than $5 million have been included. Expenditure data has been included on an “as incurred” basis.

(b) Source of information

Information has been sourced from the asset management information system regarding the substation IDs, types and voltages.

Actual incurred augmentation expenditure has been extracted from the trial balance in the Sun finance system.

(c) Methodology applied to determine information, including assumptions made

Actual incurred augmentation expenditure has been extracted from the trial balance in the Sun finance system, and supplemented by the cost breakdown structure in the work orders and invoices of contractors.

All project data in this table was provided 'on a project close basis in real dollars ($2012–13)' as per clause 7.2(c) and 7.3(c) of Appendix E of the RIN; and excludes applied overheads as per clause 1.14 of Appendix E of the RIN.

Due to the fact that augmentation projects span several financial years, it was not possible to convert individual component costs in this table (plant and equipment; other expenditure; related party cost; and land and easement) from nominal to $2012–13.

Instead an approach was adopted whereby the mid-point (financial year) of construction was identified for the individual projects listed and all component costs were converted from nominal to $2012–13 based on that mid-point.

The following table based on historic CPI was then used to escalate/de-escalate to $2012–13:

	Dec-08	Dec-09	Dec-10	Dec-11	Dec-12	Jun-13	Dec-13
CPI	92.4	94.3	96.9	99.8	102.0	102.8	104.8

Dec 08 to Jun 13 ($2008-09 to $2012-13)	11.26%
Dec 09 to Jun 13 ($2009-10 to $2012-13)	9.01%
Dec 10 to Jun 13 ($2010-11 to $2012-13)	6.09%
Dec 11 to Jun 13 ($2011-12 to $2012-13)	3.01%
Dec 12 to Jun 13 ($2012-13 to $2012-13)	0.78%
Dec 13 to Jun 13 ($2013-14 to $2012-13)	-1.91%

Assumptions

Dollars expressed in $2012-13 means $June 2013

Nominal dollars in a year are mid-year and therefore in $Dec of the relevant year

There are no Related Parties in the delivery of TasNetworks projects.

Non-material project totals

Direct Expenditure

- The **Total Direct Expenditure for non-material <u>Transmission line</u> projects** for the relevant period (2008-14) was determined by:
  - summing the expenditure on transmission line projects for each relevant year from Table 2.3.3 (as provided in the previous transmission RIN and correcting for actual 2013-14 expenditure – total expenditure over the relevant period);
  - subtracting the average percentage overhead for augmentation projects for the relevant period; and
  - subtracting the sum of the total direct expenditure of material transmission line projects for the relevant period (as included in table 2.3.2).

(d) Use of estimates

No estimations have been required in the collation and presentation of this information. Information is based on actual information, historical accounting records or other records used in the ordinary course of business.

(e) Compliance with financial reporting framework

- Non-compliance

  There has been no non-compliance with the financial reporting framework.

- Reason for non-compliance

  Not applicable.

- Changes in accounting policies

  There have been no changes in accounting policies for augmentation expenditure.

Table 2.3.3 Augmentation expenditure data – total

(a) Consistency of information with the requirements of the RIN

Information has been presented for augmentation expenditure as required under the RIN. No gifted assets have been included.

Expenditure data has been included on an “as incurred” basis.

(b) Source of information

Information has been sourced from the asset management information system regarding the substation IDs, types and voltages.

Actual incurred augmentation expenditure has been extracted from the trial balance in the Sun finance system.

(c) Methodology applied to determine information, including assumptions made

Total augmentation expenditure, table 2.3.3, for 2013/14 is the sum of the augmentation expenditure on the three categories of substations, transmission lines and other assets (based on asset lives for augmentations only).

This table has had overheads removed as per clause 1.14 of Appendix E of the RIN.

Due to the inability to capture overheads at the Substation, Lines and Other Assets level, all augmentation costs excluding applied overheads were extracted from TasNetworks’ financial system for the period 2008-14 and converted from nominal to real dollars ($2012–13).

All historic costs were then prorated based on the original breakdown of Substations, Lines and Other Assets. Hence, the breakdown is an estimate, but reconciles to the actual costs.

(d) Use of estimates

No estimations have been required in the collation and presentation of this information. Information is based on actual information, historical accounting records or other records used in the ordinary course of business.

(e) Compliance with financial reporting framework

- Non-compliance

There has been no non-compliance with the financial reporting framework.

- Reason for non-compliance

  Not applicable.

- Changes in accounting policies

  There have been no changes in accounting policies for augmentation expenditure.

Template 2.5 Connections expenditure

Table 2.5.1 Expenditure on connection projects

(a) Consistency of information with the requirements of the RIN

Information has been presented for connections expenditure in accordance with the definitions and requirements of the RIN.

(b) Source of information

Actual incurred connections expenditure has been extracted from the trial balance in the Sun finance system.

(c) Methodology applied to determine information, including assumptions made

Total project costs and total labour costs incurred in connections expenditure were extracted from the trial balance in the Sun finance system. Total material costs were derived by taking total labour costs from total project costs.

Contract labour has been considered to be material costs, and only internal labour costs are considered to be labour costs for the purposes of populating table 2.4.1.

(d) Use of estimates

No estimations have been required in the collation and presentation of this information. Information is based on actual information, historical accounting records or other records used in the ordinary course of business.

(e) Compliance with financial reporting framework

- Non-compliance

  There has been no non-compliance with the financial reporting framework.

- Reason for non-compliance

  Not applicable.

- Changes in accounting policies

  There have been no changes in accounting policies for connections expenditure.

Table 2.5.2 Description of connection projects

(a) Consistency of information with the requirements of the RIN

Information has been presented for connections expenditure in accordance with the definitions and requirements of the RIN.

(b) Source of information

The descriptions of connection projects undertaken have been sourced from the Certificates of Operational Completion for each project.

Connection point rating information has been sourced from the asset management information system.

(c) Methodology applied to determine information, including assumptions made

Descriptions of connection projects were extracted from the Certificates of Operational Completion for each project, which aligns with the Regulatory Assets Register and the asset management information system.

(d) Use of estimates

No estimations have been required in the collation and presentation of this information. Information is based on actual information, historical accounting records or other records used in the ordinary course of business.

(e) Compliance with financial reporting framework

- Non-compliance

  There has been no non-compliance with the financial reporting framework.

- Reason for non-compliance

  Not applicable.

- Changes in accounting policies

  There have been no changes in accounting policies for connections expenditure.

Template 2.6 Non-network expenditure

Table 2.6.1 Non-network expenditure
Table 2.6.2 Annual descriptor metrics – IT and communications expenditure
Table 2.6.3 Annual descriptor metrics – motor vehicles

(a) Consistency of information with the requirements of the RIN

The information provided about Non-network expenditure in *Table 2.6– Non-network expenditure* is consistent with the requirements of the Category Analysis RIN, in that:

- Information has been provided regarding non-network expenditure in accordance with the definitions and guidance included within the RIN.

(b) Source of information

Actual incurred non-network expenditure has been extracted from the trial balance in the Sun finance system.

(c) Methodology applied to determine information, including assumptions made

Operating and capital expenditures by individual asset and/or category have been extracted from the finance system.

IT and communications expenditure is considered to be operating expenditure when it is less than $100. Any items greater than $100 are considered to be capital expenditure.

Motor vehicles have been classified as a car or a light commercial vehicle in accordance with the classifications made by TasNetworks' motor vehicle fleet manager.

(d) Use of estimates

No estimations have been required in the collation and presentation of this information. Information is based on actual information, historical accounting records or other records used in the ordinary course of business.

(e) Compliance with financial reporting framework

- Non-compliance

  There has been no non-compliance with the financial reporting framework.

- Reason for non-compliance

  Not applicable.

- Changes in accounting policies

  There have been no changes in accounting policies for non-network expenditure.

Template 2.7 Vegetation management

Table 2.7.1 Descriptor metrics by zone

a) Consistency of information with the requirements of the RIN

- Information has been provided regarding vegetation management in accordance with the definitions included within the RIN.
- As part of its licence requirements, TasNetworks produces and maintains an Easement Management Plan and Transmission System Management Plan (TSMP). TasNetworks is not subject to any other external regulatory requirements for vegetation management.
- TasNetworks internally mitigates its bushfire risk through the implementation of recommendations made within the Easement Management Plan and TSMP. It also undertakes periodic external audits of its vegetation management and bushfire mitigation practices to minimise risk, liability and insurance costs.

b) Source of information

Route line length within zone

- The total length of the maintenance spans has been sourced from WASP asset data. It includes all TasNetworks-owned transmission lines, even if not currently in service.

Number of maintenance spans

- Information has been sourced from completed work orders which have been issued to vegetation management contractors. Where one span has been maintained more than once in any period, only one maintenance span has been counted.

Total length of maintenance spans

- Information has been sourced from the asset management information system.

Average number of trees per maintenance span

- Information regarding the total number of vegetation maintenance spans has been sourced from completed work orders which have been issued to vegetation management contractors. The density of vegetation within the spans has been determined by:
- using vegetation density data collected by contractors approximately 10 years ago; and/or
- viewing the spans via an online medium (e.g. Google Earth) and, through experience, assigning a particular density to the vegetation in like areas.
- TasNetworks has used data provided by Forestry Tasmania in quantifying 'Medium' vegetation density.
- Information for the quantification of other vegetation density categories was sourced internally through experience of TasNetworks' easements and the types of vegetation typically encountered.

Length of vegetation corridors

- Information has been sourced from the geographical information system.

Average width of vegetation corridors

- Information has been derived from information maintained in the geographical information system.

Average frequency of cutting cycle

- Information has been sourced from the Transmission Line Easement Asset Management Plan.

c) Methodology applied to determine information, including assumptions made

The assumption has been made that the entire network is in one zone only.

Route line length within zone

- The total length of the maintenance spans has been sourced from WASP asset data. It includes all TasNetworks-owned transmission lines, even if not currently in service.

Number of maintenance spans

- Information has been extracted from the asset management system for completed work orders. No assumptions were required for the majority of work orders. A small number of work orders included a scope of works that seemed larger than that suggested by actual expenditure. In the absence of any additional information it has been assumed that the scope of works is correct.

Total length of maintenance spans

- Information has been sourced from the asset management information system. The length of the forward looking span has been used in the calculation of total length of the maintenance span.

Average number of trees per maintenance span

- TasNetworks has interpreted the definition as requiring TasNetworks to report the total number of trees that could require maintenance within a span in which one or more vegetation defects have been identified.
- The average number of trees per vegetation maintenance span has been arrived at by multiplying the span length (for the span where the maintenance was completed) by the easement width by the determined density of vegetation within each of the spans (the 'density factor'). It has been assumed that all 110 kV transmission lines have an easement width of 50m, and 220 kVA lines have a width of 60m.
- Historically, TasNetworks' field works management processes, asset information systems and reporting tools have not collected information regarding geography and the height of trees, and hence TasNetworks has not considered these in the calculation of its average number of trees per maintenance span.
- Where TasNetworks does not have access to vegetation density data, it has excluded those vegetation maintenance spans from its calculations.

Length of vegetation corridors

- Information has been sourced from the geographical information system. Where more than one transmission line runs parallel, only one length has been counted as a vegetation corridor.

Average width of vegetation corridors

- The total area of all corridors has been sourced from the geographical information system, applying a 50m or 60m easement width depending on voltage, with these then being merged to create a single area. This area (of all corridors) was then divided by the total length of the vegetation corridors as sourced from the geographical information system (described above).

Average frequency of cutting cycle

- Information has been sourced from the Transmission Line Easement Asset Management Plan, whereby each asset is inspected on a 5 year cycle, with 20 per cent inspected each year.

d) Use of estimates

Route line length within zone

- No estimations have been required in the collation and presentation of this information. Information is based on actual information, historical accounting records or other records used in the ordinary course of business.

Number of maintenance spans

- No estimations have been required in the collation and presentation of this information. Information is based on actual information, historical accounting records or other records used in the ordinary course of business.

Total length of maintenance spans

- No estimations have been required in the collation and presentation of this information. Information is based on actual information, historical accounting records or other records used in the ordinary course of business.

Average number of trees per maintenance span

- The determined density factor has been broken down into four bands, and an estimate has been required to determine the number of trees in each band of density (through practical experience and through an assessment of aerial photos for each easement where vegetation maintenance has occurred). This estimate has been required as information has historically been impracticable to collect and maintain.
- Pasture = 5 trees per Ha
- Low = 50 trees per Ha
- Medium = 1300 per Ha (approximately equal to typical Forestry Tasmania plantation density)
- High = 2000 per Ha

Length of vegetation corridors

- No estimations have been required in the collation and presentation of this information. Information is based on actual information.

Average width of vegetation corridors

- TasNetworks has applied standard easement widths in the calculation of this value (as physically maintained by TasNetworks in the field), rather than utilising actual easement widths. In the vast majority of cases these will be the same, however in a small number of instances there may be a difference. TasNetworks considers the effort required to determine these actual widths to be excessive for the benefit achieved in terms of accuracy and for comparative purposes.

Average frequency of cutting cycle

- No estimations have been required in the collation and presentation of this information. Information is based on actual information.

e) Compliance with financial reporting framework

- Non-compliance

  There has been no non-compliance with the financial reporting framework.

- Reason for non-compliance

  Not applicable.

- Changes in accounting policies

  There have been no changes in accounting policies relating to vegetation management.

Table 2.7.2 Expenditure metrics by zone

(a) Consistency of information with the requirements of the RIN

- Information has been provided regarding vegetation management in accordance with the definitions included within the RIN.
- As part of its licence requirements, TasNetworks produces and maintains an Easement Management Plan and Transmission System Management Plan (TSMP). TasNetworks is not subject to any other external regulatory requirements for vegetation management.
- TasNetworks internally mitigates its bushfire risk through the implementation of recommendations made within the Easement Management Plan and TSMP. It also undertakes periodic external audits of its vegetation management and bushfire mitigation practices to minimise risk, liability and insurance costs.
- All vegetation management costs submitted within this RIN can be considered to be the cost associated with TasNetworks' compliance with the TSMP and other, self-imposed standards.
- A high percentage of TasNetworks transmission lines are located in forested and other rural areas that are populated with rapidly growing species of vegetation.
- Past and recent bushfire events in Tasmania demonstrate the potential for bushfires in these areas and the associated impact. While rare, past bushfire events in this and other jurisdictions demonstrate that bushfires can be initiated by transmission assets.
- Similarly, past events demonstrate that vegetation in these forested and rural areas can cause unplanned outages, impacting detrimentally on customer supply.
- Meeting the applicable regulations and self-imposed standards for vegetation management in these areas drives significant costs for TasNetworks.

(b) Source of information

The reported vegetation management information has been sourced from the general ledger in the Sun finance system.

(c) Methodology applied to determine information, including assumptions made

- Information was sourced from the general ledger in the Sun finance system by extracting costs by contractor to ascertain the amount spent for contracted services for 2013-14. Work orders were obtained to confirm the nature of the contracted service provided. Contracted services were classified based on the requirements of the RIN.
- No contractor liaison costs were able to be sourced from contractor work orders. As such, any contractor liaison costs that were incurred are included within Other vegetation management costs.

(d) Use of estimates

No estimations have been required in the collation and presentation of this information. Information is based on actual information, historical accounting records or other records used in the ordinary course of business.

(e) Compliance with financial reporting framework

- Non-compliance

  There has been no non-compliance with the financial reporting framework.

- Reason for non-compliance

  Not applicable.

- Changes in accounting policies

There have been no changes in accounting policies relating to vegetation management.

Table 2.7.3 Descriptor metrics for unplanned vegetation events

(a) Consistency of information with the requirements of the RIN

Information reported has been provided in accordance with the definitions provided in the RIN.

(b) Source of information

Information is based on actual outages recorded for 2013-14.

(c) Methodology applied to determine information, including assumptions made

Review of outage reports was undertaken to determine the cause of outage. Wind borne debris, eg bark was not considered as an outage caused by vegetation.

(d) Use of estimates

No estimations have been required in the collation and presentation of this information. Information is based on actual information, historical accounting records or other records used in the ordinary course of business.

(e) Compliance with financial reporting framework

- Non-compliance

  There has been no non-compliance with the financial reporting framework.

- Reason for non-compliance

  Not applicable.

- Changes in accounting policies

  There have been no changes in accounting policies relating to maintenance expenditure.

Template 2.8 Maintenance

Table 2.8.1 Descriptor metrics for routine and non-routine maintenance

(a) Consistency of information with the requirements of the RIN

Information has been provided regarding maintenance expenditure in accordance with the definitions included within the RIN. Information was not able to be sourced for the asset track maintenance and decommissioned assets.

(b) Source of information

Telecommunications network assets

- Information has been sourced from the internally maintained telecommunications asset register, the Telecommunications RIN Data MS Excel spreadsheet, and from the asset management plan.

Access track maintenance and decommission assets

- Information was not able to be sourced for these assets. Many of these assets are not owned by TasNetworks and the collation of such information would be impracticable.

Substation equipment and property maintenance

- Information has been sourced from the asset management information system and the asset management plan.
- Asset 'inspection/maintained' data was obtained from BASIX.

Substation Secondary assets

- Information is sourced from the WASP asset register and reported through business intelligence reporting tools.

All other assets

- Information has been sourced from the asset management information system and the asset management plan

(c) Methodology applied to determine information, including assumptions made

Asset quantities in this table have been collected for those assets that have undergone either routine or non-routine maintenance.

Telecommunications network assets

- Information regarding the number of elements owned, inspected and maintained was extracted from the telecommunications asset register.
- Asset ages were extracted from the telecommunications asset register.
- Inspections and maintenance occurs on telecommunications assets every six months. This information was extracted from the asset management plan.

Substation equipment and property maintenance

- Switch bays and transformers are visually inspected several times per year and hence TasNetworks has specified that 'All' assets are inspected.
- For switch bays, in calculating the number maintained, TasNetworks has included those bays where disconnectors or circuit breakers have been maintained, and excluded those bays where only condition monitoring on instrument transformers has been completed.

- For transformers, in calculating the number maintained, TasNetworks has included those transformers where tap changer maintenance has been completed, and excluded those transformers where only condition monitoring was undertaken (eg. bushing and/or oil testing).

Transmission lines

- The number of towers and the line lengths owned, inspected and maintained were extracted from the asset management information system.
- Asset ages were extracted from the asset management information system.
- Inspection cycles were extracted from the asset management plan.

SCADA and network control maintenance

- The average SCADA asset age is derived from the total number of devices that have a manufactured date within the year, per scheme category.
- SCADA assets count includes the number of SCADA schemes registered in WASP for the period. SCADA schemes were once allocated at station level only but are now allocated at station and bay level which increases the number of schemes per station. Only whole of station schemes have been counted and bay level SCADA schemes have been excluded.
- Asset quantity inspected/maintained is higher than asset quantity as schemes were visited multiple times throughout the year.
- '0' has been stated for maintenance cycle as there is no planned maintenance cycle. These assets are inspected and monitored regularly.

Protection systems maintenance

- Protection system asset count includes Bus Coupler, Bus Zone, Capacitor Bank, HV Feeder, System Protection, Supply Transformer, Transformer and Transmission Circuit schemes.
- The average protection system asset age is derived from the total device count that have a manufactured date that were in service during that period per scheme category.
- Maintenance cycle is as per the TSMP, which is 6 years for self-monitored schemes, and 3 years for non-self-monitored schemes.

(d) Use of estimates

No estimations have been required in the collation and presentation of this information. Information is based on actual information, historical accounting records or other records used in the ordinary course of business.

(e) Compliance with financial reporting framework

- Non-compliance

  There has been no non-compliance with the financial reporting framework.

- Reason for non-compliance

  Not applicable.

- Changes in accounting policies

  There have been no changes in accounting policies relating to maintenance expenditure.

Table 2.8.2 Cost metrics for routine and non-routine maintenance

(a) Consistency of information with the requirements of the RIN

Information has been provided regarding maintenance expenditure in accordance with the definitions included within the RIN.

(b) Source of information

Information has been sourced from the asset management information system and the asset management plan.

(c) Methodology applied to determine information, including assumptions made

Information was sourced from the general ledger in the Sun finance system by extracting maintenance capital expenditure costs by asset class for each financial year.

For protection systems and SCADA and network control, total costs were split based on the following:

a. Experience

b. Work undertaken a two day maintenance job (15 Hours) would typically involve 12 hours on protection and 3 hours on SCADA

c. Non-routine maintenance personnel – 50% SCADA and %50 protection

d. Engineering and technical support based on total workload

(d) Use of estimates

No estimations have been required in the collation and presentation of this information. Information is based on actual information, historical accounting records or other records used in the ordinary course of business.

(e) Compliance with financial reporting framework

- Non-compliance

  There has been no non-compliance with the financial reporting framework.

- Reason for non-compliance

  Not applicable.

- Changes in accounting policies

  There have been no changes in accounting policies for maintenance expenditure.

Template 2.10 Overheads

Table 2.10.1 Network overheads expenditure

(a) Consistency of information with the requirements of the RIN

The information provided in *Table 2.10* is consistent with the requirements of the Category Analysis RIN, in that:

- The template has been prepared in accordance with RIN paragraphs 14.1-14.4 of Appendix E – Principles and Requirements;
- All relevant input cells have been populated; and
- All data has been gathered from reliable and objective data sources which are used in the normal course of TasNetworks' business.

(b) Source of information

- For both network and corporate overhead expenditure, historical information has been extracted from the audited Regulatory financial statements.

(c) Methodology applied to determine information, including assumptions made

For both network and corporate overhead expenditure:

- Prescribed overhead expenditure has been extracted from the audited Regulatory financial statements.
- Non-prescribed overhead expenditure has been extracted from the general ledger in the Sun finance system, which is broken down into the required expenditure subcategories.

TasNetworks capitalises overheads to ensure that all costs directly attributable to bringing an asset to the location and condition necessary for its use are capitalised per AASB 116.16.

The overhead costs included in this worksheet include both capital and operational overheads which are separated in worksheet 2.1.

Negotiated Services & Unregulated Services Overhead Expenditure

In prior years, overheads applied were grossed up on the basis of what categories the overheads were applied to, rather than where the overheads were recovered from. We have changed this approach to ensure that each category now reflects the gross cost incurred in each category, prior to the application of overheads recovered.

(d) Use of estimates

No estimations have been required in the collation and presentation of this information. Information is based on actual information, historical accounting records or other records used in the ordinary course of business.

(e) Compliance with financial reporting framework

- Non-compliance

  There has been no non-compliance with the financial reporting framework.

- Reason for non-compliance

  Not applicable.

- Changes in accounting policies

There have been no changes in accounting policies for network and corporate overhead expenditure.

Table 2.10.2 Corporate overheads expenditure

(a) Consistency of information with the requirements of the RIN

Information reported has been determined regarding overheads in accordance with the definitions provided in the RIN.

(b) Source of information

- For both network and corporate overhead expenditure, historical information has been extracted from the audited Regulatory financial statements.

(c) Methodology applied to determine information, including assumptions made

For both network and corporate overhead expenditure:

- Prescribed overhead expenditure has been extracted from the audited Regulatory financial statements.
- Non-prescribed overhead expenditure has been extracted from the general ledger in the Sun finance system, which is broken down into the required expenditure subcategories.

TasNetworks capitalises overheads to ensure that all costs directly attributable to bringing an asset to the location and condition necessary for its use are capitalised per AASB 116.16.

The overhead costs included in this worksheet include both capital and operational overheads which are separated in worksheet 2.1.

(d) Use of estimates

No estimations have been required in the collation and presentation of this information. Information is based on actual information, historical accounting records or other records used in the ordinary course of business.

(e) Compliance with financial reporting framework

- Non-compliance

  There has been no non-compliance with the financial reporting framework.

- Reason for non-compliance

  Not applicable.

- Changes in accounting policies

  There have been no changes in accounting policies for network and corporate overhead expenditure.

Template 2.11 Labour

Table 2.11.1 Cost metrics per annum; and
Table 2.11.2 Extra descriptor metrics for current year

(a) Consistency of information with the requirements of the RIN

The information provided in *Table 2.11* is consistent with the requirements of the Category Analysis RIN, in that:

- All relevant input cells have been populated; and
- All data has been gathered from reliable and objective data sources which are used in the normal course of TasNetworks' business.

(b) Source of information

Financial information has been sourced from the trial balance in the Sun finance system, which integrates information directly from the payroll system.

Information regarding the average staffing level has been determined with reference to the staff list at year end.

The average productive work hours per average staffing level has been determined based on a standard working week for all employees, with allowances made for training and leave. Leave hours are excluded within the Sun finance system, and training hours per person were extracted from the payroll system.

(c) Methodology applied to determine information, including assumptions made

Information regarding the full time equivalent average staffing level has been determined with reference to the staff list at year end, which details staff headcount by department and by labour classification level.

The total labour costs per average staffing level have been determined based on a standard working week for all employees multiplied by total rate per hour.

The average productive work hours per average staffing level have been determined based on a standard working week for all employees, with allowances made for training and leave. Leave hours are excluded within the Sun finance system, and training hours per person were extracted from the payroll system on an employee by employee basis.

The average productive work hours hourly rate per average staffing level is the total labour costs divided by the average productive work hours per average staffing level.

The assumption has been made that prescribed labour costs as a proportion of total labour costs would be consistent across all labour classification levels. Accordingly, prescribed labour costs paid for employees were derived from the total of all labour costs less non-prescribed labour costs, and this proportion has been applied to labour costs in all levels.

There have been no stand-down occurrences to report.

Overtime includes only salary and wage costs as per the definition in the RIN and not any related oncosts.

(d) Use of estimates

No estimations have been required in the collation and presentation of this information. Information is based on actual information, historical accounting records or other records used in the ordinary course of business.

(e) Compliance with financial reporting framework

- Non-compliance

  There has been no non-compliance with the financial reporting framework.

- Reason for non-compliance

  Not applicable.

- Changes in accounting policies

  There have been no changes in accounting policies for labour.

Template 2.12 Input tables

(a) Consistency of information with the requirements of the RIN

Information reported has been determined in accordance with the definitions and instructions provided in the RIN.

(b) Source of information

Information presented on the Input tables worksheet has been sourced from other worksheets in the RIN templates.

(c) Methodology applied to determine information, including assumptions made

The split of costs into the categories required by the RIN was based on actual expenditure in the year from the Sun financial system, with a percent of costs to each actual category (ie direct materials) then applied across the line items in the RIN.

(d) Use of estimates

No estimations have been required in the collation and presentation of this information. Information is based on actual information, historical accounting records or other records used in the ordinary course of business.

(e) Compliance with financial reporting framework

- Non-compliance

  There has been no non-compliance with the financial reporting framework.

- Reason for non-compliance

  Not applicable.

- Changes in accounting policies

  Changes in accounting policies are not applicable for input tables.

Template 5.2 Asset age profile

Table 5.2.1 Asset age profile

(a) Consistency of information with the requirements of the RIN

Information has been provided regarding asset age profile in accordance with the definitions included within the RIN.

(b) Source of information

The economic lives of assets and the age of assets currently in commission have been sourced from information maintained within the asset management information system.

The economic lives and age of telecommunications assets currently in commission were sourced from the telecommunications asset register, telecommunications operational drawings and asset management plans.

(c) Methodology applied to determine information, including assumptions made

- Information was extracted from the asset management information system. Where a parent asset has multiple child assets, the age of the parent asset has been presented.
- The mean age presented is the useful life of the assets for each category.
- The standard deviation has been calculated as the square root of the mean for each asset category, in accordance with the definitions included within the RIN.

Substation Switchbays Asset group

For this table 5.2.1 the following asset categories have been included in the "Other" asset grouping.

Asset Category
< ≈ 33 kV; Vacuum Insulated Circuit Breaker
< ≈ 33 kV; Oil Insulated Circuit Breaker
< ≈ 33 kV; SF6 Insulated Circuit Breaker
> 33 kV & < ≈ 66 kV; Oil Insulated Circuit Breaker
> 33 kV & < ≈ 66 kV; SF6 Insulated Circuit Breaker
> 66 kV & < ≈ 132 kV; SF6 Insulated Circuit Breaker
> 66 kV & < ≈ 132 kV; Oil Insulated Circuit Breaker
> 132 kV & < ≈ 275 kV; SF6 Insulated Circuit Breaker
> 132 kV & < ≈ 275 kV; Oil Insulated Circuit Breaker

SCADA, Network Control and Protection systems Asset group

For this table 5.2.1, the following asset categories that have been included in the "other" asset category.

Asset Category
> 66 kV & < = 132 kV; Coupling Capacitors
> 132 kV & < = 275 kV; Coupling Capacitors
> 66 kV & < = 132 kV; Wave Traps
> 132 kV & < = 275 kV; Wave Traps

Telecommunications

The Data from the telecommunications information sources has been collated into an Excel spreadsheet to enable calculation of asset age profile. All asset data for telecommunications is currently considered to be estimated due to the ad-hoc nature of the collation with data verification usually being tacit knowledge of the network. The source data was based on the information collated for the development of the asset management plans with the data brought into a single asset list in the Excel spreadsheet. Since this data was considered correct only up until the asset management plan development the additional works and assets needed to be included into these source data sheets was collated from telecommunications drawings, work order database, and the sun finance system. A project is currently underway to incorporate telecommunications assets information into the asset management information system.

SCADA

Economic life - mean

The economic life of protection and SCADA assets is 15 years.

Economic life - standard deviation

The standard deviation is the square root of the mean value.

Installed assets – quantity currently in commission by year

A report has been developed that takes the manufactured date of a device and assumes that to be close enough to the installation date of that device. The installation dates of the devices that are related to a scheme are averaged which then provides an installation date for the scheme. Only assets that have a status of commissioned are included, hence these values are used to populate the quantity of installed assets still commissioned by year.

(d) Use of estimates

The telecommunications figures are considered to be estimated due to the present inaccuracy of the telecommunications asset information.

Information for the other asset classes is based on actual information, historical accounting records or other records used in the ordinary course of business. Some back casting was required to determine route line lengths; however this back casting would not have valid alternatives that could result in materially different responses to the RIN.

(e) Compliance with financial reporting framework

- Non-compliance

  There has been no non-compliance with the financial reporting framework.

- Reason for non-compliance

  Not applicable.

- Changes in accounting policies

  There have been no changes in accounting policies relating to asset age profiles.

Template 5.3 Maximum demand at network level

Table 5.3.1 Raw and weather corrected coincident MD at network level

(a) Consistency of information with the requirements of the RIN

Information has been provided regarding maximum demand at the network level in accordance with the definitions included within the RIN.

The maximum demand transported through the network has been taken from the downstream settlement location in Tasmania, and includes Basslink transfers at the time of Tasmanian maximum demand. This is different to the overall system maximum demand of 2,132 MW.

(b) Source of information

Raw network coincident maximum demand

- Information has been sourced from TasNetworks' metering and billing system.

Date and time period maximum demand occurred

- Information has been sourced from TasNetworks' metering and billing system.

Winter/summer peaking

- Information has been sourced from TasNetworks' metering and billing system.

Embedded generation

- TasNetworks has not kept and maintained historical data or embedded generation data downstream of connection point. As the quantity is not zero, the cell has been left blank.

Weather corrected maximum demand – 10% or 50% probability of exceedance

- Historical information has been sourced from TasNetworks' metering and billing system.
- Weather data has been sourced from the Bureau of Meteorology.

(c) Methodology applied to determine information, including assumptions made

Raw network coincident maximum demand assumptions:

- Information extracted includes the maximum demand on the Tasmanian network, and the load being transmitted by Basslink at the time of maximum demand on the Tasmanian network.
- Information relating to Basslink is included in the raw network coincident maximum demand where Basslink is exporting electricity.

Coincident weather adjusted maximum demand is derived based on the following methodology and assumptions:

- Based on historic daily maximum and minimum temperatures obtained from Bureau of Meteorology, Daily effective temperatures have been calculated in accordance with the definition provided by NIEIR.
- Annual minimum effective temperatures for the period from 1970 to 2014 were extracted from the calculated daily effective temperatures.
- The temperatures at 10% and 50% probability of exceedance were derived from the annual minimum effective temperatures for the period from 1970 to 2014.
- Daily maximum demand has been taken from metering data and effective temperature data has been taken from previous calculations for weekdays for 2013/14.

- The assumption has been made that demand of the major industrial companies and Basslink flow are not dependent on weather, and this load has not been forecast to change with the 10% or 50% probability of exceedance.
- Weather adjustments for winter and summer (seasons) have been done separately. December to March is considered as summer months. June to September is considered as winter months. However, for 2014 winter, only June to August is considered.
- The slope of the relationship between effective temperature and daily maximum demand has been calculated for the minimum temperature 25 days of each season and taken as the demand sensitivity to a change in temperature (in megawatts per degree Celsius), assuming a linear relationship. (In section of 25 days interval, R-square of the linear relationship between daily peak demand and daily effective temperature for state demand during winter for 2005 to 2013 was used. Though the relationship was week, the highest R-square can be observed at 25 data points. R-square for 20 data points: 0.2509, R-square for 25 data points: 0.2856, R-square for 30 data points: 0.2669).
- The difference between the probability of exceedance temperature and the lowest of the daily effective temperature or the historic maximum of annual lowest effective temperatures has been multiplied by the load sensitivity to determine the total change in demand for the probability of exceedance.

(d) Use of estimates

No estimations have been required in the collation and presentation of this information. Information is based on actual historic information, historical accounting records or other records used in the ordinary course of business.

(e) Compliance with financial reporting framework

- Non-compliance

  There has been no non-compliance with the financial reporting framework.

- Reason for non-compliance

  Not applicable.

- Changes in accounting policies

  Changes in accounting policies are not applicable for the maximum demand information requirements.

Template 5.4 Maximum demand and utilisation at spatial level

Table 5.4.1 Non-coincident and coincident maximum demand

(a) Consistency of information with the requirements of the RIN

Information has been provided regarding maximum demand and utilisation at the spatial level in accordance with the definitions included within the RIN.

(b) Source of information

Connection Point Rating

- Information has been sourced from the asset management information system.
- Where ratings change with season (transmission lines for instance) the rating that applies at the relevant season is used.
- The continuous rating of a transformer based on its operating configuration (i.e., ONAN/ONAF/OFAN/OFAF) is used as normal condition on a daily basis, ie it is acceptable to operate a transformer at its full ONAF (or OFAF) rating on a 24/7 basis. TasNetworks does not have thermal models of the transformer loading capacity.
- For operation of transmission lines TasNetworks uses dynamic line ratings based on real time wind speed, temperature and conductor tension monitors. However, for planning studies, TasNetworks uses static (winter and summer) ratings based on “normal operating conditions”. Normal operating conditions for transmission line planning are 25°C and 0.5 m/sec wind speed for summer and 15°C and 0.5 m/sec wind speed for winter. Where applicable the templates are populated with static ratings of transmission lines.

Raw adjusted maximum demand

Information has been sourced from the metering and billing system. There are no identified temporary load transfers in the network.

Date and time period maximum demand occurred

Information has been sourced from TasNetworks’ metering and billing system.

Winter/summer peaking

Information has been sourced from TasNetworks’ metering and billing system.

Embedded generation

TasNetworks does not have information on historical embedded generation data downstream of connection points.

Weather corrected maximum demand – 10% or 50% probability of exceedance

Historical information has been sourced from the metering and billing system.

Weather data has been sourced from the Bureau of Meteorology.

(c) Methodology applied to determine information, including assumptions made

Raw adjusted maximum demand

- Information has been sourced from TasNetworks’ metering and billing system.

- The sites that have a peak MVA demand that exceeds the MVA at the time of peak MW demand (due to power factor variations) are populated below.

Site	2013/14
Avoca 22 kV	7.889658
Boyer 6.6 kV 'A'	
Boyer 6.6 kV 'B'	
Bridgewater 11 kV	
Burnie 22kV	
Chapel St 11 kV	
Comalco 220 kV	341.2952
Creek Rd 33 kV	
Derby 22 kV	
Derwent Bridge 22 kV	
Devonport 22 kV	
Electrona 11 kV	
Emu Bay 11 kV	
George Town 220 kV (Basslink)	634.5397
George Town 22 kV	25.17101
Hadspen 22 kV	
Hampshire 110 kV	
Huon River 11 kV	1.737844
Kermandie 11 kV	
Kingston 11 kV	
Kingston 33 kV	6.910196
Knights Rd 11 kV	
Lindisfarne 33 kV	
Meadowbank 22 kV	
Mornington 33 kV	
Mowbray 22 kV	
New Norfolk 22 kV	16.06214
Newton 22 kV	
Newton 11 kV	5.586237
North Hobart 11 kV	
Norwood 22 kV	
Palmerston 22 kV	
Port Latta 22 kV	
Que 22 kV	1.01009
Queenstown 11 kV	
Queenstown 22 kV	
Railton 22 kV	46.10409
Risdon 33 kV	
Risdon 11 kV	154.8359

Rokeby 11 kV	
Rosebery 44 kV	35.30933
Savage River 22 kV	23.31012
Scottsdale 22 kV	
Smithton 22 kV	22.70523
Sorrell 22 kV	29.35946
St Leonards 22 kV	
St Marys 22 kV	
Starwood 110 kV	3.912571
TEMCO 110 kV	117.3876
Trevallyn 22 kV	
Triabunna 22 kV	6.584996
Tungatinah 22 kV	
Ulverstone 22 kV	
Waddamana 22 kV	
Wesley Vale 11 kV (Converted to 22 kV operation after 2014)	
Arthurs Lake 6.6 kV	6.919971

Weather Corrected maximum demand is derived based on the following methodology and assumptions:

- Based on historic daily maximum and minimum temperatures obtained from Bureau of Meteorology, Daily effective temperatures have been calculated in accordance with the definition provided by NIEIR.
- Annual minimum effective temperatures for the period from 1970 to 2014 were extracted from the calculated daily effective temperatures.
- The temperatures at 10% and 50% probability of exceedance were derived from the annual minimum effective temperatures for the period from 1970 to 2014.
- Daily maximum demand has been taken from metering data and effective temperature data has been taken from previous calculations for weekdays for 2013/14.
- The assumption has been made that demand of the major industrial companies is not dependent on weather, and this load has not been forecast to change with the 10% or 50% probability of exceedance.
- Weather adjustments for winter and summer (seasons) have been done separately. December to March is considered as summer months. June to September is considered as winter months. However, for 2014 winter, only June to August is considered.
- The slope of the relationship between effective temperature and daily maximum demand has been calculated for the minimum temperature 25 days of each season and taken as the demand sensitivity to a change in temperature (in megawatts per degree Celsius), assuming a linear relationship. (In section of 25 days interval, R-square of the linear relationship between daily peak demand and daily effective temperature for state demand during winter for 2005 to 2013 was used. Though the relationship was week, the highest R-square can be observed at 25 data points. R-square for 20 data points: 0.2509, R-square for 25 data points: 0.2856, R-square for 30 data points: 0.2669).
- The difference between the probability of exceedance temperature and the lowest of the daily effective temperature or the historic maximum of annual lowest effective temperatures has been

multiplied by the load sensitivity to determine the total change in demand for the probability of exceedance.

(d) Use of estimates

No estimations have been required in the collation and presentation of this information. Information is based on actual historic information, historical accounting records or other records used in the ordinary course of business.

(e) Compliance with financial reporting framework

- Non-compliance

  There has been no non-compliance with the financial reporting framework.

- Reason for non-compliance

  Not applicable.

- Changes in accounting policies

  Changes in accounting policies are not applicable for the maximum demand information requirements.


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