TransGrid

Reset RIN 2018/19 – 2022/23

Basis of Preparation

Contents

1. Introduction 3
2. Compliance with Reset RIN requirements 3
3. Preparation Process 4
   - 3.1 Document Control 4
   - 3.2 Governance 4
   - 3.3 Review opinion provided 5
4. Principles of Preparation 5
5. Information Sources 6
6. Detailed Basis of Preparation 7
   - 6.1 Template 2.14 Forecast Price Changes 7
   - 6.2 Template 7.4 Shared Assets 8
   - 6.3 Template 7.5 EBSS 10
   - 6.4 Template 5.4 Demand Forecast 20
   - 6.5 Template 7.9 STIPIS 22

List of Figures

Figure 1 Basis of Preparation Structure 4
Figure 2 RIN Preparation Process 4
Figure 3 Information Sources 6

1. Introduction

TransGrid operates and manages the major high voltage electricity transmission network in NSW and the ACT as a *transmission network service provider*, connecting generators, distributors and major end users. TransGrid is the trading name for the NSW Electricity Networks Operations Pty Ltd (ACN 609 169 959) as a Trustee for the NSW Electricity Networks Operations Trust (ABN 70 250 995 390). Prior to 16 December 2015, it was a State Owned Corporation (SOC) owned by the NSW government.

On 15 November 2016, the Australian Energy Regulator (AER) issued TransGrid with a *Regulatory Information Notice Under Division 4 of Part 3 of the National Electricity (New South Wales) Law* (the 'RIN'), requiring the business to prepare and submit certain information to support the AER's regulatory responsibilities.

This Basis of Preparation document has been prepared to support the reviewed information package that is due to be submitted to the AER by 31 January 2017:

- The populated worksheets provided as Appendix A to the RIN;
- The Basis of Preparation for each variable as required by the RIN.

2. Compliance with Reset RIN requirements

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

Schedule 1 of the Reset RIN

1.1 For all information, other than *forecast information*, provide in accordance with this *notice* and the instructions in Appendix E, a *basis of preparation* demonstrating *TransGrid* has complied with this *notice*, in respect of:

(a) the information in each *regulatory template* in the Microsoft Excel Workbooks attached at Appendix A; and

(b) any other information prepared in accordance with the requirements of this *notice*.

Schedule 2 of the Reset RIN

1. Prepare Information

1.2 For information, other than *forecast information*, prepare a *basis of preparation* in accordance with the requirements specified in Schedule 1. The *basis of preparation* must:

(a) demonstrate how the information provided is consistent with the requirements of this *notice;*

(b) explain the source from which *TransGrid* obtained the information;

(c) explain the methodology *TransGrid* applied to provide the required information, including any assumptions *TransGrid* made;

(d) explain, in circumstances where *TransGrid* cannot provide *actual information* and therefore must provide *estimated information*;

i. why an estimate was required, including which it was not possible for *TransGrid* to use actual information;

ii. the basis for the estimate, including the approach used, assumptions made and reasons why the estimate is *TransGrid's* best estimate.

To promote a common approach across the business to addressing the requirements of the Reset RIN, TransGrid has gathered information from across the business using a template prepared to respond to each of the AER's requirements. This is outlined in Figure 1 below.

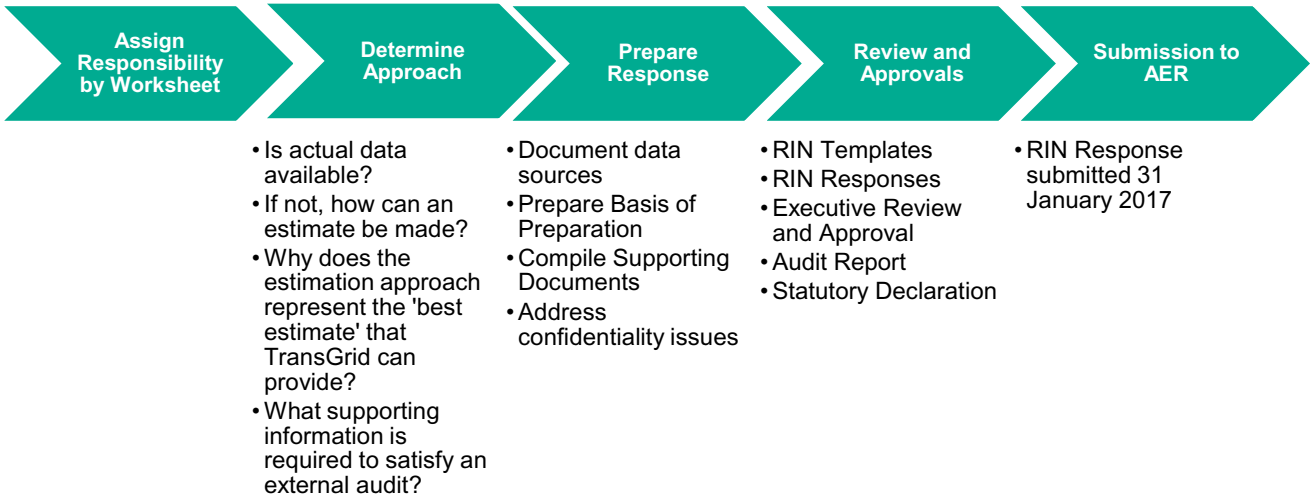
Figure 1 Basis of Preparation Structure

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
From RIN template worksheet	*TransGrid interpretation and its rationale* ***[Schedule 2 – 1.2(a)]***	*Specify source systems, reports, forms, other RIN variables etc* ***[Schedule 2 – 1.2(b)]***	• *Actual* • *Estimate* ***[Schedule 2 – 1.2(d)]***	*Clear description of approach steps / methodology* ***[Schedule 2 – 1.2(c)]***	*Clearly describe any assumptions used and the rationale for each* ***[Schedule 2 – 1.2(c)]***

3. Preparation Process

TransGrid's high level process for preparing its response to the RIN is outlined below in Figure 2.

Figure 2 RIN Preparation Process



3.1 Document Control

The RIN Templates, Basis of Preparation, RIN Responses and supporting documents are located on TransGrid's file servers. These documents will be retained until 30 June 2025 as required by the RIN.

3.2 Governance

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

The final RIN package will be provided by 31 January 2017, inclusive of the final Review Report and signed Statutory Declaration.

3.3 Review opinion provided

On 16 December 2015, the NSW Electricity Networks Consortium acquired TransGrid assets from the NSW State Government. As a result of the change in ownership, audited financial accounts was produced for the TransGrid NSW State Owned Corporation (SOC) for the period 1 July 2015 to 16 December 2015, and a separate set of audited financial accounts undertaken for NSW Electricity Networks for the remainder of the financial year to 30 June 2016.

The financial information used for the compilation of the relevant RIN schedules for the full financial year ended 30 June 2016 have therefore been based on the aggregation of the:

- Audited financial information for the TransGrid SOC for the period 1 July 2015 to 16 December 2015, and
- Audited NSW Electricity Networks (NSWEN) Special Purpose Aggregated Financial Report and supporting information for the remainder of the financial period to 30 June 2016.

Management of NSW Electricity Networks Operations Trust (i.e., the current entity responsible for the preparation and submission of the TransGrid RINs) have relied on the audited financial information for the TransGrid SOC in the preparation of the relevant schedules. Accordingly, the aggregation of the financial information for TransGrid SOC and NSWEN is considered to be an estimate for the year ended 30 June 2016.

4. Principles of Preparation

TransGrid's response to the RIN has been prepared in accordance with the AER issued "*Regulatory Information Notice Under Division 4 of Part 3 of the National Electricity (New South Wales) Law"* to TransGrid. This is subject to the mitigating circumstances discussed in section 3.3 above relating to change of ownership of TransGrid.

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

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

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

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

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

5. Information Sources

TransGrid has drawn data from the following information sources to support the historical information required in the RIN. In most cases it has been necessary to undertake additional analysis to derive the specific information that is required in the RIN response.

The key systems and information sources for RIN templates requiring a formal Basis of Preparation that have been relied on are summarised in the table below, and are referred to, in the detailed basis of preparation tables in section 6.

Figure 3 Information Sources

Information Source	Brief Description	Supports	Subject to Audit
AER Post Tax Revenue Model, 2015	The AER Post Tax Revenue Model (PTRM) used by TransGrid for the 2014/15 to 2017/18 regulatory control period	7.5 EBSS	Yes
AER Final Decision for TransGrid, 2015	The AER final decision for TransGrid for the 2014/15 to 2017/18 regulatory control period	7.5 EBSS	Yes
TransGrid Annual Financial Accounts, multiple years	TransGrid's audited annual financial accounts	7.4 Shared Assets	Yes
BIS Shrapnel: report on expected wage changes 2022/23, November 2016	A report commissioned by TransGrid on the historical and expected wage changes in Australia	2.14 Forecast price changes	Yes
TAPR 2016	Transmission Annual Planning Report – a yearly update on TransGrid's direction and plans for the network	5.4 MD & Utilisation - Spatial	No
Capital Accumulation Model (CAM)	TransGrid's Capex forecasting model that is used for the preparation of the regulatory proposal	5.4 MD & Utilisation - Spatial	No
ez2view	Commercial software application for market constraint data	7.9 STIPIS	No – data for 2013 - 2017 due to be provided on 31 January 2018 and audited by 28 February 2018
THEOS	Internal TransGrid business application used by Network Operations staff to record outage data	7.9 STIPIS	No – data for 2013 - 2017 due to be provided on 31 January 2018 and audited by 28 February 2018
Opslog	Internal TransGrid a separate business application used as a diary/logbook by Network Operators	7.9 STIPIS	No – data for 2013 - 2017 due to be provided on 31 January 2018 and audited by 28 February 2018
AEMO NOS database	Network Outage Schedule	7.9 STIPIS	No – data for 2013 - 2017 due to be provided on 31 January 2018 and audited by 28 February 2018

6. Detailed Basis of Preparation

6.1 Template 2.14 Forecast Price Changes

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
2.14.1 - FORECAST LABOUR AND MATERIALS PRICE CHANGES					
Materials price changes - Current regulatory period (Actual 2013/14 to 2015/16)	Material price changes.	N/a	Actual	N/a	N/a
Labour and other price changes - Current regulatory period (Actual 2013/14 to 2015/16)	Real labour and other price changes.	TransGrid-BIS Shrapnel-Appendix H Expected wage changes-1116-PUBLIC, Table 4.5: Wages and Prices – Australia Year Average Growth, p33	Actual	In accordance with BIS Shrapnel Wage Forecast Report.	In accordance with BIS Shrapnel Wage Forecast Report. Real wage growth is calculated by subtracting applicable CPI from nominal wage growth in each year. High precision numbers were generated in accordance with the spreadsheet: TransGrid - *Summary Table Wages -0117 - PUBLIC*

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
CPI - Current regulatory period (Actual 2013/14 to 2015/16)	Historical consumer price index in accordance with that identified by BIS Shrapnel: REPORT ON EXPECTED WAGE CHANGES TO 2022/23, for use only in the context of historical changes in the wage index that BIS Shrapnel has forecast.	TransGrid-BIS Shrapnel-Appendix H Expected wage changes-1116-PUBLIC, Table 3.1: Wages and Prices – Australia Year Average Growth, p16	Actual	N/a	N/a

6.2 Template 7.4 Shared Assets

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
7.4.1 - TOTAL UNREGULATED REVENUE EARNED WITH SHARED ASSETS					
Name of shared asset unregulated service	**Telecommunications Services**	N/A	N/A	N/A	N/A
Description of shared assets used to provide the service	• Leasing of optical fibre network capacity (incl. related equipment): both dark fibre and bandwidth backhaul service • Leasing of radio repeater site facilities: access to radio communications sites for customers	N/A	N/A	N/A	N/A

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
Shared asset unregulated revenue (Actual 2013/14)	Leasing of radio repeater site facilities that falls within shared assets guidelines: access to radio communications sites for customers	TransGrid Annual Financial Accounts on the General Ledger transaction details	Actual	2013/14 - Total Telecommunication income less the revenue from optical fibre.	No assumption was made. Based on actual invoices.
Shared asset unregulated revenue (Actual 2014/15 to 2015/16)	Leasing of radio repeater site facilities that falls within shared assets guidelines: access to radio communications sites for customers	TransGrid Annual Financial Accounts on the General Ledger transaction details cross checked against annual customer invoices	Actual	2014/15-2015/16 - Total radio repeater site revenue less revenue from 100% non-prescribed assets.	No assumption was made. Based on actual invoices.
Shared asset unregulated revenue (Actual 2013/14)	Leasing of optical fibre network capacity (incl. related equipment) that falls within shared assets guidelines: both dark fibre and bandwidth backhaul service	TransGrid Annual Financial Accounts on the General Ledger transaction details	Actual	Revenue from optic fibre is based on financial records for individual contracts for 2013/14.	No assumption was made. Based on actual invoices.
Shared asset unregulated revenue (Actual 2014/15 to 2015/16)	Leasing of optical fibre network capacity (incl. related equipment) that falls within shared assets guidelines: both dark fibre and bandwidth backhaul service	TransGrid Annual Financial Accounts on the General Ledger transaction details	Actual	Revenue from optic fibre is based on financial records for individual contracts for 2014/15-2015/16.	Known contracts used to derive shared asset split between prescribed and non-prescribed assets.
Shared asset unregulated revenue (Actual 2014/15 to 2015/16)	Leasing of optical fibre network capacity (incl. related equipment) that falls within shared assets guidelines: both dark fibre and bandwidth backhaul service	TransGrid Annual Financial Accounts on the General Ledger transaction details	Estimate	Revenue from optic fibre is based on financial records for individual contracts for 2014/15-2015/16.	Other new contracts in the current regulatory period that were not identified at the time the 2014-18 revenue proposal was developed were assumed to have the same contractual percentage as

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
					known services, which is estimated to be 80% of the invoiced amount.
Name of shared asset unregulated service	**Property Rental**	N/A	N/A	N/A	N/A
Description of shared assets used to provide the service	Land used for agriculture, grazing or other purposes	N/A	N/A	N/A	N/A
Shared asset unregulated revenue (Actual 2013/14 to 2015/16)	Leasing of TransGrid's property that falls within shared assets guidelines	TransGrid Annual Financial Accounts on the General Ledger transaction details	Actual	Annual account balance for account 122 - rent income	N/A

6.3 Template 7.5 EBSS

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
7.5.1 - The carryover amounts that arise from applying the EBSS during the current regulatory control period					
7.5.1.1 - Opex allowance applicable to EBSS (EBSS target) (Actual 2012/13 to 2015/16)					

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
Total opex allowance	TransGrid's total opex allowance for the provision of prescribed transmission services.	For 2014/15 to 2017/18 AER: Post Tax Revenue Model (PTRM) (Substituted)TransGrid Transmission Determination 2014-18, 3 July 2015. For 2012/13 and 2013/14 AER: Final Decision for TransGrid, EBSS spreadsheet, sent to TransGrid via link in email from AER that no longer works: *FW Final decision - TransGrid - Embargoed release* . However, the downloaded file is available in various internal TransGrid emails, and directories, including the email: *RE EBSS Final Model*	Actual	For 2014/15 to 2017/18 Calculated from the source (AER), into the required money-base using the "re-constructed cumulative index " provided by the AER in tab: 7.5 EBSS For 2012/13 to 2013/14 i) Calculated from the source (AER) into required money base using the CPI index provided by the AER in the original source document, because the "reconstructed cumulative index" provided by the AER in the current RRRIN does not go back far enough to convert Dec 07 dollars to June 08 dollars. ii) Conversion from Dec 07 to June 08 dollars uses 2006/7 CPI due to: "* Base data in the Opex Model relates to the 2006-07 actual opex (Dec-06$) which was then adjusted from Dec-06 $ to Dec-07 $ using the actual Mar-07 to Mar-08 CPI. To be strictly correct, the indexation should have been half of the 2007CPI and half of the 2008CPI. To correct this and get to the PTRM input in Jun-09$ below the numbers above were times by ((1+2007CPI/2)*(1+2009CPI))." By this logic, June 08 dollars from Dec 07 dollars is therefore (1+ 2007CPI/2). This approach can be reconciled to the AER's final Tribunal varied PTRM for the 2009/10 to 2013/14 regulatory control period, AER: *Tribunal varied - TransGrid 2009-14 - post tax revenue model*, tab: *Input*, cells: G to K in which rows 245, 246, 247 and 249 are summed for each year, then converted to Dec 07 dollars in accordance with methodology in the final decision EBSS worksheet provided by the AER: *AER – Final decision TransGrid transmission determination – EBSS final decision TransGrid - CONFIDENTIAL,* tab*: TransGrid final decision*. It can also be reconciled to an email provided by the AER to TransGrid following the Tribunal variation to their decision: AER: *Draft AER statement with updated figure*, 1 March 2010	Which index to use to convert from Jun-14$ into Jun-13$ and Dec-07$ to Jun-08$

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
Debt raising costs	Debt raising costs, being the costs that the AER refer to in: AER: *Final decision TransGrids transmission determination - Attachment 9 - efficiency benefit sharing scheme*, p 9-9 and AER: *Final decision TransGrid transmission determination - Attachment 9 - operating expenditure*, p 7-27	<u>For 2014/15 to 2017/18</u> AER: Post Tax Revenue Model (PTRM) (Substituted) TransGrid Transmission Determination 2014-18, 3 July 2015. <u>For 2012/13 and 2013/14</u> AER: Final Decision for TransGrid, EBSS spreadsheet, sent to TransGrid via link in email from AER that no longer works: FW Final decision - TransGrid - Embargoed release . However, the downloaded file is available in various internal TransGrid emails, and directories, including the email: *RE EBSS Final Model* <u>Decision to exclude:</u> AER: *Final decision TransGrid transmission determination - Attachment 9 - Efficiency benefit sharing scheme - April 2015*, p9-9 and, AER: *Final decision TransGrid transmission determination - 28 April 2009*, p102	Actual	For 2014/15 to 2017/18 Calculated from the source (AER), into the required money-base using the "re-constructed cumulative index " provided by the AER in tab: 7.5 EBSS For 2012/13 to 2013/14 i) Calculated from the source (AER) into required money base using the CPI index provided by the AER in the original source document, because the "reconstructed cumulative index" provided by the AER in the current RRRIN does not go back far enough to convert Dec 07 dollars to June 08 dollars. ii) Conversion from Dec 07 to June 08 dollars uses 2006/7 CPI due to: "* Base data in the Opex Model relates to the 2006-07 actual opex (Dec-06$) which was then adjusted from Dec-06 $ to Dec-07 $ using the actual Mar-07 to Mar-08 CPI. To be strictly correct, the indexation should have been half of the 2007CPI and half of the 2008CPI. To correct this and get to the PTRM input in Jun-09$ below the numbers above were times by ((1+2007CPI/2)*(1+2009CPI))." By this logic, June 08 dollars from Dec 07 dollars is therefore (1+ 2007CPI/2). This approach can be reconciled to the AER's final Tribunal varied PTRM for the 2009/10 to 2013/14 regulatory control period, AER: Tribunal varied - TransGrids 2009-14 - post tax revenue model, tab: Input, cells: G to K in which rows 245, 246, 247 and 249 are summed for each year, then converted to Dec 07 dollars in accordance with the methodology in the final decision EBSS worksheet provided by the AER: *AER – Final decision TransGrid transmission determination – EBSS final decision TransGrid - CONFIDENTIAL,* tab*: TransGrid final decision*. It can also be reconciled to an email provided by the AER to TransGrid following the Tribunal variation to their decision: AER: Draft AER statement with updated figure, 1 March 2010	Same as above.

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
Network support costs	Operating expenditure allowance as a result of a *Network Support Agreement*. The definition of a *Network Support Agreement* is in accordance with AEMC: *National Electricity Rules, Chapter 10, Glossary, version 80* p1188	For 2014/15 to 2017/18 None. For 2012/13 and 2013/14 AER: Final Decision for TransGrid, EBSS spreadsheet, sent to TransGrid via link in email from AER that no longer works: *FW Final decision - TransGrid - Embargoed release* . However, the downloaded file is available in various internal TransGrid emails, and directories, including the email: *RE EBSS Final Model* Decision to exclude: *AER: Final decision TransGrid transmission determination - Attachment 9 - Efficiency benefit sharing scheme - April 2015*, p9-9 and, AER: *Final decision TransGrid transmission determination - 28 April 2009*, p102	Actual	Same as above.	Same as above.
Network capability projects	Operating expenditure allowance for work on network capability projects, in accordance with AER: *Electricity transmission network service provider Service target performance incentive scheme Version 5 (corrected),* October 2015	None. Decision to exclude: AER: *Final decision TransGrid transmission determination - Attachment 9 - Efficiency benefit sharing scheme - April 2015*, p9-9 and, AER: *Final decision TransGrid transmission determination - 28 April 2009*, p102	Actual	N/a	N/a
Superannuation contributions	Operating expenditure allowance for employer contributions to defined benefit superannuation schemes	For 2014/15 to 2017/18 AER: email to TransGrid from Patrick Lawrence, 26 October 2015. For 2012/13 and 2013/14 AER: Final Decision for TransGrid, EBSS	Actual	For 2014/15 to 2017/18 Calculated from the source (AER), into the required money-base using the "re-constructed cumulative index " provided by the AER in tab: 7.5 EBSS For 2012/13 to 2013/14	Which index to use to convert from Jun-14$ into Jun-13$ and Dec-07$ to Jun-08$

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
		spreadsheet, sent to TransGrid via link in email from AER that no longer works: *FW Final decision - TransGrid - Embargoed release* . However, the downloaded file is available in various internal TransGrid emails, and directories, including the email: *RE EBSS Final Model* <u>Decision to exclude:</u> AER: *Final decision TransGrid transmission determination - Attachment 9 - Efficiency benefit sharing scheme - April 2015*, p9-9 and, AER: *Final decision TransGrid transmission determination - 28 April 2009*, p102		i) Calculated from the source (AER) into required money base using the CPI index provided by the AER in the original source document, because the "reconstructed cumulative index" provided by the AER in the current RRRIN does not go back far enough to convert Dec 07 dollars to June 08 dollars. ii) Conversion from Dec 07 to June 08 dollars uses 2006/7 CPI due to: "* Base data in the Opex Model relates to the 2006-07 actual opex (Dec-06$) which was then adjusted from Dec-06 $ to Dec-07 $ using the actual Mar-07 to Mar-08 CPI. To be strictly correct, the indexation should have been half of the 2007CPI and half of the 2008CPI. To correct this and get to the PTRM input in Jun-09$ below the numbers above were times by ((1+2007CPI/2)*(1+2009CPI))." By this logic, June 08 dollars from Dec 07 dollars is therefore (1+ 2007CPI/2). This approach can be reconciled to the AER's final Tribunal varied PTRM for the 2009/10 to 2013/14 regulatory control period, AER: *Tribunal varied - TransGrid 2009-14 - post tax revenue model*, tab: Input, cells: G to K in which row 249 for each year is the debt raising cost allowance, then converted to Dec 07 dollars in accordance with the methodology in final decision EBSS worksheet provided by the AER: *AER – Final decision TransGrid transmission determination – EBSS final decision TransGrid - CONFIDENTIAL,* tab*: TransGrid final decision*. It can also be reconciled to an email provided by the AER to TransGrid following the Tribunal variation to their decision: AER: Draft AER statement with updated figure, 1 March 2010	
Capitalisation policy changes	Changes in the prescribed operating expenditure allowance applicable to the EBSS resulting from capitalisation policy	None.	Actual	N/a	N/a

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
	changes				
Opex associated with pass throughs	Changes in the prescribed operating expenditure allowance applicable to the EBSS resulting from pass-throughs.	None.	Actual	N/a	N/a

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
Other adjustments or exclusions required by the EBSS	For 2012/13 and 2013/14, the following adjustments to operating expenditure allowance required by the EBSS: Insurance costs Self-insurance costs Demand management costs. N/a for 2014/15 onwards.	For 2014/15 to 2017/18 None. For 2012/13 and 2013/14 AER: Final Decision for TransGrid, EBSS spreadsheet, sent to TransGrid via link in email from AER that no longer works: *FW Final decision - TransGrid - Embargoed release* Relevant decision: AER: *Final decision TransGrid transmission determination - Attachment 9 - Efficiency benefit sharing scheme - April 2015*, p9-9 and, AER: *Final decision TransGrid transmission determination - 28 April 2009*, p102	Actual	For 2012/13 to 2013/14 i) Calculated from the source (AER) into required money base using the CPI index provided by the AER in the original source document, because the "reconstructed cumulative index" provided by the AER in the current RRRIN does not go back far enough to convert Dec 07 dollars to June 08 dollars. ii) Conversion from Dec 07 to June 08 dollars uses 2006/7 CPI due to: "* Base data in the Opex Model relates to the 2006-07 actual opex (Dec-06$) which was then adjusted from Dec-06 $ to Dec-07 $ using the actual Mar-07 to Mar-08 CPI. To be strictly correct, the indexation should have been half of the 2007CPI and half of the 2008CPI. To correct this and get to the PTRM input in Jun-09$ below the numbers above were times by ((1+2007CPI/2)*(1+2009CPI))." By this logic, June 08 dollars from Dec 07 dollars is therefore (1+ 2007CPI/2). This treatment in accordance with formulas within the AER's spreadsheet.	Which index to use to convert from Dec-07$ to Jun-08$

7.5.1.2 - Actual and estimated opex applicable to EBSS (Actual 2012/13 to 2015/16)

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
Total opex	TransGrid's total operating expenditure incurred for the provision of prescribed transmission services, excluding debt raising costs.	TransGrid and AER 2012/13: AER, Final Decision for TransGrid, EBSS spreadsheet, sent to TransGrid by email. 2013/14: TransGrid, Revised Proposal to AER, EBSS spreadsheet. 2014/15 to 2015/16: TransGrid: annual RIN reporting, spreadsheets. Decision to exclude: AER: *Final decision TransGrid transmission determination - Attachment 9 - Efficiency benefit sharing scheme - April 2015*, p9-9 and, AER: *Final decision TransGrid transmission determination - 28 April 2009*, p102	Actual	N/a	
Debt raising costs	Debt raising costs	TransGrid and AER 2012/13: AER, Final Decision for TransGrid, EBSS spreadsheet, sent to TransGrid by email. 2013/14: TransGrid, Revised Proposal to AER, EBSS spreadsheet. 2014/15 to 2015/16: TransGrid: annual RIN reporting, spreadsheets. Decision to exclude: AER: *Final decision TransGrid transmission determination - Attachment 9 - Efficiency benefit sharing scheme - April 2015*, p9-9 and, AER: *Final decision TransGrid transmission determination - 28 April 2009*, p102	Actual	N/a: Not included in "Total opex".	N/a

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
Network support costs	Operating expenditure as a result of a Network Support Agreement	TransGrid and AER 2012/13: AER, Final Decision for TransGrid, EBSS spreadsheet, sent to TransGrid by email. 2013/14: TransGrid, Revised Proposal to AER, EBSS spreadsheet. 2014/15 to 2015/16: TransGrid: annual RIN reporting, spreadsheets. Decision to exclude: AER: *Final decision TransGrid transmission determination - Attachment 9 - Efficiency benefit sharing scheme - April 2015*, p9-9 and, AER: *Final decision TransGrid transmission determination - 28 April 2009*, p102	Actual	N/a	N/a
Network capability projects	Operating expenditure resulting from work on a network capability project	TransGrid and AER 2012/13: AER, Final Decision for TransGrid, EBSS spreadsheet, sent to TransGrid by email. 2013/14: TransGrid, Revised Proposal to AER, EBSS spreadsheet. 2014/15 to 2015/16: TransGrid project and general ledger for project marked as Network Capability Projects against operating activity centres. Decision to exclude: AER: *Final decision TransGrid transmission determination - Attachment 9 - Efficiency benefit sharing scheme - April 2015*, p9-9 and, AER: *Final decision TransGrid transmission determination - 28 April 2009*, p102	Actual	N/a	N/a

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
Superannuation contributions	Operating expenditure relating to the Defined Benefits Superannuation fund	TransGrid and AER 2012/13: AER, Final Decision for TransGrid, spreadsheet. 2013/14: TransGrid, Revised Proposal to AER, spreadsheet. 2014/15 to 2015/16: Financial Statements Supporting trial balance Decision to exclude: AER: *Final decision TransGrid transmission determination - Attachment 9 - Efficiency benefit sharing scheme - April 2015*, p9-9 and, AER: *Final decision TransGrid transmission determination - 28 April 2009*, p102	Actual	N/a	N/a
Capitalisation policy changes	Changes in prescribed operating expenditure resulting from capitalisation policy changes	TransGrid and AER 2012/13: AER, Final Decision for TransGrid, EBSS spreadsheet, sent to TransGrid by email. 2013/14: TransGrid, Revised Proposal to AER, spreadsheet. 2014/15 to 2015/16: TransGrid: no capitalisation policy changes.	Actual	N/a	N/a
Movements in provision related to opex	Translation of expenditure for annual leave, long service leave, workers compensation and short term incentive from an accrued to cash position for the prescribed business segment.	TransGrid and AER 2012/13: AER, Final Decision for TransGrid, EBSS spreadsheet, sent to TransGrid by email. 2013/14 to 2015/16: TransGrid Annual Financial Accounts Employee provision supporting calculations	Actual	The adjustment specific to the prescribed business segment for long service leave, annual leave and workers compensation is calculated by: * Reversal of the accrued expenditure * Addition of cash payments * Both of which are a pro rata based on the split of labour on-cost across the business segments and capex. The adjustment for short term incentive excludes the accrued expenditure within prescribed opex for the financial year and adds back the cash payment during the financial year.	N/a

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
Other adjustments or exclusions required by the EBSS	For 2012/13 and 2013/14, the following adjustments to operating expenditure required by the EBSS: Insurance costs Self-insurance costs Demand management costs. N/a for 2014/15 onwards.	TransGrid and AER 2012/13: AER, Final Decision for TransGrid, EBSS spreadsheet, sent to TransGrid by email. 2013/14: TransGrid, Revised Proposal to AER, EBSS spreadsheet. 2014/15 to 2015/16: N/a. Relevant decision: AER: *Final decision TransGrid transmission determination - Attachment 9 - Efficiency benefit sharing scheme - April 2015*, p9-9 and, AER: *Final decision TransGrid transmission determination - 28 April 2009*, p102	Actual	N/a	N/a
Base year used to forecast opex	The base year the AER used to forecast TransGrid's prescribed operating expenditure for the forecast period.	AER: Final decision TransGrid transmission determination, Attachment 7, Operating expenditure, April 2015.	Actual	N/a	N/a

6.4 Template 5.4 Demand Forecast

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
5.4.1 - NON-COINCIDENT & COINCIDENT MAXIMUM DEMAND					
Connection point	Name of the connection point as per CA RIN	2016 TransGrid CA RIN (available on AER website)	actual	copied from 2016 CA RIN	2016 CA RIN is correct
Non-coincident	Maximum demand at connection point for year	2016 TAPR	n/a	n/a	n/a

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
Coincident	Maximum demand at connection point at time of regional peak demand	n/a	n/a	n/a	n/a
Forecasting Elements					
CONNECTION POINT RATING	MVA rating of TNI	2016 TransGrid CA RIN + Capital Accumulation Model	forecast	copied then adjusted for capital expenditure changes	2016 CA RIN is correct
WINTER/SUMMER PEAKING	Whether the forecast peak occurs in summer or winter	TransGrid – Transmission Annual Planning Report 2016 - 0616 – PUBLIC	forecast	the summer peak forecast is compared to the winter peak forecast	If the summer and winter peaks are the same then summer peak is selected
ADJUSTMENTS - EMBEDDED GENERATION	Not entered	Not collected	n/a	n/a	n/a
WEATHER CORRECTED MD 10% POE	Not entered	Not Collected	n/a	n/a	n/a
WEATHER CORRECTED MD 10% POE	Not entered	Not collected	n/a	n/a	n/a
WEATHER CORRECTED MD 50% POE	DNSP Forecast	TransGrid – Transmission Annual Planning Report 2016 - 0616 – PUBLIC	forecast	appropriate forecast copied	2016 TAPR is accurate
WEATHER CORRECTED MD 50% POE	DNSP Forecast	TransGrid – Transmission Annual Planning Report 2016 - 0616 – PUBLIC and 2016 TransGrid CA RIN	forecast	MW forecast is divided by the powerfactor for that supply point for the peak demand from the 2016 CA RIN	2016 TAPR and 2016 CA RIN are correct and accurate

6.5 Template 7.9 STIPIS

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
7.9.1 - Historical performance and proposed floor, caps and targets for the service component of the STPIS (Actual 2012 to 2016)					
Floor	These proposed floor, targets, and caps for the Service Component STPIS parameters in Table 7.9.1 of the RIN template are the proposed performance values that will earn TransGrid the maximum penalty, zero incentive, and maximum incentive respectively for each measure, once STPIS V5 takes effect in the 2018-2023 regulatory control period. This is done based on historical performance actuals during the calendar years 2012-2016.	The source data for calculating these floor, caps, and targets are the proceeding variables entered as Performance Actuals into Table 7.9.1 of the RIN template. The proposed floor, targets, and caps are determined on the basis of this input data.	Yes, these variables are considered estimated information because they are based on incomplete 2016 input data, as a result of the necessity of requiring projection of the input data calculations to year-end, due to the 2016 calendar year not being complete at the time of the calculation of these variables. This has been done in order to be able to complete the statistical analysis for determining the caps, targets and collars for the Service Component parameters within the required timeframe for submission.	The report TRANSGRID-WSP PARSONS BRINCKERHOFF-APPENDIX X FITTING PROBABILITY DISTRIBUTION CURVES TO RELIABILITY DATA-1016-PUBLICcontains the method of determination for the proposed floor, targets, and caps of each STPIS Service Component parameter. The final outputs of these calculations, which form the values entered into the RIN template, are presented in Table 3.3 in the final page of the report. In summary, the @Risk plug-in of Microsoft Excel is used to determine a probability density function (from a set of predefined distribution functions) and associated distribution parameters, which best fit the input data. The 5th and 95th percentile values of these best fitting probability density functions form the caps and floor respectively, while the targets are simply set to the arithmetic mean of the input data. The TransGrid - TRANSGRID-WSP PARSONS BRINCKERHOFF-APPENDIX X FITTING PROBABILITY DISTRIBUTION CURVES TO RELIABILITY DATA-1016-PUBLICreport goes into full technical detail in describing the manner in which these values are calculated.	As stated for each of the proceeding Performance Actual variables, which are used as inputs to determine the floor, targets, and caps.

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
Target	These proposed floor, targets, and caps for the Service Component STPIS parameters in Table 7.9.1 of the RIN template are the proposed performance values that will earn TransGrid the maximum penalty, zero incentive, and maximum incentive respectively for each measure, once STPIS V5 takes effect in the 2018-2023 regulatory control period. This is done based on historical performance actuals during the calendar years 2012-2016.	The source data for calculating these floor, caps, and targets are the proceeding variables entered as Performance Actuals into Table 7.9.1 of the RIN template. The proposed floor, targets, and caps are determined on the basis of this input data.	Yes, these variables are considered estimated information because they are based on incomplete 2016 input data, as a result of the necessity of requiring projection of the input data calculations to year-end, due to the 2016 calendar year not being complete at the time of the calculation of these variables. This has been done in order to be able to complete the statistical analysis for determining the caps, targets and collars for the Service Component parameters within the required timeframe for submission.	The report TRANSGRID-WSP PARSONS BRINCKERHOFF-APPENDIX X FITTING PROBABILITY DISTRIBUTION CURVES TO RELIABILITY DATA-1016-PUBLICcontains the method of determination for the proposed floor, targets, and caps of each STPIS Service Component parameter. The final outputs of these calculations, which form the values entered into the RIN template, are presented in Table 3.3 in the final page of the report. In summary, the @Risk plug-in of Microsoft Excel is used to determine a probability density function (from a set of predefined distribution functions) and associated distribution parameters, which best fit the input data. The 5th and 95th percentile values of these best fitting probability density functions form the caps and floor respectively, while the targets are simply set to the arithmetic mean of the input data. The TRANSGRID-WSP PARSONS BRINCKERHOFF-APPENDIX X FITTING PROBABILITY DISTRIBUTION CURVES TO RELIABILITY DATA-1016-PUBLICreport goes into full technical detail in describing the manner in which these values are calculated.	As stated for each of the proceeding Performance Actual variables, which are used as inputs to determine the floor, targets, and caps.
Cap	These proposed floor, targets, and caps for the Service Component	The source data for calculating these floor, caps, and targets are the proceeding variables entered as Performance Actuals into Table	Yes, these variables are considered estimated information	The report TRANSGRID-WSP PARSONS BRINCKERHOFF-APPENDIX X FITTING	As stated for each of the proceeding Performance Actual variables, which are

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
	STPIS parameters in Table 7.9.1 of the RIN template are the proposed performance values that will earn TransGrid the maximum penalty, zero incentive, and maximum incentive respectively for each measure, once STPIS V5 takes effect in the 2018-2023 regulatory control period. This is done based on historical performance actuals during the calendar years 2012-2016.	7.9.1 of the RIN template. The proposed floor, targets, and caps are determined on the basis of this input data.	because they are based on incomplete 2016 input data, as a result of the necessity of requiring projection of the input data calculations to year-end, due to the 2016 calendar year not being complete at the time of the calculation of these variables. This has been done in order to be able to complete the statistical analysis for determining the caps, targets and collars for the Service Component parameters within the required timeframe for submission.	PROBABILITY DISTRIBUTION CURVES TO RELIABILITY DATA-1016-PUBLICcontains the method of determination for the proposed floor, targets, and caps of each STPIS Service Component parameter. The final outputs of these calculations, which form the values entered into the RIN template, are presented in Table 3.3 in the final page of the report. In summary, the @Risk plug-in of Microsoft Excel is used to determine a probability density function (from a set of predefined distribution functions) and associated distribution parameters, which best fit the input data. The 5th and 95th percentile values of these best fitting probability density functions form the caps and floor respectively, while the targets are simply set to the arithmetic mean of the input data. The TRANSGRID-WSP PARSONS BRINCKERHOFF-APPENDIX X FITTING PROBABILITY DISTRIBUTION CURVES TO RELIABILITY DATA-1016-PUBLICreport goes into full technical detail in describing the manner in which these values are calculated.	used as inputs to determine the floor, targets, and caps.
Unplanned outage circuit event rate: (Actual 2012 to 2016)					
Transmission line outage - fault	This variable is interpreted as the total number of instantaneous fault outages (fault outages as defined by the AER) on	The attached spreadsheets TRANSGRID-OUTAGE LIST 2009_2013-1016-PUBLIC, TRANSGRID-OUTAGE LIST 2014_2015-1016-PUBLIC, and TRANSGRID-STPIS SERVICE COMPONENT REPORTING 2016	For the 2012-15 years, it is NOT considered estimated data because these values were determined from	Every outage record in the relevant worksheet of the TRANSGRID-OUTAGE LIST 2009_2013-1016-PUBLIC, TRANSGRID-OUTAGE LIST	Accuracy of the record data sources (THEOS and/or Opslog) maintained by the Network Operations group within TransGrid.

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
	prescribed transmission line and/or underground cable circuits owned by TransGrid at 66kV and above, divided by the total number of such transmission line and/or underground circuits for that calendar year. This measure has excluded outages (as defined in V5 of the AER STPIS) removed from the count.	YTD AS AT 11AUG2016-1016-PUBLIC contain the historical outage data and the associated calculations for this variable, for the 2012-13, 2014-15, and 2016 calendar years respectively. The outage data within these spreadsheets is extracted from the THEOS PC Stats.accdb (for 2014 onwards), which is described in the following paragraphs. In the case of the pre-2014 outage data, this was extracted directly from THEOS. The THEOS PC Stats.accdb database is stored on TransGrid's shared drive (with secure access for only Asset Performance & Systems staff and Asset Monitoring Centre staff). The "QAPR Comment on Outage" Table in THEOS PC Stats.accdb, which contains the source outage data, is populated by importing data into it from THEOS (the business application used by Network Operations staff to record outage data). Each of these outage records in the THEOS PC Stats database is assigned with an AER code. Selecting the appropriate AER code occasionally requires obtaining additional information from Opslog (a separate business application used as a diary/logbook by Network Operators).	actual historical data. For the 2016 year, it is considered estimated data due to the necessity of requiring projection of the calculations to year-end, as a result of the 2016 calendar year not being complete at the time of the calculation of this variable. This has been done in order to be able to complete the statistical analysis for determining the caps, targets and collars for the Service Component parameters within the required timeframe for submission.	2014_2015-1016-PUBLIC and TRANSGRID-STPIS SERVICE COMPONENT REPORTING 2016 YTD AS AT 11AUG2016-1016-PUBLIC spreadsheets, whose AER code field is C or Z, and Component Type field is TL or UG, is counted across the relevant calendar year, and subsequently divided by the total number of such transmission line and/or underground circuits for that calendar year.	The method for projecting the 2016 year-end value is by taking the year-to-date value, dividing it by the number of days in the year in which the sample was taken, followed by multiplying it by the total number of days in that calendar year.
Transformer outage – fault	This variable is interpreted as the total number of instantaneous fault outages (fault outages as defined by the AER) on prescribed transformer circuits owned by TransGrid at 66kV and above, divided by the total number of such transformer circuits for that calendar year. This measure has excluded outages (as defined in V5 of the AER STPIS)	The attached spreadsheets TRANSGRID-OUTAGE LIST 2009_2013-1016-PUBLIC, TRANSGRID-OUTAGE LIST 2014_2015-1016-PUBLIC, and TRANSGRID-STPIS SERVICE COMPONENT REPORTING 2016 YTD AS AT 11AUG2016-1016-PUBLIC contain the historical outage data and the associated calculations for this variable, for the 2012-13, 2014-15, and 2016 calendar years respectively. The outage data within these spreadsheets is extracted from the THEOS PC Stats.accdb (for 2014 onwards), which is described in the following paragraphs. In the case of the pre-2014 outage data, this was extracted directly from THEOS.	For the 2012-15 years, it is NOT considered estimated data because these values were determined from actual historical data. For the 2016 year, it is considered estimated data due to the necessity of requiring projection of the calculations to year-end, as a result of the 2016 calendar year not being complete at the	Every outage record in the relevant worksheet of the TRANSGRID-OUTAGE LIST 2009_2013-1016-PUBLIC, TRANSGRID-OUTAGE LIST 2014_2015-1016-PUBLIC and TRANSGRID-STPIS SERVICE COMPONENT REPORTING 2016 YTD AS AT 11AUG2016-1016-PUBLIC spreadsheets, whose AER code field is C or Z, and Component Type field is TX, is counted across the relevant calendar year, and subsequently divided by the total number of	Accuracy of the record data sources (THEOS and/or Opslog) maintained by the Network Operations group within TransGrid. The method for projecting the 2016 year-end value is by taking the year-to-date value, dividing it by the number of days in the year in which the sample was taken, followed by multiplying it by the total number of days in that calendar year.

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
	removed from the count.	The THEOS PC Stats.accdb database is stored on TransGrid's shared drive (with secure access for only Asset Performance & Systems staff and Asset Monitoring Centre staff). The "QAPR Comment on Outage" Table in THEOS PC Stats.accdb, which contains the source outage data, is populated by importing data into it from THEOS (the business application used by Network Operations staff to record outage data). Each of these outage records in the THEOS PC Stats database is assigned with an AER code. Selecting the appropriate AER code occasionally requires obtaining additional information from Opslog (a separate business application used as a diary/logbook by Network Operators).	time of the calculation of this variable. This has been done in order to be able to complete the statistical analysis for determining the caps, targets and collars for the Service Component parameters within the required timeframe for submission.	such transformer circuits for that calendar year.	
Reactive plant – fault	This variable is interpreted as the total number of instantaneous fault outages (fault outages as defined by the AER) on prescribed reactive plant (capacitors or reactors at 66kV and above or SVCs at any voltage) owned by TransGrid, divided by the total number of such reactive plant for that calendar year. This measure has excluded outages (as defined in V5 of the AER STPIS) removed from the count.	The attached spreadsheets TRANSGRID-OUTAGE LIST 2009_2013-1016-PUBLIC, TRANSGRID-OUTAGE LIST 2014_2015-1016-PUBLIC, and TRANSGRID-STPIS SERVICE COMPONENT REPORTING 2016 YTD AS AT 11AUG2016-1016-PUBLIC contain the historical outage data and the associated calculations for this variable, for the 2012-13, 2014-15, and 2016 calendar years respectively. The outage data within these spreadsheets is extracted from the THEOS PC Stats.accdb (for 2014 onwards), which is described in the following paragraphs. In the case of the pre-2014 outage data, this was extracted directly from THEOS. The THEOS PC Stats.accdb database is stored on TransGrid's shared drive (with secure access for only Asset Performance & Systems staff and Asset Monitoring Centre staff). The "QAPR Comment on Outage" Table in THEOS PC Stats.accdb, which contains the source outage data, is populated by importing data into it from THEOS (the business application used by Network Operations staff	For the 2012-15 years, it is NOT considered estimated data because these values were determined from actual historical data. For the 2016 year, it is considered estimated data due to the necessity of requiring projection of the calculations to year-end, as a result of the 2016 calendar year not being complete at the time of the calculation of this variable. This has been done in order to be able to complete the statistical analysis for determining the caps, targets and collars for the Service Component parameters within the required	Every outage record in the relevant worksheet of the TRANSGRID-OUTAGE LIST 2009_2013-1016-PUBLIC, TRANSGRID-OUTAGE LIST 2014_2015-1016-PUBLIC and TRANSGRID-STPIS SERVICE COMPONENT REPORTING 2016 YTD AS AT 11AUG2016-1016-PUBLIC spreadsheets, whose AER code field is C or Z, and Component Type field is CAP, RX or SVC, is counted across the relevant calendar year, and subsequently divided by the total number of such reactive plant for that calendar year.	Accuracy of the record data sources (THEOS and/or Opslog) maintained by the Network Operations group within TransGrid. The method for projecting the 2016 year-end value is by taking the year-to-date value, dividing it by the number of days in the year in which the sample was taken, followed by multiplying it by the total number of days in that calendar year.

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
		to record outage data). Each of these outage records in the THEOS PC Stats database is assigned with an AER code. Selecting the appropriate AER code occasionally requires obtaining additional information from Opslog (a separate business application used as a diary/logbook by Network Operators).	timeframe for submission.		
Transmission line outage – forced outage	This variable is interpreted as the total number of instantaneous forced outages (fault outages as defined by the AER) on prescribed transmission line and/or underground cable circuits owned by TransGrid at 66kV and above, divided by the total number of such transmission line and/or underground circuits for that calendar year. This measure has excluded outages (as defined in V5 of the AER STPIS) removed from the count.	The attached spreadsheets TRANSGRID-OUTAGE LIST 2009_2013-1016-PUBLIC, TRANSGRID-OUTAGE LIST 2014_2015-1016-PUBLIC, and TRANSGRID-STPIS SERVICE COMPONENT REPORTING 2016 YTD AS AT 11AUG2016-1016-PUBLIC contain the historical outage data and the associated calculations for this variable, for the 2012-13, 2014-15, and 2016 calendar years respectively. The outage data within these spreadsheets is extracted from the THEOS PC Stats.accdb (for 2014 onwards), which is described in the following paragraphs. In the case of the pre-2014 outage data, this was extracted directly from THEOS. The THEOS PC Stats.accdb database is stored on TransGrid's shared drive (with secure access for only Asset Performance & Systems staff and Asset Monitoring Centre staff). The "QAPR Comment on Outage" Table in THEOS PC Stats.accdb, which contains the source outage data, is populated by importing data into it from THEOS (the business application used by Network Operations staff to record outage data). Each of these outage records in the THEOS PC Stats database is assigned with an AER code. Selecting the appropriate AER code occasionally requires obtaining additional information from Opslog (a separate business application used as a diary/logbook by Network Operators).	For the 2012-15 years, it is NOT considered estimated data because these values were determined from actual historical data. For the 2016 year, it is considered estimated data due to the necessity of requiring projection of the calculations to year-end, as a result of the 2016 calendar year not being complete at the time of the calculation of this variable. This has been done in order to be able to complete the statistical analysis for determining the caps, targets and collars for the Service Component parameters within the required timeframe for submission.	Every outage record in the relevant worksheet of the TRANSGRID-OUTAGE LIST 2009_2013-1016-PUBLIC, TRANSGRID-OUTAGE LIST 2014_2015-1016-PUBLIC and TRANSGRID-STPIS SERVICE COMPONENT REPORTING 2016 YTD AS AT 11AUG2016-1016-PUBLIC spreadsheets, whose AER code field is C or Z, and Component Type field is TL or UG, is counted across the relevant calendar year, and subsequently divided by the total number of such transmission line and/or underground circuits for that calendar year.	Accuracy of the record data sources (THEOS and/or Opslog) maintained by the Network Operations group within TransGrid. The method for projecting the 2016 year-end value is by taking the year-to-date value, dividing it by the number of days in the year in which the sample was taken, followed by multiplying it by the total number of days in that calendar year.

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
Transformer outage – forced outage	This variable is interpreted as the total number of instantaneous forced outages (fault outages as defined by the AER) on prescribed transformer circuits owned by TransGrid at 66kV and above, divided by the total number of such transformer circuits for that calendar year. This measure has excluded outages (as defined in V5 of the AER STPIS) removed from the count.	The attached spreadsheets TRANSGRID-OUTAGE LIST 2009_2013-1016-PUBLIC, TRANSGRID-OUTAGE LIST 2014_2015-1016-PUBLIC, and TRANSGRID-STPIS SERVICE COMPONENT REPORTING 2016 YTD AS AT 11AUG2016-1016-PUBLIC contain the historical outage data and the associated calculations for this variable, for the 2012-13, 2014-15, and 2016 calendar years respectively. The outage data within these spreadsheets is extracted from the THEOS PC Stats.accdb (for 2014 onwards), which is described in the following paragraphs. In the case of the pre-2014 outage data, this was extracted directly from THEOS. The THEOS PC Stats.accdb database is stored on TransGrid's shared drive (with secure access for only Asset Performance & Systems staff and Asset Monitoring Centre staff). The "QAPR Comment on Outage" Table in THEOS PC Stats.accdb, which contains the source outage data, is populated by importing data into it from THEOS (the business application used by Network Operations staff to record outage data). Each of these outage records in the THEOS PC Stats database is assigned with an AER code. Selecting the appropriate AER code occasionally requires obtaining additional information from Opslog (a separate business application used as a diary/logbook by Network Operators).	For the 2012-15 years, it is NOT considered estimated data because these values were determined from actual historical data. For the 2016 year, it is considered estimated data due to the necessity of requiring projection of the calculations to year-end, as a result of the 2016 calendar year not being complete at the time of the calculation of this variable. This has been done in order to be able to complete the statistical analysis for determining the caps, targets and collars for the Service Component parameters within the required timeframe for submission.	Every outage record in the relevant worksheet of the TRANSGRID-OUTAGE LIST 2009_2013-1016-PUBLIC, TRANSGRID-OUTAGE LIST 2014_2015-1016-PUBLIC and TRANSGRID-STPIS SERVICE COMPONENT REPORTING 2016 YTD AS AT 11AUG2016-1016-PUBLIC spreadsheets, whose AER code field is C or Z, and Component Type field is TX, is counted across the relevant calendar year, and subsequently divided by the total number of such transformer circuits for that calendar year.	Accuracy of the record data sources (THEOS and/or Opslog) maintained by the Network Operations group within TransGrid. The method for projecting the 2016 year-end value is by taking the year-to-date value, dividing it by the number of days in the year in which the sample was taken, followed by multiplying it by the total number of days in that calendar year.

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
Reactive plant – forced outage	This variable is interpreted as the total number of instantaneous forced outages (fault outages as defined by the AER) on prescribed reactive plant (capacitors or reactors at 66kV and above or SVCs at any voltage) owned by TransGrid, divided by the total number of such reactive plant for that calendar year. This measure has excluded outages (as defined in V5 of the AER STPIS) removed from the count.	The attached spreadsheets TRANSGRID-OUTAGE LIST 2009_2013-1016-PUBLIC, TRANSGRID-OUTAGE LIST 2014_2015-1016-PUBLIC, and TRANSGRID-STPIS SERVICE COMPONENT REPORTING 2016 YTD AS AT 11AUG2016-1016-PUBLIC contain the historical outage data and the associated calculations for this variable, for the 2012-13, 2014-15, and 2016 calendar years respectively. The outage data within these spreadsheets is extracted from the THEOS PC Stats.accdb (for 2014 onwards), which is described in the following paragraphs. In the case of the pre-2014 outage data, this was extracted directly from THEOS. The THEOS PC Stats.accdb database is stored on TransGrid's shared drive (with secure access for only Asset Performance & Systems staff and Asset Monitoring Centre staff). The "QAPR Comment on Outage" Table in THEOS PC Stats.accdb, which contains the source outage data, is populated by importing data into it from THEOS (the business application used by Network Operations staff to record outage data). Each of these outage records in the THEOS PC Stats database is assigned with an AER code. Selecting the appropriate AER code occasionally requires obtaining additional information from Opslog (a separate business application used as a diary/logbook by Network Operators).	For the 2012-15 years, it is NOT considered estimated data because these values were determined from actual historical data. For the 2016 year, it is considered estimated data due to the necessity of requiring projection of the calculations to year-end, as a result of the 2016 calendar year not being complete at the time of the calculation of this variable. This has been done in order to be able to complete the statistical analysis for determining the caps, targets and collars for the Service Component parameters within the required timeframe for submission.	Every outage record in the relevant worksheet of the TRANSGRID-OUTAGE LIST 2009_2013-1016-PUBLIC, TRANSGRID-OUTAGE LIST 2014_2015-1016-PUBLIC and TRANSGRID-STPIS SERVICE COMPONENT REPORTING 2016 YTD AS AT 11AUG2016-1016-PUBLIC spreadsheets, whose AER code field is C or Z, and Component Type field is CAP, RX or SVC, is counted across the relevant calendar year, and subsequently divided by the total number of such reactive plant for that calendar year.	Accuracy of the record data sources (THEOS and/or Opslog) maintained by the Network Operations group within TransGrid. The method for projecting the 2016 year-end value is by taking the year-to-date value, dividing it by the number of days in the year in which the sample was taken, followed by multiplying it by the total number of days in that calendar year.
Loss of supply event frequency (number of events): (Actual 2012 to 2016)					
> (x) system minutes	This is taken to be the number of unplanned outages in the relevant year entailing a loss of supply exceeding the 'X' threshold set by the AER for TransGrid (which is	The attached spreadsheets TRANSGRID-PAST ENS PERFORMANCE 2009_2013-1016-PUBLIC, TRANSGRID-PAST ENS PERFORMANCE 2014-1016-PUBLIC, TRANSGRID-PAST ENS PERFORMANCE 2015-1016-PUBLIC, and TRANSGRID-STPIS SERVICE COMPONENT REPORTING 2016	For the 2012-15 years, it is NOT considered estimated data because these values were determined from actual historical data. For the 2016 year, it is	Every loss of supply event record in the relevant worksheet of the TRANSGRID-PAST ENS PERFORMANCE 2009_2013-1016-PUBLIC, TRANSGRID-PAST ENS PERFORMANCE 2014-1016-PUBLIC,	Accuracy of the record data sources (THEOS and/or Opslog) maintained by the Network Operations group within TransGrid. The method for projecting the 2016 year-end value is by

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
	0.05 system minutes), subtracting any applicable exclusions as defined by the AER STPIS V5.	YTD AS AT 11AUG2016-1016-PUBLIC contain the historical loss of supply event data and the associated calculations for this variable, for the 2012-13, 2014, 2015, and 2016 calendar years respectively. The outage data within these spreadsheets is extracted from the THEOS PC Stats.accdb. The "ENS Lost Load" Table in THEOS PC Stats.accdb, which contains the source loss of supply event data, is populated by manually entering data into it using information sourced from THEOS (the business application used by Network Operations staff to record outage data) and/or Opslog (a separate business application used as a diary/logbook by Network Operators).	considered estimated data due to the necessity of requiring projection of the calculations to year-end, as a result of the 2016 calendar year not being complete at the time of the calculation of this variable. This has been done in order to be able to complete the statistical analysis for determining the caps, targets and collars for the Service Component parameters within the required timeframe for submission.	TRANSGRID-PAST ENS PERFORMANCE 2015-1016-PUBLIC, and TRANSGRID-STPIS SERVICE COMPONENT REPORTING 2016 YTD AS AT 11AUG2016-1016-PUBLIC spreadsheets which is not excluded (i.e. the Excluded column is FALSE) and whose MWhrs column exceeds the threshold which is equivalent to 0.05 system minutes, is counted across the relevant calendar year and forms this value. The mathematical relationship between MWh and system minutes is: MWh = system minutes / 60 * (record MW demand) The record MW demand was obtained from a spreadsheet on AEMO's website (extract TRANSGRID-NEFR DEMAND REVIEW-1016-PUBLIC), in cell B25 of the "NSW_Sum" worksheet.	taking the year-to-date value, dividing it by the number of days in the year in which the sample was taken, followed by multiplying it by the total number of days in that calendar year. This number is subsequently rounded off to the nearest integer.

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
> (y) system minutes	This is taken to be the number of unplanned outages in the relevant year entailing a loss of supply exceeding the 'Y' threshold set by the AER for TransGrid (which is 0.25 system minutes), subtracting any applicable exclusions as defined by the AER STPIS V5.	The attached spreadsheets TRANSGRID-PAST ENS PERFORMANCE 2009_2013-1016-PUBLIC, TRANSGRID-PAST ENS PERFORMANCE 2014-1016-PUBLIC, TRANSGRID-PAST ENS PERFORMANCE 2015-1016-PUBLIC, and TRANSGRID-STPIS SERVICE COMPONENT REPORTING 2016 YTD AS AT 11AUG2016-1016-PUBLIC contain the historical loss of supply event data and the associated calculations for this variable, for the 2012-13, 2014, 2015, and 2016 calendar years respectively. The outage data within these spreadsheets is extracted from the THEOS PC Stats.accdb. The "ENS Lost Load" Table in THEOS PC Stats.accdb, which contains the source loss of supply event data, is populated by manually entering data into it using information sourced from THEOS (the business application used by Network Operations staff to record outage data) and/or Opslog (a separate business application used as a diary/logbook by Network Operators).	For the 2012-15 years, it is NOT considered estimated data because these values were determined from actual historical data. For the 2016 year, it is considered estimated data due to the necessity of requiring projection of the calculations to year-end, as a result of the 2016 calendar year not being complete at the time of the calculation of this variable. This has been done in order to be able to complete the statistical analysis for determining the caps, targets and collars for the Service Component parameters within the required timeframe for submission.	Every loss of supply event record in the relevant worksheet of the TRANSGRID-PAST ENS PERFORMANCE 2009_2013-1016-PUBLIC, TRANSGRID-PAST ENS PERFORMANCE 2014-1016-PUBLIC, TRANSGRID-PAST ENS PERFORMANCE 2015-1016-PUBLIC, and TRANSGRID-STPIS SERVICE COMPONENT REPORTING 2016 YTD AS AT 11AUG2016-1016-PUBLIC spreadsheets which is not excluded (i.e. the Excluded column is FALSE) and whose MWhrs column exceeds the threshold which is equivalent to 0.25 system minutes, is counted across the relevant calendar year and forms this value. The mathematical relationship between MWh and system minutes is: MWh = system minutes / 60 * (record MW demand) The record MW demand was obtained from a spreadsheet on AEMO's website (extract TRANSGRID-NEFR DEMAND REVIEW-1016-PUBLIC), in cell B25 of the "NSW_Sum" worksheet.	Accuracy of the record data sources (THEOS and/or Opslog) maintained by the Network Operations group within TransGrid. The method for projecting the 2016 year-end value is by taking the year-to-date value, dividing it by the number of days in the year in which the sample was taken, followed by multiplying it by the total number of days in that calendar year. This number is subsequently rounded off to the nearest integer.
Average outage duration (Actual 2012 to 2016)					

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
Average outage duration (minutes)	This is the average (arithmetic mean) duration in minutes of all unplanned outages in a given year involving a loss of supply, which are not excluded (as defined by the AER STPIS V5).	The attached spreadsheets TRANSGRID-PAST ENS PERFORMANCE 2009_2013-1016-PUBLIC, TRANSGRID-PAST ENS PERFORMANCE 2014-1016-PUBLIC, TRANSGRID-PAST ENS PERFORMANCE 2015-1016-PUBLIC, and TRANSGRID-STPIS SERVICE COMPONENT REPORTING 2016 YTD AS AT 11AUG2016-1016-PUBLIC contain the historical loss of supply event data and the associated calculations for this variable, for the 2012-13, 2014, 2015, and 2016 calendar years respectively. The outage data within these spreadsheets is extracted from the THEOS PC Stats.accdb. The "ENS Lost Load" Table in THEOS PC Stats.accdb, which contains the source loss of supply event data, is populated by manually entering data into it using information sourced from THEOS (the business application used by Network Operations staff to record outage data) and/or Opslog (a separate business application used as a diary/logbook by Network Operators).	For the 2012-15 years, it is NOT considered estimated data because these values were determined from actual historical data. For the 2016 year, it is considered estimated data due to the necessity of requiring projection of the calculations to year-end, as a result of the 2016 calendar year not being complete at the time of the calculation of this variable. This has been done in order to be able to complete the statistical analysis for determining the caps, targets and collars for the Service Component parameters within the required timeframe for submission.	Every loss of supply event record in the relevant worksheet of the TRANSGRID-PAST ENS PERFORMANCE 2009_2013-1016-PUBLIC, TRANSGRID-PAST ENS PERFORMANCE 2014-1016-PUBLIC, TRANSGRID-PAST ENS PERFORMANCE 2015-1016-PUBLIC, and TRANSGRID-STPIS SERVICE COMPONENT REPORTING 2016 YTD AS AT 11AUG2016-1016-PUBLIC spreadsheets which is not excluded (i.e. the Excluded column is FALSE), has its Lost Load Time Hrs column value averaged across the relevant calendar year. This is subsequently multiplied by 60 to convert from hours to minutes, which forms this value.	Accuracy of the record data sources (THEOS and/or Opslog) maintained by the Network Operations group within TransGrid. The method for projecting the 2016 year-end value is simply by using the year-to-date value, because the average outage duration measure does not contain a time component within it, unlike the other performance parameters forming the Service Component of STPIS.
Proper operation of equipment (number of events): (Actual 2012 to 2016)					

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
Failure of protection system	Number of events in a given year where the protection system does not operate for a fault or operates where there is no actual fault.	The attached spreadsheets TRANSGRID-PROTECTION SYSTEM FAILURES AND INCORRECTION ISOLATIONS 2009_2013-1016-PUBLIC, TRANSGRID-PROTECTION SYSTEM FAILURES AND INCORRECTION ISOLATIONS 2014-1016-PUBLIC, TRANSGRID-PROTECTION SYSTEM FAILURES AND INCORRECTION ISOLATIONS 2015-1016-PUBLIC and TRANSGRID-STPIS SERVICE COMPONENT REPORTING 2016 YTD AS AT 11AUG2016-1016-PUBLIC contain the historical outage data and the associated calculations for this variable, for the 2012-13, 2014, 2015, and 2016 calendar years respectively. The outage data within these spreadsheets is extracted from the THEOS PC Stats.accdb The THEOS PC Stats.accdb database is stored on TransGrid's shared drive (with secure access for only Asset Performance & Systems staff and Asset Monitoring Centre staff). The "QAPR Comment on Outage" Table in THEOS PC Stats.accdb, which contains the source outage data, is populated by importing data into it from THEOS (the business application used by Network Operations staff to record outage data). Each of these outage records in the THEOS PC Stats database is assigned with an AER code. Selecting the appropriate AER code occasionally requires obtaining additional information from Opslog (a separate business application used as a diary/logbook by Network Operators).	For the 2012-15 years, it is NOT considered estimated data because these values were determined from actual historical data. For the 2016 year, it is considered estimated data due to the necessity of requiring projection of the calculations to year-end, as a result of the 2016 calendar year not being complete at the time of the calculation of this variable. This has been done in order to be able to complete the statistical analysis for determining the caps, targets and collars for the Service Component parameters within the required timeframe for submission.	Every outage record in the relevant worksheet of the TRANSGRID-PROTECTION SYSTEM FAILURES AND INCORRECTION ISOLATIONS 2009_2013-1016-PUBLIC, TRANSGRID-PROTECTION SYSTEM FAILURES AND INCORRECTION ISOLATIONS 2014-1016-PUBLIC, TRANSGRID-PROTECTION SYSTEM FAILURES AND INCORRECTION ISOLATIONS 2015-1016-PUBLIC, and TRANSGRID-STPIS SERVICE COMPONENT REPORTING 2016 YTD AS AT 11AUG2016-1016-PUBLIC spreadsheets classified as a Protection Failure (i.e. the AER Protection Failure column is TRUE), is counted across the relevant calendar year and forms this value.	Accuracy of the record data sources (THEOS and/or Opslog) maintained by the Network Operations group within TransGrid. The method for projecting the 2016 year-end value is by taking the year-to-date value, dividing it by the number of days in the year in which the sample was taken, followed by multiplying it by the total number of days in that calendar year. This number is subsequently rounded off to the nearest integer.

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
Material failure of SCADA	The number of TransGrid SCADA outage events advised by AEMO to TG in any given year.	The attached spreadsheets TRANSGRID-MATERIAL FAILURE OF SCADA 2006_2015-1016-PUBLIC and TRANSGRID-STPIS SERVICE COMPONENT REPORTING 2016 YTD AS AT 11AUG2016-1016-PUBLIC contain the historical outage data and the associated calculations for this variable, for the 2012-15 and 2016 calendar years respectively. This data is sourced from periodic email reports from AEMO, listing the monthly counts of such events. The attachments TRANSGRID-RE REQUEST FOR HISTORICAL SCADA MINUTES LOST EVENTS 2006_2013-1016-PUBLIC, TRANSGRID-NSW SCADA MINUTES LOST_2014-1016-PUBLIC, TRANSGRID-NSW SCADA MINUTES LOST_2015-1016-PUBLIC, and TRANSGRID-NSW SCADA MINUTES LOST _ 2016-1016-PUBLIC contain the source data reports from AEMO for the 2012-13, 2014, 2015 and 2016 calendar years respectively.	For the 2012-15 years, it is NOT considered estimated data because these values were determined from actual historical data. For the 2016 year, it is considered estimated data due to the necessity of requiring projection of the calculations to year-end, as a result of the 2016 calendar year not being complete at the time of the calculation of this variable. This has been done in order to be able to complete the statistical analysis for determining the caps, targets and collars for the Service Component parameters within the required timeframe for submission.	This value was calculated by counting all occurrences of SCADA outages reported from AEMO to TG, for the relevant calendar year. AEMO is responsible for monitoring and reporting this variable. The 'Num' column within AEMO's reports contains the monthly count of such events.	Accuracy of data from AEMO. The method for projecting the 2016 year-end value is by taking the year-to-date value, dividing it by the number of days in the year in which the sample was taken, followed by multiplying it by the total number of days in that calendar year. This number is subsequently rounded off to the nearest integer.

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
Incorrect operational isolation of primary or secondary equipment	Number of events in a given year where the primary or secondary equipment is not properly isolated during scheduled or emergency maintenance. Incorrect isolation is defined as any accidental or deliberate action by a staff member or contractor that results in an unplanned outage. No data is available to indicate the occurrence of incorrect isolation action which did not lead to outages.	The attached spreadsheets TRANSGRID-PROTECTION SYSTEM FAILURES AND INCORRECTION ISOLATIONS 2009_2013-1016-PUBLIC, TRANSGRID-PROTECTION SYSTEM FAILURES AND INCORRECTION ISOLATIONS 2014-1016-PUBLIC, TRANSGRID-PROTECTION SYSTEM FAILURES AND INCORRECTION ISOLATIONS 2015-1016-PUBLIC and TRANSGRID-STPIS SERVICE COMPONENT REPORTING 2016 YTD AS AT 11AUG2016-1016-PUBLIC contain the historical outage data and the associated calculations for this variable, for the 2012-13, 2014, 2015, and 2016 calendar years respectively. The outage data within these spreadsheets is extracted from the THEOS PC Stats.accdb The THEOS PC Stats.accdb database is stored on TransGrid's shared drive (with secure access for only Asset Performance & Systems staff and Asset Monitoring Centre staff). The "QAPR Comment on Outage" Table in THEOS PC Stats.accdb, which contains the source outage data, is populated by importing data into it from THEOS (the business application used by Network Operations staff to record outage data). Each of these outage records in the THEOS PC Stats database is assigned with an AER code. Selecting the appropriate AER code occasionally requires obtaining additional information from Opslog (a separate business application used as a diary/logbook by Network Operators).	For the 2012-15 years, it is NOT considered estimated data because these values were determined from actual historical data. For the 2016 year, it is considered estimated data due to the necessity of requiring projection of the calculations to year-end, as a result of the 2016 calendar year not being complete at the time of the calculation of this variable. This has been done in order to be able to complete the statistical analysis for determining the caps, targets and collars for the Service Component parameters within the required timeframe for submission.	Every outage record in the relevant worksheet of the TRANSGRID-PROTECTION SYSTEM FAILURES AND INCORRECTION ISOLATIONS 2009_2013-1016-PUBLIC, TRANSGRID-PROTECTION SYSTEM FAILURES AND INCORRECTION ISOLATIONS 2014-1016-PUBLIC, TRANSGRID-PROTECTION SYSTEM FAILURES AND INCORRECTION ISOLATIONS 2015-1016-PUBLIC, and TRANSGRID-STPIS SERVICE COMPONENT REPORTING 2016 YTD AS AT 11AUG2016-1016-PUBLIC spreadsheets classified as an Incorrect Isolation (i.e. the AER Incorrect Isolation column is TRUE), is counted across the relevant calendar year and forms this value.	Accuracy of the record data sources (THEOS and/or Opslog) maintained by the Network Operations group within TransGrid. The method for projecting the 2016 year-end value is by taking the year-to-date value, dividing it by the number of days in the year in which the sample was taken, followed by multiplying it by the total number of days in that calendar year. This number is subsequently rounded off to the nearest integer.
7.9.4 - Market impact component (Actual 2010 - 2016)					
Planned outage	The number of binding constraint dispatch periods with a marginal cost of constraint >$10/MWh due to	The attached spreadsheets TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2010-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2011-1016-PUBLIC, TRANSGRID-STPIS	For the 2010-15 years, it is NOT considered estimated data because these values were determined from	The spreadsheet files which were submitted to the AER as part of the STPIS submissions for the 2010-2015 calendar years were used as the source data for	Accuracy of National Electricity Market data from AEMO, which is provided via the ez2view software and NOS.

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
	TransGrid's planned outages, including those that are excluded (as defined within the AER STPIS), for the relevant month in Table 7.9.4 of the RIN template. A planned outage is defined by the AER as one with notice not less than 24 hours.	COMPLIANCE REVIEW MIC DETAIL 2012-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2013-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2014-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2015-1016-PUBLIC, and TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2016-1016-PUBLIC contain the market constraint data and associated calculations to determine these values, for each month of the 2010, 2011, 2012, 2013, 2014, 2015, and 2016 calendar years respectively. The data in the 2010-2015 spreadsheets were sourced from the spreadsheet files which were submitted to the AER for the corresponding calendar year's STPIS submission. The data within the spreadsheets submitted to the AER as part of STPIS was determined using Market Constraint data obtained through the commercial software application ez2view (2013 onwards) and a legacy in-house developed set of AEMO server querying software tools (for pre-2013 data). Data from AEMO's NOS database, THEOS, and Opslog were also used to populate the various fields required in the spreadsheets submitted to the AER as part of the STPIS submission for that year. The 2016 data is sourced from the MITC Reporting Spreadsheet. All of the above source spreadsheet files are stored on TransGrid's shared drive with secure access for only Asset Performance & Systems staff.	actual historical data. For the 2016 year, the values for the October-December months are considered estimated data due to the 2016 calendar year not being complete at the time of the calculation of these variables. This has been done in order to keep a consistent time period for sampling the source data between the Service Component and Market Component variables provided in this RIN.	determining the values entered into Table 7.9.4 of this RIN template. Any adjustments made by the AER during their process of assessing TransGrid's STPIS submission were subsequently made to these spreadsheets, so that the data presented in this RIN template reflects the AER's assessment. Each market constraint record in these spreadsheets was classified as PLANNED or UNPLANNED, in order to facilitate counting the required quantities for Table 7.9.4 of this RIN template. Spreadsheet attachments TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2010-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2011-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2012-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2013-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2014-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2015-1016-PUBLIC, and TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2016-1016-PUBLIC contain the data and calculations from which these variables are determined, for the 2010, 2011, 2012, 2013, 2014, 2015, and	Accuracy of the record data sources (THEOS and/or Opslog) maintained by the Network Operations group within TransGrid The method for projecting the 2016 October-December values is as stated in the spreadsheet attachment TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2016-1016-PUBLIC.

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
				2016 calendar years respectively. Each qualifying market constraint record due to a PLANNED outage (regardless of whether excluded or not) is counted to form this variable, in each of these seven spreadsheets.	
Planned outage exclusions	The number of binding constraint dispatch periods with a marginal cost of constraint >$10/MWh due to TransGrid's planned outages, not including those that are excluded (as defined within the AER STPIS), for the relevant month in Table 7.9.4 of the RIN template. A planned outage is defined by the AER as one with notice not less than 24 hours.	The attached spreadsheets TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2010-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2011-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2012-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2013-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2014-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2015-1016-PUBLIC, and TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2016-1016-PUBLIC contain the market constraint data and associated calculations to determine these values, for each month of the 2010, 2011, 2012, 2013, 2014, 2015, and 2016 calendar years respectively. The data in the 2010-2015 spreadsheets were sourced from the spreadsheet files which were submitted to the AER for the corresponding calendar year's STPIS submission. The data within the spreadsheets submitted to the AER as part of STPIS was determined using Market Constraint data obtained through the commercial software application ez2view (2013 onwards) and a legacy in-house developed set of AEMO server querying software tools (for pre-2013 data). Data from AEMO's NOS database, THEOS, and Opslog were also used to populate the various fields required in the spreadsheets submitted to the AER as part of the STPIS submission for that year. The 2016 data is sourced from the MITC	For the 2010-15 years, it is NOT considered estimated data because these values were determined from actual historical data. For the 2016 year, the values for the October-December months are considered estimated data due to the 2016 calendar year not being complete at the time of the calculation of these variables. This has been done in order to keep a consistent time period for sampling the source data between the Service Component and Market Component variables provided in this RIN.	The spreadsheet files which were submitted to the AER as part of the STPIS submissions for the 2010-2015 calendar years were used as the source data for determining the values entered into Table 7.9.4 of this RIN template. Any adjustments made by the AER during their process of assessing TransGrid's STPIS submission were subsequently made to these spreadsheets, so that the data presented in this RIN template reflects the AER's assessment. Each market constraint record in these spreadsheets was classified as PLANNED or UNPLANNED, in order to facilitate counting the required quantities for Table 7.9.4 of this RIN template. Spreadsheet attachments TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2010-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2011-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2012-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2013-1016-PUBLIC, TRANSGRID-STPIS	Accuracy of National Electricity Market data from AEMO, which is provided via the ez2view software and NOS. Accuracy of the record data sources (THEOS and/or Opslog) maintained by the Network Operations group within TransGrid The method for projecting the 2016 October-December values is as stated in the spreadsheet attachment TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2016-1016-PUBLIC.

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
		Reporting Spreadsheet. All of the above source spreadsheet files are stored on TransGrid's shared drive with secure access for only Asset Performance & Systems staff.		COMPLIANCE REVIEW MIC DETAIL 2014-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2015-1016-PUBLIC, and TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2016-1016-PUBLIC contain the data and calculations from which these variables are determined, for the 2010, 2011, 2012, 2013, 2014, 2015, and 2016 calendar years respectively. Each qualifying market constraint record due to a PLANNED outage which is also not excluded is counted to form this variable, in each of these seven spreadsheets.	
Unplanned outage	The number of binding constraint dispatch periods with a marginal cost of constraint >$10/MWh due to TransGrid's unplanned outages, including those that are excluded (as defined within the AER STPIS), for the relevant month in Table 7.9.4 of the RIN template. An unplanned outage is defined by the AER as one with notice less than 24 hours.	The attached spreadsheets TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2010-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2011-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2012-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2013-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2014-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2015-1016-PUBLIC, and TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2016-1016-PUBLIC contain the market constraint data and associated calculations to determine these values, for each month of the 2010, 2011, 2012, 2013, 2014, 2015, and 2016 calendar years respectively. The data in the 2010-2015 spreadsheets were sourced from the spreadsheet files which were submitted to the AER for the corresponding calendar year's STPIS submission. The data	For the 2010-15 years, it is NOT considered estimated data because these values were determined from actual historical data. For the 2016 year, the values for the October-December months are considered estimated data due to the 2016 calendar year not being complete at the time of the calculation of these variables. This has been done in order to keep a consistent time period for sampling the source data between the Service Component and Market Component variables provided in	The spreadsheet files which were submitted to the AER as part of the STPIS submissions for the 2010-2015 calendar years were used as the source data for determining the values entered into Table 7.9.4 of this RIN template. Any adjustments made by the AER during their process of assessing TransGrid's STPIS submission were subsequently made to these spreadsheets, so that the data presented in this RIN template reflects the AER's assessment. Each market constraint record in these spreadsheets was classified as PLANNED or UNPLANNED, in order to facilitate counting the required quantities for Table 7.9.4 of this RIN template. Spreadsheet attachments TRANSGRID-STPIS	Accuracy of National Electricity Market data from AEMO, which is provided via the ez2view software and NOS. Accuracy of the record data sources (THEOS and/or Opslog) maintained by the Network Operations group within TransGrid The method for projecting the 2016 October-December values is as stated in the spreadsheet attachment TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2016-1016-PUBLIC.

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
		within the spreadsheets submitted to the AER as part of STPIS was determined using Market Constraint data obtained through the commercial software application ez2view (2013 onwards) and a legacy in-house developed set of AEMO server querying software tools (for pre-2013 data). Data from AEMO's NOS database, THEOS, and Opslog were also used to populate the various fields required in the spreadsheets submitted to the AER as part of the STPIS submission for that year. The 2016 data is sourced from the MITC Reporting Spreadsheet. All of the above source spreadsheet files are stored on TransGrid's shared drive with secure access for only Asset Performance & Systems staff.	this RIN.	COMPLIANCE REVIEW MIC DETAIL 2010-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2011-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2012-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2013-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2014-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2015-1016-PUBLIC, and TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2016-1016-PUBLIC contain the data and calculations from which these variables are determined, for the 2010, 2011, 2012, 2013, 2014, 2015, and 2016 calendar years respectively. Each qualifying market constraint record due to a UNPLANNED outage (regardless of whether excluded or not) is counted to form this variable, in each of these seven spreadsheets.	
Unplanned outage exclusions	The number of binding constraint dispatch periods with a marginal cost of constraint >$10/MWh due to TransGrid's unplanned outages, not including those that are excluded (as defined within the AER STPIS), for the relevant month in Table 7.9.4 of	The attached spreadsheets TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2010-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2011-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2012-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2013-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2014-1016-PUBLIC, TRANSGRID-STPIS	For the 2010-15 years, it is NOT considered estimated data because these values were determined from actual historical data. For the 2016 year, the values for the October-December months are considered estimated data due to the 2016	The spreadsheet files which were submitted to the AER as part of the STPIS submissions for the 2010-2015 calendar years were used as the source data for determining the values entered into Table 7.9.4 of this RIN template. Any adjustments made by the AER during their process of assessing TransGrid's STPIS submission were subsequently	Accuracy of National Electricity Market data from AEMO, which is provided via the ez2view software and NOS. Accuracy of the record data sources (THEOS and/or Opslog) maintained by the Network Operations group within TransGrid The method for projecting the

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
	the RIN template. An unplanned outage is defined by the AER as one with notice less than 24 hours.	COMPLIANCE REVIEW MIC DETAIL 2015-1016-PUBLIC, and TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2016-1016-PUBLIC contain the market constraint data and associated calculations to determine these values, for each month of the 2010, 2011, 2012, 2013, 2014, 2015, and 2016 calendar years respectively. The data in the 2010-2015 spreadsheets were sourced from the spreadsheet files which were submitted to the AER for the corresponding calendar year's STPIS submission. The data within the spreadsheets submitted to the AER as part of STPIS was determined using Market Constraint data obtained through the commercial software application ez2view (2013 onwards) and a legacy in-house developed set of AEMO server querying software tools (for pre-2013 data). Data from AEMO's NOS database, THEOS, and Opslog were also used to populate the various fields required in the spreadsheets submitted to the AER as part of the STPIS submission for that year. The 2016 data is sourced from the MITC Reporting Spreadsheet. All of the above source spreadsheet files are stored on TransGrid's shared drive with secure access for only Asset Performance & Systems staff.	calendar year not being complete at the time of the calculation of these variables. This has been done in order to keep a consistent time period for sampling the source data between the Service Component and Market Component variables provided in this RIN.	made to these spreadsheets, so that the data presented in this RIN template reflects the AER's assessment. Each market constraint record in these spreadsheets was classified as PLANNED or UNPLANNED, in order to facilitate counting the required quantities for Table 7.9.4 of this RIN template. Spreadsheet attachments TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2010-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2011-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2012-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2013-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2014-1016-PUBLIC, TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2015-1016-PUBLIC, and TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2016-1016-PUBLIC contain the data and calculations from which these variables are determined, for the 2010, 2011, 2012, 2013, 2014, 2015, and 2016 calendar years respectively. Each qualifying market constraint record due to a UNPLANNED outage which is also not excluded is counted to form this variable, in each of these seven	2016 October-December values is as stated in the spreadsheet attachment TRANSGRID-STPIS COMPLIANCE REVIEW MIC DETAIL 2016-1016-PUBLIC.

Variable reference & AER description	TransGrid's interpretation of data variable	Data sources	Information type	How the values for this variable are calculated	Assumptions made to allow calculation / estimation of the variable
				spreadsheets.	