



Economic benchmarking RIN

For transmission network service providers

Instructions and Definitions

NSP Name (ACN XXX XXX XXX)

November 2013

© Commonwealth of Australia 2013

This work is copyright. Apart from any use permitted by the Copyright Act 1968, no part may be reproduced without permission of the Australian Competition and Consumer Commission. Requests and inquiries concerning reproduction and rights should be addressed to the Director Publishing, Australian Competition and Consumer Commission, GPO Box 3131, Canberra ACT 2601.

Inquiries about this document should be addressed to:

Australian Energy Regulator
GPO Box 520
Melbourne Vic 3001
Tel: (03) 9290 1444
Fax: (03) 9290 1457
Email: AERInquiry@acr.gov.au

AER reference: **50557**

Amendment record

Version	Date	Pages

Contents

Contents.....	3
1 Purpose of this document	4
1.1 Process requirements.....	4
2 Revenues	12
2.1 Instructions	12
3 Opex	14
3.1 Instructions	14
4 Assets (RAB)	19
4.1 Instructions	19
5 Operational data.....	24
5.1 Instructions	24
6 Physical assets	26
6.1 Instructions	26
7 Quality of services	29
7.1 Instructions	29
8 Operating environment factors	31
8.1 Instructions	31
9 Definitions	34

1 Purpose of this document

Economic benchmarking measures the efficiency of a firm in the use of its inputs to produce outputs. It also accounts for the substitutability of different types of inputs and for the costs of providing different outputs.

This document accompanies the AER's regulatory information notice to collect information for economic benchmarking, issued on NSP Name (ACN XXX XXX XXX) (**TNSP**) on 28 November 2013 (**Notice**). The Notice requires TNSP to complete the Microsoft Excel Workbooks attached at Appendix A to the Notice in accordance with this instructions and definitions document.

This means that TNSP must complete "*TNSP economic benchmarking data templates – Consolidated Information.xlsx*" (the Templates). TNSP must then, for the purpose of independent audit or review (as applicable) copy Actual and Estimated Information from the Templates to "*TNSP economic benchmarking data templates – Actual Information.xlsx*" and "*TNSP economic benchmarking data templates – Estimated Information.xlsx*", respectively, in accordance with section 1.1.4.

The purpose of this document is to aid TNSP in complying with the Notice so TNSP should read it in conjunction with the Notice. This document explains process requirements, provides instructions for each worksheet in the Templates and contains definitions for terms used in the Templates.

TNSP must complete the Templates in accordance with the instructions contained within this document and the Notice. Chapters 2 to 8 provide guidance on completing each worksheet within the Templates. Chapter 9 contains definitions. Terms defined in chapter 9 or the Notice are capitalised. This chapter explains process requirements.

1.1 Process requirements

For the avoidance of doubt, the overarching requirement of the Notice is that TNSP must complete the Templates. TNSP must also provide a Basis of Preparation, which explains, for each Variable, the basis upon which TNSP prepared information to populate the input cells. TNSP's completed Templates and Basis of Preparation must be independently audited and verified by statutory declaration. TNSP must also update the Templates annually and submit them to the AER.

1.1.1 Completing the Templates

Subject to a small number of exceptions, TNSP must complete all input cells in the Templates. By this, we mean that TNSP must enter a value into the cell that corresponds to the unit required. In most cases this is a number. For the avoidance of doubt, TNSP must not input 'N/A' or similar – this will amount to non-compliance with the Notice. When TNSP cannot provide Actual Information, TNSP must provide its best estimate of the required information.

Best estimates

If TNSP cannot populate an input cell in the Templates with Actual Information, it must provide the best estimate it can. Because the back cast dataset requires TNSP to populate input cells going back a number of years, we acknowledge that TNSP will likely need to estimate some Variables.

If TNSP provides an estimate, it must, in its Basis of Preparation, explain:

- why it could not use Actual Information;

- how TNSP derived the estimate; and
- why it is TNSP's best estimate.

However, we expect TNSP to set up systems to collect Actual Information in the format prescribed by the Templates such that in future years the amount of estimation can be reduced. This means we expect that TNSP will populate the Templates using (subject to a small number of exceptions) no Estimated Information for the 2015 Regulatory Year onwards. Exceptions include some Variables in the '6. Assets (RAB)' worksheet, which will inherently require estimation. This document identifies other Variables that may continue to be estimated in the relevant chapters.

In the Notice (and chapter 9) we define Actual Information as:

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

'Accounting records' include trial balances, the general ledger, subsidiary accounting ledgers, journal entries and documentation to support journal entries. Actual Financial Information may include accounting estimates, such as accruals and provisions, and any adjustments made to the accounting records to populate TNSP's regulatory accounts and responses to the Notice. 'Records used in the normal course of business', for the purposes of Non-financial Information, includes asset registers, geographical information systems, outage analysis systems, and so on.

Variables that are not applicable

In some limited circumstances, the correct response to the Notice will be a blacked out input cell. These circumstances are limited to those that this document and the Templates clearly identify as potentially not applicable to TNSP. **It is not for TNSP to decide whether any other Variable could potentially be not applicable to it.** There are two circumstances where we have determined that a Variable could potentially be not applicable to TNSP.

The first circumstance is when TNSP does not currently measure the information in accordance with the Variable requirement and we (in this document) consider that it be both:

- unnecessarily burdensome for TNSP to estimate the information; and
- illogical for TNSP to enter '0' in response to the Variable when posed as a question.

These cells are shaded orange in the Templates.

The second circumstance is when TNSP has made no Material changes (over the course of the back cast time series) to its:

- Cost Allocation Approach, or
- Basis of Preparation for its Regulatory Accounting Statements, or
- the Information Guidelines.

These cells are shaded blue in the Templates.

For each Variable which this document and the Templates (through orange or blue shading) identify as potentially not applicable to TNSP, TNSP must consider whether the Variable is actually applicable

to it. If the Variable is actually applicable to TNSP, TNSP must complete the Variable in accordance with this document.

However, if, and only if:

- this document (in Table 1.1 and Table 1.2) and the Templates (through orange or blue shading) identify a Variable as potentially not applicable to TNSP; and
- that Variable is also actually not applicable to TNSP,

then TNSP may black out the cells relating to that Variable rather than input information. In these circumstances, blacking out that Variable will comply with the requirements of the Notice for the provision of back cast information.

This does not mean that we are allowing TNSP to not respond to part of the Notice. Rather, it means that, in the circumstances set out above, the correct response required by the Notice will be a blacked out cell. Any other use of blacked out cells, empty cells or entries such as "not applicable" will not comply with the terms of the Notice. For the avoidance of doubt, all cell shadings are reproduced and explained below.

Yellow cells require input, with no exceptions. If a yellow cell is not applicable to TNSP in accordance with this document, the input will be '0'.

Orange cells allow a blacked out input if TNSP does not currently measure the information in accordance with the Variable requirement, it would be unnecessarily burdensome to estimate and it is illogical to enter '0'.

Blue cells allow a blacked out input only where there has been no Material (as defined in chapter 9) change in TNSP's Cost Allocation Approach, Basis of Preparation for Regulatory Accounting Statements or its response to the Information Guidelines.

Yellow Variables

Yellow Variables are standard input Variables. TNSP must enter a value into these cells, without exception. There may be input cells that TNSP considers do not apply to it. For these cells, TNSP must nevertheless provide an input, even if that input is '0'. There may be several Variables that fall into this category. Some examples include the energy delivery Variables, revenue Variables, or assets at voltages that TNSP does not operate.

For these Variables, TNSP should consider the Variable as a question and the input it is providing as a response to the question. For example, if TNSP uses peak or off-peak periods but does not use a shoulder period, TNSP can still provide a logical, compliant answer to the question 'what is the quantity of energy delivered at shoulder times?' by inputting '0'. Similarly, if TNSP does not receive any Prescribed Transmission Services revenue from fixed customer charges, the logical and compliant input is '0'.

TNSP must not enter '0' because TNSP considers it would be difficult or burdensome to provide the information if a Variable warrants a non-zero response.

Orange Variables

Orange Variables are limited to weather corrected Maximum Demand Variables and certain operating environment Variables. Table 1.1 specifies all orange Variables.

Table 1.1 Orange Variables that may be blacked out in certain circumstances

Variable code	Variable name	Must be provided from
TOPSD0102	Transmission System Coincident Weather Adjusted Maximum Demand 10% POE	2014
TOPSD0103	Transmission System Coincident Weather Adjusted Maximum Demand 50% POE	2014
TOPSD0105	Transmission System Non-Coincident Weather Adjusted Summated Maximum Demand 10% POE	2014
TOPSD0106	Transmission System Non-Coincident Weather Adjusted Summated Maximum Demand 50% POE	2014
TOPSD0202	Transmission System Coincident Weather Adjusted Maximum Demand 10% POE	2014
TOPSD0203	Transmission System Coincident Weather Adjusted Maximum Demand 50% POE	2014
TOPSD0205	Transmission System Non-Coincident Weather Adjusted Summated Maximum Demand 10% POE	2014
TOPSD0206	Transmission System Non-Coincident Weather Adjusted Summated Maximum Demand 50% POE	2014
TEF0101	Total number of vegetation Maintenance Spans	2013
TEF0103	Average number of trees per vegetation Maintenance Span	2013
TEF0104	Average number of Defects per vegetation Maintenance Span	2013
TEF0105	Tropical proportion	2013
TEF0106	Standard Vehicle Access	2013
TEF0107	Altitude	2013
TEF0108	Bushfire risk	2013
TEF03001	Weather station materiality	Only for 2013

Some NSPs collect this information already or could reasonably estimate it. For these NSPs, orange cells are applicable and require input. However, for NSPs that do not already collect this information, we consider that it:

- would not be reasonable to require an estimate of these Variables; and
- would be illogical for an NSP to enter '0' as an input.

For example, there are NSPs who do not currently measure weather corrected Maximum Demand. It would be, in our view, unreasonable to require these NSPs to estimate an entire back cast series of weather correction. It would also be illogical to enter '0' as an input because Maximum Demand cannot logically be zero. From 2014, we require NSPs to provide weather corrected Maximum Demand.

The operating environment Variables are similar, except that we require TNSP to estimate the most recent year of the back cast series (2013).

Blue Variables

Blue Variables are limited to the Opex Variables within Table 3.1.1 of the '3. Opex' worksheet.

Blue cells are not applicable (and hence may be blacked out) unless TNSP has made Material changes (over the course of the back cast time series) to its:

- Cost Allocation Approach, or
- Basis of Preparation for its Regulatory Accounting Statements, or
- the Information Guidelines.

If any of the above has Materially changed, the blue cells become applicable, and hence require input.

Financial inputs

All monetary input values relating to Regulatory Years must be in nominal terms unless otherwise stated. TNSP must also enter monetary values in thousands (\$'000), rounded to the nearest dollar (unless stated otherwise).

1.1.2 Basis of Preparation

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

We require the Basis of Preparation to follow a logical structure that enables Auditors, assurance practitioners and the AER to clearly understand how TNSP has complied with the requirements of the Notice.

To do this, we recommend TNSP structures its Basis of Preparation with a separate section to match each of the worksheets titled '2. Revenue' to '8. Operating environment' in the Templates. TNSP may consider structuring these sections with subheadings for each subject matter table in each worksheet. For example, for the worksheet '5. Operational data', TNSP would explain its Basis of Preparation for the Variables under the heading '5.1 Energy delivery', '5.2 Connection point numbers' and '5.3 System Demand'.

TNSP must include in its Basis of Preparation, any other information TNSP prepares in accordance with the requirements of the Notice (including this document). For example, if TNSP chooses to disaggregate its RAB using its own approach in addition to the AER's standard approach, TNSP must explain this in its Basis of Preparation.

At a minimum, the Basis of Preparation must:

- demonstrate how the information provided is consistent with the requirements of the Notice;
- explain the source from which TNSP obtained the information provided;
- explain the methodology TNSP applied to provide the required information, including any assumptions TNSP made; and

- in circumstances where TNSP cannot provide input for a Variable using Actual Information, and therefore must use an estimate, explain;
 - (i) why an estimate was required, including why it was not possible for TNSP to use Actual Information;
 - (ii) the basis for the estimate, including the approach used, assumptions made and reasons why the estimate is TNSP's best estimate, given the information sought in the Notice.

For Variables that contain Financial Information (Actual or Estimated) the relevant Basis of Preparation must explain if accounting policies adopted by TNSP have Materially changed during any of the Regulatory Years covered by the Notice including;

- (i) the nature of the change; and
- (ii) the impact of the change on the information provided in response to the Notice.

TNSP may provide additional detail beyond the minimum requirements if TNSP considers it may assist a user to gain an understanding of the information presented in the Templates.

In relation to providing an audit opinion or making an attestation report on the Templates presented by TNSP, an Auditor or assurance practitioner shall provide an opinion or attest by reference to TNSP's Basis of Preparation.

1.1.3 Information for future Regulatory Years

The Notice requires TNSP to update the Templates each year, up to and inclusive of 2024. For each subsequent Regulatory Year until 2024 TNSP must add additional columns as indicated on each of the worksheets titled '2. Revenue' to '8. Operating environment' with information for the most recent Regulatory Year. That is, in 2015, TNSP must update the Templates with 2014 information; in 2016 TNSP must update the Templates with 2015 information, and so on. The Notice requires TNSP to retain all information.

TNSP must insert the subsequent Regulatory Year between the last Regulatory Year completed and the 'insert subsequent Regulatory Year' column in each of the aforementioned worksheets. We expect any future Regulatory Information Notices or Regulatory Information Orders will require the retention and provision of the same information beyond 2024.

Subsequent Regulatory Year updates are due at the same time as annual reporting information requirements. So, NSPs who report on a financial year, April to March or July to June basis must submit the annual subsequent Regulatory Year information on 30 June or 31 October, respectively (or the next business day if 30 June or 31 October is not a business day). NSPs who report on a calendar year (January to December) basis must submit subsequent Regulatory Year information on 30 April (or the next business day if 30 April is not a business day). Table 1.2 provides an example for all NSPs.

Table 1.2 Information requirements by NSP

NSP	Example RIN year	Regulatory Year equivalent	Unaudited back cast data due	Audited back cast data due	Audited 2014 Year due	Audited 2015 Year due ^a
CitiPower, Powercor, JEN, SP AusNet (distribution), UED	2013	2013	3 March 2014	30 April 2014	30 April 2015	30 April 2016
SP AusNet (transmission)	2013	2012/13	3 March 2014	30 April 2014	31 July 2014	31 July 2015
ActewAGL, AusGrid, Aurora, ElectraNet, Endeavour, Energex, Ergon, Essential, Powerlink, SA Power Networks, Transend, Transgrid	2013	2012/13	3 March 2014	30 April 2014	31 October 2014	31 October 2015

Note: (a) The audited 2014 year is the last year where estimates may be used. Thereafter, NSPs must provide Actual Information except for those Variables that are inherently estimates as specified in this document.

TNSP must subject each year's data to independent audit, and provide an annual statutory declaration in accordance with the requirements of the Notice. TNSP is not required to re-audit the information previously audited and supplied to the AER. That is, when TNSP submits the information for the 2014 Regulatory Year, audit and attestation by statutory declaration is required only for the 2014 information. The 2006 to 2013 data would have been audited and verified already, so it will not need to be re-audited or re-verified unless TNSP Materially changes its CAM in the future. In this case, TNSP must re-cast the relevant opex data in accordance with the new CAM, and have it independently audited.

1.1.4 Auditing and statutory declaration

The Notice requires TNSP's completed Templates and Basis of Preparation to be independently audited and verified by statutory declaration. The statutory declaration, which must be completed by TNSP's **Chief Executive Officer** (CEO) is in Appendix C to the Notice. The auditing and review requirements are set out in Appendix D to the Notice.

TNSP must submit its first response to the Notice by 3 March 2014 (**First Response**). Because the Notice requires TNSP to provide a back cast time series (2006 to 2013 Regulatory Years), we do not require the First Response to be Audited or verified by statutory declaration.

On 30 April 2014, TNSP must submit to the AER the Audited and verified version of the First Response to the Notice and the accompanying Audit Report and Review Reports. However, we only require the Audit Report and Review Reports to cover Regulatory Years 2009 to 2013 (five years).

The CEO's statutory declaration is required to verify the entire back cast time series.

For subsequent submissions (from July 2014, when NSPs who report on an April to March financial year basis must submit their 2014 information) TNSP must submit audited and verified information only. That is, the provision of unaudited and unverified information by TNSP after 3 March 2014 will not be compliant with the Notice.

Class of Auditor

We require an independent registered company Auditor who is a member of the Institute of Chartered Accountants Australia (CA or FCA) or of CPA Australia (CPA or FCPA) that holds a Certificate of Public Practice to conduct the audits and reviews of Financial Information.

Where the review involves Non-financial Information, we generally expect the Auditor to engage an engineering expert for assistance. However, if TNSP's current practice is to engage an independent assurance practitioner (who is not necessarily a registered company Auditor as defined above) to review Non-financial Information for AER annual reporting requirements, TNSP may do the same for the Non-financial Information required by the Notice. The assurance practitioner must satisfy the requirements in paragraph 2.2 of Appendix D to the Notice. These include that the practitioner must:

- be an 'assurance practitioner' as defined in ASAE 3000 *Assurance engagements other than audits or reviews of historical Financial Information*;
- review the Non-financial Information in accordance with ASAE 3000 *Assurance engagements other than audits or reviews of historical Financial Information*.

Auditing procedure

For Financial Information:

- Actual Information must be audited in accordance with ASA 805 *Special Considerations — Audits of Single Financial Statements and Specific Elements, Accounts or Items of a Financial Statement*; and
- Estimated Information must be reviewed in accordance with ASRE 2405 *Review of Historical Financial Information Other than a Financial Report*.

Non-financial Information must be reviewed in accordance with ASAE 3000 *Assurance engagements other than audits or reviews of historical Financial Information*.

The Notice requires TNSP to complete three separate Microsoft Excel Workbooks. This is to ensure Auditors and assurance practitioners understand exactly which information is Estimated and which is Actual, given that Actual Financial Information is subject to reasonable assurance but Estimated Financial Information is subject to limited assurance.

TNSP must complete the Templates ("*TNSP economic benchmarking data templates – Consolidated Information.xlsx*") and ensure it contains all information required by the Notice.

TNSP must then copy all Actual Information to the Microsoft Excel Workbook titled "*TNSP economic benchmarking data templates – Actual Information.xlsx*" and all Estimated Information to the Microsoft Excel Workbook titled "*TNSP economic benchmarking data templates – Estimated Information.xlsx*".

TNSP must submit all Microsoft Excel Workbooks to us.

2 Revenues

This section applies to the worksheet entitled '2. Revenue' in the Templates. Economic benchmarking outputs can be measured on an 'as billed' basis or on a broader 'functional' basis. We are collecting revenue data to allow for the application of an 'as billed' (or billed outputs) specification in addition to a functional outputs specification. The 'as billed' basis measures outputs in terms of the services for which businesses charge customers. In order to weight the outputs under an 'as billed' basis it is necessary to collect data on revenues.¹ The objective of this template is to collect revenues split out in accordance with the main outputs for which TNSP bills its customers to be used as the weights for a billed outputs specification.

2.1 Instructions

TNSP must report revenues split in accordance with the categories in the Templates. The Templates require TNSP to report revenues by chargeable quantity (Table 2.1) and by customer class (Table 2.2). The total of revenues by chargeable quantity must equal the total of revenues by customer class because they are simply two different ways of disaggregating revenue information. TNSP must also separately provide revenues received or deducted as a result of incentive schemes (Table 2.3).

TNSP is only to report Prescribed Transmission Services revenues in this worksheet.

TNSP must enter '0' into cells that have no effect on the revenues TNSP. For instance, if TNSP did not earn any revenues from the Service Target Performance Incentive Scheme (STPIS) because the STPIS did not apply to it, the amount of revenue reported would be '0'.

Box 1 Revenue Financial Reporting Framework

Revenues must be reported in accordance with the requirements of, and should reconcile to, the Prescribed Transmission Services revenues reported in the Income Statement as per the Information Guidelines. For instance if these statements are inclusive of taxes or penalties or rewards of incentive schemes then revenues must be reported inclusive of these amounts.

For the avoidance of doubt, this means that TNSP must report revenue line items in a manner that is consistent with the Income Statement. As a consequence, total revenues should equal those reported in the Income Statement (with the exception of total revenue in Table 2.3).

Table 2.1 Revenue grouping by chargeable quantity

TNSP must allocate revenues to the chargeable quantity that most closely reflects the basis upon which the revenue was charged by TNSP to customers (the chargeable quantities are the Variables TREV0101–TREV0109).

Revenues that cannot be allocated to the specific chargeable quantities in Variables TREV0101 to TREV0109 must be reported against 'Revenue from other Sources' (TREV0110).

External project work and gross proceeds from the sale of assets where they relate to Prescribed Transmission Services should be reported as "Revenue from other Sources" (TREV0110).

¹ For further explanation of the billed outputs specification see: Economic Insights, *Economic benchmarking of electricity network service providers*, 25 June 2013, p. 6.

TNSP must report:

- revenues from common service and general charges where they are billed on an energy accumulation basis against 'From Energy based Common Service and General Charges' (TREV0107).
- revenues from charges based on a "nominated / agreed" demand basis against 'From Fixed Demand based Usage Charges' (TREV0108).
- revenues from charges based on a "measured / actual" demand basis against 'From variable Demand based Usage Charges'(TREV0109).

Table 2.2 Revenue Grouping by type of connected equipment

TNSP must report revenues in accordance with the type of connection equipment.

External project work and gross proceeds from the sale of assets where they relate to Prescribed Transmission Services should be reported as "other revenue" (TREV0205).

Table 2.3 Revenue (penalties) allowed (deducted) through incentive schemes

TNSP must report the penalties or rewards of incentive schemes in this table.

Revenues reported in Table 2.3 must reflect the effect on revenues of incentive schemes in the year that the penalty or reward is applied (as opposed to when it was earned which depending on the scheme may be in earlier years). For instance, if TNSP is rewarded extra revenues for performance under the STPIS in 2009 and gains these revenues in 2011 these revenues must be reported in the 2011 year only.

3 Opex

This section applies to the worksheet entitled '3. Opex' in the Templates. Opex is a key input required for NSPs to deliver their services and hence is being requested for economic benchmarking purposes. Opex is requested by category to identify the drivers of change in the partial productivity of operating expenditures for NSPs.

Consistent categorisations of Opex are requested such that the differences in the composition and change in composition of regulated activities can be accounted for over time.

Opex is also required in accordance with both historical and current reporting arrangements such that the effect of any Material changes in reporting approach on efficiency measurement can be taken into account. A Material change would include, for example, a change in capitalisation policy that significantly shifts costs from Opex to capex or a change in the categories of Opex reported by an NSP in its response to the Information Guidelines.

3.1 Instructions

TNSP must only report Opex for Prescribed Transmission Services in these tables.

Table 3.1.1 Current Opex categories and cost allocations

In table 3.1.1, TNSP must report Opex in accordance with the activities (for example: network operations, asset management support and field maintenance) reported in its most recent response to the Information Guidelines.

TNSP must report historical Opex in accordance with its current Opex categories, Cost Allocation Approach and response to the Information Guidelines.

TNSP is required to complete this table only if there has been a Material change (over the course of the back cast time series) in TNSP's:

- Cost Allocation Approach, or
- Basis of Preparation for its Regulatory Accounting Statements, or
- response to the Information Guidelines.

If any of the above has Materially changed, the blue cells are compulsory input cells. A Material change, in this context, is a change in Opex of greater than half of a per cent of total Prescribed Transmission Services Opex in the year that the change occurred.

When completing the Templates for Regulatory Years subsequent to the 2013 Regulatory Year, if TNSP can provide Actual Information for Table 3.1.1 it must do so; otherwise TNSP must provide Estimated Information.

Box 2 Opex Financial Reporting Framework – table 3.1.1

Opex must be prepared for all Regulatory Years in accordance with TNSP's Cost Allocation Approach and directions within the Information Guidelines for the most recent completed Regulatory Year. For the avoidance of doubt:

- The accounting principles and policies specified in the Information Guidelines applying to the Regulatory Financial Statements for the most recent completed Regulatory Year must be applied for all Regulatory Years.
- TNSP must report Opex line items in a manner that is consistent with the regulatory financial statements.

As a consequence, for years where the Cost Allocation Approach and Regulatory Accounting Statements are consistent with those that applied in the most recent completed Regulatory Year, total Opex should directly reconcile to that reported in the Regulatory Accounting Statements.

Table 3.1.2 Historical Opex categories and allocations

Table 3.1.2 requires TNSP to report Opex activities (for example: network operations, asset management support and field maintenance) reported in its Information Guidelines response for individual Regulatory Years.

TNSP must report, for all Regulatory Years, Opex in accordance with its Cost Allocation Approach and the Regulatory Accounting Statements that were in effect for the relevant Regulatory Year.

Opex must be reported in accordance with the categories for the relevant Regulatory Year and should directly reconcile to the Opex in TNSP's response to the Information Guidelines for that year.

TNSP must add additional rows to report changes in the Opex categories as indicated in the Templates.

When completing the Templates for Regulatory Years subsequent to the 2013 Regulatory Year, if TNSP can provide Actual Information for Table 3.1.2 it must do so; otherwise TNSP must provide Estimated Information.

Figure 1 provides an example of the reporting requirements where a TNSP has changed its cost allocation method and reporting arrangements. As these amendments have been made the TNSP is required to add rows to separately report Opex where the changes have occurred.

Box 3 Financial Reporting Framework – tables 3.1.2

TNSP must report, for all Regulatory Years, Opex in accordance with the requirements of the Cost Allocation Approach and the Information Guidelines that were in effect for the individual Regulatory Year. For the avoidance of doubt this means that:

- The accounting principles applied by the NSP to complete its regulatory Financial Statements for each individual Regulatory Year must be applied when reporting Opex for that Regulatory Year
- Opex reported must be prepared in a consistent manner to that of Opex reported in the Regulatory Financial Statements
- Opex line items reported in Table 3.1.2 should equal Opex line items reported in the Regulatory Accounting Statements for each Regulatory Year.

Figure 1 Example of Opex category reporting requirements where Opex categories/ CAM have changed over time

	Regulatory year		2006	2007	2008	2009	2010	2011	2012	2013
Variable_Code	Variable	Unit								
	Table 3.1 Opex categories									
	Table 3.1.1 Current opex categories and cost allocations									
TOPEX0101	Network operations	\$'000	\$\$\$	\$\$\$	\$\$\$	\$\$\$	\$\$\$	\$\$\$	\$\$\$	\$\$\$
TOPEX0102	Asset management support	\$'000	\$\$\$	\$\$\$	\$\$\$	\$\$\$	\$\$\$	\$\$\$	\$\$\$	\$\$\$
TOPEX0103	Corporate costs	\$'000	\$\$\$	\$\$\$	\$\$\$	\$\$\$	\$\$\$	\$\$\$	\$\$\$	\$\$\$
TOPEX0104	Grid support	\$'000	\$\$\$	\$\$\$	\$\$\$	\$\$\$	\$\$\$	\$\$\$	\$\$\$	\$\$\$
TOPEX0105	Field maintenance	\$'000	\$\$\$	\$\$\$	\$\$\$	\$\$\$	\$\$\$	\$\$\$	\$\$\$	\$\$\$
TOPEX01	Total opex	\$'000	\$\$\$	\$\$\$	\$\$\$	\$\$\$	\$\$\$	\$\$\$	\$\$\$	\$\$\$
	3.1.2 Historical opex categories and cost allocations									
TOPEX0101A	Network operations	\$'000						\$\$\$	\$\$\$	\$\$\$
TOPEX0102A	Asset management support	\$'000						\$\$\$	\$\$\$	\$\$\$
TOPEX0103A	Corporate costs	\$'000						\$\$\$	\$\$\$	\$\$\$
TOPEX0104A	Grid support	\$'000						\$\$\$	\$\$\$	\$\$\$
TOPEX0105A	Field maintenance	\$'000						\$\$\$	\$\$\$	\$\$\$
TOPEX01A	Total opex	\$'000						\$\$\$	\$\$\$	\$\$\$
TOPEX0101B	Network operations	\$'000				\$\$\$	\$\$\$			
TOPEX0102B	Asset management support	\$'000				\$\$\$	\$\$\$			
TOPEX0103B	Corporate costs	\$'000				\$\$\$	\$\$\$			
TOPEX0104B	Grid support	\$'000				\$\$\$	\$\$\$			
TOPEX0105B	Field maintenance	\$'000				\$\$\$	\$\$\$			
TOPEX01B	Total opex	\$'000				\$\$\$	\$\$\$			
TOPEX0101C	Network operations	\$'000	\$\$\$	\$\$\$	\$\$\$					
TOPEX0102C	Grid support	\$'000	\$\$\$	\$\$\$	\$\$\$					
TOPEX0103C	Field maintenance	\$'000	\$\$\$	\$\$\$	\$\$\$					
TOPEX01C	Total opex	\$'000	\$\$\$	\$\$\$	\$\$\$					

2013 cost allocation approach and accounting principles and policies

New CAM approved by AER in 2011

New reporting arrangements implemented 2008

Table 3.3 Provisions

TNSP must report, for all Regulatory Years, Financial Information on provisions for Prescribed Transmission Services in accordance with the Cost Allocation Approach and the Information Guidelines that were in effect for the relevant Regulatory Year.

TNSP must report Financial Information for each of its provisions. A provision is an account which records a specific present liability of an entity to another entity. Examples of provision accounts include employee entitlements, doubtful debts and uninsured losses. TNSP must complete the table for each individual provision and must add rows as necessary to the template for this purpose.

For each additional provision specify the name of the provision and add Variable codes for line items. A letter or letters must be added to the end of each Variable code link it to the provision. For example, the Variable codes for the first additional provision would be TOPEX0201A to TOPEX0212A, Variable codes for the second would be TOPEX0201B to TOPEX0212B and the Variable codes for the 28th provision would be TOPEX0201AA to TOPEX0212AA.

Box 4 Reporting framework for provisions

Provisions must be reported in accordance with the principles and policies within the Information Guidelines for each Regulatory Year.

Financial information on provisions should reconcile to the reported amounts for provisions in the Regulatory Accounting Statements for each Regulatory Year.

4 Assets (RAB)

This section applies to the worksheet entitled '4. Assets (RAB)' in the Templates. Economic benchmarking of NSPs requires data on the price, quantity and value for each output and input, together with data in relation to key operating environment conditions. The model specification recommended by Economic Insights provides for three aggregated categories of capital inputs, which are overhead lines, underground cables, and transformers and other capital.²

The relative weighting of each category of capital and the 'value' of capital inputs rely on measures of financial capital in each NSP's RAB. The value of each capital input is the 'Annual User Cost of Capital' (AUCC). Calculating the AUCC requires data in relation to the opening value of the asset, depreciation, the opportunity cost of funds used to purchase the asset and capital gains. In the context of the 'building blocks' framework, the AUCC is consistent with measures of the 'return-on' and the 'return-of' capital.

The relative weight of each category of capital is derived using:

- the value of capital input (again the AUCC); and
- the quantity of capital measured by a physical proxy of capital.

For example, a physical proxy of capital is the lines of capital input quantity measured in Megavolt ampere-kilometres (MVA-kms) derived using the sum of kilometres of line by voltage class, multiplied by the weighted average MVA rating for each class. Therefore, the data to calculate the AUCC is required for each capital input category employed in the economic benchmarking model. This requires allocation of the RAB into the specified capital input categories.

In the '4. Assets (RAB)' worksheet we are requiring RAB Assets be reported in line with our asset input categories for economic benchmarking.

4.1 Instructions

TNSP must report RAB values in accordance with the standard approach in section 4.1.1 and the Assets (RAB) Financial Reporting Framework in Box 5 below. This is a standard approach that must be used for RAB disaggregation to be followed by all Transmission Network Service Providers (TNSPs) (the **Standard Approach**).

Where TNSP believes it has sufficient information to provide a consistent RAB disaggregation into the categories in the Assets (RAB) worksheet that better reflects the values of those assets (the **Optional Additional Approach**), they may also provide this in a separate Excel worksheet.

In both cases we will require the provision of the Basis of Preparation for the allocated RAB values detailing the calculations undertaken. The disaggregated RAB values developed using the Optional Additional Approach must be reported in accordance with Tables 4.2 and 4.3. In both cases TNSP must provide a supporting worksheet detailing the calculations undertaken.

² For further information see: Economic Insights, *Economic benchmarking of electricity network service providers*, 25 June 2013.

Box 5 **Assets (RAB) Financial Reporting Framework**

RAB Financial Information must be allocated from, and reconcile to, the 'as commissioned' RAB. RAB Financial Information must reconcile to:

- For years prior to any AER determination of RAB values, determinations made in relation to RAB values made by the previous jurisdictional regulator.
- Any decision that the AER has made in relation to RAB values unless that decision incorporates forecasts (for example, for the last year of the previous regulatory period) in which case those forecast values should be replaced with actual values where possible. Actual values must reconcile to amounts reported in the response to the Information Guidelines.
- For years where the AER has not made a decision on values for the RAB, RAB values must be prepared in accordance with the RAB Framework. In this circumstance, actual additions (recognised in the RAB) and disposals must reconcile to amounts reported in the response to the Information Guidelines.

4.1.1 **Standard Approach**

Direct attribution to the AER's economic benchmarking RAB Asset classes

Where RAB Financial Information can be directly allocated to the RAB Assets (as per the definitions in chapter 9) it should be directly allocated to those RAB Assets. Financial Information can be directly allocated to RAB Asset class where that Financial Information relates to assets that wholly fall within the definition of that RAB Asset class. For example, financial data associated with towers can be directly allocated to Overhead Transmission Assets.

Where direct attribution to the economic benchmarking asset classes is not possible

RAB Financial Information that cannot be directly allocated to a single RAB Asset category should be allocated in accordance with the RAB allocation approach.

RAB allocation approach

- (a) RAB Financial Information that can be directly allocated to a group of RAB Assets, but cannot be directly allocated to an individual RAB Asset category, should be directly allocated to that group of RAB Assets, and then allocated across the individual categories in the group in accordance with this RAB allocation approach.
- (b) To allocate RAB Financial Information across RAB Assets, the RAB Financial Information must be allocated in direct proportion to the relevant RAB Asset's share of the total estimated depreciated replacement cost for that year (estimated in accordance with (c) and (d)).

In the event that the sum of the estimated disaggregated asset values for the RAB Assets for each year that are formed using (c) and (d) do not equal the total value of the RAB for that year, the disaggregated RAB series must be calculated by multiplying the total value of the

RAB by each RAB Asset's share of the sum of all asset values for that year formed using (c) and (d).

- (c) TNSP must estimate the depreciated replacement cost of their assets for each RAB Asset for which RAB Financial Information cannot be directly allocated. This estimation must be made for the most recent year for which the RAB Financial Information cannot be directly allocated. Where disaggregation is required for the whole period then this will be the 2013 Regulatory Year.
- This depreciated replacement cost estimate should be based on the physical asset data provided for lines, cables and transformers in the '6. *Physical Assets*' worksheet of the templates (for the relevant RAB Asset category); unit rate replacement costs applicable to TNSP for each of the physical asset categories and the weighted average asset age relative to the corresponding weighted average service life.
 - Estimation of the depreciated replacement costs can be undertaken for aggregate asset categories using best endeavours rather than a very detailed exercise. All assumptions, however, should be made clear.
 - Book values may be used for Easements, other long life assets and other short life assets.
- (d) To estimate the depreciated replacement cost for years prior to the estimated depreciated replacement cost developed under (c), the depreciated replacement cost estimate developed under (c) must be rolled back to 2006 using disaggregated capex data and depreciation in accordance with the RAB Framework.

The allocated values for the 2013 Regulatory Year are to be used as the basis for rolling forward the RAB for Regulatory Years subsequent to the 2013 Regulatory Year.

4.1.2 Optional Additional Approach

Where TNSP believes it has sufficient information to provide a consistent RAB disaggregation into the categories in the '4. *Assets (RAB)*' worksheet that better reflects the values of those assets in addition to the specified standard approach, this must be provided in a separate Excel worksheet, together with details of the calculations undertaken. For clarity, TNSP must still provide disaggregated RAB values using the standard approach if it chooses to also provide optional additional approach values.

The optional additional approach must be prepared in accordance with the Assets (RAB) Financial Reporting Framework. Further, TNSP must have the optional additional approach audited.

Table 4.1 Regulatory Asset Base Values

TNSP must report totals for RAB Financial Information for all years in this table. The total for the RAB Financial Information will reconcile with the RAB Financial Information provided in Table 4.2.

Table 4.2 Asset value roll forward

TNSP must report RAB Financial Information broken down in accordance with the RAB Assets as per the definitions of these categories provided in chapter 9.

Substation land should be reported against the 'Transmission switchyards, substations' category. Separate values for substation land must be provided in accompanying documentation to the RIN response.

When completing the templates for Regulatory Years subsequent to the 2013 Regulatory Year, if TNSP can provide Actual Information for the asset value roll forward Variables it must do so; otherwise TNSP must provide Estimated Information.

Table 4.3 Total disaggregated RAB Asset values

TNSP must report average RAB Asset values that have been disaggregated into the categories in this table. These must be calculated as the average of the opening and closing RAB values for the relevant Regulatory Year for each of the RAB Asset categories and should be directly reconcilable to the opening and closing values in Table 4.2 for the relevant categories.

When completing the templates for Regulatory Years subsequent to the 2013 Regulatory Year, if TNSP can provide Actual Information for total disaggregated RAB asset Variables it must do so; otherwise TNSP must provide Estimated Information.

Table 4.4 Asset lives

In relation to Table 4.4.1 'Asset Lives – estimated service life of new assets' and Table 4.4.2 'Asset lives – estimated residual service life', TNSP must report asset lives for all RAB Assets in accordance with the category definitions provided in chapter 9.

Where the categories comprise of a number of assets, asset lives for the whole category must be calculated by weighting the lives of individual assets within that category. Weightings must be calculated in order of preference:

1. On the basis of the asset's share of the RAB for the category and expected asset lives;
2. If 1 is not available, on the basis of replacement costs and expected asset lives;
3. If 1 and 2 cannot be applied, in accordance with the asset's contribution to the category's capacity (ie MVA-kms for lines and for cables and MVA for transformers).

The weighted average asset life of each category is as set out in Equation 1.

Equation 1 Weighted average asset life calculation

$$\text{Weighted average asset life for assets in category } j = \sum_{i=1}^n \frac{x_{i,j}}{RC_j} \cdot EL_{i,j}$$

Where:

n is the number of assets in category j

$x_{i,j}$ is the value of asset i in category j

$EL_{i,j}$ is the expected life of asset i in category j

RC_j is the sum of the value of all assets in category j

Where the weightings are based on RAB shares or replacement costs, the weighted average asset life of each category may, for two assets, be calculated in the following manner: If Category 1 contains 2 assets; Asset 1 has an expected life of 50 years and a value of \$3 million; and Asset 2 has an expected life of 20 years and a value \$2 million, then the weighted average asset life of assets in this category is 38 years: $[(3/5) \times 50] + [(2/5) \times 20] = 38$.

RAB is our preferred asset value measure for weighting but replacement cost is an acceptable proxy if disaggregation of the RAB to the relevant level is not possible (and capacity shares are then a further proxy to replacement cost shares).

When completing the templates for Regulatory Years subsequent to the 2013 Regulatory Year, if TNSP can provide Actual Information for asset lives it must do so; otherwise TNSP must provide Estimated Information.

Table 4.4.1 Asset Lives – estimated service life of new assets

TNSP must report the current expected service life of new assets in this table. The expected service life of new assets is the estimated period after installation of a new asset during which the asset will be capable of delivering the same effective service as it could at its installation date.

This may not align with the asset's financial or tax life.

Table 4.4.2 Asset Lives – estimated residual service life

TNSP must report a current estimation of the weighted average remaining time expected that an asset class (as per TRAB0901–TRAB0905) will deliver the same effective service as that asset class did at its installation date.

When completing the templates for Regulatory Years subsequent to the 2013 Regulatory Year, if TNSP can provide Actual Information for the residual service life variables it must do so; otherwise TNSP must provide Estimated Information.

5 Operational data

This section applies to the worksheet entitled '5. *Operational data*' in the Templates. Economic benchmarking examines the efficiency with which NSPs transform inputs into outputs. The data in this worksheet is required to for the output measures for energy delivery, connection points and Maximum Demand.

5.1 Instructions

Table 5.1 Energy delivery

Report the amount of electricity transported through TNSP's network in the relevant Regulatory Year (measured in GWh). This must be as metered at the downstream settlement location rather than the import location to TNSP's network. Energy delivered must be actual energy delivered data, unless this is unavailable.

Energy delivery 'To other connected transmission networks' (TOPED0101) must include both imported and exported energy.

Where energy delivery 'To directly connected end-users' (TOPED0103) is confidential, in the public version of the RIN Templates, cells associated with this Variable should be blacked out and energy delivered that would otherwise be reported as part of TOPED0103 must be included in energy delivered 'To Distribution networks' (TOPED0102).

Table 5.2 Connection point numbers

Connection point numbers must be reported as the average of connection point numbers in the relevant Regulatory Year under system normal conditions. The average is calculated as the average of the number of connection points on the first day of the Regulatory Year and on the last day of the Regulatory Year.

TNSP must report the number of entry and exit points at each voltage level. TNSP must add additional rows as necessary to Table 5.2 to report each voltage level for entry or exit points.

Table 5.3 System Demand

Table 5.3 must be completed in accordance with the definitions in chapter 9. TNSP must provide inputs for these cells if it calculates historical Weather Adjusted Maximum Demands.

Where TNSP does not calculate Weather Adjusted Maximum Demands it may estimate the historical Weather Adjusted data or shade the cells black. For Subsequent Regulatory Years TNSP will be required to provide Weather Adjusted Maximum Demand on an ongoing basis in accordance with best regulatory practice weather adjustment methodologies.

Table 5.3.3 Power factor conversion between MVA and MW

TNSP must report the power factor to allow for conversion between MVA and MW measures for each voltage. If both MVA and MW demand for a network are available then the power factor is the total MW divided by the total MVA. TNSP must provide a power factor for each voltage level and for the network as a whole. The average overall power factor conversion (TOPSD0301) is the total MW divided by the total MVA.

If either the MW or MVA measure is unavailable the average power factor conversion can be calculated as an approximation based on best engineering estimates.

When completing the Templates for Regulatory Years subsequent to the 2013 Regulatory Year, if TNSP can provide Actual Information for Table 5.3.3 it must do so; otherwise TNSP must provide Estimated Information.

6 Physical assets

This section applies to the worksheet entitled '6. *Physical Assets*' in the Templates. Economic benchmarking requires a quantity measure of the capital service flow used by the NSP in the production process. However, this cannot be directly observed. Only the quantity of the stock of capital can be observed at any point in time. Therefore, it is necessary to use proxy measures of capital service flow.

The recommended specification provided by Economic Insights provides physical measures of capital to be used as a proxy for capital service flow from assets.³ The capital service flow is assumed to be proportional to the capital stock and assumes a one-hoss shay physical depreciation profile.

We are requiring data be reported on the quantities and capacities of physical assets. Capacities are measured in MVA-kms for lines and cables and in MVA for transformers to be used as a measure of the capital service flow.

6.1 Instructions

For 'other transmission voltages' TNSP must add additional rows for voltages other than those already specified in the tables. An additional row must be added for each other voltage level. TNSP must specify the voltage for each other voltage level.

Table 6.1.1 Overhead network length of circuit at each voltage

TNSP is required to report overhead network length of circuit at each voltage level. The network length of circuit is the circuit length (measured in kilometres) of lines in service (the total length of lines including interconnectors, backbones and spurs). A double circuit line counts as twice the length. Length does not take into account vertical components such as sag.

Table 6.1.2 Underground cable circuit length at each voltage

TNSP is required to report underground cable circuit length at each voltage level. The underground cable circuit length is the circuit length (measured in kilometres) of lines in service (the total length of lines including interconnectors, backbones and spurs).

Table 6.1.3 Estimated overhead network weighted average MVA capacity by voltage class

TNSP must provide estimated typical or weighted average capacities for each of the listed voltage classes under normal circumstances taking account of limits imposed by thermal or by voltage drop considerations as relevant.

This information will be used to calculate an overall MVA x km 'carrying capacity' for each voltage class under normal circumstances. TNSP is required to provide summer Maximum Demands for summer peaking assets and winter Maximum Demands for winter peaking assets. If TNSP's peak has changed from winter to summer (or vice versa) over the time period, winter ratings should be applied for those years where there was a winter peak and summer ratings for those years where there were summer peaks.

³ For further information see: Economic Insights, *Economic benchmarking of electricity network service providers*, 25 June 2013

Where circuits travel both overhead and underground and the capacity of the overhead and underground components is not available separately, TNSP may split the circuit capacity by the ratio of the network that is overhead and underground to form estimates of the overhead capacity and underground capacity components.

6.1.4 Estimated underground network weighted average MVA capacity by voltage class

TNSP is required to provide estimated typical or weighted average capacities for each of the listed voltage classes under normal circumstances taking account of limits imposed by thermal or by voltage drop considerations as relevant. This information will be used to calculate an overall MVA x km 'carrying capacity' for each voltage class under normal circumstances. TNSP is required to provide summer Maximum Demands for summer peaking assets and winter Maximum Demands for winter peaking assets. If a TNSP's peak has changed from winter to summer (or vice versa) over the time period, winter ratings should be applied for those years where there was a winter peak and summer ratings for those years where there were summer peaks.

Where circuits travel both overhead and underground and the capacity of the overhead and underground components is not available separately, TNSP may split the circuit capacity by the ratio of the network that is overhead and underground to form estimates of the overhead capacity and underground capacity components.

From the 2015 Regulatory Year onwards TNSP is required to report actual overhead and underground capacity.

Table 6.1.5 Installed transmission system transformer capacity

TNSP must report transformer capacity involved in transformation levels indicated within the table. For the purposes of these measures the transmission system includes transformers, overhead and underground lines and cables in service that serve a transmission function. The transformer capacities Variables must be reported inclusive of Cold Spare Capacity.

For each level, report the summation of normal assigned continuous capacity or rating (with forced cooling or other capacity improving factors included if relevant). Also include capacity of tertiary windings as relevant. Assigned rating must be, if available, the rating determined from results of temperature rise calculations from testing or otherwise the nameplate rating. Do not include step-up transformers at generation connection location.

For category the 'Transformer Capacity for Directly Connected End-Users Owned by the End-User' (TPA0504), report transformer capacity at connection point to directly connected end user where the capacity is owned by the directly connected end user. Where TNSP knows what the directly-connected customer's transformer capacity is, it should include that information. Where this information is not available to TNSP, report a summation of non-coincident individual Maximum Demands of each such directly connected customer whenever they occur (ie the summation of a single annual Maximum Demand for each customer) as a proxy for capacity within the customer's installation. The Variable should be the sum of the direct information where this is available and of the proxy MVA measure where the direct measure is not available.

Where TNSP utilises installed transformer capacity which is not included in the other categories within this table, report this transformer capacity against 'other installed transformer capacity' (TPA0506) and specify its type.

Table 6.1.6 Cold Spare Capacity

Report the capacity of spare transformers owned by TNSP but not currently in use.

7 Quality of services

This section applies to the worksheet entitled '7. *Quality of services*' in the Templates. The quality of a NSP's services is an important dimension of the services it provides. Hence for economic benchmarking it is important to consider service quality, particularly because increases in measured efficiency may otherwise be achieved at the expense of service quality in either the short-term or the longer term. For this reason, we require TNSP to report information on the quality of its services in our Templates.

7.1 Instructions

Quality of services must be reported in accordance with the definitions specified in the December 2012 electricity transmission network service providers service target performance incentive scheme (STPIS) documents.⁴

Table 7.1 Service Component and table 7.2 Market Impact Component

Service Parameter 1 – Average Circuit outage rate

'Outage' means 'loss of connection' rather than loss of supply by a connected system or customer. To allow summation into an overall Average Circuit outage rate, both numerator (No. of Events with defined circuits unavailable per annum) and denominator (Total No. of defined circuits) are needed as well as the calculated percentage rate for each item.

'Number of lines fault outages' (TQS0102) and 'number of defined lines' (TQS0103) must be reported as the amounts used to calculate the "Lines outage rate - fault" (TQS0101).

'Number of Transformer fault outages' (TQS0105) and 'Number of defined Transformers' (TQS0106) must be reported as the amounts used to calculate the 'Transformers outage rate - fault' (TQS0104).

'Number of Reactive plant fault outages' (TQS0108) and 'Number of defined reactive plant' (TQS0109) must be reported as the amounts used to calculate 'Reactive plant outage rate - fault' (TQS0107).

'Number of Lines forced outages' (TQS0111) must be reported as the amount used to calculate the 'Lines outage rate – forced outage' (TQS0110).

'Number of Transformers forced outages' (TQS0113) must be reported as the amount used to calculate the 'transformer outage rate – forced outage' (TQS0112).

'Number of reactive plant forced outages' (TQS0115) must be reported as the amount used to calculate 'Reactive plant outage rate – forced outage' (TQS0115).

Service Parameter 2 – Loss of supply event frequency – number in ranges specified

TNSP must enter the loss of supply event frequency thresholds x and y in cells B23 and B24. Where the loss of supply event frequency thresholds have changed, TNSP must specify all loss of supply event frequency thresholds that applied in the period and the years to which they applied.

⁴ AER, *Final decision – Electricity transmission network service providers service target performance incentive scheme*, 20 December 2012

7.3 System losses

'System losses' (TQS03) must be calculated as:

$$\frac{(\text{Electricity inflows} - \text{electricity outflows}) \times 100}{\text{electricity inflows}}$$

where:

Electricity inflows is the total electricity inflow into TNSP's transmission network including from generation, other connected TNSPs at the connection point, and connected DNSPs as measured by revenue meters.

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

8 Operating environment factors

This section applies to the worksheet entitled '8. *Operating environment*' in the Templates. We are collecting operating environment factors to account for exogenous circumstances that may cause differences in productivity across networks. The Variables we are collecting in '8. *Operating environment*' relates to:

- terrain factors such as difficult terrain and vegetation encroachment
- network characteristics such as Variability Of Dispatch and distance to load generators
- weather stations which are required to analyse weather data from the Bureau of Meteorology.

8.1 Instructions

Table 8.1 Terrain factors

Complete the table in accordance with the definitions provided in chapter 9.

If TNSP records poles rather than spans, the number of spans is the number of poles less one.

We require five years of back cast data for the terrain factors and the following Variables have the most recent Regulatory Year shaded yellow and the remaining four years shaded orange:

- number of vegetation Maintenance Spans (TEF0101)
- Average Number Of Trees Per Maintenance Span (TEF0103)
- average number of Defects per vegetation Maintenance Span (TEF0104)
- tropical proportion (TEF0105)
- Standard Vehicle Access (TEF0106)
- Altitude (TEF0107)
- bushfire risk (TEF0108)

If TNSP has Actual Information, TNSP must report all years of available data. If TNSP does not have Actual Information on these Variables, then it must estimate data for the most recent Regulatory Year.

If there is no available data for the 'average vegetation Maintenance Span Cycle' Variable (TEF0102), TNSP is required to estimate five years of back cast data. The average vegetation Maintenance Span Cycle can be calculated based on a simple average of all the Maintenance Span Cycles.

Average number of trees per vegetation Maintenance Span

TNSP must report the Average Number of Trees per Maintenance Span. If TNSP does not have Actual Information for the Average Number of Trees per Maintenance Span it must, estimate this Variable using one or a combination of the following data sources:

- Encroachment Defects (e.g. ground or aerial Inspections, LiDAR) and/or records of vegetation works scoping, or GIS vegetation density data;

- Field surveys using a sample of Maintenance Spans within each vegetation management zone to assess the number of mature trees within the maintenance corridor. Sampling must provide a reasonable estimate and consider the nature of Maintenance Spans in urban versus rural environments in determining reasonable sample sizes.
- Vegetation data such as:
 - the Normalised Difference Vegetation Index (NDVI) grids and maps available from the Bureau of Meteorology (BOM);
 - data from the National Vegetation Information System (VIS data) overlaid on network GIS data to assess the density of vegetation in the direct vicinity of the Maintenance Spans; or
 - similar data from other sources such as Geoscience Australia or commercial suppliers of satellite imagery overlaid on network GIS data records.
- Any other data source based on expert advice.

TNSP must outline its estimation approach for the Average Number of Trees per Maintenance Span in its Basis of Preparation.

When completing the Templates for Regulatory Years subsequent to the 2013 Regulatory Year, if TNSP can provide Actual Information for the average number of trees per vegetation maintenance span it must do so; otherwise TNSP must provide Estimated Information.

Average number of Defects per vegetation Maintenance Span

TNSP must report the average number of vegetation related Defects that are recorded per Maintenance Span in the relevant year.

In its Basis of Preparation, TNSP must specify whether it records the total number of Defects for each vegetation Maintenance Span, or whether it records Defects on a vegetation Maintenance Span as one, regardless of the number of Defects on the span.

When completing the Templates for Regulatory Years subsequent to the 2013 Regulatory Year, if TNSP can provide Actual Information for the average number of defects per vegetation maintenance span it must do so; otherwise TNSP must provide Estimated Information.

Tropical spans

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

When completing the Templates for Regulatory Years subsequent to the 2013 Regulatory Year, if TNSP can provide Actual Information for tropical spans it must do so; otherwise TNSP must provide Estimated Information.

Bushfire risk

The bushfire risk Variable is the number of Maintenance Spans in high bushfire risk areas as classified by a person or organisation with appropriate expertise on fire risk. This includes but is not limited to:

- TNSP's jurisdictional fire authority
- local councils
- insurance companies
- TNSP's consultants
- Local fire experts

When completing the Templates for Regulatory Years subsequent to the 2013 Regulatory Year, if TNSP can provide Actual Information for bushfire risk it must do so; otherwise TNSP must provide Estimated Information.

Table 8.2 Network characteristics

Complete the table in accordance with the definitions provided in chapter 9.

TNSP must input the route line length of lines for TNSP's network. This is based on the distance between line segments and does not include vertical components such as line sag. The route line length does not necessarily equate to the circuit length as the circuit length may include multiple circuits.

Table 8.3 Weather stations

TNSP must input the weather station number, post code, suburb/locality for all weather stations in its service area. The weather station details are available from the BOM.

Where TNSP considers weather data from a weather station is not relevant to the management of its network, TNSP must input a 'no' in the 'Materiality' column and provide supporting evidence (in its Basis of Preparation) as to why the weather station is not relevant. For all other weather stations, TNSP must input a 'yes' in the 'Materiality' column.

TNSP must also input a Variable code for each weather station (for example, TEF03001 for the first weather station).

TNSP must add (or remove) rows from Table 8.3 such that all weather stations within its network will be included.

9 Definitions

Variable	Variable definition
Reporting framework	
Actual Information	<p>Information presented in response to the Notice whose presentation is Materially dependent on information recorded in the NSP's historical accounting records or other records used in the normal course of business, and whose presentation for the purposes of the Notice is not contingent on judgments and assumptions for which there are valid alternatives, which could lead to a Materially different presentation in the response to the Notice.</p> <p>'Accounting records' include trial balances, the general ledger, subsidiary accounting ledgers, journal entries and documentation to support journal entries. Actual Financial Information may include accounting estimates, such as accruals and provisions, and any adjustments made to the accounting records to populate the NSP's regulatory accounts and responses to the Notice. 'Records used in the normal course of business', for the purposes of Non-financial Information, includes asset registers, geographical information systems, outage analysis systems, and so on.</p>
Cost Allocation Approach	This is the cost allocation methodology in effect for the Regulatory Years where an AER approved cost allocation methodology is in effect. Otherwise this is the approach applied by TNSP to allocate costs in compliance with TNSP's Annual Reporting Requirements.
Directly Allocated (for RAB Financial Information)	Financial information can be Directly Allocated to a RAB Asset class where that financial information relates to assets that wholly fall within the definition of that RAB Asset class. For example, financial data associated with poles can be Directly Allocated to Overhead Transmission Assets (Wires And Towers/Poles etc).
Estimated Information	Information presented in response to the Notice whose presentation is not Materially dependent on information recorded in the NSP's historical accounting records or other records used in the normal course of business, and whose presentation for the purposes of the Notice is contingent on judgments and assumptions for which there are valid alternatives, which could lead to a Materially different presentation in the response to the Notice.
Financial Reporting Framework	The Financial Reporting Framework specifies the principles and policies that TNSP must adhere to when providing information in accordance with this RIN. This differs depending on the Financial Information. The Financial Reporting Framework for Financial Information is individually specified within these Instructions and definitions.
Income Statement	<p>Income Statement means the:</p> <ul style="list-style-type: none"> Income Statement - Prescribed Transmission Services; or statement of financial performance – Prescribed Transmission Services <p>as per the Information Guidelines.</p>
Information Guidelines	<p>The Information Guidelines are either of the following guidelines depending on which applied in the relevant Regulatory Year:</p> <ul style="list-style-type: none"> AER, Final Electricity transmission network service providers information guidelines, September 2007; or ACCC, Decision Statement of principles for the regulation of transmission revenues Information requirements guidelines, 5 June 2002

Material

Information is Material if its omission, misstatement or non-disclosure has the potential, individually or collectively to influence the economic decisions of users (including the AER) taken on the basis of the information provided in accordance with the Notice.

This definition is based on the definition of materiality in the accounting standard AASB 1031. This accounting standard provides context for the interpretation of this definition of materiality.

The Notice	The regulatory information Notice to which this document is an appendix.
------------	--

Prescribed Transmission Services	As defined in the National Electricity Rules (NER).
----------------------------------	---

RAB Framework	The RAB Framework is the method for calculating RAB financial values as set out in "AER, Final decision, amendment electricity transmission network service providers roll forward model handbook, December 2010" and "AER, Electricity Transmission Network Service Provider Roll Forward Model, Version: 2.0" or any subsequent revisions of these documents.
---------------	---

Regulatory Accounting Statements	Regulatory Accounting Statements are financial reports revealing the performance and financial situation of TNSP. They show the originating statutory account amount, its translation into a regulatory account amount and its disaggregation between the different categories of transmission services that it provides.
----------------------------------	---

Year coverage

Regulatory Control Period	As defined in the NER.
---------------------------	------------------------

Regulatory Year	Each consecutive period of 12 calendar months in a Regulatory Control Period (under the NER) or equivalent regulatory period under a preceding regulatory framework. The first such 12 month period commences at the beginning of the Regulatory Control Period (or equivalent regulatory period, as the case may be) and the final 12 month period ends at the end of the Regulatory Control Period (or equivalent regulatory period, as the case may be).
-----------------	---

3. Opex

Opex	The costs of operating and maintaining the network (excluding all capital costs and capital construction costs).
------	--

4. Assets (RAB)

Easements	An electricity easement is the right held by TNSP to control the use of land near above-ground and underground power lines and substations. It holds this right to ensure the landowner's safety and to allow staff access to work on the power lines at all times.
-----------	---

Other assets with long lives	Assets that are not Overhead Transmission Assets, Underground Transmission Assets, substations, switchyards and transformers which have asset lives of 10 years or greater used for provision of Prescribed Transmission Services only. This includes secondary substation equipment (protection, telecommunication and control systems) where these assets have lives of ten years or greater.
------------------------------	---

Other assets with short lives	Assets that are not Overhead Transmission Assets, Underground Transmission Assets, substations, switchyards and transformers which have asset lives of less than 10 years used for provision of Prescribed Transmission Services only. This includes secondary substation equipment (protection, telecommunication and control systems) where these assets have
-------------------------------	---

	lives of less than 10 years.
Overhead Transmission Assets (Wires and Towers/Poles etc)	Assets used to conduct electricity from one point to another above ground. These include poles, towers, insulators, pole-top structures and overhead conductors. However, it does not include overhead conductors used for communication, signal or protection purposes, or for the reticulation or control of any street lighting system. Overhead substations and their associated connection, fuses and transformers must be separately regarded as assets classified as substations and/or transformers.
RAB Asset	<p>The RAB Assets are:</p> <ul style="list-style-type: none"> Overhead Transmission Assets Underground Transmission Assets Substations, Switchyards and Transformers Easements Other assets with long lives Other assets with short lives
RAB Financial Information	For the purposes of the Assets (RAB) worksheet, RAB Financial Information includes the RAB opening value, inflation addition, straight line depreciation, regulatory depreciation, actual additions (recognised in RAB), disposals and the closing value for asset value. This financial data must be sourced from the 'Partially As Commissioned' RAB in the roll forward model.
RAB	The Regulatory Asset Base as referred to in S6A.2.1 of the NER.
Substations, Switchyards and Transformers	<p>Asset installations at intermediate locations for transmission service function, which incorporate transmission switchyards, substations etc (eg 500 kV to 330 kV, 330 kV to 132 kV and so on). This includes the following:</p> <ul style="list-style-type: none"> transformers and switchyards without transformers. transmission assets for connection to DNSPs or direct connected end use customers. energised transformers and Cold Spare Capacity. capacity of tertiary windings where relevant. relevant small equipment (eg circuit breakers and current transformers). <p>Do not include step-up transformers at generation connection location.</p>
Underground Transmission Assets (cables, ducts etc)	Assets used to conduct electricity from one point to another below ground. This includes cables, cable joints, cable terminations and other assets used to connect the underground network to the overhead system (which, but for the cable connection, would not have been necessary). It does not include communication, signal or protection cables, or cables which form part of any street lighting system. Ground mounted, indoor or submerged substations and their associated enclosures, switchgear and transformers must be separately regarded as assets classified as Substations, Switchyards and Transformers.
5. Operational data	
Maximum Demand	Maximum Demand is as defined in the NER
Probability of Exceedance	The probability that the actual weather circumstances will be such that the actual Maximum

(POE) Demand experienced will exceed the relevant Maximum Demand measure adjusted for weather correction.

A 50% Probability of Exceedance means that the Maximum Demand measure adjusted for weather correction is expected to be exceeded fifty out of every one hundred years.

System Demand System Demand must be measured at the downstream/output connection location.

Transmission System Coincident Maximum Demand This is the summation of actual unadjusted (ie not weather normalised) demands at TNSP's downstream connection and supply locations at the time when this summation is greatest. Include export demand at the time on interconnectors.

Transmission System Coincident Weather Adjusted Maximum Demand 10% POE This is the summation of the Weather Adjusted annual Maximum Demands at TNSP's downstream connection and supply locations at the 10 per cent POE level at the time when this summation is greatest. Include export demand at the time on interconnectors.

Transmission System Coincident Weather Adjusted Maximum Demand 50% POE This is the summation of the Weather Adjusted annual Maximum Demands at TNSP's downstream connection and supply locations at the 50 per cent POE level at the time when this summation is greatest. Include export demand at the time on interconnectors.

Transmission System Non-Coincident Summated Maximum Demand This is the actual unadjusted (ie not weather normalised) summation of actual raw demands at TNSP's downstream connection and supply locations irrespective of when they occur in the year. Include export demand at the time on interconnectors.

Transmission System Non-Coincident Weather Adjusted Summated Maximum Demand 10% POE This is the summation of the Weather Adjusted annual Maximum Demands at TNSP's downstream connection and supply locations at the 10 per cent POE level irrespective of when they occur in the year. Include export demand at the time on interconnectors.

Transmission System Non-Coincident Weather Adjusted Summated Maximum Demand 50% POE This is the summation of the Weather Adjusted annual Maximum Demands at TNSP's downstream connection and supply locations at the 50 per cent POE level irrespective of when they occur in the year. Include export demand at the time on interconnectors.

Weather Adjusted The removal of the impact of temperature fluctuations so as to derive a Maximum Demand measure corrected to a POE, usually 50% POE and/or 10% POE.

6. Physical assets

Circuit Line Length The length (measured in kilometres) of lines in service (the total length of lines including interconnectors, backbones and spurs). A double circuit line counts as twice the length. Length does not take into account vertical components such as sag.

Cold Spare Capacity The capacity of spare transformers owned by TNSP but not currently in use. Cold Spare Capacity incorporates both spare capacity and cold capacity. Cold capacity is equipment which is already on site, with connections already in place so that the device can be brought into service merely by switching operations but which is not normally load carrying. Spare capacity also includes spare assets, on site, or in the store, where physical movement and / or making of connections would require manual intervention at the site of use.

Interconnector Capacity This is TNSP's Network thermal capacity available for network interconnector purposes to another network – ie regarding other network as an export capacity required on the source network.

Terminal Points To DNSP Systems	This is the transformer capacity at connection point to the distribution network service provider.
Transformer Capacity for Directly Connected End-Users Owned by the TNSP	This is the transformer capacity at connection point to directly connected end user where the capacity is owned by the TNSP.
Transformer Capacity for Directly Connected end-Users Owned by the End-User	This is the transformer capacity at connection point to directly connected end users where the capacity is owned by the directly connected end user. Where this information is not known to the TNSP, it should be approximated by the summation of non-coincident individual Maximum Demands (in MVA) of directly connected end users whenever they occur (ie the summation of a single annual MD for each customer) as a proxy for capacity within those end users' installations.
Transmission Substations	This is the transformer capacity at intermediate locations for transmission service function
Transmission System Capacities Variables	<p>The transmission system capacity Variables are:</p> <ul style="list-style-type: none"> • Transmission Substations (eg 500 kV to 330 kV, 330kV to 132kV and so on) • Terminal Points to DNSP Systems • Transformer Capacity for Directly Connected End-Users Owned by the TNSP • Transformer Capacity for Directly Connected End-Users Owned by the End-User • Interconnector Capacity • Other installed transformer capacity - specify voltages <p>For the purposes of these measures the transmission system includes transformers, overhead and underground lines and cables in service that serve a transmission function. The transformer capacities Variables must be reported inclusive of Cold Spare Capacity.</p>
8. Operating environment factors	
Altitude	Route Line Length 600 metres above sea level.
Average Number of Trees per Maintenance Span	The estimated average of the number of trees within TNSP's vegetation Maintenance Spans. This includes only trees that require active vegetation management to meet its vegetation management obligations. This excludes trees that only require Inspections and no other vegetation management activities required to comply with TNSP's vegetation obligations.
Concentrated Load Distance	<p>Greatest distance (Route Line Length) from node having at least 30 per cent of generation capacity to node having at least 30 per cent of load, where a node is a connection point from a generation source or location to the (transmission) network at source end and a connection point to a load or distribution system at the destination end.</p> <p>Where there is no concentrated source or load above 30 per cent, respond relative to the largest concentrated source and load and indicate the generation and load magnitudes.</p>
Defect	A Defect is any recorded incidence of noncompliance with TNSP's vegetation clearance standard. This also includes vegetation outside TNSP's standard clearance zone that is recognised as hazardous vegetation and which would normally be reported as requiring management under TNSP's Inspection practices.
Inspection	Inspections only for the purpose of identifying trees or other vegetation that require trimming or removal. This includes vegetation scoping works, use of LiDAR and aerial Inspections.

Maintenance Span	A span in TNSP's network that is subject to active vegetation management practices in the relevant year. Active vegetation management practices do not include Inspection of vegetation Maintenance Spans.
Maintenance Span Cycle	The planned number of years between which cyclic vegetation maintenance is performed.
Route Line Length	The aggregate length in kilometres of lines, measured as the length of each span between poles and/or towers, and where the length of each span is considered only once irrespective of how many circuits it contains. This is the distance between line segments and does not include vertical components such as line sag.
Standard Vehicle Access	Areas with Standard Vehicle Access are serviced through made roads, gravel roads and open paddocks (including gated and fenced paddocks). An area with no Standard Vehicle Access would not be accessible by a two wheel drive vehicle.
Total Number of Maintenance Spans	The total count of spans in the network that are subject to vegetation management practices in the relevant year. If TNSP records towers rather than spans, the number of spans is the number of towers less one.
Variability Of Dispatch	Proportion of energy dispatch from non-thermal generators.