Draft

Electricity transmission network service providers

Service target performance incentive scheme

September 2012

AUSTRALIAN ENERGY REGULATOR

Inquiries about these guidelines should be addressed to:

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

AER reference: 45236 / D12/114822

Amendment record

Version	Date	Pages
01	31 August 2007	43
02	7 March 2008	51
03	31 March 2011	54
04 (draft)	3 September 2012	39

Contents

1 Nature and Authority

1.1 Introduction

Consistent with the requirements of clause 6A.7.4 of the National Electricity Rules (NER), this publication sets out the Australian Energy Regulator's (AER) *service target performance incentive scheme.*

1.2 Authority

Clause 6A.7.4 of the NER requires the AER to develop, in accordance with the *transmission consultation procedures*, the *service target performance incentive scheme*.

1.3 Role of the scheme

a) This *scheme*:

   1) defines the performance incentive scheme parameters that specify how a transmission network service provider's (TNSP) network reliability and market impact is measured

   2) sets out the requirements with which the values to be attributed to the *parameters* must comply

   3) will be used by the AER to decide the service target performance financial reward or penalty component of a *transmission determination*, and

   4) provides guidance about the approach the AER will take in reviewing a TNSP's service target performance and explain how this will affect a TNSP's *maximum allowed revenue*

b) The obligation of a TNSP to comply with this *scheme*:

   1) is additional to any obligation imposed under any other law applying to a TNSP, and

   2) does not derogate from such an obligation.

1.4 AER objectives

AER objectives for this scheme are that it:

a) contributes to the achievement of the *national electricity objective*

b) is consistent with the principles in clause 6A.7.4(b) of the NER

c) promotes transparency in:

1) the information provided by the TNSP to the AER, and

2) the decision made by the AER

d) assists in the setting of efficient capital and operating expenditure allowances in its *transmission determinations* by balancing the incentive to reduce actual expenditure with the need to maintain and improve *reliability* for customers and reduce the market impact of transmission congestion.

1.5 Confidentiality

The AER's obligations regarding confidentiality and the disclosure of information provided to it by a TNSP are governed by the *Competition and Consumer Act 2010*, the National Electricity Law and the NER.

1.6 Definitions and interpretation

a) In this *scheme*, the words and phrases presented in italics have the meaning given to them in:

1) the glossary, or

2) if not defined in the glossary, the NER.

b) Explanations in this *scheme* about why certain information is required are provided for guidance only.

1.7 Processes for revision

The AER may amend or replace this *scheme* from time to time in accordance with clause 6A.7.4(f) of the NER and the *transmission consultation procedures*.

1.8 Version history and effective date

A version number and an effective date of issue will identify every version of this *scheme*.

2 The service target performance incentive scheme

2.1 General application of the scheme

a) The *parameters* for each TNSP and the maximum revenue increment or decrement that a TNSP can receive for a given level of performance are prescribed in this *scheme*.

b) In each *transmission determination* the AER will approve or set the values that will apply to the TNSP's *parameters* for the *regulatory control period*.

c) The *maximum allowed revenue* that a TNSP can earn in each *regulatory year* will be adjusted according to its performance against the values included in its *transmission determination*, as assessed by the AER in accordance with this *scheme*.

2.2 Structure of the scheme

a) This *scheme* comprises the following three components:

1) the *service component*

2) the *market impact component*, and

3) the *network capability component*.

The *service component* applies to each TNSP subject to the *scheme* except Ausgrid (formerly EnergyAustralia). The *market impact component* applies to each TNSP subject to the *scheme* except Ausgrid.[1] The *network capability component* applies to each TNSP subject to the *scheme* except Ausgrid, Directlink and Murraylink.

b) The components set out:

1) the *parameters* that apply to each TNSP

2) the requirements with which values to be attributed to the *parameters* must comply, and

3) the maximum revenue or decrement that a TNSP may receive under each component of the *scheme*.

2.3 Addition, removal or variation of parameters

a) In accordance with clause 6A.7.4 of the NER and the *transmission consultation procedures*, the AER may amend this *scheme* to:

1) add, remove or vary a *parameter*, and

[1] The market impact component currently applies to TransGrid, Powerlink, ElectraNet and SP AusNet. It will apply to Murraylink at 1 July 2013, Transend at 1 July 2014 and Directlink at 1 July 2015.

2) vary the definition of a *parameter* in Appendix A, Appendix B or Appendix C.

The *parameters* and definitions can vary between TNSPs.

b) While this *scheme* can be amended at any time, an amendment cannot apply to a TNSP for a *regulatory control period* unless it is promulgated no less than 15 months before the commencement of that *regulatory control period* (the 'cut off date').

2.4 Timing of performance

a) TNSPs must measure their performance against the *parameters* and values applicable to the TNSP under this *scheme* on a calendar year basis within the *regulatory control period*. Unless stated otherwise in this *scheme*, the *calendar year* for each TNSP will run between 1 January and 31 December during a *regulatory control period*.

b) Where a TNSP's *regulatory control period*:

1) commences after 1 January (the beginning of the *calendar year*), the TNSP must measure its performance for that *calendar year* from the commencement of the *regulatory control period* until 31 December of that year

2) ceases before 31 December (the end of the *calendar year*), the TNSP must measure its performance for that *calendar year* from 1 January until the end of the *regulatory control period*.

2.5 Adjustments to maximum allowed revenue

a) The maximum revenue increment or decrement that a TNSP can receive for a given level of performance against its *parameters* and values is set out in clauses 3.3, 4.3 and 5.3 of this *scheme*.

b) The *s-factor* and *financial incentive* adjustment to the *maximum allowed revenue* for each TNSP will be calculated and approved annually by the AER in accordance with Appendix D.

c) This *scheme* does not operate retrospectively. An adjustment to a TNSP's *maximum allowed revenue* can only be made as a result of its performance in a period where *parameters* and values have been established under the *scheme* for the TNSP in advance of the relevant period.

3 Service component

3.1 Performance incentive scheme parameters and weightings

a) Appendix A contains the definitions of the following *parameters*:

   1) average circuit outage rate

   2) loss of supply event frequency

   3) average outage duration

   4) proper operation of protection and control equipment.

b) Appendix B prescribes and defines the *parameters* applicable to individual TNSPs under this *service component*. Appendix B may specify that no *parameters* apply to a TNSP under this *service component*.

c) If a TNSP is not referred to in Appendix B, the *parameters* and standard definitions in Appendix A apply to that TNSP under this *service component*.

3.2 Values for parameters

a) A TNSP must submit, in its *revenue proposal*, proposed values for the *parameters* applicable to the TNSP under this *service component*. The AER must accept these proposed values if they comply with the requirements specified in this clause 3.2 and this *scheme*.

b) For each *parameter* applying to the TNSP under this *service component*, the TNSP must propose the following values:

   1) a *performance target*

   2) a *collar*, and

   3) a *cap*.

c) A proposed *performance target* may take the form of a *performance deadband*.

d) Data used to calculate proposed values must be accurate and reliable.

e) The proposed *caps* and *collars* must be calculated by reference to the proposed *performance targets* and using a sound methodology. Adjustments to the proposed *performance targets* may result in adjustments to the proposed *caps* and *collars*.

f) A proposed *cap* and *collar* may result in symmetric or asymmetric incentives for the TNSP.

g) Subject to clause 3.2 h) to 3.2 k) below, proposed *performance targets* must be equal to the TNSP's average performance history over the most recent five years. The data used

to calculate the *performance target* must be consistently recorded based on the *parameter* definitions that apply to the TNSP under this *service component* of the *scheme*.

h) The AER may approve a *performance target* based on a different period if it is satisfied that the use of a different period is consistent with the objectives in clause 1.4 of this *scheme*.

i) If the performance history information described in clause 3.2 g) is not available, the AER may accept a *performance target* proposed by the TNSP if the AER is satisfied that the *performance target* is based on an appropriate benchmark or methodology.

j) Proposed *performance targets* may be subject to reasonable adjustment to allow for:

   1) statistical outliers

   2) the expected effects on the TNSP's performance from any increases or decreases in the volume of capital works planned during the *regulatory control period* (compared with the volume of capital works undertaken during the period used to calculate the *performance target*)

   3) the expected material effects on the TNSP's performance from any changes to the age and ratings of the assets comprising the TNSP's *transmission system* during the TNSP's next *regulatory control period* (compared to the age and ratings of the TNSP's assets comprising the TNSP's *transmission system* during the period used to calculate *performance targets*), and

   4) material changes to an applicable *regulatory obligation*.

k) Unless a *performance deadband* is applied, *performance targets*, *caps* and *collars* for loss of supply event frequency *parameters* must be rounded to the nearest integer number.

l) The AER may reject the proposed values where it forms the opinion that they are inconsistent with the objectives listed in clause 1.4 of this *scheme*.

3.3 Adjustments to maximum allowed revenue

The maximum revenue increment or decrement that a TNSP may earn against its *parameters* and values under this *service component* is 1 per cent of the TNSP's *maximum allowed revenue* for the relevant *calendar year*. That is, under this *service component* a TNSP will receive a *financial incentive* that falls within a range of plus or minus 1 per cent of the TNSP's *maximum allowed revenue*.

3.4 Weighting of parameters

Tables 1 and 2 detail the *weightings* for each of the *service component parameters*, and how the *weighting* is apportioned to each of the sub-parameters. Table 1 provides the *weightings* for all TNSPs except Murraylink and Directlink, whose *weightings* are provided in Table 2.

Where there is insufficient accurate and reliable data available for determining the values of a *parameter* or sub-parameters applying to a TNSP under this *service component*, the AER may reduce the *weighting* for that *parameter* or sub-parameter to zero.

Table 1: Weightings for each parameter/sub parameter (except Murraylink and Directlink)

Parameter	Weighting (MAR %)
Average circuit outage rate:	**0.50**
Line outage - fault	0.20
Transformer outage – fault	0.20
Reactive plant – fault	0.10
Line outage – forced outage	0.00
Transformer outage – forced outage	0.00
Reactive plant – forced outage	0.00
Loss of supply event frequency:	**0.30**
> (x) system minutes	0.15
> (y) system minutes	0.15
Average outage duration:	**0.20**
Single circuit assets	0.10
Multiple circuit assets	0.10
Proper operation of protection and control equipment:	**0.00**

Table 2: Weightings for each parameter/sub parameter for Murraylink and Directlink

Parameter	Weighting (MAR %)
Average circuit outage rate:	**1.00**
Circuit outage - fault	1.00
Circuit outage – forced outage	0.00
Proper operation of protection and control equipment:	**0.00**

4 Market impact component

4.1 Performance incentive scheme

Appendix C contains the definition of the market impact *parameter*. The *parameter* is applicable to all TNSPs subject to this *market impact component.*

4.2 Values for parameter

a) Each TNSP subject to this *market impact component* must submit, in its revenue proposal, a *performance target* for the market impact *parameter*. The AER must accept this proposed value if it complies with the requirements specified in this clause 4.2 of the *scheme*.

b) Data used to calculate the proposed values must be accurate and reliable.

c) Subject to paragraphs (d) and (e) below, the proposed *performance target* must be equal to the TNSP's average performance history over the preceding three calendar years of the performance measure, as detailed in Appendix E. The data used to calculate the *performance target* must be consistently recorded based on the *parameter* definition in Appendix C.

d) The proposed *performance target* may be subject to reasonable adjustment to allow for:

    1) statistical outliers

    2) the expected material effects on the TNSP's performance from any changes to the age and ratings of the assets comprising the TNSP's *transmission system* during the TNSP's next *regulatory control period* (compared to the age and ratings of the TNSP's assets comprising the TNSP's *transmission system* during the period used to calculate *performance target*), and

    3) material changes to an applicable *regulatory obligation*.

e) The AER may reject the proposed values where it forms the opinion that they are inconsistent with the objectives listed in clause 1.4 of this *scheme*.

4.3 Adjustments to maximum allowed revenue

The maximum revenue increment that a TNSP may earn against its *parameter* and values under this *market impact component* is 2 per cent of the TNSP's *maximum allowed revenue* for the relevant *calendar year*. That is, under the *market impact component*, a TNSP will receive a *financial incentive* which falls within a range of 0 and 2 per cent of the TNSP's *maximum allowed revenue*.

5 Network capability component

5.1 Network capability incentive scheme parameter

The network capability incentive scheme *parameter* is applicable to all TNSPs subject to the *network capability component*.

5.2 Network capability improvement parameter

a) The network capability improvement *parameter* measures the improvements in the capability of transmission assets through operational expenditure and minor capital expenditure on a TNSP's network which results in :

   1) improved capability of those elements of the transmission system most important to determining spot prices, or

   2) improved capability of the transmission system at times when Transmission Network Users place greatest value on the reliability of the transmission system.

b) A TNSP must submit, in the STPIS component of its *revenue proposal*, a network capability improvement parameter action plan (NCIPAP):

   1) identifying for every transmission circuit or injection point on its network, the reason for the limit for each transmission circuit or load injection point.

   2) proposing the *priority projects* to be undertaken in the *regulatory control period* to improve the limit of the transmission circuits and injection points listed above through operational and/or minor capital expenditure projects. This proposal must include:

      i. the total operational and capital cost of each *priority project*

      ii. the proposed value of the *priority project* improvement target in the limit for each *priority project*

      iii. the current value of the limit for the transmission circuits and/or load injection points which the *priority project* improvement target is seeking to improve, and

      iv. the ranking of the *priority projects* in descending order based on the likely benefit of the *priority project* on customers or wholesale market outcomes

      in which the average total expenditure of the *priority projects* outlined in each *regulatory year* must not be greater than 1 per cent of the TNSP's average proposed *maximum allowed revenue* for the *regulatory control period*.

c) The *priority project* improvement target must result in a material improvement in the transmission circuit or load injection point limit.

d) Capital expenditure for a project will be considered to be minor capital expenditure if it has an estimated capital cost less than the cost threshold for the proposed *transmission investment* to be subject to the *regulatory investment test for transmission* in clause 5.6.5C(2) of the NER.

e) A *priority project* may address multiple limiting elements across transmission circuits and/or load injection points in the TNSP's network.

f) The AER must approve the TNSP's *priority project* improvement targets if it is consistent with the requirements in this clause 5.2 and this *scheme.*

g) In determining if the *priority project* improvement target results in a material improvement, the AER may take into the account the following:

    1) the likely effect of the *priority project* improvement target on wholesale market outcomes

    2) the likely effect of the *priority project* improvement target in ensuring that the transmission network can meet demand at a load injection point without network augmentation or replacement

    3) whether the *priority project* improvement target is appropriate, taking into account the forecast changes in demand at a relevant load injection point

    4) the benefits to consumers resulting from the improvement target being achieved, and

    5) any relevant information contained in the TNSP's most recent annual planning report.

h) The TNSP must consult with *AEMO* prior to submitting the NCIPAP as to:

    1) whether the proposed *priority project* improvement targets for its projects will result in a material improvement

    2) which projects should be classified as *priority projects* based on their likely impact on consumers or wholesale market outcomes, and

    3) the ranking of the *priority projects*.

i) If there is any disagreement between the TNSP and *AEMO* as to:

    1) whether a project should be classified as a *priority project*, or

    2) whether an *priority project* improvement target will result in a material improvement, or

    3) the ranking the *priority projects*,

    then the TNSP will include in its NCIPAP any disagreement with *AEMO* and the grounds for disagreement.

j) The AER may amend a *priority project* limit improvement target proposed by the TNSP to ensure consistency with the objectives of the *scheme* where:

   1) the AER considers the target would result in a material improvement and the TNSP agrees to the AER's amended improvement target; or

   2) the AER considers the target would result in a material improvement and *AEMO* considers the improvement target can be achieved by the TNSP within the next *regulatory control period*.

k) The AER must reject the TNSP's proposed *priority project* if it is inconsistent with the requirements in this clause 5.2 and the objectives of the *scheme*.

l) The AER may amend the ranking of the *priority projects* to ensure consistency with the requirements in clause 5 and the objectives of the *scheme*.

m) The TNSP must in each annual STPIS compliance review report on steps it has taken towards reaching the *priority project* improvement target against each project in the NCIPAP approved by the AER for each year or part year of the *regulatory control period*. The TNSP must include in this report:

   1) the current value of limit of the transmission circuits and/or load injection points which the *priority projects* seek to address

   2) up-to-date actual operational and capital expenditure for each *priority project*, and

   3) the expected completion date for each *priority project*.

n) If 1.5 per cent of the TNSP's average maximum allowed revenue for the regulatory control period is less than 1 per cent of the TNSP's average proposed maximum allowed revenue, then the AER must reduce the number of *priority projects* until the average annual cost of the *priority projects* is less than 1.5 percent of the TNSP's average maximum allowed revenue. In reducing the number of *priority projects*, the AER has discretion over which projects are to be removed.

   Note: This is to ensure that the TNSP's priority projects in the regulatory control period can be funded solely via the incentive payments provided under clause 5.3 of this scheme.

o) The cost of the proposed *priority projects* must not be included:

   1) in the total forecast operating expenditure proposed by the TNSP in its revenue proposal to meet the *operating expenditure objectives* under clause 6A.6.6 of the NER.

   2) in the total forecast capital expenditure proposed by the TNSP in its revenue proposal to meet the *capital expenditure objectives* under clause 6A.6.7 of the NER.

5.3 Network capability parameter incentive payments

a) As part of the *financial incentive*, in each *regulatory year* the TNSP will receive an incentive allowance under the network capability component equal to 1.5 per cent of its *maximum allowed revenue* for the first four years of the *regulatory control period*.

   As part of the *financial incentive*, for the final year of the *regulatory control period*, if the TNSP achieves its *priority* project improvement target for each *priority project*, then the TNSP will receive an incentive payment equal to 1.5 per cent of its *maximum allowed revenue* under the network capability component. If the TNSP does not achieve its *priority project* improvement target for a priority project, then sub-clauses b) and c) apply.

b) If the TNSP does not achieve its *priority project* improvement target for a *priority project*, then the AER may reduce the incentive payment received by the TNSP under the network capability component, taking into account the factors in clauses 5.3(e)-(f), in the final regulatory year by:

   1) for a *priority project* ranked in the top 50 percentile of *priority projects*, a reduction equal to 2.5 per cent of the TNSP's *maximum allowed revenue* divided by the number of *priority projects* ranked in the top 50 percentile of *priority projects*

   2) for a *priority project* ranked in the bottom 50 percentile of priority projects, a reduction equal to 1 per cent of the TNSP's *maximum allowed revenue* divided by the number of *priority projects* ranked in the bottom 50 percentile of *priority projects*

   The maximum total *maximum allowed revenue* that can be reduced in this manner for a TNSP is 3.5 per cent. The assessment of whether a reduction applies will be made when a TNSP submits its annual STPIS compliance review following the end of the *regulatory control period*.

c) Where the AER reduces a TNSP's incentive payment under sub-clause b), the incentive payment which will apply for the final year of the *regulatory control period* will be equal to 1.5 per cent minus the total sum of the reduction imposed by the AER under sub-clause b).

   Note: the lowest incentive payment that a TNSP can receive is a negative incentive payment of –2.0 per cent of its *maximum allowed revenue* for the final year of the *regulatory control period*.

d) A TNSP will be taken not to achieve its *priority project* improvement target if the target has been achieved through network augmentation or replacement of existing network assets with a capital cost greater than outlined in the TNSP's proposal.

e) In deciding whether to reduce a TNSP's incentive payment under sub-clause b), the AER must take into account:

   1) whether, despite the *priority project* improvement target not being achieved, there has still been a material improvement in network capability

2) whether the failure to achieve the *priority project* improvement target has been due to factors or events outside the control of the TNSP, and

3) whether it is likely that due to the actions undertaken by the TNSP, there will be a material improvement in the capability of the identified transmission circuit or load injection point in the future.

f) For avoidance of doubt, the AER may consider the factors outlined in sub-clause 5.2(g) in assessing whether there is a material improvement

6 Information and reporting requirements

6.1 Information gathering by the AER

The AER may make information requests of TNSPs using the *information guidelines,* the *submission guidelines*, and regulatory information notices (RINs). TNSPs must comply with requirements under the *information guidelines,* when submitting annual or ad hoc information to the AER during the course of a *regulatory control period*. TNSPs must comply with the *submission guidelines* when submitting revenue proposals. In addition, the AER may use its broad information gathering powers under the National Electricity Law to issue RINs requiring that TNSPs provide information, and/or prepare, maintain or keep information in certain manners and forms for the purpose of enabling the AER to determine any adjustments to TNSP revenue for each regulatory year.

6.2 Information to be requested under submission guidelines

A TNSP must include information on its proposed *parameter* values in its *revenue proposal* in accordance with the *submission guidelines*.

6.3 Information to be requested under information guidelines or RINs

A TNSP must report to the AER information under this *scheme* in accordance with the *information guidelines* or a RIN, where applicable. Information obtained under the *information guidelines* will be used to monitor and report on TNSP performance under the STPIS.[2] In addition, information obtained under both the *information guidelines* or a RIN will be used to determine adjustments to TNSP revenue for the regulatory year to which the STPIS applies.

This report must include details of responses by TNSPs to *force majeure events* that have been excluded from the *service component* and the *market impact component*.

6.4 Annual compliance review

a) The AER will review the service performance information that a TNSP is required to provide annually under the *information guidelines* or a RIN, where applicable.

b) In undertaking the review referred to in clause 6.4(a), the AER may assess:

    1) the appropriateness and accuracy of the TNSP's data collection, reporting and recording processes and systems

[2] Clause 6A.17.1(d)(4), Electricity Rules.

2) whether the performance data reported is consistent with the *parameter* definitions and *other elements* contained in Appendix A or Appendix B, Appendix C and the *transmission determination*, and

3) whether the *financial incentive* proposed by the TNSP has been calculated in accordance with this *scheme*.

c) The AER will advise the TNSP of the outcome of any review conducted under clause 6.4(a).

d) The timetable for the review referred to in clause 6.4(a) will be decided on an annual basis by agreement between the AER and the relevant TNSP and will have due regard to this *scheme* and the TNSP's pricing obligations under the NER.

6.5 Changes to data collection

a) A TNSP must notify the AER in writing as soon as it becomes aware of or plans any *material changes* to data collection or recording methods used by the TNSP to record and report on the TNSP's performance against the TNSP's *parameters*.

b) Any notice provided to the AER under clause 6.5(a) must include an assessment of whether the changes to the data collection or recording methods allow the TNSP to accurately record and report on the TNSP's performance against one of the *parameters* applicable to the TNSP.

c) The AER may amend this *scheme* as a result of the TNSP's new data collection methods.

Glossary

This *scheme* uses the following definitions.

cap	the level of performance that results in a TNSP receiving the maximum financial reward attributed to a *parameter*.
calendar year	has the meaning set out in clause 2.4.
collar	the level of performance that results in a TNSP receiving the maximum financial penalty attributed to a *parameter*.
financial incentive	the dollar value of the revenue increment or decrement that the *maximum allowed revenue* is adjusted by in each *regulatory year* based on a TNSP's performance in the preceding *calendar year*.
force majeure event	has the meaning set out in Appendix F.
marginal value	has the meaning set out in Appendix C.
market impact component	section 4 of this *scheme*.
market systems	*AEMO*'s systems for operating the *national electricity market*, and for recording and publishing data relating to the operation of the *national electricity market*.
material change	a change that can influence the outcomes that may otherwise result.
national electricity objective	has the meaning set out in the National Electricity Law.
National Electricity Rules or NER	the rules as defined in the National Electricity Law.
network capability component	section 5 of this *scheme*.
network outage constraint	has the meaning set out in Appendix C.
other elements	the unit of measure, source of data, exclusions and inclusions relating to a parameter
parameters	the *performance incentive scheme parameters* and includes the sub-parameters, where applicable.
performance deadbands	a *performance target* that is set over a range of values, within which a TNSP neither receives a financial penalty nor financial reward in the *regulatory year*.
performance target	the level of performance that results in a TNSP neither receiving a financial penalty nor financial reward in the *regulatory year*.
priority project	a project which is likely to result in a material benefit to customers or wholesale market outcomes and is identified in the TNSP's NCIPAP under clause 5.2(b)(1).
return period	the average period at which events of a specified size will occur.
RIN	regulatory information notice
service component	section 3 of this *scheme*.

service target performance incentive scheme or scheme	the *service target performance incentive scheme* defined in the NER.
s-factor or service standards factor	the percentage revenue increment or decrement that the *maximum allowed revenue* is adjusted by in each *regulatory* year based on a TNSP's performance in the previous *calendar year*.
TNSP	*transmission network service provider* as defined in the NER.
Weightings	the proportion of the *financial incentive* under the *service component* allocated to each of *parameters* applying to the TNSP under the *service component*.

A Service component – performance incentive scheme parameters – standard definitions

Parameter 1	**Average circuit outage rate**
Sub-parameters	lines outage rate - fault transformers outage rate - fault reactive plant outage rate - fault lines outage rate – forced outage transformer outage rate – forced outage reactive plant outage rate – forced outage
Unit of measure	average circuit outage rate
Source of data	TNSP outage reports and system
Definition/formula	formula: $\frac{\text{No. of events (defined circuits unavailable) per annum}}{\text{Total no. of defined circuits}} \times 100\%$ definition: the actual number of times defined transmission circuits are unavailable due to unplanned (fault/forced) outages divided by the total number of defined (lines/transformer/reactive) circuits. forced outage means the urgent and unplanned reduction in the availability of defined circuits that occurs as a necessary consequence of the identification of the actual or imminent occurrence of an event that poses, or has the potential to pose, an immediate threat to the safety of persons, hazard to any equipment of property or a threat to power system security outages of sub-components of a primary piece of equipment, such as static var compensator transformers, are measured as an outage of the primary equipment type, ie the static var compensator
Inclusions	'circuits' includes overhead lines, underground cables, power transformers, phase shifting transformers, static var compensators, capacitor banks, and any other primary transmission equipment essential for the successful operation of the transmission system (TNSP to provide lists on an annual basis). For the avoidance of doubt, the following equipment is excluded: individual circuit breakers and isolators, secondary systems including protection and control equipment and auxiliary transformers 'fault outages' to include outages from all causes including emergency events and extreme events 'forced outages' are outages where less than 24 hours notification was given to affected customers (except where *AEMO* reschedules the outage after notification has been provided)
Exclusions	outages on assets that are not providing *prescribed transmission services*

exclude from ‘fault outages’ and ‘forced outages’ any outages shown to be primarily caused or initiated by a fault or other event on a third party system —e.g. intertrip signal, generator outage, customer installation

exclude from ‘forced outages’ any outages caused by a direction from fire services or *AEMO*

force majeure events

transient interruptions (less than one minute duration)

for the reactive plant sub-parameters only:

capacitor banks and reactors operating at less than 66kV

NOTE: the TNSP must provide a list to the AER each year of the events that the TNSP considers should be excluded from performance results, including reasons and how the event meets the relevant exclusion definition. The AER will exercise its discretion to reject the TNSP’s exclusion claims where insufficient justification has been provided.

Parameter 2	**Loss of supply event frequency**
Unit of measure	number of events per annum
Source of data	TNSP outage reports and system for circuit availability
Definition/formula	number of events greater than x system minutes per annum number of events greater than y system minutes per annum formula: system minutes are calculated for each supply interruption by the "Load Integration Method" using the following formula: $\text{System minute} = \frac{\Sigma (\text{MWh unsupplied} \times 60)}{\text{MW peak demand}}$ where: MWh unsupplied is the energy not supplied as determined by using NEM metering and substation load data. This data is used to estimate the profile of the load over the period of the interruption by reference to historical load data period of the interruption starts when a loss of supply occurs and ends at the point at which supply restoration is offered to the customer. For supply outages resulting from an under-frequency event, the period of the interruption is capped at half an hour. This is done to include the impact of automatic under-frequency load shedding, but to exclude the impact of any market failure to respond and restore load within required timeframes MW peak demand means the maximum amount of aggregated electricity demand recorded at entry points to the TNSP's transmission network and interconnector connection points at any time previously an interruption >y system minute also registers as a >x system minute event interruptions affecting multiple connection points at exactly the same time are aggregated (i.e. system minutes are calculated by events rather than connection point interruptions) the x system minute and y system minute thresholds are as follows:

TNSP	x system minute	y system minute
ElectraNet	0.05	0.20
Powerlink	0.10	0.75
SP Ausnet	0.05	0.30
TransGrid	0.05	0.25
Transend	0.10	1.00

Inclusions	all unplanned outages exceeding the specified impact (that is, x minutes and y minutes) unplanned outages on all assets providing *prescribed transmission service* outages from all causes including emergency events and extreme events forced outages where notification to affected customers was less than 24 hours (except where *AEMO* reschedules the outage after notification has been provided).
Exclusions	outages on assets that are not providing *prescribed transmission service* any unplanned outages shown to be primarily caused or initiated by a fault or other event on a third party system — e.g. intertrip signal, generator outage, customer installation any unplanned outages caused by a direction from fire services or *AEMO* planned outages transient interruptions (less than one minute duration) interruptions of infrequent, occasional loads (such as pumping stations) where accurate estimate of load profiles is unreliable *force majeure events* NOTE: the TNSP must provide a list to the AER each year of the events that the TNSP considers should be excluded from performance results, including reasons and how the event meets the relevant exclusion definition. The AER will exercise its discretion to reject the TNSP's exclusion claims where insufficient justification has been provided

Parameter 3	**Average outage duration**
Sub-parameters	single circuit assets multi-circuit assets
Unit of measure	minutes
Source of data	TNSP outage reports and system
Definition/formula	formula: $\frac{\text{Aggregate duration (in minutes) of all unplanned outages with a loss of supply}}{\text{No. of events}}$ definition: the cumulative summation of the outage duration time for the period, divided by the number of outage events where loss of supply occurred during the period Single circuit transmission assets are assets, such as radial lines, supplying a connection point using a single circuit (such that the loss of a single transmission circuit would cause supply interruption to some customers). Multi-circuit assets are all other assets where supply may not be interrupted where there is an unplanned outage of any one circuit. the start of each outage event starts when a loss of supply occurs and ends at the point at which supply restoration is offered to the customer the impact of each event is capped at seven days
Inclusions	outages on assets that are providing *prescribed transmission services* all forced and fault outages where a loss of supply occurs fault outages includes outages from all causes including emergency events and extreme events forced outages are outages where less than 24 hours notification was given to affected customers (except where *AEMO* reschedules the outage after notification has been provided)
Exclusions	outages on assets that are not providing *prescribed transmission services* any unplanned outages shown to be primarily caused or initiated by a fault or other event on a third party system — e.g. intertrip signal, generator outage, customer installation any unplanned outages caused by a direction from fire services or *AEMO* planned outages transient interruptions (less than one minute duration) *force majeure events*

NOTE: the TNSP must provide a list to the AER each year of the events that the TNSP considers should be excluded from performance results, including reasons and how the event meets the relevant exclusion definition. The AER will exercise its discretion to reject the TNSP's exclusion claims where insufficient justification has been provided

Parameter 4	**Proper operation of protection and control equipment**
Sub-parameters	Failure of protection system Material failure of the Supervisory Control and Data Acquisition (SCADA) system Incorrect operational isolation of primary or secondary equipment
Unit of measure	number of events
Source of data	TNSP outage reports TNSP compliance monitoring systems *AEMO* reports
Definition/formula	Failure of protection system formula: No. of protection system failure events per annum where: 'protection failure events' are those events where the relevant protection equipment does not operate for a fault event as designed or where the relevant equipment operates when there is no relevant fault event. Material failure of the SCADA system formula: No. of SCADA failures per annum where: 'SCADA failures' are those events notified to the TNSP by *AEMO* on a monthly basis in the SCADA Minutes Lost report Incorrect operational isolation of primary or secondary equipment formula: No. of incorrect operational isolation events per annum where: 'incorrect operational isolation events' are those events where primary or secondary equipment has not been properly isolated during scheduled or emergency maintenance
Inclusions	'protection equipment' includes equipment designed to monitor or protect the function of primary equipment of the *transmission system.* 'Primary equipment' includes overhead lines, underground cables, power transformers, phase shifting transformers, static var compensators, capacitor banks, and any other primary transmission equipment essential for the successful operation of the *transmission system* The failure of one piece of protection or control equipment where there is a backup or duplicate protection or control equipment for the relevant element

Exclusions	protection equipment for those assets that are not providing *prescribed transmission service* The failure of primary equipment, such as circuit breakers, to respond to signals sent by protection or control equipment *force majeure events* NOTE: the TNSP must provide a list to the AER each year of the events that the TNSP considers should be excluded from performance results, including reasons and how the event meets the relevant exclusion definition. The AER will exercise its discretion to reject the TNSP's exclusion claims where insufficient justification has been provided.

B Service component – performance incentive scheme parameters and definitions applicable to individual TNSPs

Part 1—Directlink

Parameter 1 **Average circuit outage rate**

The standard definition applies with the following modifications:

1. Replace the sub-parameters in the standard definition with the following sub-parameters:

   circuit outage rate - fault

   circuit outage rate – forced outage

Parameter 2 **Loss of supply event frequency**

This parameter does not apply to Directlink.

Parameter 3 **Average outage duration**

This parameter does not apply to Directlink.

Parameter 4 **Proper operation of protection and control equipment**

The standard definition applies.

Part 2—Murraylink

Parameter 1 **Average circuit outage rate**

The standard definition applies with the following modifications:

1. Replace the sub-parameters in the standard definition with the following sub-parameters:

   circuit outage rate - fault

   circuit outage rate – forced outage

Parameter 2 **Loss of supply event frequency**

This parameter does not apply to Murraylink.

Parameter 3 **Average outage duration**

This parameter does not apply to Murraylink.

Parameter 4 **Proper operation of protection and control equipment**

The standard definition applies.

C Market impact component – performance incentive scheme parameter

Market impact parameter

Unit of measure:	Number of dispatch intervals

Definition:

The market impact *parameter* is the number of *dispatch intervals* where an outage on a TNSP's network results in a *network outage constraint* with a *marginal value* greater than $10/MWh.

Where:

dispatch interval has the meaning set out in the NER.

network outage constraint is the change to the physical capability of the transmission network following the outage of transmission network equipment from service as identified by and recorded in the market systems.

the *marginal value* is published in the *market systems* and is an indication of the change, at the margin, in the cost of producing electricity sufficient to meet demand brought about by a particular *network outage constraint*.

Where there is more than one *network outage constraint* with a *marginal value* greater than $10/MWh in one *dispatch interval*, the market impact parameter counts the *dispatch interval* for each *network outage constraint* (that is, the same dispatch interval may be counted more than once).

To measure a TNSP's performance against this market impact *parameter*, the AER will allocate each network outage constraint to the TNSP responsible for the constraint using:

1. the Market Information on Planned Network Outages, which is published every month by AEMO based on information provided by the TNSPs as required under clause 3.7A of the NER, or
2. the Network Outage Schedule, which is published by AEMO on its website based on information provided by the TNSPs or
3. the description in the constraint set published by AEMO of why the constraint was invoked or
4. where it is not clear from (1), (2) or (3), the published market management system data or other information provided by AEMO.

Where the information described in (1), (2), (3) or (4) indicates that more than one TNSP is responsible for a single *network outage constraint* (for example an outage affecting an interconnector), the number of *dispatch intervals* is apportioned equally between the TNSPs.

Exclusions

1. *force majeure events*
2. network constraints that are invoked to manage the reclassification of *non-credible contingency events* to *credible contingency events* as per clause 4.2.3(f) of the NER
3. any unplanned outages shown to be primarily caused or initiated by a fault or other event on a third party system — e.g. intertrip signal, generator outage, customer installation
4. outages on assets that are not providing *prescribed transmission services*
5. outages for personal safety that are not related to the activity of owning or operating a *transmission network*
6. outages that are only for the purpose of assisting with operational security, for example where a lower voltage parallel circuit is taken out of service to assist with transfers across an interconnector
7. network constraints related to network support services in accordance with clause 5.6.2 of the NER
8. *dispatch intervals* (for a *network outage constraint*) that are affected by:
    a. a manifestly incorrect input to the *dispatch algorithm* (as determined by AEMO under clause 3.9.2B of the NER)
    b. a constraint applied by AEMO that does not accurately reflect or is otherwise inconsistent with the network capability that the TNSP advised AEMO
    c. a scheduling error
    d. *mandatory restrictions* under clause 3.12A of the NER
    e. *AEMO* declaring the *spot market* suspended under clause 3.14.3 of the NER, or
    f. an *administered price cap* under clause 3.14.2 of the NER

NOTE: the TNSP must provide a list to the AER each year of the events that the TNSP considers should be excluded from performance results, including reasons and how the event meets the relevant exclusion definition. The AER will exercise its discretion to reject the TNSP's exclusion claims where insufficient justification has been provided.

D Adjustments to allowed revenue

Calculating allowed revenue

The *maximum allowed revenue* (MAR) for each *regulatory year* of a *regulatory control period* is calculated in accordance with the NER and the TNSP's *transmission determination*. The MAR includes any *financial incentive* adjustments resulting from the *service target performance incentive scheme* in the previous *calendar year*.
The MAR is calculated as follows:

MAR_t = AR_t + financial $incentive_{ct}$ + other adjustments

where: AR = allowed revenue

AR_t = AR_{t-1} *(1 + Δ CPI) *(1-X_t)

Δ CPI is the annual percentage change in the most recently published "Consumer Price Index All Groups, Weighted Average of Eight Capital Cities" as specified in the TNSP's *transmission determination*

X_t is the X factor specified in the TNSP's *transmission determination*.

A TNSP's *financial incentive* (see below) within a *calendar year* of a *regulatory control period* will impact upon the TNSP's MAR in the immediately following financial year. As such, a six month lag[3] exists between when a TNSP's performance is measure, and when the *financial incentive* adjustment is made to the TNSP's MAR.

The financial incentive

The *financial incentive* is calculated as follows:

$$\text{financial incentive}_{ct} = \left(\frac{(AR_{t-1} + AR_{t-2})}{2} \times S_{ct} \right)$$

AR = allowed revenue (above)
S = total s-factor (below)
t = regulatory year
ct = calendar year (below)

The MAR values used to establish transmission charges each relevant financial year will be used to determine the *financial incentive*.

[3] SP AusNet is only subject to a three month lag.

The service standards factor

The *s-factor* for each service component *parameter* is calculated by comparing a TNSP's performance against its *parameters* and the values included in the TNSP's *transmission determination* within a *calendar year*.

The market impact *parameter s-factor* is calculated by comparing the TNSP's performance measure against its *performance target*. See Appendix E for the calculation of performance measure and *performance target*.

The network capability *parameter* s-factor for the first four regulatory years in the regulatory control period is 1.5. The network capability parameter s-factor for the final regulatory year in the regulatory control period is 1.5 minus the total value of any reductions made by the AER.

The maximum *s-factor* possible for each *parameter* applying to the TNSP under the *service component* of this *scheme* is the *weighting* of that *parameter*. The maximum *s-factor* possible for the *parameter* applying to a TNSP under the *market impact component* of this *scheme* is the maximum revenue increment specified in clause 4.3.

The total *s-factor* is the sum of the *s-factors* for each *parameter*. The total *s-factor* result cannot exceed the sum of the maximum revenue increment or decrement that the TNSP may earn under the *service component,* the *market impact component* and the *network capability component*.

Worked example

Assume that based on its performance between 1 January and 31 December 2017 a TNSP achieved an *s-factor* of -0.1 per cent under the *service component*, 0.9 per cent under the *market impact component* and 1.5 per cent under the *network capability component*. The total *s-factor* achieved by the TNSP is 2.30 per cent.

<table>
<tr><th>Year</th><th>Total s-factor</th><th>AR</th></tr>
<tr><td>1 July 2016</td><td></td><td rowspan="2">$100m</td></tr>
<tr><td>1 January 2017</td><td rowspan="2">2.3%</td></tr>
<tr><td>1 July 2017</td><td rowspan="2">$110m</td></tr>
<tr><td>1 January 2018</td><td></td></tr>
</table>

Calculating the financial incentive

The *financial incentive* for a total s-factor of 2.3 per cent is $2.42 million as shown

$$\text{financial incentive}_{2007} = \left(\frac{(AR_{2017–18} + AR_{2016–17})}{2} \times S_{2017} \right)$$

$$= \left(\frac{(110 + 100)}{2} \times 2.3\% \right)$$

= $2.42m

Calculating the allowed revenue

The *financial incentive* of $2.41 million for the 2017 *calendar year* would not affect the AR until the preceding financial year beginning 1 July 2018. Assuming no other adjustments were made in accordance with clauses 6A.3.1 and 6A.3.2 of the NER and the AR for the 2018–19 period is $120 million, the MAR for the 2018 *regulatory year* would be:

$MAR_{2008–09}$ = $AR_{2018–19}$ + $\text{financial incentive}_{2017}$

= $120m + $2.42m

= $122.42m

Adjustments to the financial incentive formula

The *financial incentive* formula will be adjusted by the AER in the following circumstances.

Overlap between regulatory control periods

As noted above, a TNSP's performance in a calendar year will not affect the MAR until the financial year commencing on 1 July in the following year. This means that a TNSP's performance in the last year of its *regulatory control period* will affect its MAR in the following *regulatory control period*.

If, for example, a TNSP has a *regulatory control period* of five years, which runs between 1 July 2007 and 30 June 2012, its performance in the 2011 calendar year will affect its MAR in the first financial year of the next *regulatory control period* (that is, 2012–13). The TNSP's MAR in the second financial year of the next *regulatory control period* (that is 2013–14) will be affected by its performance in the final six months of the last *regulatory control period* and the first six months of the next *regulatory control period*. The MAR in this financial year will be calculated by applying the following formula:

$MAR_{2013–14} = AR_{2013–14} + \text{financial incentive}_{2012}$

Where:

$$\text{financial incentive}_{2012} = \left(\frac{AR_{2011–12}}{2} \times S_{1Jan2012–30Jun2012} \right) + \left(\frac{AR_{2012–13}}{2} \times S_{1Jul2012–31Dec2012} \right)$$

Where performance is measured over part of a calendar year

Where a TNSP's performance has not been measured under the *scheme* for a full calendar year, the AER will make a pro-rata adjustment to the AR to apply to the *s-factor* to calculate the *financial incentive*. For example this adjustment may be made where a new TNSP becomes subject to the *scheme* at the commencement of a financial year.

Adjustment for SP AusNet's April to March financial year

SP AusNet's *regulatory year* runs from 1 April to 31 March in the following year to correspond with the Singapore financial year. To account for this anomaly, there will a three-month lag between when SP AusNet's performance is measured, and when the *financial incentive* adjustment is made to SP AusNet's MAR. The *financial incentive* for SP AusNet is calculated as follows:

Financial incentive$_{ct}$ = $$\left(\left(AR_{t-2}\times\frac{3}{12}\right)+\left(AR_{t-1}\times\frac{9}{12}\right)\right)\times S_{ct}$$

E Market impact component - calculation of the performance measure and performance target

The value of the performance measure (PM) for the market impact *parameter* is calculated based on the TNSP's average performance over a rolling two calendar year period. Note that the PM may include performance in periods outside of the current *regulatory control period*.

The value of the *performance target* (PT) is calculated based on the TNSP's average performance over a rolling three calendar year period. This period must always be the three calendar years preceding the two calendar years over which the PM is measured.

E1. Worked example:

$$\text{PM (t)} = \frac{(P_t + P_{t-1})}{2}$$

$$\text{PT (t)} = \frac{(P_{t-2} + P_{t-3} + P_{t-4})}{3}$$

Where:

t = year

PM = performance measure

PT = *performance target*

P = calendar year performance count

So for example in early 2015, a TNSP will submit its annual compliance review for 2014, (in this example t is 2014). The performance measure will be based on 2014 and 2013 performance data and the performance target will be based on 2010, 2011 and 2012 performance data.

Market Impact Component Service Standard Factor

$$\text{S-factor} = 0.02 \times \left(1 - \min\left(\frac{PM}{PT}, 1\right)\right)$$

Where:

PM = performance measure

PT = *performance target*

F Definition of force majeure

For the purpose of applying the *service target performance incentive scheme*, force majeure event means any event, act or circumstance or combination of events, acts and circumstances which (despite the observance of good electricity industry practice) is beyond the reasonable control of the part affected by any such event, which may include, without limitation, the following:

- fire, lightning, explosion, flood, earthquake, storm, cyclone, action of the elements, riots, civil commotion, malicious damage, natural disaster, sabotage, act of a public enemy, act of God, war (declared or undeclared), blockage, revolution, radioactive contamination, toxic or dangerous chemical contamination or force of nature
- action or inaction by a court, government agency (including denial, refusal or failure to grant any authorisation, despite timely best endeavour to obtain same)
- strikes, lockouts, industrial and/or labour disputes and/or difficulties, work bans, blockades or picketing
- acts or omissions (other than failure to pay money) of a party other than the TNSP, which party either is connected to or uses the high voltage grid or is directly connected to or uses a system for the supply of electricity that in turn is connected to the high voltage grid
- where those acts or omissions affect the ability of the TNSP to perform its obligations under the service standard by virtue of that direct or indirect connection to or use of the high voltage grid.

In determining what force majeure events should be excluded, the AER will consider the following:

- was the event unforeseeable and its impact extraordinary, uncontrollable and not manageable?
- does the event occur frequently? If so, how did the impact of the particular event differ?
- could the TNSP, in practice, have prevented the impact (not necessarily the event itself)?
- could the TNSP have effectively reduced the impact of the event by adopting better practices?