Explanatory Statement

Electricity transmission network service providers

Draft Service Target Performance Incentive Scheme

September 2012

AUSTRALIAN ENERGY REGULATOR

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Contents

Shortened forms

ACCC	Australian Competition and Consumer Commission
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
Electricity Law	National Electricity Law
Electricity Rules	National Electricity Rules
EMS	energy management system
Issues Paper	AER Issues Paper - Service Target Performance Incentive Scheme - October 2011
MAR	maximum allowed revenue
MEU	Major Energy Users
MIC	market impact component
MWh	megawatt hour
NCIPAP	network capability improvement parameter action plan
NEM	National Electricity Market
NEO	national electricity objective
RIN	Regulatory Information Notice
SCADA	Supervisory Control and Data Acquisition
STPIS	service target performance incentive scheme for electricity transmission network service providers
TFR	Transmission Frameworks Review
TNSP	transmission network service provider
VCR	value of customer reliability

Executive Summary

The Australian Energy Regulator (AER) administers a service target performance incentive scheme (STPIS) for transmission network service providers (TNSPs). The purpose of the STPIS is to provide incentives to TNSPs to improve or maintain a high level of service for the benefit of participants in the National Electricity Market (NEM) and end users of electricity.

The current version of the scheme has two main components:

- the service component, which measures the overall availability of a TNSP's network to transport energy and the reliability of the network, and
- the market impact component, which is designed to incentivise TNSPs to improve network availability at times and on those parts of the network that are most important to influencing wholesale electricity spot prices.

In October 2011, the AER commenced a review of the STPIS. The purpose of the review is to conduct a comprehensive examination of every element of the STPIS and identify possible changes to enhance the ability of the STPIS to incentivise TNSPs to improve or maintain the performance of their network. As part of the review, the AER has sought input from key stakeholders including representatives of major end users, generators, the Australian Energy Market Operator (AEMO) and TNSPs on how to improve the STPIS.

The AER has formed a draft decision that the STPIS should be significantly amended. The AER proposes to:

- amend the current service component parameters, including by replacing an existing parameter with a new parameter, so that performance against these parameters can be used as a lead indicator of a deterioration of network reliability
- bring the application of the service component into greater alignment between TNSPs through standard definitions
- improve the setting of targets and measurement of performance against the market impact component to encourage consistency in TNSP performance
- introduce a network capability component to encourage TNSPs to increase the capability of existing network assets, and
- amend the triggers for the review of the scheme.

The proposed scheme will consist of three components:

- the service component, which has an unchanged incentive of +/- 1 per cent of maximum allowed revenue (MAR). It has three parameters – *loss of supply event frequency*, which measures the number of large and small interruption to supply events; *average outage duration***,** which measures the average duration of loss of supply events; and *average circuit outage rate***,** which is a new measure of the number of unplanned faults on the transmission network. The service component also includes a new reporting only parameter which measures the number of times that protection and control equipment fail to operate correctly

- the market impact component, which has an unchanged incentive of 0 to 2 per cent of MAR. This component rewards TNSPs for reducing the market impact of transmission outages by measuring the impact on a rolling two calendar year basis compared to the average impact over the previous three calendar years, and

- the network capability component, which provides an incentive of 1.5 per cent of MAR subject to completion of projects that improve the capability of the transmission network at times most needed. The component is designed to influence a TNSP's operation and management of its network assets to develop one-off projects that can be delivered through low cost operational and capital expenditure (up to a total of 1 per cent of MAR per year). AEMO would play a part in prioritising the projects to deliver best value for money for consumers.

The AER is seeking stakeholder input into the AER's proposed amendments to the STPIS, with the aim that the new version of the scheme be in place for the next round of regulatory resets in 2013.

1 Introduction

The AER is responsible for regulating the revenues of TNSPs in the NEM in accordance with the National Electricity Rules (Electricity Rules).

Under clause 6A.7.4 of the Electricity Rules, the AER is responsible for establishing a STPIS. This scheme is designed to provide incentives for each TNSP to maintain or improve the reliability of transmission network services.

1.1 The development of the current scheme

The STPIS was based on the service standards guidelines developed by the Australian Competition and Consumer Commission (ACCC) in 2003.[1] The ACCC service standards guidelines aimed to address the incentives provided to TNSPs under an ex ante revenue cap to reduce operating costs below forecast levels at the expense of service quality. The guidelines attempted to address this incentive by linking TNSPs' regulated revenues to their performance against defined service level measures.

In 2006 the Australian Energy Market Commission (AEMC) reviewed the framework for regulating electricity transmission networks. The new arrangements required the AER to release guidelines on its approach to regulation including a new STPIS.

In accordance with the Electricity Rules, the AER published the STPIS (version one) in August 2007.[2] The AER incorporated the service measures (referred to as parameters) that were previously used under the ACCC's service standards guidelines. These parameters included:

- circuit availability
- loss of supply event frequency, and
- average outage duration.

These parameters focus on providing an incentive to TNSPs to improve network availability and reliability. The parameters that apply to electricity transmission networks are in some respects different to those that apply to electricity distribution networks. This is because electricity transmission networks are inherently reliable, with significant built-in redundancy. As such, interruptions to supply occur very rarely and generally only when there are multiple and significant concurrent events.

Another feature of transmission networks is that, in general, generators are connected to the wholesale market at the transmission level. Version one of the STPIS did not address incentives on TNSPs to reduce the market impact of transmission congestion. Transmission network congestion can lead to higher wholesale prices, which in turn flows through to customer energy prices.

[1] ACCC, *Decision – statement of principles for the regulation of transmission revenues service standard guidelines,* 12 November 2003.
[2] AER, *Final decision – electricity transmission network service providers service target performance incentive scheme,* August 2007.

The AER published the STPIS (version two) in March 2008.[3] This version split the scheme into two components:

- the service component, which incorporated the existing network availability and reliability parameters, and
- a new market impact component.

The market impact component (MIC) provides an incentive to TNSPs to improve the availability of the transmission system at times and on those elements of the network that are most important to determining spot prices.

In March 2010, the AEMC published amendments to the Electricity Rules which permitted the application of the MIC to TNSPs earlier than under the normal regulatory timelines.[4] The MIC currently applies to TransGrid, Powerlink, ElectraNet and SP AusNet. It will apply to Murraylink from 1 July 2013 and Directlink from 1 July 2015. Transend does not currently participate in the MIC.

The AER released the third version of the STPIS in March 2011.[5] This version incorporated relatively minor amendments to the parameters that would apply to Powerlink for its 2012-2017 regulatory control period and is the current version of the scheme.

1.2 AER review of the current scheme

In October 2011, the AER published an issues paper reviewing the service component and the financial incentive arrangements of the MIC, seeking stakeholder input on ways to improve the effectiveness of the STIPS (the Issues Paper). The Issues Paper focused on the following areas:

- service component parameters (including exclusions)
- weighting of service component parameters
- methods for setting targets, caps and collars
- the amount of revenue at risk
- the method for establishing the financial incentive for the service component
- the method for establishing the financial incentive for the MIC, and
- the triggers to amend the STPIS.

Submissions to the Issues Paper closed on the 11 November 2011. The AER received eight submissions from Alinta, AEMO, Grid Australia, the Major Energy Users (MEU), the Private Generators, SP AusNet, Transend and TRUenergy. A forum was subsequently held in December 2011 between AER and stakeholder representatives to discuss the submissions received by the AER.

To allow proper consideration of the diverse views raised by stakeholders and the issues raised in the AEMC's November 2011 first interim report on the Transmission Frameworks Review (TFR), the AER decided in December 2011 to delay the review.

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[3] AER, *Final decision – electricity transmission network providers service target performance incentive scheme (incorporating incentives based on the market impact of congestion),* March 2008.
[4] AEMC, *Rule determination – national electricity amendment (early implementation of the market impact parameters) rule 2010,* 11 March 2010.
[5] AER, *Final decision – electricity transmission network providers service target performance incentive scheme,* March 2011.

In June 2012, the AER decided to recommence the review of the STPIS. The AER did so by conducting an informal consultation process with the stakeholders that had lodged submissions to the Issues Paper. AER staff met with representatives of AEMO, ElectraNet, the MEU, the Private Generators, SP AusNet, Transend, TransGrid and TRUenergy in July 2012 to outline preliminary views on amending the STPIS.

The AER intends to finalise the review in time for the new version of the scheme to apply to the revenue resets for SP AusNet, TransGrid and Transend scheduled to commence in 2013.

1.3 SP AusNet and Transend proposals to amend the current scheme

SP AusNet and Transend have submitted proposals to amend the STPIS ahead of their regulatory resets in 2013.

1.3.1 SP AusNet

On 31 May 2012, SP AusNet submitted an application proposing amendments to:

- the transmission circuit availability parameter. One of the options for amending the parameter included a change to the financial incentive arrangements of the service component
- the average outage duration parameter, and
- the financial incentive arrangements in relation to the MIC.

SP AusNet recognised in its proposal that the AER was undertaking a review of the current scheme and considered that it may update its position on some aspects of scheme design in light of changes that emerge from the AER's review of the current scheme.

1.3.2 Transend

On 23 August 2012, Transend submitted an application proposing amendments to the STPIS. Transend proposed to:

- include the MIC of the scheme, provided it remains an asymmetrical bonus only scheme
- amend the sub-parameters for transmission circuit availability parameter by removing the critical and non-critical transmission line circuit availability sub-parameters (to avoid overlap with the MIC), which would result in a consolidated transmission line circuit availability sub-parameter, and
- retain the zero weighting for the average outage duration parameter.

Transend also noted that the AER is reviewing the current STPIS to determine whether the scheme should be amended. Transend stated that it supports the ongoing review and improvement of the STPIS, and will continue to work closely with the AER on the further development of the STPIS.

As part of its current review, the AER has considered SP AusNet's and Transend's applications to amend the scheme.

1.4 Draft scheme and explanatory statement

Following a review of stakeholder submissions to the Issues Paper, Transend and SP AusNet's applications to amend the scheme and feedback from stakeholders during the recent informal consultation process, the AER has prepared a draft of the amended STPIS (the proposed scheme) for consultation. An overview comparing the current scheme with the proposed scheme is set out at section 1.5 below.

As required by clause 6A.20(b)(2) of the Electricity Rules, this explanatory statement accompanies the proposed scheme amendments. It sets out the Electricity Rules requirements, the purpose and objectives of the proposed amendments to the scheme, the nature and reasons for the proposed amendments to the scheme and the consultation process to be undertaken. It also invites written submissions on the proposed scheme as required by clause 6A.20(b)(3) of the Electricity Rules.

1.5 Proposed amendments to the scheme

	Current scheme	Proposed scheme
Service Component		
Transmission circuit availability	Measures impact of planned and unplanned outages on circuit availability TNSP specific sub-parameters TNSP specific inclusions and definitions	Amend to measure only unplanned outage rates Introduction of common sub-parameters Harmonisation of definitions and inclusions across TNSPs
Loss of Supply	Measures size of loss of supply events caused by unplanned outages TNSP specific 'x' and 'y' system minute thresholds Inclusions and definitions vary between TNSPs	Harmonisation of definitions and inclusions across TNSPs
Average outage duration	Measures average duration of unplanned outages TNSP specific sub-parameters Inclusions and definitions vary between TNSPs	Amend to measure unplanned outages where loss of supply occurs Introduction of new sub-parameters based on circuit redundancy Harmonisation of definitions and inclusions across TNSPs
Additional parameter	Nil	Introduction of new reporting only parameter measuring incidences of incorrect operation of protection and control systems and the incorrect isolation of the network
Exclusions	Standard exclusions with multiple TNSP specific exclusions for each parameter	Standardisation of exclusions across TNSPs Additional force majeure event reporting Specific reference in scheme to AER's ability to refuse exclusion claims on the basis of insufficient substantiation
Market Impact Component	Measures the market impact of planned and unplanned outages Asymmetric component with annual performance measured against a target based on an average five year historical performance value	Amend the way performance is measured and targets are set to a rolling basis
Additional Component	Nil	Introduction of a network capability incentive worth 1.5% of MAR
Weightings	Flexible weightings for each TNSP	Standardised weightings of parameters and sub-parameters Ability to set weightings of parameters and sub-parameters to zero
Triggers to amend scheme	TNSPs can propose amendments up to 15 months prior to next reset	Scheme amended through regular review process
Information reporting	TNSPs provide annual compliance information in accordance with TNSP Information Guidelines Information for resets provided pursuant to submission guidelines	TNSPs to provide annual compliance information and reset information pursuant to regulatory information notices

1.6 Electricity Rules requirements

Clause 6A.7.4(f) of the Electricity Rules allows the AER to amend or replace a service target performance incentive scheme from time to time. However for an amendment or replacement to apply to a TNSP, the final scheme must be published at least 15 months before the TNSP's next regulatory control period. Clause 6A.7.4(g) provides that, subject to certain exceptions,[6] the AER may from time to time amend or replace the values attributed to the performance incentive scheme parameters.

Any amendment or replacement of a STPIS or the values attributed to the parameters of the STPIS under these clauses must be made in accordance with the transmission consultation procedures.

The transmission consultation procedures in clause 6A.20 of the Electricity Rules outline the process to be followed by the AER in developing the final STPIS. They require the AER to publish the proposed STPIS with an explanatory statement and invite written submissions on the proposed scheme. Within 80 business days of publishing the proposed STPIS, the AER must publish the final STPIS.

1.7 Structure of this document

The remainder of the explanatory statement is structured as follows:

- Chapter 2 sets out the purpose and objectives of the proposed scheme
- Chapter 3 outlines the AER's proposed amendments for the current service component parameters, including service component parameter exclusions
- Chapter 4 outlines the AER's proposed new service component parameter and network capability component
- Chapter 5 outlines the AER's proposed amendments for the MIC
- Chapter 6 outlines the AER's proposed amendments for weightings, caps and collars
- Chapter 7 outlines the AER's proposed amendments on triggers to amend the scheme
- Chapter 8 outlines the AER's proposed use of regulatory information notices in the context of the STPIS, and
- Chapters 9 and 10 set out the consultation process for the proposed scheme.

[6] See clause 6A.7.4(h), Electricity Rules.

2 Purpose and objectives of the proposed scheme

This chapter sets out the purpose and objectives of the proposed scheme and the criteria which the AER has applied when amending the STPIS.

Under clause 6A.7.4(b) of the Electricity Rules, the principles which the STPIS is required to comply with are to:

(1) provide incentives for each Transmission Network Service Provider to:

(i) provide greater reliability of the transmission system that is owned, controlled or operated by it at all times when Transmission Network Users place greatest value on the reliability of the transmission system; and

(ii) improve and maintain the reliability of those elements of the transmission system that are most important to determining spot prices;

(2) result in a potential adjustment to the revenue that the Transmission Network Service Provider may earn, from the provision of prescribed transmission services, in each regulatory year in respect of which the service target performance incentive scheme applies;

(3) ensure that the maximum revenue increment or decrement as a result of the operation of the service target performance incentive scheme will fall within a range that is between 1% and 5% of the maximum allowed revenue for the relevant regulatory year;

(4) take into account the regulatory obligations or requirements with which Transmission Network Service Providers must comply;

(5) take into account any other incentives provided for in the Rules that Transmission Network Service Providers have to minimise capital or operating expenditure; and

(6) take into account the age and ratings of the assets comprising the relevant transmission system.

The AER's current objectives for the scheme are set out in clause 1.4 of the STPIS are that the scheme:

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

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

(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.

2.1 AER STPIS objectives

2.1.1 AER Issues Paper

In the Issues Paper, the AER sought submissions on whether the objectives in clause 1.4 of the current STPIS were satisfactory and whether the AER consider other objectives when amending the STPIS.

Submissions by Grid Australia and Alinta Energy considered that the STPIS objectives were satisfactory. Grid Australia considered the AER should clarify whether the STPIS was still intended to only influence operational decisions and not capital expenditure.

The MEU submission stated that the STPIS objectives should recognise that transmission is only part of the supply chain and that increasing service performance in transmission might deliver little benefits to consumers because of other elements in the supply chain. The MEU considered a well designed STPIS would result in less congestion, less price separation between regions, less out-of-merit dispatch and greater uptime of the transmission assets when most needed. The STPIS should focus on the worst performing elements in the network rather than focusing on the average performance of a TNSP's network.

AEMO's submission stated that the STPIS review should be considered in the context of the broader transmission regulatory framework. AEMO considered that the building block approach to revenue regulation did not ensure an appropriate price-service balance. AEMO suggested that the AER take the opportunity to develop a longer term position on a more encompassing service based approach to regulation.

2.1.2 AER considerations and decision

The AER considers the current AER STPIS objectives are appropriate.

The AER notes that the MEU considered a STPIS objective should recognise the role of transmission frameworks in the delivery of electricity services and that increasing service performance may deliver little benefit to consumers. The AER considers the existing objectives of the scheme, to contribute to the achievement of the National Electricity Objective (NEO) and to be consistent with the STPIS principles in clause 6A.7.4(b) of the Electricity Rules, takes this objective into account. The NEO requires the AER to ensure the scheme is consistent with promoting and supporting the efficient operation, investment and use of electricity services in the NEM with respect to price, quality, safety, reliability and security of supply. The STPIS principles require the scheme to provide incentives to maintain and improve reliability at times most valued by customers and on elements of the system most important to determining spot prices. Thus, the objectives have recognised that the incentives on TNSPs should deliver material benefits to customers.

In relation to AEMO's submission, the AER notes that the STPIS review is limited to the incentive scheme framework in clause 6A.7.4 of the Electricity Rules. The AER considers that the development of a more encompassing service based approach to regulation is outside the scope of this STPIS review. However, the AER would welcome further input from AEMO on the development of the STPIS towards a more service based approach to regulation for consideration in the next STPIS review.

2.2 Criteria for assessing incentive options

2.2.1 AER Issues Paper

In the Issues Paper, the AER outlined criteria for assessing proposed incentive options for the service component. The outlined criteria were that the incentive options should:

- promote the NEM objective
- relate the economic benefit of the TNSP's action to the cost
- depend, as far as possible, on the TNSP's action

- be constructed on objective information and analysis that can be audited
- apply consistently across TNSPs, and
- minimise administrative costs.

The AER sought submissions on whether the evaluation criteria were appropriate or whether other evaluation criteria should be used.

Grid Australia's submission considered that all the criteria proposed were appropriate with the exception of incentive options should be applied consistently across TNSPs. Grid Australia stated that the consistent application of incentive options would disadvantage or advantage TNSPs due to the differences between TNSP networks. Grid Australia proposed a new assessment criterion be added, that incentive options should influence specific, identifiable behaviour by the TNSP as it is important to identify what incentives TNSPs are responding to.

The MEU's submission considered that the assessment criteria should relate directly to customer cost/benefit.

The Private Generators submission considered that an assessment be undertaken to see if the incentive amounts that have been paid have been productive in reducing overall costs of network incidents to the market.

2.2.2 AER considerations and decisions

The AER considers the incentive criteria options outlined in the Issues Paper are appropriate and has drawn on them in assessing the changes to the STPIS outlined in this explanatory statement.

In relation to Grid Australia's objection to consistent incentive options across TNSPs, the AER considers that the incentive options should only be inconsistent to the extent that it would be inappropriate to do otherwise. The AER's starting point is that incentive options should be consistent and inconsistencies should only be allowed when a consistent approach would not drive efficient outcomes for all TNSPs due to the differences in network characteristics. The AER agrees with Grid Australia's view that incentive options should influence specific, identifiable behaviour by the TNSPs. In assessing the current parameters and the proposed new parameters the AER has sought to identify the behaviours that the incentive is seeking to address and the applicability of the parameter to TNSPs.

The AER notes that both the MEU and Private Generators submissions consider the evaluation of incentive options should involve a cost/benefit analysis. To the extent where this is possible, the AER has sought to undertake a cost/benefit analysis of the effectiveness of the current and new parameters. However, the AER notes a quantitative assessment of the effectiveness of some of the parameters may not be feasible given the difficulties and complexities involved in undertaking such an assessment.

3 Proposed changes to current service component parameters and exclusions

This chapter sets out the proposed amendments to the service component parameters and exclusions, including the AER's reasons for the proposed amendments.

3.1 Proposed amendments to existing service component parameters

The service standard component currently has three parameters, each of which has two or more sub-parameters. These parameters are transmission circuit availability, loss of supply event frequency and average outage duration.

The scheme contains definitions for each parameter which specifies: applicable sub-parameters, unit of measure, source of performance data, the formula for measuring performance, definitions of relevant terms, inclusions (which specify particular equipment or events which are to be measured) and exclusions.

3.1.1 Transmission circuit availability

This parameter currently measures the actual circuit hours that defined transmission circuits were available relative to the total possible circuit hours those circuits could have been available. This parameter provides an incentive to TNSPs to keep primary transmission assets, such as lines, transformers and reactive plant available to transport energy as much as possible. This parameter is generally disaggregated into two or more sub-parameters.

The purpose of this parameter is to act as a lead indicator of reliability. If availability is low as a result of outages of network equipment, then there is an increased probability that reliability may be affected.

The vast majority of outages are planned. The current parameter does not, however, distinguish between unavailability due to planned outages and unplanned outages of plant. The impact of planned (and unplanned) outages on the wholesale market is the subject of the MIC, which is designed to incentivise TNSPs to better plan outages to minimise the market impact.

Unplanned outages occur far less frequently than planned outages. Measuring the frequency of just unplanned outages serves to increase the focus of the parameter on reduced reliability potentially arising as a result of decreased maintenance.

Unplanned outages generally arise from a fault or as a result of a forced outage. A forced outage is where the TNSP identifies that a piece of equipment needs to be taken out of service due to the high probability of an imminent fault event. Outages on direction from third parties, such as fire services or AEMO, are another form of forced outage. The delineation between a forced outage and a planned outage can be unclear. As a general rule, the AER considers that those outages that occur with less than 24 hours notice are forced, while those outages that take place with more than 24 hours notice are planned outages (albeit on short-notice).

AER Issues Paper

The AER proposed that the transmission circuit availability parameter be changed to remove the inclusion of planned outages and to amend the target accordingly. The AER suggested a new target

of zero unplanned outages, noting that the use of exclusions would mean that TNSPs would not be penalised for outages caused by third party or force majeure events.

TNSPs did not agree with the proposed amendments to the transmission circuit availability parameter as set out in the Issues Paper, as they considered that the transmission circuit availability parameter was influencing the desired TNSP behaviour. The MEU[7] and generator submissions were generally supportive of the proposed changes.

The Issues Paper proposed a target of reducing the incidence of unplanned outages to zero. TNSPs advised that this is unattainable and unlikely to be economically efficient. TNSPs also commented that there was overlap between this parameter and the average outage duration parameter – as the average outage duration parameter includes all unplanned outages whether or not the outages cause an interruption to supply.

Informal stakeholder consultation

A detailed option for amending the transmission circuit availability parameter to only measure unplanned outages was put to stakeholders for comment during July 2012. This option proposed that the sub-parameters, definitions, inclusions and exclusions be harmonised across TNSPs.

TRUenergy expressed the view that planned outages should continue to be included in the transmission circuit availability parameter to ensure that transmission assets are available to transport energy as long as possible, irrespective of whether outages are planned or unplanned. TRUenergy does not consider the current overlap between the MIC and the transmission circuit availability parameter as a sufficient basis to amend the parameter. Given the impact that the duration of planned outages can have on market participants, TRUenergy considers that planned outages should continue to be included in the parameter in order to incentivise TNSPs to minimise the duration of planned outages and to schedule outages at suitable times.

TRUenergy also proposed that, should the AER wish to focus on forced outage performance, the AER introduce a forced outage availability sub-parameter similar to those currently applying to Murraylink and Directlink or re-evaluate the average outage duration parameter (which already solely focuses on unplanned outages).

Grid Australia indicated that it had no particular objections to narrowing the focus of the transmission circuit availability parameter to unplanned outages. Grid Australia did flag that there is inconsistency in how TNSPs measure forced outages. In particular, some TNSPs have not used a 24 hour notification threshold for forced outages, which would make setting targets difficult. Grid Australia indicated that forced outages were relatively rare and that TNSPs would be able to measure forced outages using the 24 hour threshold going forward.

SP AusNet application

In addition to the STPIS, SP AusNet participates in the Availability Incentive Scheme (AIS) administered by AEMO. In SP AusNet's application to revise the STPIS ahead of its forthcoming reset, SP AusNet proposed a number of changes to the transmission circuit availability parameter. SP AusNet considered these changes were necessary as there was a conflict between the incentives provided by the MIC, which incentivised asset availability based on dynamic market information, and those provided by the transmission circuit availability parameter, which incentivised asset availability

[7] The MEU initially opposed the change to the transmission circuit availability based on a misunderstanding of the proposal but following subsequent discussions agreed with the proposal.

based on pre-defined periods (i.e peak and off-peak). The AIS places different incentives again on SP AusNet.

SP AusNet has put forward two options to amend the transmission circuit availability parameter:

Option A:

- SP AusNet's participation in AEMO's AIS be finalised
- assets which are covered by the MIC (namely those transmission assets where an inopportune outage could impact on the wholesale spot market price) be excluded from inclusion in the transmission circuit availability parameter
- add regulated connection assets for coverage by the parameter
- replace existing availability sub-parameters with the following:
    - reverse peaking assets (such as rural reactive plant) during off-peak periods only
    - priority CBD assets during peak and intermediate peak periods
    - priority Metropolitan assets during peak and intermediate peak periods
    - priority Regional assets during peak and intermediate peak periods, and
- revenue at risk be increased to 1.5 per cent of MAR, or

Option B:

- SP AusNet's participation in AEMO's AIS continue but with the coverage of assets amended to avoid overlap with the MIC and the STPIS
- assets which are covered by the MIC be excluded from the transmission circuit availability parameter
- exit connection assets be the only assets covered by the transmission circuit availability parameter, and
- availability be measured during peak and intermediate peak periods only.

SP AusNet indicated that it was seeking to reduce the overlap between the MIC, the transmission circuit availability parameter and the AIS.

Transend application

Transend proposed that with the addition of the proposed MIC, the scheme revert to measuring a consolidated transmission line circuit availability sub-parameter, with no critical and non-critical sub-parameters. The reason given was that:

> It is Transend's view that the inclusion of the market impact component within the STPIS provides a more sophisticated and targeted market-based incentive than that achieved by splitting transmission line circuit availability into critical and non-critical sub-parameters (where 'criticality' is defined in a way that attempts to simulate market impact).

AER considerations and decision

The AER proposes to amend the transmission circuit availability parameter to only include unplanned outages, with the target set on actual historical performance. This change will ensure there is only minor overlap with the MIC, as the MIC is concerned with planned and unplanned outages of only those assets that impact materially[8] on generator dispatch. Unplanned outages make up a small proportion of these outages and, in any event, do not necessarily lead to a material market impact (the threshold for inclusion in the MIC). Planned outages that have a market impact are currently captured in the MIC, and so the proposal will reduce the current overlap with the MIC.

The AER recognises that this change will result in a subset of outages no longer being directly covered by the STPIS, namely: planned outages of the shared network that do not have a material market impact and planned outages of assets that only provide customer connection services. As these outages do not materially impact on the market and are unlikely to impact on customer supply, the AER considers that there is no need to measure these outages. The purpose of the STPIS is to incentivise TNSPs to maintain their network to an efficient standard to ensure reliability and to minimise the impact of outages on market outcomes. The AER does not consider the STPIS needs to measure every type of outage to achieve this goal.

The AER considers this amendment to the transmission circuit availability parameter will better promote reliability in accordance with clause 6A.7.4(b) of the Electricity Rules and the NEO. The amendment allows this measure to focus on just unplanned outages, whether they have a market impact or not. The AER considers that the narrowing of the parameter will provide greater transparency on the rate of unplanned outages and provide a greater incentive for TNSPs to undertake maintenance designed to prevent unplanned outages than the current parameter. The AER considers that customers value a consistently high level of reliability. In this regard, the AER considers that the revised parameter would act as a lead indicator of the overall reliability of the network.

Accordingly the AER will not be adopting either of the options proposed by SP AusNet, nor that proposed by Transend to amend the transmission circuit availability parameter. The AER considers that the draft amendment to the transmission circuit availability parameter addresses SP AusNet and Transend's main concern of there being an overlap between the incentives provided by the transmission circuit availability parameter and the MIC. Further, the AER considers its amendment is to be preferred because it makes the transmission circuit availability parameter a better lead indicator of the overall reliability of the network than either of the options proposed by SP AusNet, which are a variation of the current parameter.

In amending the transmission circuit availability parameter to act as a lead indicator of reliability, the AER had considered whether to only measure particular types of unplanned outages. Following a contingency event, such as an unplanned outage of a major transmission element, AEMO is required to return the power system to a secure operating state within at most thirty minutes.[9] The Reliability Panel is obligated to produce guidelines[10] that determine how quickly AEMO should return power system security taking into account the costs and benefits. These guidelines, however, have not been produced. In the absence of these guidelines AEMO must return system security as soon as practicable – including by immediately changing the dispatch of generators, or requiring immediate reduction of customer load. The AER considered excluding outages of less than 30 minutes duration

[8] The outage is only considered if it has a marginal impact of greater than $10/MWh. This means that if the outage is taken at off peak times and the impact is therefore less than $10/MWh then it is not penalised.
[9] Clause 4.2.6(b), Electricity Rules
[10] Clause 8.8.1(a)(2)a), Electricity Rules

from the revised parameter, as these short outages would have a lower likelihood of leading to a loss of supply or creating congestion. However, the lack of guidelines from the Reliability Panel means that this distinction is not possible at this time.

Changing the transmission circuit availability parameter will have a number of flow-on consequences for the sub-parameters, the methodology for measuring performance and inclusions and exclusions (see section 3.2 below).

Measurement

The current measure for the transmission circuit availability parameter identifies the percentage of time circuits were available. By removing planned outages, the measurement of total circuit availability has less meaning due to the relative infrequency of unplanned outages. Measuring the amount of time that circuits were unavailable as a result of unplanned outages creates issues around the setting of targets and measuring of performance. Further, the AER considers the duration of an unplanned outage is not important for this parameter; rather it is the fact that an unplanned outage occurs. The AER's proposed change is aimed at making the parameter a lead indicator of unreliability by focussing on the rate at which unplanned outages occur. In line with this, the parameter will be renamed to the 'average circuit outage rate' parameter. The unit of measurement will be the average number of times circuits were unavailable during the relevant time period as a result of unplanned outages. An increase in the frequency of unplanned outages may indicate a future reliability issue.

Sub-parameters

Currently, there are eight different sub-parameters used by TNSPs to measure performance against the transmission circuit availability parameter. As it stands, each TNSP uses a different set of sub-parameters to measure their performance against the transmission circuit availability parameter. In addition to a generic total circuit availability sub-parameter, there are three sets of additional sub-parameters which measure the availability of circuits by:

- equipment categories
- critical and non-critical circuits, and
- peak and non-peak time periods.

The reason for measuring outages during peak/non-peak periods or on critical/non-critical circuits is to incentivise higher circuit availability during times or on equipment which is the most valued by customers. The subsequent development of the MIC, which focuses on the critical circuits that form the major transmission flow paths, has created duplication in this type of measurement of circuit availability.

The AER considers that a number of sub-parameters become redundant when measuring only unplanned outages. Delineating between peak and non-peak periods becomes less relevant when measuring unavailability due to unplanned outages as the time at which an unplanned outage occurs is largely outside of a TNSP's control. As the average circuit outage rate parameter is designed as a lead indicator of unreliability, the AER does not consider that when an unplanned outage has occurred is a material factor when measuring whether reliability has been maintained or improved. The AER notes that an unplanned outage during peak times has a greater probability of causing interruptions. In this regard, the impact of unplanned outages is already measured by the average outage duration, the (revised) loss of supply parameters and the MIC. The AER also considers that measuring critical versus non-critical circuit unavailability is not required for similar reasons.

The AER proposes that, with the exception of Murraylink and Directlink, the sub-parameters be aligned across all TNSPs to measure the outage rate of circuits by equipment category (namely lines, transformers and reactive plant) and by outage type (fault and forced). In light of the issues about the accurate measurement of forced outages raised by Grid Australia, the AER proposes that the forced equipment sub-parameters have a zero weighting and have no target. This would allow for the measurement of forced outages to be consistent across TNSPs going forward. The AER considers that all TNSPs should commence measuring forced outages in the same manner. The gathering of this data will allow forced and fault outages to be jointly measured under the same sub-parameters in future regulatory control periods.

The Murraylink and Directlink networks only consist of the Murraylink and Directlink DC interconnectors, which means they have far fewer assets than the other TNSPs. The proposed sub-parameters for transformers and reactive plant are inappropriate given the limited number of these assets Murraylink and Directlink operate. The AER proposes that the performance of Directlink and Murraylink be measured against one parameter for circuits. The AER notes that the next reset at which the new parameters could apply for Murraylink is in 2023.

Inclusions and Exclusions

The amendment to the transmission circuit availability parameter will also impact on the inclusions definition for TNSPs. In particular, the AER proposes that the inclusions section be harmonised across TNSPs. Under the current scheme, certain TNSPs have narrower equipment inclusions than the current standard inclusions definition for circuits. ElectraNet only includes regulated overhead lines and underground cables, excluding transformers, reactive plant and other primary plant. Transend's definition of circuits only includes overhead lines, underground cables and power transformers. Powerlink and SP AusNet exclude individual circuit breakers and isolators or secondary systems. Given that an unplanned outage of any piece of primary equipment included in the standard inclusion definition has the potential to cause a reliability issue, the AER proposes that the standard inclusions definition apply to all relevant TNSPs at their next reset.

The AER also considers that exclusions ought to be standardised, discussed at section 3.2 below.

Revised performance data

The AER notes that the move to a parameter measuring only unplanned outages will require TNSPs to provide the AER with revised performance data in order to set targets going forward. The AER considers that generally this data should exist as a sub-set of current data gathered for the existing transmission circuit availability parameter. The AER considers that TNSPs should be able to readily identify unplanned outages and calculate historical performance for the new parameter.

3.1.2 Loss of supply event frequency

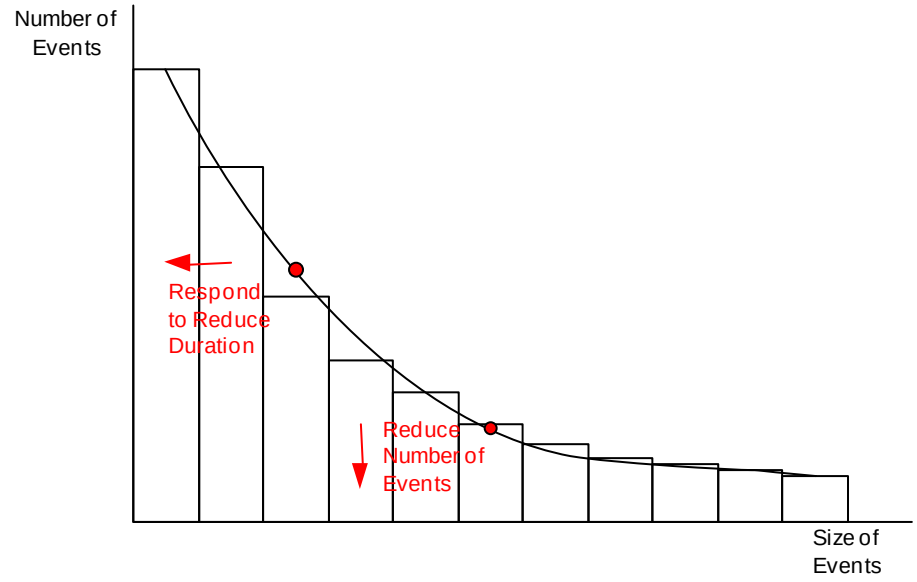
This parameter counts the number of loss of supply events that breach a particular 'system minute' threshold. 'System minutes' measure the size of an unplanned outage in megawatt hours (MWh) normalised against the peak demand the network supplies. This parameter is disaggregated into a moderate (x) system minute loss of supply sub-parameter and a large (y) system minute loss of supply sub-parameter.

The size of a loss of supply event is influenced by the magnitude of the customer load interrupted and the duration of the outage. As illustrated by Figure 3.1 below, there tends to be a small number of very large events (which could be because a large load customer is interrupted for even a short

period or a moderate load customer is interrupted for a long period) and a large number of small events (where smaller loads are interrupted for shorter periods).

The sub-parameters are designed in order to drive reductions in the duration of moderate and small customer interruptions (through fast response times) and to drive reductions in the number of small customer interruptions through improved reliability. The parameter does so by setting an 'x' system minute threshold to incentivise a reduction in duration of events and a 'y' system minute threshold to incentivise a reduction in the frequency of high loss events.

Figure 3.1 Distribution of energy not supplied events



Source: Grid Australia

If the 'x' or 'y' system minute threshold is set inappropriately, TNSPs may be unable to change their behaviour to meet targets. Further, if the thresholds are set too close to one another, one of the incentives is lost.

This parameter does not apply to Murraylink and Directlink due to the nature of their network. Murraylink and Directlink do not directly link into customer load; accordingly, measuring loss of supply as a result of unplanned outages is not feasible.

AER Issues Paper

Each TNSP has a different 'x' system minute and 'y' system minute threshold for the loss of supply events frequency parameter. The Issues Paper set out the AER's view that there was no reason for there to be variations in thresholds between TNSPs, as the system minutes indicator is a normalised measure according to the peak load characteristics of TNSPs' networks.

The MEU supported the proposal to align 'x' and 'y' system minute thresholds. SP AusNet and Grid Australia expressed the view that different thresholds were appropriate given the different physical characteristics of each network, driven by variations in topography and layout. SP AusNet considered that a consistent threshold could be applied so long as there were a statistically significant sample of events for all TNSPs at the level the 'x' system minute and 'y' system minute thresholds are set.

Informal stakeholder consultation

During the informal consultation period, stakeholder views were sought about the harmonisation of the wording of the loss of supply parameter definition, inclusions and exclusions for all TNSPs. Stakeholders were generally supportive of bringing the wording of the loss of supply parameter into alignment.

Views were also sought whether 'x' system minute and 'y' system minute thresholds should be aligned between TNSPs. AER staff considered that it was possible to set universal 'x' and 'y' system minute thresholds for all TNSPs so long as the AER can obtain sufficient data points for each TNSP to gain statistical confidence about appropriate 'x' and 'y' system minute thresholds that would provide an incentive for every TNSP to improve their performance.

TNSPs were not supportive of using a common threshold for 'x' and 'y' system minutes. TNSPs argued that the different physical characteristics of TNSP networks means that uniform thresholds were not appropriate. For example, a universal 'x' system minute threshold may set achievable targets for a TNSP with a meshed network, but not for a TNSP with a skinny network with long radial lines. Changing the 'x' and 'y' may remove the ability for a TNSP to maintain its performance by responding to reduce the length of moderate customer interruptions (an 'x') before it reaches a large interruption (a 'y').

AER considerations and decision

The AER considers the current review provides an opportunity to update the requirements of the loss of supply event frequency parameter. The current standard definition of the loss of supply event frequency parameter does not adequately describe the requirements of the parameter. This is reflected by the fact that each TNSP has a more detailed specification for this parameter. The AER considers that the definition should be harmonised across TNSPs. The majority of TNSPs have loss of supply event frequency parameter definitions that are the same as, or substantially similar to, the AER's revised wording. However, the AER's revised wording does not incorporate all of the current requirements of all TNSPs. In particular, a number of TNSPs have definitions which specify that the loss of supply event frequency parameter applies to exit points only. The AER does not intend to allow that limitation going forward as it may exclude outages that cause loss of supply.

The AER does not propose to amend the 'x' and 'y' system minute thresholds at this time. The AER does, however, consider that the methods by which 'x' and 'y' system minute thresholds have been set should be re-examined at the next review of the STPIS. The AER is conscious that there is a tension in setting a threshold that incentivises change in TNSP behaviour but delivers sufficient data in order to accurately measure performance. The AER proposes that the next review of the scheme include a comprehensive review of TNSP system minute event data to ensure that appropriate thresholds are being used.

3.1.3 Average outage duration

This parameter measures the average length of unplanned outages in minutes (whether or not loss of supply occurs). All unplanned outages greater than one minute are included in the calculation of this parameter; however large duration outages are capped for some TNSPs.

This parameter uses the time a TNSP takes to restore plant as a proxy for measuring the effectiveness of the TNSP's operational response to unplanned events. The parameter provides an incentive to TNSPs to minimise the length of all unplanned outages.

The duration of an outage is affected not only by a TNSP's responsiveness, but also by the location of the outage in the network. Outages on radial single circuit lines (usually in remote locations) are usually longer in duration than outages on meshed, multi-circuit parts of the network. The average outage duration parameter does not delineate between outages according to the level of redundancy in the relevant asset. Accordingly, performance against this measure can be variable, depending on where outages occur on a TNSP's network within a reporting period. This is particularly true for those TNSPs with a higher proportion of long remote radial lines in their networks.

This parameter does not apply to Murraylink and Directlink for the same reasons as for the loss of supply event parameter. The AER does not propose to change this situation.

AER Issues Paper and Informal Stakeholder Consultation

No change to the parameter was proposed by the AER in the Issues Paper.

During the informal industry consultation, stakeholders were requested to provide their views on amending the average outage duration parameter such that only those unplanned outages that cause a loss of supply are measured by the parameter. Views were also sought on whether the requirements of the parameter should be harmonised across TNSPs. Stakeholders did not raise any particular concerns about making the parameter more consistent across TNSPs. Grid Australia flagged that, by only measuring loss of supply events, issues may arise around being able to properly set targets to deliver consistent performance as a result of a small population of events.

SP AusNet application

Under the scheme as it currently stands, SP AusNet has the duration of individual outage events capped at 7 days. The rationale behind capping individual events is to ensure that the incentive to minimise the duration of outages remains throughout the year. SP AusNet proposes that its cap be reduced to 48 hours. SP AusNet noted that the inclusion of 'long' outages early in the year meant that the incentive rate was blunted for the remainder of the year. SP AusNet considers that the cap of 7 days has been too high during the current regulatory period for it to achieve its intended goal.

SP AusNet noted that there would still be an incentive to minimise the duration of long outages as affected customers would still get captured in the loss of supply event frequency parameter.

AER considerations and decision

As a consequence of the change to the transmission circuit availability parameter, the AER considers the average outage duration parameter should be changed to focus on loss of supply events. This change is in line with comments made by TNSPs that there is overlap between the average outage duration parameter and the current transmission circuit availability parameter. The extent of this overlap would be exacerbated by amending the transmission circuit availability parameter to only measuring unplanned outages. The AER also notes that current ElectraNet and Transend average outage duration parameters only cover unplanned outages where a loss of supply occurs and forced outages where notification to affected customers is less than 24 hours.

The AER proposes the parameter definition be expanded to provide greater specificity regarding the measurement of unplanned outages, including the start and end of each event and the capping of the duration of each event at seven days. The AER does not consider these changes to be controversial as all TNSPs currently include similar wording in their respective amendments to the scheme. The AER notes that ElectraNet's current definition for this parameter has wording which specifies the

performance parameter applies to exit points only. The AER does not propose to include that as standard wording going forward as it may exclude outages that cause loss of supply.

The AER does not agree with SP AusNet's application to amend the average outage duration parameter to cap the duration of each event to 48 hours. Despite long outages being captured in the loss of supply event parameter, the AER considers it is still appropriate for the average outage duration to be capped at seven days to directly incentivise SP AusNet to reduce the length of an outage. The AER notes that SP AusNet's proposed amendment may be due to its recent performance against the average outage duration transformer sub-parameter. If that is the case, this issue may be better addressed through the setting of a more appropriate cap and collar in the next revenue determination. SP AusNet has performed strongly against its other average outage duration sub-parameter.

In light of the changes to the average outage duration parameter, the AER welcomes further input from SP AusNet on whether it considers a seven day cap would still blunt the incentive of the average outage duration parameter.

Inclusions

The inclusions definition will also be amended to provide greater clarity and consistency on what constitutes forced outages between parameters and TNSPs. The AER notes that the standard inclusions definition currently applies to the majority of TNSPs.

Sub-parameters

There are currently three sub-parameters which are used: total average outage duration, transmission lines and transmission transformers/plant. SP AusNet and Transend have two sub-parameters: transmission lines and transmission transformers/plant. ElectraNet, Powerlink and TransGrid are measured against the total average outage duration sub-parameter. The AER considers that the transmission lines and transmission transformers/plant sub-parameters are not required, as the proposed average circuit outage rate parameter will use similar sub-parameters.

The AER proposes introducing two new sub-parameters: single circuit assets and multi-circuit assets. 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 AER considers that, in light of the proposed amendment to only measure the duration of unplanned events where loss of supply occurs, it is timely to consider differentiating between outages by redundancy level. The AER considers that this change will introduce a greater level of consistency into performance measures and the setting of performance targets, notwithstanding the smaller data set. The AER also considers that this change will enable TNSPs and the AER to identify whether performance is declining on particular parts of a TNSP's network.

The AER notes that some TNSPs have predominantly meshed networks. For these networks, the small number of events for single circuit assets may be such that the setting of targets becomes infeasible. In these circumstances, the AER considers that the weighting of that sub-parameter should be reduced to zero. Further detail is set out in section 6.2.3 of this explanatory statement.

3.2 Proposed amendments to service component exclusions

3.2.1 Exclusions definition

Each service component parameter has a number of exclusions which sets out the particular types of events that are not to be included when measuring performance and setting targets for those parameters. Over time, the STPIS has been amended to include a number of TNSP specific exclusions for each parameter. For the most part, these exclusions were added to provide greater clarity and/or to reflect the TNSP's current practice in collating data on performance.

AER Issues Paper

The AER expressed the view that it was appropriate to consider introducing a common approach to exclusions across TNSPs. The AER also expressed the view that, in addition to there being no reason why exclusions should differ between TNSPs, a common approach could serve to address a lack of clarity about what events fell within the definition of an exclusion.

The AER identified a number of options to the application of exclusions under an amended scheme. These options included adopting a:

- definitional approach, whereby an exhaustive list of exclusion events is defined in the scheme
- statistical approach, whereby only events which occur less than once every five years are excluded, or
- service performance threshold approach, where a threshold for excluding events would be set around target performance (as determined by historical performance) and allowing for discretion for excluding exceptional events.

TNSPs did not support a common approach to exclusions for TNSPs on the basis of different statutory roles and transmission system configuration between TNSPs. Grid Australia submitted that exclusion definitions are bedded down with few disputes between TNSPs and the AER; changing definitions would require TNSPs to review and reclassify historical data used to set targets, impacting on the data quality. TRUenergy and AEMO supported consistency across TNSPs, while the MEU and the Private Generators advocated that exclusions should be diminished or abolished. Alinta considered that exclusion criteria should be improved.

Most respondents raised concerns about the definitional approach. The MEU and AEMO submitted that the service performance threshold approach was preferable to the other options outlined in the Issues Paper. TNSPs supported maintaining the current arrangement.

Informal stakeholder consultation

The three alternative options identified by the AER in the Issues Paper are each problematic in their own right. An alternative option of maintaining the current approach to exclusions but standardising exclusions across TNSPs was put to stakeholders.

TNSPs considered that standardising exclusions going forward was a sensible approach but flagged that doing so would create data issues for TNSPs. TNSPs may have to review significant amounts of historical data to bring it in line with the revised exclusions. In some instances, TSNPs may not have recorded sufficient information about a particular event in order to ascertain whether or not the relevant exclusion applied.

TRUenergy supported the standardisation of exclusions across TNSPs.

AER considerations and decision

The AER proposes maintaining the current approach to exclusions at this time. The current approach is a category approach, whereby broad exclusion clauses are listed in the scheme and TNSPs would provide a case as to why an event falls within a specific exclusion clause.

The AER proposes to continue with a category approach, but remove TNSP specific exclusions. This will provide consistency of clauses between TNSPs and be easier to administer. This is also in line with the changes to the inclusion definitions of the parameters, which aims to provide consistency for all TNSPs.

The AER proposes to implement a new standard exclusion list, which encompasses all common exclusions between TNSPs, standardises terminology and removes exclusions that are no longer appropriate due to the proposed amendments to the current parameters. The AER found that some TNSP specific exclusions were simply a variation of the standard exclusions or other TNSPs' exclusions. For example, for ElectraNet, one of the exclusion clauses for a loss of supply event states:

> "*Where ElectraNet protection system operates correctly due to a fault on a third party system no lost load is recorded."*

The AER considers this would fall under the current standard clause (3) of the scheme for that parameter. Details on the current standard exclusions for each service component parameter are listed in Annexure A, as are the TNSP specific exclusions for each parameter.

The revised exclusions definitions for the service component parameters proposed by the AER are set out below in Table 3.1:

Table 3.1 Proposed standard exclusion clauses to apply to all TNSPs

Parameter	Standard exclusion clauses
Average circuit outage rate	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
Loss of supply event frequency	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) interruptions of infrequent, occasional loads (such as pumping stations) where accurate estimate of load profiles is unreliable *force majeure events*
Average outage duration	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*

The AER considers that the standard exclusions for the average circuit outage rate should also apply to Directlink and Murraylink. In particular, the AER does not consider that Directlink requires a broader definition of force majeure events than other TNSPs (including Murraylink).

The AER has experienced difficulties in the past in obtaining sufficient information from TNSPs to allow the AER to reach a fully informed decision about TNSPs' performance against STPIS targets. A particular area of concern has been in relation to obtaining sufficient information to substantiate the exclusion of certain events from TNSPs' performance measures. While the AER has the ability to reject TNSPs' exclusion claims on the basis of insufficient justification, the AER has not taken this approach to date. The AER has decided to take a more robust approach to exclusions and has included an explicit reference in the scheme to the AER's ability to refuse exclusion claims on the basis of insufficient substantiation. This will be complemented by the use of formal information gathering powers, as discussed in Chapter 8.

3.2.2 Force majeure exclusion

Under both service and market impact components of the scheme force majeure events are excluded. In determining what force majeure events should be excluded the AER considers the nature of the event, the frequency of occurrence, whether the TNSP in practice could have prevented the impact and whether the TNSP could have effectively reduced the impact of the event by adopting better practices.

When force majeure events occur it can have a significant impact on customer supply, potentially for long durations. Under the current scheme, TNSPs' incentive payments are not affected by customers' loss of supply due to force majeure events. This is in some way contradictory to the goal of the scheme, as customers experience poor service yet TNSPs are not penalised.

Informal stakeholder consultation

The AER recognises that force majeure events are out of the control of TNSPs but explored whether there should be some adjustment to incentive payments for the service component parameters in

extreme cases. It was proposed that when the sum of the impact of force majeure events is greater than the service level provided, no incentive payment is made to the TNSP. That is, if the TNSP would only earn an incentive payment because force majeure events are excluded, then the TNSP would receive no payment. In all other circumstances, the TNSP will receive its usual incentive payment. It was emphasised that force majeure events by definition should not occur often, particularly the number of times the impact of force majeure events exceeds service provided during the remainder of the year.

TNSPs objected to the possibility of incentive payments not being paid to TNSPs during exceptional force majeure years. TNSPs raised concerns that such a clause could serve as a perverse incentive to reduce service performance for the balance of the year after a significant force majeure event. TNSPs respond to incentives by building the financial payments or penalties into their operational decision making. Accordingly, if TNSPs knew that they would be no longer be eligible for an incentive payment, TNSPs may chose not to improve their performance for the rest of the regulatory year. TNSPs also noted that force majeure events were relatively rare. Other stakeholders, including TRUenergy and the Private Generators, supported the introduction of a clawback type provision for force majeure events. TRUenergy and the Private Generators considered that such a change would force TNSPs to operate in a more commercial manner.

AER considerations and decision

The AER does not propose to introduce a zero cap on incentive payments during exceptional force majeure years at this time. The AER recognises that during force majeure events there is no incentive on TNSPs under the scheme to minimise the time taken to return service to customers due to the existence of standard force majeure exclusions. The AER considers that TNSPs raised valid concerns that a zero cap could act as a perverse incentive for TNSPs not to improve or maintain performance outside of force majeure events in the same period. The AER proposes that the scheme be amended to include additional reporting requirements on TNSPs regarding force majeure events. In addition to TNSPs providing greater verification that force majeure should apply to particular events, the scheme will also require that TNSPs report on the steps taken to ensure that TNSPs use all reasonable endeavours to minimise the impact of force majeure events on customers. The AER considers this requirement would influence TNSPs' performance in a similar manner to how the inclusion of force majeure events in the measurement of TNSP performance would do.

4 Proposed new service and network capability component parameters

This chapter sets out the proposed new service component and network capability component parameters, including the AER's reasons for the proposed amendments.

4.1 Introduction of new service component parameters

4.1.1 AER Issues Paper

In the Issues Paper, the AER explored the possibility of introducing four additional service component parameters designed to measure 'near miss' events which may be a lead indicator of a deterioration of service and potential loss of supply. These new parameters related to the proper operation of protection and control equipment, failure to meet jurisdictional reliability standards, incorrect operational isolation and a network transfer capability incentive.

The MEU, Alinta, TRUenergy and the Private Generators supported the addition of some 'near miss' indicators. AEMO and Grid Australia had concerns about the value of 'near miss' indicators. Grid Australia flagged that the inclusion of too many parameters would dilute the value of the scheme. Grid Australia expressed the view that some of the events the AER proposed to measure under 'near miss' parameters would not affect electricity consumers. Further, the collection of data surrounding 'near miss' parameters would be challenging given the different definitional thresholds and recording methods between TNSPs and would increase the administrative complexity and cost of data collection.

The AER recognises that the inclusion of too many service component parameters can dilute the financial incentive to undertake improvements to meet some, or all, of the targets. The AER has reviewed the additional parameters proposed in the Issues Paper to assess which would be most beneficial in achieving the aim of the STPIS. The AER considers that two additional parameters would be appropriate: proper operation of equipment and a network transfer capability incentive. Given the inconsistency between jurisdictional reliability standards, the AER considers that a parameter relating to a failure to comply with reliability standards would be of limited value.

4.2 Proper operation of equipment

Clause 5.7.4 (a1) of the Electricity Rules requires a TNSP to institute and maintain a compliance program to ensure that its protection and control systems operate reliably. This obligation requires a TNSP to monitor the performance of these systems. The AER monitors compliance with these obligations.

This compliance obligation recognises that every time a protection or control system fails to operate as required there is the potential for an interruption to customer supply.

High voltage (and secondary) plant outages (usually for maintenance) require correct isolation for safe work. An incorrect operational isolation of equipment can create the potential for an interruption to customer supply.

4.2.1 AER Issues Paper

In the Issues Paper the AER proposed introducing a new parameter setting targets for failures of protection systems or Supervisory Control and Data Acquisition (SCADA) systems. The SCADA is a

distributed control and communications system that is required to operate the power system and the market. TNSPs play a crucial role in providing these systems. Every time protection equipment or SCADA systems fail to operate as required there is the potential for an impact on the market or for an interruption to customer supply. The AER considers that ideally there should be zero SCADA failures and zero protection system failures, where the cost of achieving a zero failure rate does not outweigh the benefits of achieving that rate.

Maintenance outages (of either high voltage or secondary plant) require correct isolation for safe work. An incorrect operational isolation of equipment can create the potential for an interruption to customer supply. The AER considers that ideally best practice maintenance and training should reduce the occurrence of incorrect operational isolations close to zero.

The MEU, TRUenergy and the Private Generators were generally supportive of including a parameter around the operation of protection and control equipment and incorrect operational isolation of the network. TNSP submissions to the Issues Paper did not explicitly address the inclusion of such a parameter. During the informal stakeholder consultation process, TNSPs were generally supportive of the introduction of a parameter in the terms set out in section 4.2.2 below.

4.2.2 AER considerations and decision

The AER proposes the inclusion of an additional service component parameter in relation to the proper operation of equipment. This parameter comprises of three sub-parameters:

- failure of a protection system
- material failure of the SCADA system, and
- incorrect operational isolation of the network.

The unit of measure for these sub-parameters would be the number of incidents within the reporting period.

Following feedback from TNSPs, the AER is conscious that the parameter requires a robust definition to provide clear guidance to TNSPs on the events that are to be measured by the parameter. For example, the AER recognises that there may be minor inaccuracies in the SCADA system's monitoring of analogue quantities (such as voltage) which could be characterised as a 'failure' of the SCADA system. The purpose of the SCADA sub-parameter is to identify events beyond a materiality threshold, being those events which have a greater probability of impacting on the operation of the power system and the market. Accordingly, the AER has set the threshold for SCADA failures to only include those events that AEMO advises TNSPs of in its "SCADA Minutes Lost" report. The AER has taken TNSP feedback into consideration when drafting the wording of the new parameter and seeks TNSP views on whether the proposed definition provides sufficient guidance and the right balance of inclusions and exclusions.

This parameter would be introduced on a reporting only basis. The AER does not consider that a financial incentive is required at this time, although there may be an option to transition to having an incentive for the parameter in a future version of the scheme. TNSPs have informally supported the AER's view that a reporting only parameter can incentivise improvement of performance.

The AER considers that the introduction of this parameter would complement the revisions to the existing service component parameters by focussing on failures, or improper use, of key secondary systems which underpin the effective operation of primary network assets. The AER also considers

that the introduction of such a parameter should not unduly increase the burden of data collection for TNSPs. TNSPs are currently obligated to monitor failures of protection or control systems in accordance with current compliance programs pursuant to clause 5.7.4 (a1) of the Electricity Rules. The AER considers that the collection of data on protection equipment and SCADA system failures and the incidence of incorrect operation isolation of the network should be a standard procedure for TNSPs.

4.3 Network Capability Incentive

4.3.1 AER Issues Paper

The AER considered in the Issues Paper that an appropriate incentive regime may promote:

- more efficient transmission operating and maintenance practices, and
- more efficient use of existing transmission infrastructure.

The AER reiterated the view it expressed in its submission to the TFR, (where the AER flagged its intention to conduct this review of the STPIS) that:

> In the AER's conception of an ideal transmission framework, a significant proportion of a TNSPs' remuneration would be based on the level of service they provide rather than the size of their investment programs. … TNSPs would have incentives to operate, maintain and upgrade their network in a manner that delivers an appropriate level of network capability for least sustainable cost. [11]

The AER also supported the use of financial incentives to encourage TNSPs to take steps to operate and maintain their network in a manner that delivers an appropriate level of network capability for least sustainable cost. This is consistent with promoting the efficient use of existing transmission infrastructure.

There are a range of technical transmission network factors that can affect the safe maximum capability of the network. This can impact the efficient dispatch of generation in the market and the ability to deliver peak load to customers. The TNSPs have significant discretion in making decisions which affect these technical factors, which also lack transparency. The AER considered a network transfer capability incentive would encourage TNSPs to devote resources to maintaining and where necessary improving (primarily through changes to operational practices) the capability of their existing network rather than focusing on capital expenditure. Under this approach, TNSPs would be rewarded for improving the capability of existing infrastructure, and penalised for allowing network capability to deteriorate.

The AER did not express a view on the mechanism for determining a network transfer capability incentive, encouraging stakeholders to provide their views on any such mechanism.

Grid Australia was the only submission to address the idea of a network transfer capability incentive in detail. Grid Australia supported such an approach in principle but considered there were a number of difficulties in establishing such an incentive. In particular, Grid Australia considered that the issue of determining the ultimate level of transfer capability and the operation of the network where no additional capability is available would be difficult to overcome.

[11] AER, *Submission – transmission frameworks review directions paper*, 31 May 2011, p.3.

4.3.2 Informal stakeholder consultation

During the informal consultation, a high level outline of a possible network transfer capability incentive was put to stakeholders. The outline required TNSPs to submit a proposal for increasing the capability of existing assets for AER and AEMO approval during the regulatory reset. Subject to obtaining approval for the preliminary proposal, TNSPs would submit detailed activity plans each year. Incentive payments would be made for activities which met or exceeded TNSP specific targets. Projects to replace existing assets would not be eligible and no operational or capital expenditure would be allocated during the reset for undertaking capability improvements.

TNSPs were generally supportive of having a network capability incentive, expressing the view that the scheme needed to set out in detail the requirements TNSPs had to meet to be eligible. The Private Generators were generally supportive but flagged that it may be difficult to unravel activities under the incentive from normal operational or capital expenditure activities. TRUenergy considered that the incentive needed to clearly set out how it would operate, particularly if the revenue at risk was (the proposed) 1 per cent of MAR. TRUenergy preferred any incentive to have a symmetric parameter to ensure there were penalties for failing to meet predefined targets as well as incentives to reward innovation. TRUenergy suggested introducing a reporting only requirement for TNSPs to monitor and report on material congestion which occurs under 'system normal' conditions before introducing any financial incentive aimed at modifying TNSP operational practices. Grid Australia and TRUenergy queried the requirement for joint approval from both AEMO and the AER.

4.3.3 AER considerations

When considering the need for an incentive to increase network capability it is instructional to revisit the lessons learnt from the MIC. The MIC was introduced in response to a failure of TNSPs to consider the market impacts of outages of critical pieces of network infrastructure for maintenance. Obligations in the rules on TNSPs to provide information about when outages were to occur were insufficient to resolve this market failure. The MIC rewarded TNSPs for undertaking maintenance on critical circuits at times when the market impact was likely to be low, in recognition that this may result in increased costs for TNSPs.

The AER considers that the introduction of the MIC has not only focussed network outage scheduling on the market consequences of those outages, but has also brought greater focus on network capability. Since the MIC was introduced, there has for example been increased focus by TNSPs on the safety margins used in constraint equations by AEMO, as the magnitude of these margins can now have financial impacts for TNSPs. This has incentivised TNSPs to work with AEMO to formulate the most efficient constraints.

However, the MIC only focuses on network outages. As a result system normal constraints have not been the subject of the same degree of focus. The AER considers there may be an opportunity to introduce incentives to improve TNSPs' processes to enable more efficient use of the network under all conditions, not just under network outage conditions.

An indication of the ability of TNSPs to increase capability is the recent increase in the Heywood interconnector's system normal capability through simple operational measures made by ElectraNet. Examination of the constraints that were limiting imports found that a change in the constraint equation (to look at the availability of the capacitor banks rather than a check of whether the capacitor banks were in or out of service) improved import capability. ElectraNet also increased capability by performing a recalculation of limits with different input assumptions (such as the actual output from the largest South Australian generator Northern Power station, rather than assuming worst-case maximum possible output). Prior to this change, constraints would often unnecessarily limit the

network. The network is now operated ready for the largest contingency rather than the worst-case scenario.

As the example above highlights, TNSPs are best placed to identify the limitations on their network which can be improved through small measures which are low cost compared to major network augmentation. The AER considers such actions by TNSPs would promote the NEO by ensuring the efficient operation of transmission networks to extract maximum value from the network in the long-term for consumers.

However, the AER notes that despite the benefits of TNSPs undertaking such measures to improve network capability to the benefit of users of the network, the current regulatory arrangements do not promote such behaviour. Rather, they promote major capital investment to meet minimum reliability standards. TNSPs are not incentivised or allocated expenditure to identify limitations that could be addressed or improved through increasing the network capability of existing transmission assets as part of their business as usual practices. The current framework also provides limited incentives for interaction between the operating and asset management units of a TNSP's business. As highlighted above, prior to the MIC there was little focus by TNSPs on the impact their asset management decisions had on wholesale market pricing outcomes. Thus, the absence of an adequate incentive has meant that attempts to increase network capability by TNSPs other than through major capital expenditure have been sporadic.

The AER considers it is appropriate to introduce a capability incentive to deliver efficient levels of network capability from existing assets when it is most needed. The network capability incentive would encourage TNSPs to identify whether incremental or small improvements can be implemented to resolve limitations or emerging constraints on the network. This would not be a heavy additional regulatory burden on TNSPs, but rather an extension of the existing obligations on TNSPs to identify known and emerging limitations in annual planning reports. However TNSPs would now be incentivised to deliver a more service oriented focus by determining whether incremental or small improvements could be implemented to improve network capability.

In trying to formulate a network capability incentive, the AER considered the following options to measure improvements in network capability:

- asset utilisation rates: AEMO has used its energy management system (EMS) data to calculate asset utilisation rates for transmission transformers and lines.[12] The parameters reflect the average asset utilisation of all circuits in the relevant state. The utilisation was calculated as throughput on the peak demand day for each state compared to the rating of the plant

- measuring system normal market congestion in a similar way to the MIC, by using the market systems and setting $10/MWh as a tipping point (as consistent with the MIC). A benchmark could be based on past performance, with actual performance measured by identifying binding constraints that are not associated with network outages. However, a limitation of this approach is that network constraints are only used to manage flow paths between generators, and so do not cover all of the transmission network

- measuring the line ratings of transmission lines which connect to load injection points, and

- placing a reporting requirement on all new investment undertaken under the regulatory test for transmission or under the regulatory investment test for transmission to compare actual

[12] See AEMO's May 2012 submission to the Productivity Commission's review of *Electricity Network Regulation*.

network capability (using either EMS data or network constraint equations outcomes at peak demand times or when the constraint is binding) with modelled/design capability used in justifying the new investment. This could include all assets (transformer capability as well as lines).

The AER recognises that the design of any network transfer capability incentive must take into consideration the possibility that such an incentive may deliver perverse outcomes. Firstly, an improperly designed mechanism could create incentives for TNSPs to replace existing assets early in order to deliver increases in asset capability or to build out congestion. Such expenditure may not be subject to the regulatory investment test for transmission. Secondly, there is a risk that reliability could be reduced below optimal levels in order to achieve capacity increases.

Previously the objective of the STPIS was to primarily influence decisions made by TNSPs in relation to operational expenditure to maintain customer reliability; the purpose has not been to influence capital expenditure. The AER recognises that an effective network transfer capability incentive may involve minor capital expenditure by a TNSP or have secondary effects on capital expenditure by delaying the augmentation of existing assets.

4.3.4 AER decision

The AER proposes to introduce a new network capability component, separate to the existing service component and market impact component. The network capability component is designed to fund and incentivise increases in the capability of existing assets in the network when most needed as consistent with clause 6A.7.4 of the Electricity Rules, while maintaining adequate levels of reliability. An overview of the proposed network capability component is outlined below.

The network capability component seeks to incentivise TNSPs to reveal the capability of parts of their existing network and to identify measures that would provide greater value to generators and customers. Generators benefit from increased network capability as they are less likely to be constrained from dispatching generation by network limits, leading to more efficient dispatch. Customers benefit from the resulting lower wholesale costs and efficient improvements in network capability to meet increases in peak demand. In this way, the new component seeks to encourage low cost solutions for limitations on all transmission equipment on the TNSP's transmission network which unnecessarily restricts energy flows.

The AER's intention is for the network capability component to apply for one regulatory period, with a review after one regulatory cycle to determine whether an ongoing network capability component is appropriate.

Overview of proposed network capability component

The draft scheme includes a new network capability component separate to the service standards component and market impact component. Under the network capability component, a TNSP would be required to submit, as part of the STPIS component of its revenue proposal, a network capability improvement parameter action plan (NCIPAP). The TNSP must consult AEMO in developing the NCIPAP.

The NCIPAP must outline the key network capability limitations on each transmission circuit or load injection point on the TNSP's network. The TNSP would also include a list of projects (*priority projects)* designed to improve, through operational and/or minor capital expenditure, some of the network capability limitations identified and the value of the priority project improvement target for the projects. The TNSP will also rank the priority projects based on the likely impact of the projects on

customers or wholesale market outcomes in descending order. AEMO's role will include prioritising the projects that will deliver best value for money for consumers and ranking those priority projects. The total annual average expenditure of the projects listed cannot exceed 1 per cent of the MAR proposed by the TNSP. There is no pre-defined unit of measure for limit improvement targets. Targets must be objectively measurable as the AER must be satisfied the target would result in a material improvement in network capability. The AER will take into account the factors outlined in the scheme when determining whether a target would result in a material improvement, including the likely benefits to the wholesale market or to customers. A material improvement in this sense takes into account the effect the achievement of the target would have on spot price outcomes or improved capability of the transmission system at those times when customers place greatest value on its reliability.

The AER must approve the priority project improvement target if it is consistent with the requirements of the network capability component and the STPIS. The AER may amend the priority project improvement target, but only if either the TNSP agrees to the amended target or AEMO considers the amended target will result in a material improvement and can be achieved by the TNSP in the regulatory control period.

The TNSP will be required to report in each STPIS annual compliance review report on steps taken towards reaching the priority project improvement target, including any measurable improvements in network capability as a result of implementing a NCIPAP project.

In the first four regulatory years the TNSP will receive incentive payments equivalent to 1.5 per cent of the MAR to fund projects outlined in NCIPAP. TNSPs' NCIPAP projects are not to be specifically funded from regulated revenue, as the incentive payments are sufficient to cover the cost of the NCIPAP projects. This provides TNSPs with an allowance separate to its regulated revenues to undertake its priority project improvement targets. Where there is a reduction in the TNSP's proposed MAR by the AER in the final determination to the extent that 1.5 per cent of the MAR is greater than 1 per cent of the proposed MAR, the AER will reduce the number of priority projects to ensure that they can still be funded through the incentive payments.

For the final regulatory year, the AER will assess whether the TNSP has achieved the limit improvement targets for all the NCIPAP projects, based on the annual compliance report following the end of the regulatory control period. If the TNSP has not achieved the priority project improvement targets for the regulatory control period or the project costs more than the expenditure outlined in the NCIPAP, then the AER may reduce the incentive payment of the TNSP per project by a proportion of the MAR. For the priority projects ranked in the top half of the list, the proportion of the MAR per project will be equal to 2.5 per cent of the MAR divided by the number of priority projects ranked in the top half of the list. For the priority projects ranked in the bottom half of the list, the proportion of the MAR will be equal to 1 per cent of the MAR divided by the number of priority projects ranked in the bottom half of the list. The incentive payment for the final regulatory year will be equal to 1.5 per cent of the MAR minus any reductions, to a minimum of minus 2 per cent of the MAR.

For example, assume a TNSP has 18 priority projects. If the TNSP did not achieve the priority project improvement target for any of its top 9 priority projects then the AER may deduct a proportion of the TNSP's MAR equal to 2.5 per cent divided by 9 for each incomplete project. This results in a potential deduction of 0.28 per cent of the MAR for each incomplete project. If the TNSP did not achieve the priority project improvement target for any of its bottom 9 priority projects, then the AER may deduct a proportion of the TNSP's MAR equal to 1 per cent divided by 9 for each incomplete project. This results in a potential deduction of 0.11 per cent of the MAR for each incomplete project. If the TNSP did not achieve the targets for any of its priority projects, this would result in a total deduction of

3.5 per cent of the MAR. After the forgone 1.5 per cent incentive payment is accounted for, this would result in a negative incentive payment of minus 2 per cent of the TNSP's MAR in the final year of the regulatory control period.

The AER notes that where minor amounts of capital expenditure are spent, these assets will be rolled into the regulatory asset base of the TNSP.

Reasons for the design of the network capability component

As outlined in the AER considerations section above, the purpose of the network capability component is to incentivise TNSPs to identify and implement incremental and/or small changes that would improve the capability of the network at times most needed. Examples of this would be the implementation of dynamic line ratings to allow for greater network capacity at peak times, updating system normal constraints to remove redundant inputs to increase flow capacity, removing secondary circuit limitations (such as overloaded instrument transformers) and raising the height of low towers to address transmission line sag, thereby increasing transmission capability. Whilst some TNSPs have taken such measures to improve network capability, it is not the usual business practice of all TNSPs. The AER considers the network capability component will encourage all TNSPs to develop such solutions to improve network capability through the availability of regular incentive payments. If TNSPs already have in place such practices, then the network capability component will reward TNSPs for continuing this behaviour.

The AER considers this design of the network capability component is consistent with the principles in clause 6A.7.4(b) as it incentivises TNSPs to improve the reliability of existing network assets by improving their capability and is consistent with the NEO as it promotes greater value out of transmission networks for customers in the long-term.

The AER considers that TNSPs are best placed to identify network limits and develop solutions to improve them. Thus, the network capability component has minimal regulatory oversight to ensure TNSPs have flexibility in implementing solutions. TNSPs will only be required to report annually to the AER on steps it has taken to implement its NCIPAP projects. As outlined in the above sections, the AER considers that this component should not be an additional regulatory burden, but rather an extension of existing regulatory requirements and operational practices.

The AER notes the design and operation of the network capability component differs from the service standards component and market impact component. In particular the network capability component targets are not determined based on the average historical performance of the TNSP and the incentive payments received by the TNSP are not linked to traditional performance measures. These differences have been made to ensure the purposes of the network capability component are achieved.

The network capability component is designed primarily to influence the TNSPs' operation and management of its network assets to develop one-off projects to improve identified limits on its network in the regulatory control period. This type of incentive is not suited to having a target based on historical performance and incentive payments (or penalties) based on its annual whole of network performance. The AER considers the network capability component better achieves its purpose by having TNSPs identify the projects it will undertake to improve network limits and set a target that will deliver a material improvement for customers AEMO would play a part in prioritising the projects to deliver best value for money for consumers.

The AER considers the annual incentive payments of 1.5 per cent of TNSPs' MAR will adequately incentivise TNSPs to develop solutions to improve the capability of the existing network and is appropriate as customers will benefit in the long term as they obtain greater value from the existing transmission network. The AER may reduce the incentive payment received in the final regulatory year if the TNSP does not achieve its improvement target for a priority project. The reduction per project will be based on the number of priority projects and the ranking of the priority project. The AER has designed the reduction mechanism this way to ensure that there is an incentive for TNSPs to achieve the improvement targets for all priority projects but at the same time prioritise the achievement of the higher ranked priority projects which are likely to have more market and customer benefits. Thus, in the final regulatory year of the regulatory control period the TNSPs can receive an incentive payment of up to 1.5 per cent of the MAR or a negative incentive payment of up to –2.0 per cent of the MAR.

5 Proposed amendments to the market impact component

This chapter sets out the proposed amendments to the MIC, including the AER's reasons for the proposed amendments.

5.1 Market impact component

The MIC provides an incentive to TNSPs to minimise planned transmission outages that can affect the NEM spot price. It measures the number of dispatch intervals where an outage on the TNSP's network results in a network outage constraint with a marginal value greater than $10/MWh.

The MIC currently operates as a bonus only scheme which provides a TNSP with a payment of up to two per cent of its MAR in each calendar year. A TNSP receives the full two per cent payment if it can reduce the number of dispatch intervals with a marginal value greater than $10/MWh to zero. The payment which a TNSP receives in each calendar year is calculated by measuring the TNSP's annual performance against the target. The asymmetric nature of the scheme means there is no revenue at risk for the TNSP.

Table 5.1 shows the performance count for each participating TNSP to date. The MIC first applied to TransGrid in 2009, Powerlink in 2010, and ElectraNet and SP AusNet in 2011. Table 5.1 shows the performance count (bolded) versus the performance target for each TNSP. To date, with the exception of SP AusNet, TNSPs have outperformed (i.e. been under) their performance targets.

Table 5.1 Performance count versus target

TNSP	Performance	2004	2005	2006	2007	2008	2009		2010		2011	
TransGrid	Count	1437	3840	2721	3425	-	-	**1149***	**780**		**872**	
	Target	-	-	-	-	-	-	1428**	2857		2857	
Powerlink	Count	-	2153	3673	1702	179	143		1502	**11`**	**37**	
	Target	-	-	-	-	-	-		830	740``	1570	
SP AusNet	Count	-	-	1151	2542	3136	1439		2088		-	**1573^**
	Target	-	-	-	-	-	-		-		-	869^^
ElectraNet	Count	-	2025	2509	2427	1835	515		1789~		**1388**	
	Target	-	-	-	-	-	-		-		1862	

Measure commenced on 1 July 2009
** Annual performance target was 2857, so the target for six months was half of this (1428.5)
` Powerlink's start date was 13 July 2010. 2010 performance was based on 172 days and performance target was 740. The performance count for this period was 11. For the first half of the year the count was 1393.
`` Annual performance target was 1570 using 2005 to 2009 data.
^ Measure commenced on 1 August 2011
^^ For the period from 1 August 2011 to 31 Dec 2011
~ To be confirmed

Table 5.2 shows the s-factors and respective incentive payments arising from the market impact parameter of the STPIS. Total payments to date have been around $46 million over the seven years in total the parameter has applied across the four TNSPs.

Table 5.2: S-factors and incentive payments under the MIC

TNSP		2009	2010	2011	Total payments ($m)
TransGrid	S-factor (%)	0.39	1.45	1.39	
	Payment (million)	1.33*	10.29	10.71	22.33
Powerlink	S-factor (%)	N/A	1.97	1.95	
	Payment (million)	N/A	6.825*	15.16	21.99
SP AusNet	S-factor (%)	N/A	N/A	0.00	
	Payment (million)	N/A	N/A	0.00**	0.00
ElectraNet	S-factor (%)	N/A	N/A	0.52	
	Payment (million)	N/A	N/A	1.49	1.49
Total payments					**45.81**

* for the 1 July to 31 Dec period
**for the 1 Aug to 31 Dec period

Being a bonus only scheme, the scheme has been well-received by TNSPs, with a number of TNSPs having applied for the early application of the MIC ahead of the reset process. Whilst impossible to quantify the benefits of the scheme, the AER's qualitative analysis of market outcomes concludes there has been a noticeable improvement in outage related market impacts, across all regions following take up of the MIC.[13]

The AER identified a number of areas for improvement in the Issues Paper. Consequently the AER has given further consideration to possible amendments to the MIC to strengthen the design of the scheme, taking into account TNSPs' ability to strongly influence their performance under the scheme and flag a potential future 'efficiency frontier' performance issue.

5.2 Reasons for a review of the scheme

5.2.1 AER Issues Paper

Development of a symmetrical financial incentive to address TNSP's potential influence of the scheme

In the Issues Paper, the AER highlighted that the MIC differs from the other components of the STPIS as it is directly linked to the highly controllable activities of TNSPs. Around 80 per cent of outages affecting the MIC result from planned activities, which can be varied to significantly influence performance against the MIC. This high level of control over market impacts flowing from outages appears to have allowed TNSPs to engage in strategic behaviour to influence the outcomes of the scheme. This controllability of market impact outages was higher than anticipated when the scheme was first designed – one of the reasons for the one-side nature of the new untested scheme.[14]

This incentive-only arrangement has potentially led to perverse outcomes. For example, on 13 July 2010, under the early implementation framework, Powerlink commenced participation in the MIC. Powerlink's MIC performance measure for the remainder of 2010 (from the period 13 July to 31 December), was 11 dispatch intervals of binding constraints (mostly related to unplanned

[13] The AER reports each week on significant wholesale spot price outcomes. The analysis compared the frequency of prices above $250/MWh before and after participation in the MIC where network outages were a contributing factor. AER electricity weekly reports can be found on the AER website www.aer.gov.au.

[14] One of the other reasons for commencing the scheme as bonus-only was to encourage early participation by TNSPs in the scheme. This goal was achieved, with the TNSPs proposing a rule change to allow for the early take-up of the scheme (outside of the normal regulatory reset timeframe).

outages). However, prior to this (from the period 1 January to 12 July 2010), Powerlink's MIC totalled approximately 1400 binding constraints. The majority of these 1400 binding constraints were planned outages taken by Powerlink.

The Issues Paper stated that this demonstrated evidence of Powerlink undertaking strategic behaviour by scheduling planned outages to a period prior to the commencement of measuring the impact to maximise incentive payments. Powerlink also performed very strongly in 2011, achieving 1.9 per cent out of a maximum of 2 per cent. In response, Powerlink representatives have indicated to the AER that this reduction reflects a change in work practices triggered under the scheme, including the use of scarce "live line" work resources, although no details have been provided.

This change in work practice is the type of behaviour that the scheme envisaged, but the lumpiness of the indicator between periods is of significant concern and reflects the design of the scheme, where this is no penalty for significantly underperforming in one period to facilitate better performance in an adjacent period. For this reason the Issues Paper explored the possibilities of a symmetrical scheme.

In response to the Issues Paper, Alinta Energy, TRUenergy and the Private Generators supported a symmetrical scheme, as it better reflects the risk experiences of other market participants who rely on transmission performance.

AEMO argued that MIC should be a penalty only scheme as it is consistent with international practice and would minimise the potential for strategic behaviour of TNSPs.

Transend, Grid Australia and SP AusNet argued for the scheme to remain a bonus only scheme.

Grid Australia highlighted that:

> "Grid Australia does not believe there has been sufficient experience with the application of the market impact component to consider a symmetrical financial incentive.
>
> .... the consideration of a symmetrical incentive has not considered the impact when a TNSP reached the 'efficiency frontier' at which it can no longer improve.... If the TNSP has made all the behavioural changes possible and is operating at the efficiency frontier, it will be unable to improve its average performance and will be exposed to penalties at a high impact per dispatch interval while maintaining the same behaviour that benefits consumers and incurring costs for such behaviour."

Grid Australia also stated:

> "it appears to be more difficult to mitigate the effect of outages for capital works at locations on the network that are prone to constraints, such as interconnections or particular intra-regional cut-sets. This is because outages for capital works are likely to be longer than outages for maintenance due to the nature of the work, and are likely to be more difficult to reschedule if they are part of a program of works..."

Transend stated that it:

> "considers it unreasonable to be subject to a penalty arrangement under an as-yet untested scheme in Tasmania. Introducing the scheme as a bonus only scheme would be consistent with the approach taken in all other regions".

Timing of performance measure

The STPIS requires that each TNSP's performance is measured over a calendar (rather than financial) year. This approach is taken to reduce the lag between the annual performance being

measured and the financial incentive being added or subtracted from the MAR to six months. This amplifies the perverse incentives as illustrated in the example of Powerlink in the second half of 2010.

5.2.2 Informal stakeholder consultation

Development of a symmetrical financial incentive to address TNSP's potential influence of the scheme

In light of the submissions made by the industry, AER staff explored the possibility of a symmetrical scheme with a limited penalty. A symmetrical scheme provides an improved incentive for continual improvement as an underperformance will impose a penalty. This also reduces the incentive for TNSPs to deliberately underperform to set an easy-to-achieve target in the future. AER staff considered a capped penalty scheme would provide improved incentives for TNSPs, whilst limiting the penalty applied to the TNSP in recognition that TNSPs have unavoidable capital works and outages at times. A capped penalty scheme means that, in the case of underperformance, the TNSP is not penalised any greater than the incentive payment made in the previous year. AER staff considered this could limit the risks to TNSPs and overcome some of the perverse incentives that currently exist. This position was put to stakeholders for comment.

TRUenergy commented:

> "the MIC does not penalise TNSPs for underperforming against their target. As a result, there may be a perverse incentive for TNSPs to deliberately cause a high level of congestion (without penalty), which then feeds forward into a higher performance target. The TNSP can then more easily outperform this target in subsequent years receiving higher incentive payments. This incentive exists as long as there is an asymmetric scheme. For this reason, we consider that the introduction of a symmetrical scheme will help address this weakness".

Grid Australia commented:

> 'the change to a symmetric scheme does not change the design feature of the parameter that create the potential to 'game' outcomes. It simply shifts this feature, the collar, from zero to a non-zero level'.
>
> 'TNSPs incur costs in responding to the scheme. The introduction of a symmetric scheme is likely to create situations in which TNSPs incur cost to respond, thence incur penalties for subsequent events in the year'.
>
> The prospect of foregone incentive due to prudent behaviour, as has already been experienced by some TNSPs, has not considered in the design of the parameter.

TransGrid also highlighted instances when TransGrid forewent incentive payments under the MIC due to TransGrid undertaking significant capital works designed to deliver net market benefits, even though the work had been planned such that the impact on the wholesale market would be minimised.

Improvement on performance target calculation

In the current scheme, a TNSP's annual performance target is equal to the TNSP's average performance history over the five years prior to the revenue reset being determined. This value is set as the performance target for the 5 years of the coming regulatory period and does not vary for that period.

This performance target may not be the most appropriate target as it does not take into account the TNSP's most recent performance, which is closely linked to TNSP activities. As shown in Table 5.2 the actual performance varies considerably from year to year. However, in the current scheme

network congestion in 2005 for example would be used to set a performance target for 2014, despite the fact that substantial market changes may have occurred over this 10 year period. The AER considers it is timely to review the calculation of the performance target to provide more relevant targets.

5.2.3 SP AusNet and Transend applications

In SP AusNet's May 2012 application to amend the STPIS, SP AusNet proposed to increase the revenue at risk for the MIC from 2 per cent to 3.5 per cent. SP AusNet highlighted that:

> "Increasing revenue at risk on the Market Impact parameter is consistent with the NEO because it provides a stronger alignment of TNSP objectives with the interests of consumers".

Transend indicated its desire to participate in the MIC on an asymmetric basis only. Transend has developed the tools and systems required to assess the market impact of transmission system outages, and will have five years of data on which to develop a performance target for the next regulatory control period. Transend considered that it was appropriate that it participate on an asymmetric basis given the MIC was untested in Tasmania and the extent to which Transend is able to influence the outcome under the scheme is also untested. Introducing the MIC as bonus only would also be consistent with the approach taken in all other regions.

5.2.4 AER considerations and decision

Asymmetric application of the market impact component and setting of the performance target

Input from submissions to the Issues Paper, internal AER modelling and informal stakeholder consultation has led the AER to the conclusion that a rolling performance measure and rolling target is an improvement over both the current scheme and the symmetric scheme set in section 5.2.2. The high controllability of the MIC performance measure, with around 80 per cent of outages related to planned maintenance, means that very poor performance in one period (with very adverse market impacts) would result in penalties capped at the collar. On the other hand, the unpredictability of market outcomes means that exposing TNSPs to a large penalty may not be appropriate.

Maintaining an asymmetrical scheme will allow Transend to enter into the scheme on the similar conditions to other TNSPs and make efficient operational decisions without the risk of a penalty. This will also provide an opportunity for the AER to collate further data to analyse the impact of the MIC on TNSPs' operational decisions and whether the incentives are effective and robust. The AER also notes that TNSPs may, in response to the MIC, incur additional operational expenses by scheduling maintenance during off-peak periods in order to minimise the impact of outages on the market. This increase in operational expenditure would not be included in the operational expenditure allowance as this is set at efficient levels.

AER considers that a rolling performance measure and rolling performance target will incentivise TNSPs to provide continual improvement on performance, and not result in perverse outcomes.

A rolling performance measure limits the ability for TNSPs to artificially 'zig zag' their performance to receive large incentive payments. A rolling performance measure over a two year period will address the incentive for a TNSP to schedule all critical outages in one year at a time likely to deliver high market impacts (to flow into an easier target) and move in the next period. By artificially spiking the performance in one year, the TNSP will be 'penalised' with very low incentive payments for two years before benefiting from high targets.

In the current scheme, a TNSP's annual performance target is equal to the TNSP's average performance history over the five years prior to the revenue reset being determined. The AER considers that it is more appropriate for the performance target to include just the most recent performance data. That is the performance target is recalculated annually (on a moving annual average basis) during a regulatory period. The AER propose a rolling three year performance target. The combination of the rolling performance measure and target provides a strong incentive for a continual improvement performance by the TNSP and providing more relevant targets to TNSPs.

An example of a 3-year rolling average performance target and 2-year performance measure is shown in Table 5.3 below.

Table 5.3: Example of 3-year rolling average performance target and 2-year rolling average performance measure

Year	2008	2009	2010	2011	2012
Performance	1000	900	800	700	600
Target	-	-	-	-	900 (Avg performance of 2008-10)
Measure	-	-	-	-	650 (Avg performance of 2011-12)

In relation to SP AusNet's proposal to increase the financial incentive, the AER considers that 2 per cent revenue at risk for the MIC provides a sufficient level of incentive. This is evidenced by the material decrease in network outage related market impacts and by the number of TNSPs that have applied for the early application of the scheme. In light of the changes proposed by the AER, further assessment on how TNSPs perform under the new scheme is required to determine whether changes to the revenue at risk are warranted.

Furthermore, the AER is also proposing to introduce a new network capability incentive parameter that provides an additional 1.5 per cent of revenue at risk (bonus only parameter). This brings the total revenue at risk to 4.5 per cent, which leaves little room to increase the revenue at risk for the MIC. Thus, the AER does not consider it is necessary to increase the revenue at risk for the MIC.

6 Weightings, caps and collars for the service component

This chapter sets out the AER's position regarding the setting of service component weightings, caps and collars, including the AER's reasons for proposed amendments.

6.1 AER position regarding the methodology to set performance targets, caps and collars

Whether a TNSP receives an incentive payment or penalty for a service component parameter is determined by the TNSP's performance against the relevant target. In addition to setting a target, upper and lower bounds are set (referred to as caps and collars). The cap specifies the level of performance that results in a TNSP receiving the maximum financial reward attributed to a parameter; the collar specifies the level for receiving the maximum financial penalty.

6.1.1 AER Issues Paper

The AER has predominately set performance targets using five years of historical performance data. The AER takes the mean of the performance data from the previous five years to determine the target for the following regulatory period. The cap and collar applied to the target are then generally determined through the use of two standard deviations around the mean.

Some TNSPs' performance against the circuit availability parameter has approached a point where two standard deviations from the mean above the target is greater than 100 per cent availability ("the natural limit"). This leads to a cap that is unachievable.

The AER flagged that alternative approaches to applying the cap when two standard deviations from the mean will violate the natural limit include setting the cap at:

- the natural limit
- the percentile level that is less than the natural limit, or
- one standard deviation above the mean.

The AER noted that some TNSPs currently have caps set at one standard deviation above the mean. The rationale for applying this approach is that the closer a TNSP is to operating its network at 100 per cent availability the closer to the efficiency frontier the firm is operating. Therefore any further improvement will be harder to obtain under the scheme.

In recent decisions, the AER agreed to this approach to determining the cap where the TNSP was approaching an efficiency frontier. The AER then moved to an approach of setting the cap at one standard deviation above the mean to incentivise future performance improvements.

The AER expressed the view in the Issues Paper that in the future it may be appropriate to:

- apply the natural limit when an approach of applying one standard deviation leads to a value greater than 100 per cent, or
- apply an alternate value based on a calculation of the efficiency frontier.

A variety of views were expressed in the submissions in response to the AER's Issues Paper.

Grid Australia considered that setting caps and collars statistically at two standard deviations from the mean was based on an appropriate principle. Grid Australia considers that the principle was to aim for a TNSP's performance to be positioned on the slope of the incentive curve rather than beyond the cap or collar, where there is no incremental incentive.

Grid Australia expressed the view that a statistical approach to setting the cap and collar is not appropriate for three reasons:

- it cannot be demonstrated that performance against a parameter over a regulatory period follows a normal distribution, as acknowledged when the use of two standard deviations was first introduced
- when a TNSP is operating near the 'efficiency frontier' there is a greater probability of attaining an outcome below the target than above the target, indicating an asymmetrical distribution, and
- a sample of five or six data points is not statistically significant enough to fit a distribution.

Grid Australia considered there were alternative methods available that:

- provide an incentive to reach and maintain performance at the efficiency frontier, and
- avoid the tendency of the scheme to penalise TNSPs in the long term in response to good performance, which is counter to the scheme's objectives.

The MEU considered that where there is high circuit availability and more than one standard deviation would exceed the 100 per cent limit, the bonus/penalty could be set asymmetrically. Alinta expressed the view that there is little benefit in rewarding TNSPs for parameters where it has reached the 'performance frontier'. The Private Generators supported the targets, collars and caps approach to incentives, but questioned whether bands should not be set in a more stretching manner or the linear slope changed to reflect more challenging approaches to the collars and caps.

6.1.2 AER considerations and decision

In light of the proposed changes to the transmission circuit availability and average outage duration parameters, the AER considers that maintaining the current approach of setting targets with reference to historical performance would be appropriate. It is unclear how close TNSPs would be to the efficiency frontier for the revised parameters. The AER is, however, cognisant that the normal distribution methodologies traditionally used to set targets, collars and caps may not be appropriate in the circumstances where TNSPs are approaching the natural limit. The AER is exploring whether other methodologies could be applied in these circumstances.

The current scheme states that the proposed cap and collars must be calculated by reference to the proposed targets and using a sound methodology. The scheme does not prescribe the methodologies to be applied. The AER considers that what constitutes a 'sound methodology' for setting caps and collars may differ between parameters and for TNSPs.

The AER will take into account the nature of the data (discrete vs continuous) and the distribution of data when assessing the methodology used to calculate the cap and collar. The AER considers that in the situation where a TNSP has achieved a service level close to the limit, the TNSP must consider fitting a curve that mimics the data set (i.e asymmetric distribution curves). Fitting a normal distribution curve in those circumstances can result in a cap value greater than a feasible value (such as greater than 100 per cent).

Grid Australia flagged that, by only measuring loss of supply events in the average outage duration parameter, issues may arise as a result of a small population of events. In these circumstances a unit increase of an event can have significant impact on the TNSP's performance against the average outage duration parameter target. Further, the TNSP has limited control over the number of events that occur, which affects their performance measure and the setting of targets. Where a parameter measures infrequent events, this can create challenges in setting appropriate targets and performance measures to ensure that the parameter incentivises consistent improvement or maintenance of TNSP performance. The AER recognises that this may be a weakness of the average outage duration measure as revised, but would like to review the performance of TNSPs under this new parameter before making further changes. The AER will re-assess the effectiveness of this parameter in its next STPIS review.

6.2 Proposed amendments to service component parameter weightings

Under the current scheme a TNSP must, in its revenue proposal, propose weightings for each of its parameters and demonstrate how the proposed weightings are consistent with the objectives listed in clause 1.4 of the scheme. The AER may reject the proposed weightings if it forms the opinion that they are inconsistent with the objectives of the scheme. The sum of the weightings must equal the maximum revenue increment or decrement that a TNSP may earn under the service component (currently 1 per cent of the TNSP's MAR for the year).

Under the current scheme, a TNSP must, where relevant, take the following factors into account when proposing weightings to apply to each parameter:

- the extent to which each parameter applying to the TNSP under the service component provides the incentives described in clause 6A.7.4(b)(1) of the Electricity Rules
- the *availability of accurate and reliable data* for determining the values for each parameter applying to the TNSP
- the *scope that the TNSP has to improve its performance* as measured by each of the parameters that apply to it, and
- the extent to which the parameters and sub-parameters applying to the TNSP *overlap*.

When assessing whether proposed parameter weightings are consistent with the STPIS, the AER has considered the following matters:

- whether the proposed weightings are structured to provide incentives for the TNSP to:
    - plan and minimise outages at times and to assets highly valued by customers
    - improve service performance where it has the greatest scope or ability for service improvement,
- that a parameter specific weighting of less than 1 per cent of total revenue at risk is too weak to provide an adequate incentive to maintain or improve service performance, and
- that a parameter specific weighting of zero is appropriate where the reliability of available data to determine performance targets is in question.

The flexibility in the STPIS in setting weightings was provided to take into account data limitations and the need to respond to unforeseen issues that may arise in applying the STPIS. In contrast, the performance incentive scheme for distribution network service providers 'locks' the weightings into the scheme.

As a result of the current requirements of the scheme, the weightings given to each service component parameter (and sub-parameters) differ across TNSPs. The current weightings for each TNSP are set out in Appendix B.

6.2.1 AER Issues Paper

The AER expressed the view that in principle there does not appear to be a compelling rationale for why weightings should vary across TNSPs. The current approach has led to inconsistencies in the relative weightings for parameters between TNSPs. If the flexibility of setting weightings is removed, the AER considered that a consistent approach to setting weightings across TNSPs may be required.

Submissions by Grid Australia and SP AusNet argued that weightings should take into account the differences between transmission networks and therefore should not be standardised across TNSPs. Most other stakeholders, however, supported a more consistent and transparent approach to the setting of weightings.

There were also a number of submissions on the question of how weightings should be applied to each parameter and sub-parameter. In general, there was a consensus that greater weight should be applied to those parameters that reflect services more highly valued by customers.

6.2.2 Informal stakeholder consultation

During the informal consultation stage, views were sought from stakeholders about standard parameter weightings (specified in similar terms as set out in Table 6.1 below).

Stakeholders expressed broadly similar views to those expressed in response to the AER's Issues Paper. The Private Generators supported standardising weightings to provide clarity and national consistency. TRUenergy supported maintaining the current flexible approach to setting weightings on the basis that it allowed the AER and TNSPs to target particular areas of performance.

Transend expressed the view that the legislative requirement is for the scheme to provide incentives for each TNSP to maintain or improvement performance. Transend considered that weightings for parameters should remain flexible such that areas for improvement could be targeted with a higher weighting. Transend considered that a standardised weighting could lead to TNSPs neglecting areas of poor performance to focus on areas where its performance is already high. Transend also considered that the parameters of most value were the loss of supply parameter, as this parameter focuses on events with a tangible impact on customers, and the MIC, which generators valued the most due to its focus on minimising market constraints.

6.2.3 AER considerations and decision

The AER considers that there is no sound basis for allowing parameter weightings to vary across TNSPs. The different operational circumstances and network characteristics for most TNSPs should be accounted for by setting targets based on historical performance. These differences should not also be factored into parameter weightings as there is no evidence that customers across the NEM will differ in how they value quality of service, as measured by the service component parameters. Furthermore, the AER considers that the appropriate time to review and, if necessary, amend these

parameter weightings is during the regular review of the STPIS (if this approach to reviewing the STPIS is adopted). This is also consistent with the AER's STPIS for distribution network service providers (noting, however, the more generic nature of distribution reliability).

The AER proposes setting the parameter weightings during the current review of the STPIS, with the new weightings to take effect in the application of the scheme upon the next reset for each TNSP. The AER proposes that the weightings for the current service parameter be amended to the following:

Table 6.1 Standard parameter weightings for TNSPs (excluding Directlink and Murraylink)

Parameter	Weighting (MAR %)
Average circuit outage rate:	**0.50**
Transmission line outage - fault	0.20
Transformer outage – fault	0.20
Reactive plant – fault	0.10
Transmission 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
Multi circuit assets	0.10
Proper operation of equipment:	**0.00**

The AER considers that the average circuit outage rate parameter should have the highest weighting to reflect the importance of unplanned outages as a lead indicator of system reliability. The AER considers that customers highly value reliability and that the average circuit outage rate parameter will incentivise TNSPs to improve the reliability of their networks (and therefore minimise the likelihood of loss of supply events). Together, the parameters that measure loss of supply have equal weighting to the unplanned transmission outage frequency parameter of 0.50 per cent of MAR. The AER considers that the magnitude of the energy lost and the length of time of unplanned outages, as measured by the loss of supply event frequency and average outage duration parameters respectively, have equal importance. However, in light of concerns as flagged by Grid Australia that narrowing the average outage duration parameter may reduce the effectiveness of the parameter, the AER proposes that the average outage duration parameter have a lower weighting of 0.20 per cent of MAR.

Within each parameter, the AER has also proposed weightings for sub-parameters. Of the average circuit outage rate sub-parameters, the AER considers that transmission line and transformer fault sub-parameters should have equal weights given the failure of these circuits has a higher probability of causing loss of supply. As outages of reactive plant are less likely to cause loss of supply, this sub-

parameter has a lower weighting. In recognition of the issues surrounding a lack of consistent methodology of measuring forced outages, the AER proposes that forced outage sub-parameters have a zero weighting. For the loss of supply frequency sub-parameters the AER proposes that the 'x' and 'y' system minute sub-parameters have the same weighting. The AER notes that there is currently no consistent approach to how the 'x' and 'y' system minute sub-parameters are weighted, with some TNSPs having a higher weighting for the 'y' system minute sub-parameter and others TNSPs vice versa. The AER considers that each sub-parameter incentivises desirable behaviour and that, so long as the 'x' and 'y' system minute thresholds are appropriately set, equal weighting for the sub-parameters is appropriate.

The AER proposes that, where there is insufficient accurate and reliable data available for determining the values of a parameter or sub-parameter for a TNSP, the AER be able to reduce the weighting for that parameter or sub-parameter to zero. For example, the AER considers that it may be appropriate to set the weighting for the single circuit asset sub-parameter to zero for those TNSPs with a highly meshed network due to insufficient data for setting values for the sub-parameter. The AER will consider Transend's application to maintain the average outage duration parameter at zero during the reset process.

With regards to Transend's concerns that having standardised weightings could lead to TNSPs neglecting areas of poor performance to focus on areas where its performance is already high, the AER considers such conduct is unlikely in the long run. If TNSPs continue to focus attention on areas of high performance, targets for those parameters will become harder to achieve, refocusing attention back to areas of poor performance. Further, the AER considers that giving a TNSP with poor performance against a parameter a higher weighting than another TNSP with good performance against the same parameter effectively penalises the other TNSP for performing well.

The AER considers that the different parameter weightings for Directlink and Murraylink be maintained in light of the unique characteristics of their networks. The revised weightings are set out below:

Table 6.2 Standard parameter weightings for Directlink and Murraylink

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**

The AER notes that, should its proposed weightings consistently provide insufficient incentive for most TNSPs to improve or maintain levels of performance, the weightings and/or total MAR at risk for the service component can be reconsidered during a future STPIS review.

6.3 The level of financial incentive

The Electricity Rules provide that the maximum revenue increment or decrement that a TNSP may receive as a result of the operation of the scheme must be in the range of one and five per cent of the MAR.

Generally, the service component provides a financial bonus (or penalty) of up to one per cent of each TNSP's MAR for the relevant regulatory year. The financial incentive that a TNSP receives for the service component is calculated by comparing a TNSP's performance against its cap, target and collars for each of its parameters and sub-parameters and applying the weighting that is attributed to each parameter and sub-parameter. The revenue at risk was set at one per cent given the scheme was still in its early stages and there was concern around exposing TNSPs to additional uncertainty or risk.

There is an additional zero to two per cent for the MIC.

6.3.1 AER Issues Paper

The AER expressed the view that, given the current arrangements are at the bottom of the range and have not been reviewed since the start of the STPIS, the financial incentive and revenue at risk arrangements may be outdated. The AER sought submissions on whether the review at risk should be increased.

The AER put forward for consideration the following approaches to the design of the financial incentive and revenue at risk arrangements:

- incorporating the **economic cost of outages** into the financial incentive for parameters and sub-parameter measuring loss of supply.

  Should the size of the financial incentive on the TNSP be set with reference to the size of the economic harm resulting from outages on the transmission network. The Value of Customer Reliability (VCR) produced by AEMO could be used as a proxy measure of economic harm. The VCR, expressed in dollars per MWh of unserved energy, is used in transmission planning to ensure that the extra benefit of reliability associated with an augmentation outweighs the building costs.

- setting **asymmetrical financial incentives** for 'efficiency frontier' and 'near-miss' parameters.

  Currently TNSPs can be given a financial bonus for maintaining rather than improving its current level of service where it has reached the efficiency frontier of its network. Where the TNSP is unlikely to improve performance against a parameter value because it has reached the 'efficiency frontier' it may be more appropriate for an asymmetric financial penalty-only incentive to apply for that parameter. This is because as there is no scope for improvement, it is inappropriate to provide the TNSP with a financial bonus for network maintenance.

  If 'near miss' parameters were included, the AER put forward the possibility that the financial incentive associated with these parameters be penalty-only. Under this arrangement, every occurrence of a near miss measure by a TNSP would result in a penalty. This would provide an incentive to TNSPs to minimise actions which lead to reduced levels of service.

Non-TNSP stakeholders were supportive of the proposal in the Issues Paper to increase the revenue at risk to the full ±5 per cent under the Electricity Rules. In particular, submissions from generators proposed the revenue at risk for the MIC be increased to ±3 per cent and the service component be increased to ±2 per cent. The key rationale provided by stakeholders was that increasing the revenue at risk would better incentivise TNSPs to improve network reliability.

TNSPs cautioned against increasing the revenue at risk. Grid Australia considered that as a first step, the AER should first assess whether the current financial incentive arrangements are adequately

achieving the desired behavioural responses from TNSPs. In particular, attention should be paid to the design of the rate of the incentive.

While there was support in principle for the incorporation of the economic cost of outages into the calculation of financial incentive, stakeholders noted the difficulties associated with such an approach. Stakeholders supported the AER further exploring this idea as part of the review.

There was mixed support for the proposed penalty-only financial incentive arrangements. Several stakeholders supported TNSPs receiving incentive payments where there was a corresponding increase in network reliability.

6.3.2 AER considerations and decision

The AER proposes maintaining the symmetrical (±1 per cent of MAR) approach at this stage to the existing service component. The AER considers that if TNSPs are approaching the natural limit, it is still appropriate for efficient TNSPs to be rewarded for maintaining their performance at optimal levels. Further, moving to penalty only once TNSPs have reached the efficiency frontier may provide a perverse incentive to other TNSPs not to improve performance while efficient TNSPs are effectively penalised. The AER considers that the aim should be to set realistic performance targets and then incentivise improvements compared to the target.

As detailed in chapter 5, the AER proposes that the revenue at risk for the MIC be maintained at zero to +2 per cent.

The AER proposes that the revenue at risk be set at +1.5 per cent of MAR for the network transfer capability, with the exception of the final year in the regulatory control period. Further details are set out in chapter 4.

7 Proposed amendments to triggers to amend the scheme

This chapter sets out the AER's views regarding triggers to amend the STPIS and the AER's reasons for the proposed amendments to the current arrangement.

7.1 Current approach to scheme amendments

Under the STPIS, amendments to the scheme can be initiated by the AER or proposed by a TNSP. There are two avenues through which TNSPs can propose to amend the STPIS.

Clause 2.3 of the STPIS allows TNSPs to propose amendments to any aspect of the scheme at any time up to 22 months before the commencement of the next relevant regulatory control period. Clause 3.2 of the STPIS allows TNSPs to propose alterations to elements (i.e. definition, unit of measure, source of data, exclusions) of the service component parameters as part of the transmission determination.

7.1.1 AER Issues Paper

The AER expressed the view in the Issues Paper that there should be a move to periodic reviews of the STPIS involving stakeholders and to remove the ability of TNSPs to suggest amendments to the STPIS outside of those reviews. The AER expressed the concern that the current approach was creating a piecemeal approach to the STPIS, leading to divergent parameter definitions and inconsistencies in the way the STPIS is developed and applied over time.

Non-TNSP stakeholders were supportive of the AER removing a TNSP's ability to amend the STPIS. TNSPs did not agree with the AER's proposal, arguing that the current approach promotes regulatory certainty by facilitating incremental changes and allows the review to be carried out in an appropriate time frame. If the current process is removed, TNSPs considered it should be replaced with alternative process for a TNSP to propose amendments.

7.1.2 Informal stakeholder consultation

The AER's position in the Issues Paper was reiterated during the informal consultation process. Most stakeholders maintained their views. Grid Australia was concerned that, by removing the ability to amend the scheme on an individual basis, TNSPs would be dissuaded from proposing amendments to innovate the scheme.

7.2 AER considerations and decision

The AER proposes changing the scheme to remove TNSPs' ability to amend the scheme on an ad hoc basis, moving to undertaking regular reviews of the scheme in its entirety. The AER considers that this ability has driven the disjoint between the STPIS scheme as it applies to individual TNSPs. The AER considers that the level of inconsistency between TNSP specific requirements is not justified. While the aim of the reviews of the scheme would be to bring TNSPs into greater alignment, they would provide an opportunity for TNSP specific amendments should the process of harmonisation provide ineffective. These reviews would involve stakeholder consultation, providing the TNSPs with the opportunity to propose amendments. In light of the policy uncertainty surrounding the TFR review, the AER intends to conduct the next review of the STPIS two years after the current review has been finalised.

The AER strongly encourages TNSPs to put forward proposals to improve the effectiveness of the scheme and acknowledges that TNSPs are uniquely positioned to identify potential innovations. Notwithstanding, the AER considers that regular reviews – conducted at regular intervals to allow TNSPs to propose changes to the scheme before their next reset – would provide TNSPs with the appropriate forum. The AER also considers that conducting regular reviews provides all stakeholders with a defined period to focus on the scheme and to give more fulsome consideration to proposed changes than the current process. Further, the AER considers that where a TNSP does put forward an amendment to improve the scheme, that amendment should be applied to all TNSPs. The AER acknowledges that improvements may not have been carried across from the originating TNSP to other TNSPs under the current process. The AER considers that regular reviews are likely to encourage greater participation from stakeholders and has the potential to increase innovation for the benefit of the scheme as a whole.

8 Provision of information under the scheme

This chapter sets out the current requirements under the STPIS for the provision of information by TNSPs and the AER's reasons for the proposed use of Regulatory Information Notices (RINs).

8.1 Current information requirements

Under the current scheme, TNSPs provide annual compliance information to the AER in accordance with the requirements of the AER's TNSP Information Guidelines. TNSPs are obligated to provide certain categories of information in relation to the STPIS to the AER, including:

- performance results against parameters, with and without proposed exclusions
- information regarding proposed exclusions, including a detailed description of each event, the basis of excluding an event from a TNSP's performance measure and supporting documentation where available, and
- proposed service standards factor (s-factor) and financial incentive calculations.

The TNSP Information Guidelines specify that TNSPs must use a customised service performance reporting template to provide specified information to the AER. The AER is required to provide TNSPs with an updated template by 15 December each year.

The AER relies on information provided by TNSPs to determine the financial incentives TNSPs receive under the STPIS. One of the areas the AER closely examines when assessing TNSP's proposed s-factors is information on exclusions. Decisions on whether particular events are excluded from a TNSP's performance measure affect both the incentive received by the TNSP during the relevant year and the setting of performance targets going forward. The AER's experience to date has been that insufficient information has been provided with annual submissions to support exclusions, requiring requests for additional supporting information to be made.

Under the current arrangements, information or data used as the basis for the final annual compliance information reported under the Information Guidelines is not required to be gathered or recorded in a particular way. The manner in which TNSPs record or maintain certain information can affect not only measurement of performance against the existing requirements of the STPIS, but also future developments in the scheme. For example, as identified by Grid Australia, TNSPs have different processes for recording the timeframes in which customers are notified of a forthcoming urgent outage, which can affect the ability of TNSPs to determine whether certain outages come within the definition of a forced outage under the scheme. This has required the design of the renamed transmission circuit availability parameter to be tailored to address this issue.

8.2 Regulatory information notices

A RIN is a notice prepared and served by the AER that requires the recipient to:

- provide to the AER information specified in the notice, and/or
- prepare, maintain or keep information specified in the notice in a manner and form specified in the notice.[15]

[15] Section 28D, Electricity Law.

Section 28F(1) of the Electricity Law provides that the AER may serve a RIN on a recipient if the AER considers that the service of a RIN is reasonably necessary for the performance or exercise of the AER's functions or powers under the Electricity Law or Electricity Rules. Section 28F(3) provides that the AER must not serve a RIN for certain sole purposes, such as for the purpose of collecting information for the preparation of a service provider performance report.

The AER's power to compel the provision of information using a RIN is broader than the AER's information gathering powers under clause 6A.17.1 of the Electricity Rules, dealing with information disclosure by TNSPs to the AER under the TNSP Information Guidelines. The AER can use RINs to require TNSPs to prepare, maintain or keep information in certain manners and forms so as to ensure the quality and consistency of the information that the TNSPs eventually provide to the AER, be that information provided to the AER under the TNSP Information Guidelines or pursuant to a RIN.

In considering whether the issue of a RIN is "reasonably necessary" under section 28F(1), the AER must have regard to the factors in sections 28F(2) and 28G(2) of the Electricity Law, including:

- the matters to be addressed by the RIN
- the likely costs incurred by an efficient TNSP in complying with the RIN, and
- whether the TNSPs will be able to provide or prepare, maintain or keep the information outlined in the RIN, particularly where the RIN applies to related providers contributing a service to the TNSP.

Before serving a RIN, the AER must notify a TNSP in writing of its intention to serve a RIN and provide a draft of the RIN to the TNSP or related providers.[16] The notice must invite the TNSP and/or related providers to make written representations on whether the AER should serve the RIN, and give the TNSP and/or related providers at least 20 business days in which to do so. If the RIN is an urgent notice,[17] then the TNSP must be given 5-10 business days to respond to the notice.

The RIN may also specify any requirements in the manner and form in which the information specified in the RIN is to be provided, prepared, maintained or kept.[18] The AER must also state in the RIN the AER's reasons for requiring the TNSP to provide to the AER, and/or to prepare, maintain or keep in the particular manner and form the information specified in the RIN.[19]

8.3 Informal stakeholder consultation

The option of using RINs as a part of the STPIS to enable better measurement of performance against targets (including the exclusion of eligible events) and to set targets with greater precision was put to stakeholders on an informal basis.

TRUenergy supported the use of RINs. Grid Australia questioned the rationale behind using RINs to obtain relevant information from TNSPs, expressing the view that all TNSPs have provided information as required by the AER under the TNSP Information Guidelines. Grid Australia queried how RINs would improve on the current method of managing TNSP performance against targets. Grid Australia also raised concerns about the potential burden of RINs, particularly with regards to TNSPs providing all supporting material for exclusions claims.

[16] Section 28J, Electricity Law.
[17] For a RIN to be considered urgent it must meet the requirements listed in section 28J(3) of the Electricity Law.
[18] Section 28K, Electricity Law.
[19] Section 28K, Electricity Law.

8.4 AER considerations and decision

The AER proposes to use the TNSP Information Guidelines to obtain information from TNSPs regarding performance against the STPIS. In addition, the AER proposes to use RINs to require that information be prepared, maintained or provided in certain ways for the purpose of enabling the AER to determine any adjustments to TNSP revenue (incentive payouts) for each regulatory year that the STPIS applies, and to facilitate the setting of targets for the next regulatory control period.

The AER proposes using RINs to:

- ensure that TNSPs provide revised performance data during their reset to enable the setting of targets for those service component parameters that have been amended during the current review, namely the renamed transmission circuit availability and average outage duration parameters
- require TNSPs to prepare, maintain or keep information in accordance with requirements of the amended STPIS, in order to enhance the setting of TNSPs' performance targets for parameters during the TNSP's next regulatory control period and for determining any adjustments to TNSP revenue for each regulatory year of the STPIS, and
- require TNSPs to provide:
    - information in accordance with the requirements of the STPIS as it applies during the TNSP's current regulatory control period, and
    - adequate information and supporting material to substantiate claims for exclusion events,

  in order to determine the s-factor for incentive payments and to facilitate the setting of targets to apply in the next regulatory control period.

The AER intends to issue RINs to SP AusNet, TransGrid and Transend requiring them to provide the revised performance information for the setting of targets during their resets, which are scheduled to commence in 2013. The AER may also issue RINs to each TNSP to require the provision of annual compliance information for the STPIS (the version as applying until their next reset), including the provision of supporting material for exclusions. For TNSPs that are mid-reset, the RINs will require them to maintain and provide information in accordance with the requirements of the revised STPIS.

The AER is mindful that the AER does not require every piece of material which supports a TNSP's exclusion claim in order to reach a view as to whether an event should be excluded, and that the provision of all supporting material could be burdensome for TNSPs. The AER does, however, wish to improve the level of information provided by TNSPs. The AER will work closely with TNSPs to ensure that the wording of any RIN does not include an ambit claim for all supporting material, but rather the provision of a sufficient level of information to substantiate claims.

The AER commence its consultations with TNSPs regarding draft RINs when the final decision on the STPIS is published in December 2012.

9 Consultation process

The AER may amend or replace the STPIS at any time, however the amendment or replacement cannot apply to a TNSP for a regulatory control period that has commenced before, or that will commence within, 15 months of the amendment or replacement coming into operation.[20]

In amending the scheme, the AER must comply with the transmission consultation procedures set out in the Electricity Rules.[21] The transmission consultation procedures require the AER to publish a proposed STPIS and explanatory statement. Interested parties must have at least 30 business days to provide submissions on the draft scheme. Within 80 business days of publishing the draft STPIS, the AER must publish its final decision which sets out (among other things) the final STPIS.[22] The AER may also publish issues, consultation and discussion papers and hold conferences and information sessions on the proposed scheme as it considers appropriate.[23]

The AER plans to amend the STPIS to apply to the next round of transmission determinations, commencing with SP AusNet. For any amended scheme to apply to SP AusNet, it must be in place by **31 December 2012**.

Table 9.1 outlines the planned consultation process:

Table 9.1 Consultation process

Date	Action
4 September 2012	Publish explanatory statement and draft scheme and invite written submissions
16 October 2012	Close of written submissions on draft scheme and accompanying explanatory statement
21 December 2012	Publish final decision

[20] Clause 6A.7.4 (f), Electricity Rules.
[21] Clause 6A.7.4 (f), Electricity Rules.
[22] Clause 6A.20, Electricity Rules.
[23] Clause 6A.20(d), Electricity Rules.

10 Invitation for written submissions

Interested parties are invited to make written submissions to the AER on the amendments proposed in this paper by the close of business **16 October 2012**.

Submissions can be sent electronically to: Mark.Wilson@aer.gov.au

Alternatively, submissions can be sent to:

Mr Chris Pattas
General Manager
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The AER prefers that all submissions be publicly available to facilitate an informed and transparent consultative process. Submissions will be treated as public documents unless otherwise requested. Parties wishing to submit confidential information are requested to:

- clearly identify the information that is the subject of the confidentiality claim, and
- provide a non-confidential version of the submission in a form suitable for publication.

All non-confidential submissions will be placed on the AER's website at http://www.aer.gov.au. For further information regarding the AER's use and disclosure of information provided to it, see the *ACCC/AER Information Policy*, October 2008 publication also available on the AER's website.

Any enquiries about this explanatory statement, or about lodging submissions, should be directed to AERinquiry@aer.gov.au.

A Exclusion clauses for the service component parameters

Table A.1 sets out the standard exclusion clauses for the service component parameters as currently set out in the STPIS.

Table A.1 Current standard exclusion clauses applied to all TNSPs

Parameter	Standard exclusion clauses
Transmission circuit availability	1) unregulated transmission assets 2) exclude from 'circuit unavailability' any outages shown to be caused by a fault or other event on a third party system – e.g. intertrip signal, generator outage, customer installation 3) outage to control voltages within required limits, both as directed by AEMO and where AEMO does not have direct oversight of the network (in both cases only where the element is available for immediate energisation if required) 4) force majeure events
Loss of supply event frequency	1) Unregulated transmission assets (e.g some connection asset) 2) Successful reclose events (less than one minute duration) 3) Any outage shown to be caused by a fault or other event on a third party system – e.g intertrip signal, generator outage, customer installation 4) planned outages 5) force majeure events
Average outage duration	1) Planned outages 2) Momentary interruptions (less than one minute) 3) force majeure events

Tables A2-4 set out the exclusions as they currently apply for each TNSP. Exclusions marked with an asterisk (*) are considered as no longer relevant as the transmission circuit availability parameter will be applied to unplanned outages only. Exclusions marked with a cross (†) are considered as a rewording of, or that are implicitly covered by, an existing standard exclusion. Exclusions marked with a hash (#) are proposed to be included as a standard exclusion.

Table A.2 Current TNSP specific transmission circuit availability exclusion clauses

TNSP	Exclusion clauses
ElectraNet	Standard clause (1), (3) & (4) Standard clause (2): reference to AEMO direction and omit 'exclude from circuit availability' Additional clauses: the opening of only one end of a transmission line where the transmission line remains energised and available to carry power* the number of interrupted hours related to a single transmission line redevelopment project or substation redevelopment project capped at 336 hours (14 days)*

TNSP	Exclusion clauses
Powerlink	Standard clause (1) with reference to e.g some connection assets Standard clause (2) omit 'exclude from circuit availability' Standard clause (4) Additional clauses: Any outages not affecting Powerlink's primary transmission equipment† Faults originating from Powerlink owned equipment that affect primary plant or equipment owned by a distributor, connected customer or a generator† Capacitor bank in the winter off-peak period*
SP AusNet	Standard clause (1), (2), (3) & (4) Additional clauses: Connection assets Exclude from 'circuit availability' (peak critical) and 'circuit availability (peak non-critical) any outages of shunt reactors* Fault-level mitigation works, except for that associated with JLTS 220 kV Fault Limiting Reactors and Fault Level Mitigation Works at JLTS and MWTS 66kV Bus Tie Series Fault Limiting Reactor*
Transend	Standard clause (1) – worded: outages on assets that are not providing prescribed transmission services Standard clause (2) – additional word: coincident outages, customer installations (including a customer request), or by direction of fire services or AEMO Standard clause (4) Additional clauses: Dedicated connection assets that supply a customer who has negotiated a higher (or lower) level of service required by the NER where that customer has agreed to the cost (or discount) for that higher (or lower) level of service†
TransGrid	For all sub-parameters only: Standard clause (1) – worded: outages on assets that are not providing prescribed transmission services Standard clause (2) – omit 'exclude from circuit availability' Standard clause (3) & (4) Additional clauses: Transient interruptions less than one minute# For the line availability sub-parameters only: The opening of only one end of a transmission circuit (eg where the transmission circuit remains energised and available to carry power with immediate manual or automatic return to service)* Outages for remedial repairs to an underground power cable damaged by an external party are capped at 14 days if* The external party did not enquire with 'dial before you dig' or

TNSP	Exclusion clauses
	The eternal party enquired, received accurate information and did not follow this information For the transformer availability sub-parameter only: Auxiliary transformers† Static var compensator transformer (which are counted as part of the SVC) † The opening of only one or both sides of a transformer for operational purposes, such as to control losses, fault levels, incompatibility of tap changes etc but where the transformer remains available to carry power on immediate manual or automatic return to service* The period where a transformer is made available for service but not switched in, at the end of each day of a multi-day planned outage* For the reactive plant availability sub parameters only: Capacitor banks and reactors operating less than 66kV# Reactive plant switched out by System Operations, or left out after repairs that make it available for service for operational purposes*
Directlink	Standard clause (1) & (2) Standard clause (5) with additional wording: (b) to avoid doubt, the following may be 'force majeure events' depending on the circumstances at the time: i. the loss of, or damage to, 11 or more control or secondary cables ii. the loss of, or damage to, two or more transformers and capacitor banks, either single or three phased, connected to a bus iii. the loss of, or damage to, a transformer, capacity bank or reactor where the loss or damage is not repairable on site according to normal practice
Murraylink	Additional clauses: Exclude outages needed to replace transformers where: i. The replacement of the transformer was needed ii. The time taken to replace the transformer was needed, and iii. The AER is satisfied that the replacement was the best alternative and all reasonable preventative measures have been taken

Table A.3 Current TNSP specific Loss of Supply exclusion clauses

TNSP	Exclusion clauses
ElectraNet	Standard clause (1), (2), (4), (5) Standard clause (3) – add "or AEMO direction" Additional clauses: For supply outages resulting from an interconnector outage, 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 (i.e excluding factors outside of ElectraNet's control)[#] Pumping station supply interruptions (these interruptions were excluded from historical data used for target setting due to the highly irregular nature of these loads, which makes accurate estimation of load profiles unreliable)[#] Where ElectraNet protection operates incorrectly ahead of third party protection of customer load that would have been lost had ElectraNet protection not operated is removed from the total lost load[†] Where ElectraNet protection operates correctly due to a fault on a third party system no lost load is recorded[†]
Powerlink	Nil
SP AusNet	Nil
Transend	Standard clause (1) – worded : outages on assets that are not providing prescribed transmission services Standard clause (3) – additional words "circuit outages", "or direction of fire services or AEMO" Standard clause (4), (5) Additional clauses: Dedicated connection assets that supply a customer that has negotiated a higher (or lower) level of service required by the NER, here that customer has agreed to the cost (or discount) for that higher (or lower) level of service[†]
TransGrid	Standard clause (1) – worded : outages on assets that are not providing prescribed transmission services (e.g some connection assets) Standard clause (2), (3), (4), (5) Additional clauses: Where TransGrid protection operates correctly due to a fault on a customer's or a third party system[†] Pumping station supply interruption[#] Outage caused by customer's own control system during a transient voltage fluctuation[†]

Table A.4 Current TNSP specific average outage duration exclusion clauses

TNSP	Exclusion clauses
ElectraNet	Standard clause (1) : worded : successful reclose event (less than one minute) Standard clause (2), (3) Additional clauses Unregulated transmission assets† Any outages shown to be caused by a third party system – e.g intertrip signal, generator outage, customer installation, customer request or AEMO direction # For supply outages resulting from an interconnector outage, the duration 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 (i.e excluding factors outside of ElectraNet's control) # Where ElectraNet protection operates correctly due to a fault on a third party system no outage duration is recorded#
Powerlink	Standard clause (1), (2) (3) Additional clauses: Capacitor banks in the winter off-peak period* Any outages shown to be caused by a third party system – e.g intertrip signal, generator outage, customer installation, customer request#
SP AusNet	Standard clause (1), (2) (3) Additional clauses: Any outages shown to be caused by a third party system – e.g intertrip signal, generator outage, customer installation, customer request#
Transend	Standard clause (1), (2) (3) Additional clauses: Outages on assets that are not provided prescribed transmission services† Dedicated connection assets that supply a customer who has negotiated a higher (or lower) level of service required by the NER, where that customer has agreed to the cost (or discount) for that higher (or lower) level of service† Circuit outages caused by a fault or other event on a third party system e.g. intertrip signal, generator outage (including coincident outage), fire services direction, customer installation (including a customer request), or by direction by fire services or AEMO# For all outages the duration is capped at seven days#
TransGrid	Standard clause (1), (2) (3) Additional clauses: Any outages shown to be caused by a third party system – e.g intertrip signal, generator outage, customer installation, customer request or AEMO request# Outages for capacitor banks and reactors operating at less than 66kV#

B Weightings for individual TNSPs

The following table outlines the weightings applicable to the service component parameters and sub-parameters for each TNSP.

Table B. 1: TNSP specific parameter weightings

Parameter	Weighting (MAR %)
ElectraNet	
Transmission Circuit Availability	**0.50**
Total transmission circuit availability	0.30
Critical circuit availability peak	0.20
Critical circuit availability non-peak	0.0
Loss of supply event frequency	**0.30**
> 0.05 (x) system minutes	0.10
> 0.20 (y) system minutes	0.20
Average outage duration	**0.20**
Powerlink	
Transmission Circuit Availability	**0.45**
Peak transmission circuit availability	0.10
Transmission line availability	0.10
Transformer availability	0.10
Reactive plant availability	0.15
Loss of supply event frequency	**0.45**
> 0.10 (x) system minutes	0.15
> 0.75 (y) system minutes	0.30
Average outage duration	**0.10**
SP AusNet	
Transmission Circuit Availability	**0.50**
Total circuit availability	0.20
Peak critical circuit availability	0.20
Peak non-critical circuit availability	0.05

Parameter	Weighting (MAR %)
Intermediate critical circuit availability	0.025
Intermediate non-critical circuit availability	0.025
Loss of supply event frequency	**0.25**
> 0.05 (x) system minutes	0.125
> 0.30 (y) system minutes	0.125
Average outage duration	**0.25**
Average outage duration – lines	0.125
Average outage duration – transformers	0.125
Transend	
Transmission Circuit Availability	**0.45**
Transmission line circuit availability (critical circuits)	0.20
Transmission line circuit availability (non-critical circuits)	0.10
Transformer circuit availability	0.15
Loss of supply event frequency	**0.55**
> 0.1 (x) system minutes	0.20
> 1.0 (y) system minutes	0.35
Average outage duration	**0.0**
Average outage duration – transmission lines	0.0
Average outage duration – transformers	0.0
TransGrid	
Transmission Circuit Availability	**0.45**
Transmission line availability	0.20
Transformer availability	0.15
Reactive plant availability	0.10
Loss of supply event frequency	**0.35**
> 0.05 (x) system minutes	0.25
> 0.25 (y) system minutes	0.10
Average outage duration	**0.20**

Parameter	Weighting (MAR %)
Directlink	
Transmission Circuit Availability	**1.00**
Scheduled circuit availability	0.30
Forced outage circuit availability in peak periods	0.35
Forced outage circuit availability in off-peak periods	0.35
Murraylink	
Transmission Circuit Availability	**1.00**
Planned circuit energy availability	0.40
Forced outage circuit energy availability in peak periods	0.40
Forced outage circuit energy availability in off-peak periods	0.20

Glossary

This explanatory statement uses the following definitions.

cap	the level of performance that results in a TNSP receiving the maximum financial reward attributed to a *parameter*.
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 Chapter 5 of the SPTIS.
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*.
parameters	the *performance incentive scheme parameters* and includes the sub-parameters, where applicable.
performance target	the level of performance that results in a TNSP neither receiving a financial penalty nor financial reward in the *regulatory year*.
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*.
weightings	the proportion of the *financial incentive* under the *service component* allocated to each of *parameters* applying to the TNSP under the *service component*.