Final Decision

Electricity transmission network service providers

Service Target Performance Incentive Scheme

December 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
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 incentive parameter action plan
NEM	National Electricity Market
NTNDP	National Transmission Network Development Plan
PSDCS	Power System Data Communications Standard
RIN	Regulatory Information Notice
RIT-T	regulatory investment test for transmission
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

Executive Summary

This document outlines the Australian Energy Regulator's (AER) final decision to amend the service target performance incentive scheme (STPIS) for transmission network service providers (TNSPs).

The AER creates, administers and maintains the STPIS in accordance with the requirements of the National Electricity Rules (Electricity Rules). 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 existing version of the scheme (version 3) 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 (MIC), which is designed to incentivise TNSPs to improve network availability at those times and on those parts of the network that are most important in moderating wholesale electricity spot prices.

In October 2011, the AER commenced a review of the STPIS. The purpose of the review was 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 sought input from key stakeholders including representatives of major end users, generators, the Australian Energy Market Operator (AEMO) and TNSPs.

Following its review of the STPIS, the AER published a draft revised STPIS and explanatory statement in September 2012, proposing significant amendments to the service and market impact components of the scheme and the introduction of a new network capability component. The AER sought stakeholder submissions on the proposed amendments. The AER received five submissions from stakeholders and conducted two stakeholder forums to discuss the revisions.

Taking into account stakeholders' views on the draft scheme, the AER has formed the decision to: amend the service component to focus more on lead indicators of reliability; change the way performance against the MIC is measured to improve consistency of performance; and introduce a new network capability component to incentivise TNSPs to identify and implement low cost solutions to network limitations.

The scheme will now consist of three components:

- the service component, which has an unchanged incentive of +/- 1 per cent of maximum allowed revenue (MAR). It has three main 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 fails to operate correctly
- the MIC, 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 the proposed MAR per year). AEMO would play a part in prioritising the projects to deliver best value for money for consumers.

1 Introduction

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

The 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 wholesale 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 will participate in the MIC in its next regulatory control period.

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 Review of the 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 AER received eight submissions from Alinta, AEMO, Grid Australia, the Major Energy Users (MEU), the Private Generators, SP AusNet, Transend and TRUenergy (now EnergyAustralia). 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.

On 31 May 2012, SP AusNet submitted a proposal to amend the STPIS. The proposal sought to amend the transmission circuit availability parameter, the average outage duration parameter and increase the financial incentive for the MIC.

In June 2012, the AER recommenced 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.

On 23 August 2012, Transend submitted a proposal to amend the STPIS. The proposal sought to have the MIC apply to Transend as an asymmetrical bonus-only scheme, amend the transmission

[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.

circuit availability parameter and retain Transend's zero weighting for the average outage duration parameter.

Following a review of stakeholder submissions to the Issues Paper, SP AusNet and Transend's applications to amend the scheme and feedback from stakeholders during the informal consultation process, the AER prepared a draft of the amended STPIS (the draft scheme) and explanatory statement for consultation.

1.3 Draft scheme and explanatory statement

On 4 September 2012, the AER issued a draft scheme with an accompanying Explanatory Statement. The AER proposed a number of amendments to the scheme, including to:

- amend the current service component parameters to focus more on unplanned outages, including by introducing a new parameter focussing on proper operation of equipment, 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, exclusions and parameter weightings
- improve the setting of targets and measurement of performance against the MIC to encourage consistency in TNSP performance
- introduce a network capability component to encourage TNSPs to increase the capability of existing network assets
- amend the triggers for the review of the scheme, and
- use regulatory information notices for information gathering purposes.

The period for submissions closed on 16 October, with the AER receiving five submissions from AEMO, Grid Australia, the MEU, SP AusNet and Transend. A stakeholder forum was held on 2 November to discuss the issues arising out of the submissions received. The forum was attended by representatives from TNSPs, generators, AEMO and the MEU. A workshop was held on 20 November with TNSP and AEMO representatives to discuss the new network capability component in more detail.

1.4 Final scheme

The AER has tailored the STPIS to achieve three main objectives: the maintenance of high levels of reliability (or improvements where efficient), to encourage TNSPs to manage their network to reduce the impact of outages on wholesale spot market prices and promote innovation by TNSPs to deliver improved services through low cost alterations to their network.

The new scheme (Version 4) has three main components:

- the **service component**, which has been amended to incentivise network reliability by focussing on unplanned outages. The component is designed to incentivise TNSPs to reduce the occurrence of unplanned outages and to return the network to service promptly after unplanned outages that lead to an interruption to supply. The service component has been tailored to act as a lead indicator of potential reliability issues and to encourage TNSPs to maintain or improve performance

- the **market impact component**, which has been designed to provide an incentive to TNSPs to reduce the impact of planned and unplanned outages on wholesale market outcomes. TNSPs do so by reducing the length of planned outages and scheduling outages to occur during those times when there will be the least impact on the wholesale market. TNSPs are also incentivised to improve reliability on those elements of the network critical to the wholesale market to reduce the incidence of unplanned outages, and

- the **network capability component**, which has been introduced to influence a TNSP's operation and management of its network assets. The component incentivises TNSPs to deliver benefits through increased network capability, availability or reliability through the development of one-off projects that can be delivered through low cost operational and capital expenditure.

The service component has been amended to use four parameters to measure a TNSP's performance:

- the **average circuit outage rate** parameter measures 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 be a lead indicator of a future reliability issue. This parameter does not measure either the duration of the outage or whether the outage caused a loss of supply or market impact. Any impact of the unplanned outage on the wholesale market is measured by the MIC

- the **loss of supply event frequency** parameter measures the number of unplanned outages when there has been a loss of supply. The parameter measures the number of small events (where smaller loads are interrupted for short periods) and large events (where a customer with a large load is interrupted for even a short duration, or a customer with a moderate load is interrupted for a long duration). The parameter is designed to incentivise TNSPs to reduce the duration of moderate and small customer interruptions through fast response times and to reduce the frequency of large customer interruptions through improved reliability

- the **average outage duration** parameter measures the average length (in minutes) of unplanned outages where a loss of supply has occurred. The 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 focuses on loss of supply events to incentivise TNSPs to focus on those unplanned outages with the greatest impact on customers, and

- the **proper operation of equipment** parameter measures the number of incidents where a protection or control system has failed or where there has been incorrect operational isolation of equipment during maintenance. These events can cause an unplanned outage of primary transmission equipment and act as a lead indicator of reliability. This is a new parameter introduced on a reporting only basis.

1.5 Chapter 6A transitional arrangements

On 29 November 2012, the AEMC published new rules for chapters 6 and 6A of the Electricity Rules. Relevant changes to the process that will apply to TNSPs include a lengthened determination process (by 4 months) to allow for greater consumer engagement and the introduction of a framework and approach paper stage.

The AEMC also published transitional arrangements, which provide time in 2013 for parties to engage in the development of the guidelines under the new rules and ensure that the reset schedule is not unduly congested going forward.

To implement the new regulatory framework, transitional arrangements will apply to the upcoming transmission determinations for TransGrid and Transend. The new regulatory framework will not apply to the upcoming transmission determination for SP AusNet but the length of the regulatory control period for that determination is limited to three years. During this period the new scheme will apply.

The transitional rules establish a default position that the STPIS that applied in the previous control period will continue to apply for the transitional year. However, the AER is able to apply a different STPIS through the framework and approach paper to be published in January 2014. In its submission to the AER's draft decision, Grid Australia set out a proposal for the application of STPIS during the transitional regulatory year for the affected TNSPs. The AER will conduct further consultation on this prior to publishing the framework and approach paper.

1.6 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 service component parameters, including service component parameter exclusions
- Chapter 4 outlines the network capability component
- Chapter 5 outlines the market impact component
- Chapter 6 outlines the weightings, performance target and performance measures for the service component
- Chapter 7 outlines the triggers to amend the scheme, and
- Chapter 8 outlines the use of regulatory information notices in the context of the STPIS.

2 Purpose and objectives of the proposed scheme

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

2.1 Principles and objectives of the scheme

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, as 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.

2.2 AER objectives for the scheme

2.2.1 Draft decision

In the draft decision, the AER proposed to maintain the current AER STPIS objectives on the basis that they were appropriate. In its draft decision, the AER noted earlier submissions considered that:

- the STPIS should focus on the worst performing elements in a transmission network, rather than focussing on the average performance of a TNSP's network, to deliver the most benefit to customers, and
- the AER transition to a more service based approach to regulation.

On balance, however, the AER considered that the existing objectives achieved these goals within the scope of the AER's mandate under the Electricity Rules.

The AER did not receive any submissions on the STPIS objectives in response to its draft decision.

2.2.2 AER considerations and final decision

The AER has decided to maintain the current objectives for the STPIS. The AER considers that the current objectives adequately reflect the principles of the scheme as set out in the Electricity Rules.

2.3 Criteria for assessing incentive options

During the process of revising the STPIS, the AER has applied particular criteria when assessing any proposed incentive options. The relevant 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
- unless inappropriate, apply consistently across TNSPs
- influence specific, identifiable TNSP behaviour, and
- minimise administrative costs.

In applying these criteria, the AER was mindful of earlier submissions by stakeholders to the Issues Paper that the evaluation of incentive options should involve a cost/benefit analysis. The AER notes that, as previously indicated, the AER is supportive of using cost/benefit analysis to the extent to which a quantitative assessment is feasible.

3 Service component parameters and exclusions

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

3.1 Service component parameters

The service standard component of Version 3 of the scheme 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 / Average circuit outage rate

The current transmission circuit availability 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 unreliability. If availability is low as a result of outages of network equipment, then there is an increased probability that reliability may be affected.

Draft decision

The AER proposed in the draft decision to amend the transmission circuit availability parameter to only include unplanned outages. The parameter will measure both fault and forced unplanned outages. In this regard, the AER considered that forced outages with less than 24 hours notification to customers constituted an unplanned outage.

The AER considered that narrowing the focus of the parameter to unplanned outages would heighten the parameter's ability to act as a lead indicator of reliability. In addition, the proposed amendment would reduce the overlap with the MIC, which measures the period of time that planned and unplanned outages have a material impact on the wholesale spot market.

As a consequence of narrowing the parameter, the AER proposed that performance against the parameter be measured by the average number of times that circuits were unavailable as a result of unplanned outages, with the target set on actual historical performance. This focuses the parameter on the frequency rather than the duration of unplanned outages. The parameter will be renamed as the 'average circuit outage rate' parameter.

The AER also proposed new standard sub-parameters to measure the outage rate of circuits by equipment category (namely lines, transformers and reactive plant) and by outage type (fault and forced). The forced equipment sub-parameters were proposed as an interim measure to allow TNSPs to align their measurement of forced outages to the 24 hour threshold proposed by the AER. The AER proposed that forced equipment sub-parameters have a zero weighting and have no target. The measurement of forced and fault unplanned outages will be rolled into single equipment category sub-

parameters in the next iteration of the scheme. These sub-parameters will apply to each TNSP (with the exception of Murraylink and Directlink), aligning sub-parameters between TNSPs. The AER proposed that the performance of Directlink and Murraylink be measured against one parameter for circuits.

The AER proposed that inclusions be harmonised across TNSPs, and that the standard inclusions definition apply to all relevant TNSPs at their next reset. The AER proposed that unplanned outages of all primary equipment be included in the revised parameter, rather than the narrower sub-sets of equipment that a number of TNSPs currently have under Version 3 of the STPIS. The AER considers that an unplanned outage of any primary equipment has the potential to cause a loss of supply.

Given the AER's proposal to revise the transmission circuit availability parameter to focus on unplanned outages, the AER did not accept the changes proposed by SP AusNet and Transend designed to reduce the overlap with the MIC.

Issues raised in submissions

Grid Australia was of the view that the inclusion of reactive plant in this parameter would incentivise TNSPs to respond quickly to fault outages at times when the availability of reactive plant was not critical. Grid Australia considered that TNSPs would inefficiently incur costs by doing so, and suggested that the AER consider using a seasonal window for the application of reactive plant in this parameter.

The MEU submitted that both the severity and frequency of unplanned outages should be addressed in this parameter. The MEU considered that the duration and frequency of unplanned outages was important as the cost to consumers increased with longer and more frequent unplanned outages.

SP AusNet noted that excluding planned outages would significantly reduce the number of incidents measured by this parameter. As a result, the parameter was likely to be volatile, making it difficult to set meaningful targets and for TNSPs to be able to deliver consistent performance against targets. SP AusNet identified that volatility would be a particular issue for the transformer and reactive plant sub-parameters. SP AusNet suggested calculating performance using a rolling average of previous years to reduce volatility.

SP AusNet also submitted that the threshold definition for forced outages of 'less than 24 hours notification given to affected customers' should be amended. SP AusNet advised that it did not always notify end customers of forced outages, notifying AEMO instead.

During the stakeholder forum, Powerlink sought further clarification on what the AER's intention was in narrowing the transmission circuit availability and what the revised parameter was intended to cover.

AER considerations and final decision

In accordance with its draft decision, the AER has decided to narrow the transmission circuit availability parameter to focus only on unplanned outages and to align the application of the parameter across TNSPs. The purpose of this amendment is to focus the parameter on those outages which serve as a lead indicator of potential reliability issues. The parameter is designed to incentivise TNSPs to take preventative measures to maintain or improve the reliability of primary transmission equipment. The AER's decision to narrow this parameter is also to ensure there is only minor overlap with the MIC. Planned outages that have a market impact are currently captured in the MIC, so excluding planned outages from this parameter ensures TNSPs are not measured twice.

The AER agrees with Grid Australia's submission that TNSPs should not be incentivised to incur inefficient costs by responding quickly to outages of non-critical equipment. The revised parameter should not do this as it does not measure the duration of unplanned outages. The focus of the parameter is to incentivise maintenance of equipment to prevent unplanned outages. Accordingly, the AER does not consider that the parameter provides an incentive for urgent restoration of reactive plant. For the revised parameter to act as a lead indicator of unreliability the occurrence of any unplanned outage must be measured, regardless of when it occurs. Therefore the AER does not propose to use a seasonal window for the application of reactive plant in this parameter.

The average circuit outage rate parameter measures the average frequency of unplanned outages. The duration of unplanned outages, where there is a loss of supply or material impact on the market, is measured by the average outage duration parameter and the MIC. Not all unplanned outages cause a loss of supply to customers. As such the AER does not propose to measure the duration of unplanned outages in the revised parameter, as submitted by the MEU.

The AER acknowledges SP AusNet's submission that the number of events measured by the revised parameter will be fewer, and that performance against the parameter is likely to be volatile as a result. The AER supports the use of a rolling average performance measure to address issues associated with volatility. This is discussed in detail in chapter 6.

The AER has also implemented SP AusNet's proposal to amend the definition of forced outages to reflect the fact that TNSPs notify AEMO and/or affected customers of short notice maintenance. The amended definition will also apply to the loss of supply event frequency and the average outage duration parameters.

3.1.2 Loss of supply event frequency

This parameter currently 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. There is 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 depends on both the magnitude of the customer load interrupted, and the duration of the outage. There tends to be a lower number of very large events (where a customer with a large load is interrupted for even a short duration, or a customer with a moderate load is interrupted for a long duration), and a higher number of small events (where customers with smaller loads are interrupted for short durations).

The value of the 'x' system minute threshold is set to incentivise TNSPs to reduce the duration of moderate and small customer interruptions through fast response times. The value of the 'y' system minute threshold is set to incentivise TNSPs to reduce the frequency of large customer interruptions through improved reliability. 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.

Draft decision

The AER's draft decision was to reword the definition of the loss of supply event frequency parameter to ensure consistency across all applicable TNSPs. Going forward the AER noted that it would not allow the loss of supply event frequency parameter to only apply to exit points, as this may exclude outages that cause loss of supply.

The AER did not propose to amend the 'x' and 'y' system minute thresholds at this time. However, the AER did consider that the methods of setting 'x' and 'y' system minute thresholds should be re-examined at the next review of the STPIS. The AER proposed 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.

Issues raised in submissions

Grid Australia supported the AER's decision to retain the TNSP-specific 'x' and 'y' system minute thresholds, while the MEU submitted that measures of the frequency of loss of supply events should be benchmarked across TNSPs. The MEU was of the view that, while the thresholds for the 'x' and 'y' sub-parameters should differ between TNSPs to reflect the nature of the different TNSP networks (for example, the degree of meshing of the network), there was currently no consistency between the relative values of 'x' and 'y'. The MEU questioned whether the degree of inconsistency between the values of 'x' and 'y' thresholds for TNSPs was warranted. During the stakeholder forum, generator representatives raised concerns regarding the non-transparent manner in which 'x' and 'y' system minute thresholds had been set.

AER considerations and final decision

The AER has decided to implement the changes to the loss of supply event frequency parameter to standardise the parameter across TNSPs as outlined in its draft decision. The AER does not propose to amend the 'x' and 'y' system minute thresholds at this time. The current values of the 'x' and 'y' system minute sub-parameters were set at levels, in part based on historical network performance, to appropriately incentivise each TNSP and to allow for meaningful performance measurement against this parameter. These values do not necessarily facilitate comparison between TNSPs. As indicated in the AER's draft decision, the AER intends to conduct a comprehensive assessment of 'x' and 'y' system minute thresholds during the next review of the STPIS.

3.1.3 Average outage duration

This parameter currently 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; the length of large duration outages is 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. This parameter incentivises TNSPs to minimise the length of all unplanned outages.

This parameter does not apply to Murraylink and Directlink for the same reasons as for the loss of supply event frequency parameter.

AER draft decision

The AER proposed in the draft decision that the average outage duration parameter be changed to focus on loss of supply events, in order to reduce the overlap with the revised transmission circuit availability parameter. The AER also proposed that the parameter definition be expanded to provide greater specificity regarding the measurement of unplanned outages, such as specifying the start and end of each event and capping the duration of each event at seven days. The AER also noted that it would not include wording that limited the application of the average outage duration parameter to exit points only as this may exclude outages that cause loss of supply.

The AER considered that the transmission lines and transmission transformers/plant sub-parameters were no longer required on the basis that the average circuit outage rate parameter will use similar sub-parameters. The AER proposed introducing two new sub-parameters: single circuit assets and multi-circuit assets. The AER had proposed these sub-parameters in recognition that 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. The AER proposed sub-parameters to delineate between outages that occurred on radial lines from those on more meshed parts of a TNSP's network.

The AER also proposed that the inclusions definition be amended to provide greater clarity and consistency regarding forced outages across TNSPs and parameters.

The AER did not accept SP AusNet's proposal to reduce the cap from seven days to 48 hours. The AER considered that a seven day cap was sufficient to ensure that there was an incentive to minimise the duration of outages remained throughout the year.

Issues raised in submissions

SP AusNet questioned the need to narrow the average outage duration parameter to only measure the duration of those unplanned outages that caused a loss of supply. SP AusNet considered that other factors, such as reputational concerns and the loss of supply event parameter, provided sufficient incentive to reduce the outage duration associated with loss of supply events.

Grid Australia and SP AusNet submitted that, like the revised average circuit outage rate parameter, a narrower parameter would capture a significantly smaller number of events. Grid Australia and SP AusNet consider this was likely to increase volatility and may weaken the effectiveness of the parameter as an incentive. Grid Australia and SP AusNet also questioned the value of introducing sub-parameters for single and multi-circuit outages, as this would further increase the volatility of this parameter by splitting an already small number of events into two categories. In the event these sub-parameters were retained, SP AusNet and Grid Australia requested further clarification on the definitions of single and multi-circuit outages.

Grid Australia also proposed using a smaller cap, but did not suggest a value. Grid Australia considered that a seven day cap was adequate when the parameter included all unplanned outages, but that the narrowing of the parameter to those outages that interrupt supply to customers meant the cap needed to be reduced.

On the other hand, the MEU were of the view that the seven day cap should be removed entirely as it resulted in the cost to consumers and generators that suffer outages longer than seven days not being captured. Further, the MEU considered the cap constrained the ability of the AER to benchmark between TNSPs on this measure.

AER considerations and final decision

The AER has decided to narrow the average outage duration parameter to only measure unplanned outages where a loss of supply occurs. The AER acknowledges the concerns raised by Grid Australia and SP AusNet that the amended parameter will capture fewer events and is likely to be more volatile as a result. In line with the average circuit outage rate parameter, the AER proposes to use a rolling average performance measure to address volatility concerns. This is discussed further in chapter 6.

The AER accepts Grid Australia and SP AusNet's views that introducing sub-parameters for single and multi-circuit outages is problematic given the already small number of events the revised parameter is likely to capture. As such, the AER has decided that the average outage duration parameter will have no sub-parameters. The AER notes that this maintains the current situation for the majority of TNSPs; only SP AusNet and Transend will have to move back to a single parameter.

The AER does not propose to amend the seven day cap on average outage duration. Grid Australia did not provide further reasons to support a reduction of the cap, and the AER considers that seven days provides the appropriate direct incentive for TNSPs to reduce the length of an outage. The AER also considers that a rolling performance measure will assist in maintaining an incentive on TNSPs to reduce the length of an outage throughout the year. The AER does not consider that it is necessary to increase or remove the cap, as the MEU submitted, as longer outages are still captured in the loss of supply event frequency parameter.

3.1.4 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.[6] 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.

TNSPs also play a crucial role in providing 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. Every time SCADA systems fail to operate as required there is the potential for an impact on the market or for an interruption to customer supply.

Draft decision

The AER proposed in its draft decision to include a new service component parameter in relation to the proper operation of equipment. The AER proposed three sub-parameters including failure of a protection system, material failure of the SCADA system, and incorrect operational isolation of the network. Performance for each sub-parameter would be measured by the number of incidents within the reporting period. The AER proposed that AEMO's SCADA Minutes Lost report be used to measure material failures of the SCADA system.

[6] Protection and control systems are secondary systems as opposed to primary plant such as transmission lines and transformers.

The AER proposed that this parameter be introduced on a reporting only basis.

Issues raised in submissions

Grid Australia was of the view that there was insufficient benefit from incentives or incentive reporting relating specifically to protection and control systems. Grid Australia considered that the other service component parameters were better placed to incentivise TNSPs to prioritise effort to deliver service outcomes. Grid Australia stated that protection and control systems were designed to withstand the failure of a single component. As such, Grid Australia submitted that, if this parameter were to have a non-zero weighting in the future, it should measure failure of the system rather than individual components.

SP AusNet supported the introduction of the proper operation of protection and control equipment parameter on the basis that the parameter sought to measure events which could impact on customer supply. SP AusNet suggested that TNSPs should have the option to adopt this parameter on a financial incentive basis from the start of their next regulatory control period. SP AusNet identified that it was in a position to do this as it had sufficient historic data. SP AusNet considered that the application of a financial incentive enables any benefits associated with improved performance to be realised sooner than a reporting only basis could deliver. SP AusNet suggested setting the incentive at 0.2% of the MAR (consistent with the lowest parameter weighting in the proposed scheme).

During the stakeholder forum, Powerlink requested the AER provide more detail on how to measure and record performance against the new parameter. In particular, Powerlink requested further clarification on what each sub-parameter was measuring and suggested the AER provide definitions for each sub-parameter. TransGrid flagged that the outage threshold used by AEMO for its SCADA Minutes Lost report was lower than the definition used in the Power System Data Communications Standard (PSDCS), the standard to which TNSPs are required to comply.[7] TransGrid suggested that the definitions may need to be aligned.

AER considerations and final decision

The AER does not agree with Grid Australia's submission that this parameter should measure failure of the system rather than individual components, as this parameter is intended to be a lead indicator. The AER considers that the sub-parameters target particular aspects of a TNSP's protection systems, control systems and isolation systems. Having sub-parameters enables TSNPs and the AER to identify areas for improvement or declining performance better than with a single measure of the system as a whole. The AER will monitor the effectiveness and need for each sub-parameter going forward.

The AER notes that, as SP AusNet identified, all TNSPs should already collect data for this parameter. This is because TNSPs are currently required 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. As such, the AER does not consider further clarification of the sub-parameters is required at this time. 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. The AER has maintained the use of AEMO's SCADA Minute Lost report as the measure for the 'material failure of the SCADA system' sub-parameter. While the AER notes the difference in thresholds between the SCADA Minute Lost report and the PSDCS, the AER

[7] Clause 4.11.2(c) of the Rules required NEMMCO (now AEMO) to establish in consultation with Network Service Providers, standards which must be met by them in providing and maintaining data communications facilities for control, operational metering and indication from various stations for NEMMCO's control centres. The Standard came into effect on 1 January 2004.

considers the SCADA Minute Lost report is an adequate measure given the purpose of the sub-parameter to act as a lead indicator. Further, the use of the SCADA Minute Lost report as a measure means that TNSPs do not need to collect additional information for the purpose of reporting performance against the sub-parameter.

The AER considers that a reporting only parameter provides sufficient incentive at this time. The AER will consider the effectiveness of the parameter in the future, including whether to have a financial incentive in subsequent versions of the scheme.

3.2 Service component parameter exclusions

3.2.1 Exclusions definitions

Each service component parameter has a number of exclusions which set 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.

The current approach is a category approach, whereby broad exclusion clauses are listed in the scheme and TNSPs provide a case as to why an event falls within a specific exclusion clause.

Draft decision

During its review of the STPIS, the AER contemplated whether to take a different approach to exclusions. The AER's draft decision was to maintain the current approach to exclusions at this time. The AER proposed to implement a new standard exclusion list which would replace the current TNSP specific exclusions. This list would encompass all common exclusions between TNSPs, standardise terminology and remove exclusions that are no longer appropriate due to the proposed amendments to the current parameters. The AER was of the view that the standard exclusions, including for force majeure events, should also apply to Directlink and Murraylink.

The AER also decided to take a more robust approach to exclusions and include an explicit reference in the scheme to the AER's ability to refuse exclusion claims on the basis of insufficient substantiation. This decision was in response to difficulties experienced by the AER in obtaining sufficient information from TNSPs to substantiate the exclusion of certain events from performance measures.

Issues raised in submissions

Grid Australia supported standardisation of exclusions across TNSPs, but noted that future data might not be comparable to historic data as a result. Grid Australia also proposed some clarifications which included amending the common exclusion for any outages caused by a direction from fire services or AEMO to refer to a direction from all emergency services. Grid Australia also suggested that rescheduled planned outages be explicitly excluded from the average circuit outage rate parameter. Grid Australia stated a rescheduled planned outage may appear in the network outage system as having less than 24 hours notice (within the 24 hour threshold specified for a forced outage) even though it is not a forced outage. Grid Australia advised that TNSPs often rescheduled planned outages at short notice when there were inclement weather conditions or to mitigate possible market impacts.

AER considerations and final decision

The AER has decided to standardise exclusions across all TNSPs in line with the standard exclusions set out in its draft decision.

The AER accepted Grid Australia's proposed amendment to broaden the relevant common exclusion to include a direction from all emergency services (not just fire services). The AER has also inserted a new exclusion for the average circuit outage rate parameter that specifies rescheduled planned outages are excluded from performance against the parameter.

The AER notes that TNSPs will be required to recollect historic data on exclusions in order to set targets, which will enable comparison with future data.

3.2.2 Force majeure exclusion

Force majeure events are excluded under both service and market impact components of the scheme. 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.

Draft decision

In its review of the STPIS, the AER had contemplated introducing a zero cap on incentive payments during exceptional force majeure years.[8] In its draft decision, the AER decided not to implement a zero cap. The AER, however, recognised 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 exclusion of force majeure events. The AER proposed 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 would also require that TNSPs report on the steps they had taken in order to ensure that TNSPs use all reasonable endeavours to minimise the impact of force majeure events on customers.

Issues raised in submissions

Grid Australia supported the AER's approach to not to introduce a zero cap and to introduce reporting requirements regarding force majeure events.

The MEU was of the view that there needed to be an incentive for TNSPs to reconnect users as soon as possible following a force majeure event. The MEU suggested that the scheme should contain a 'reasonable endeavours' requirement of TNSPs to reinstall service as quickly as possible. The MEU raised a subsequent concern during the stakeholder forum that, when there was a force majeure outage occurring concurrently with another outage that was measured by the STPIS, TNSPs would prioritise responding to the outage covered by the STPIS irrespective of whether that outage was the more significant of the two.

[8] The AER suggested that incentive payments for service component parameters could be reduced to zero when the sum of the impact of force majeure events was greater than the service level provided.

During the stakeholder forum, Powerlink requested that the AER provide further clarification in the scheme in line with the explanation provided in the draft decision.

AER considerations and final decision

The AER's approach to force majeure exclusions remains the same as its draft decision. In recognition of the concerns raised by Powerlink, the AER has amended the relevant wording in the final version of the scheme to better reflect the AER's views in the draft decision.

Under the scheme, the AER will have the ability to refuse force majeure exclusion claims on the basis of insufficient substantiation by a TNSP. TNSPs will also be required to report on the steps that were taken in response to force majeure outages to ensure that all reasonable endeavours were taken to minimise the impact of each force majeure event on customers. The scheme specifies the information that TNSPs are required to provide in relation to their responses to force majeure outages. The AER's view on whether TNSPs undertook all reasonable endeavours will be included in its annual performance reporting on TNSPs. The AER considers that these amendments address the concerns raised by the MEU.

4 Network capability incentive

This chapter sets out the network capability component including the AER's reasons for introducing the component and how the AER intends the component to be applied.

4.1 Draft decision

In the draft decision, the AER considered it was appropriate to introduce a network capability incentive to promote efficient levels of network capability from existing assets when most needed. TNSPs are best placed to identify the limitations on their network which can be addressed through low cost measures and they should be incentivised to do so. To date, regulatory arrangements have not incentivised TNSPs to do so, rewarding TNSPs for undertaking major capital expenditure to meet minimum reliability standards.

The AER proposed in the draft decision the introduction of a network capability component separate to the existing service and market impact components. 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.

Under the network capability component in the draft scheme, TNSPs were required to submit a network capability incentive parameter action plan (NCIPAP) as part of the STPIS component of their revenue proposal. The TNSP had to consult with AEMO in developing the NCIPAP.

The NCIPAP would outline the key network capability limitations on each transmission circuit or load injection point on the TNSP's network and include a list of priority projects proposed by the TNSP to improve, through operational and/or minor capital expenditure, the network capability for some of the circuits or injection points. For each proposed priority project, the TNSP would also specify a priority project improvement target.

In the NCIPAP the TNSP would also rank the priority projects based on the likely benefit of the projects on customers or wholesale market outcomes in descending order. The total annual average expenditure of the proposed priority projects could not exceed 1 per cent of the average MAR proposed by the TNSP in its revenue proposal.

The AER must approve the priority project 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 agreed to the amendment or AEMO considered the amendment will result in a material benefit and could be achieved by the TNSP in the regulatory control period. If approved, the TNSP would be required to report on the status of the priority project in each STPIS annual compliance review.

Under the network capability component, the TNSP would receive an incentive payment equivalent to 1.5 per cent of its MAR to fund projects outlined in the NCIPAP in each year apart from the final year of the regulatory control period. In the final year of the regulatory control period the incentive payment would be 1.5 per cent of the TNSP's MAR less any reductions made by the AER, up to a minimum of minus 2 per cent of the MAR for failing to achieve priority project improvement target(s).

The AER considered that the design of the network capability component was consistent with the STPIS principles in clause 6A.7.4(b) of the Electricity Rules. While the one-off project design of the network capability component is different to the service and market impact components, which are

based on TNSPs' historical performance, this better achieves the objectives of increasing network capability than a historical performance based parameter could.

4.2 Issues raised in submissions

The AER received submissions on the network capability from AEMO, Grid Australia, the MEU, SP AusNet and Transend.

AEMO was supportive of the network capability component proposed by the AER but considered that amendments should be made to align the network capability component with the Victorian process which has provided superior overall outcomes for customers. AEMO proposed the following amendments:

- AEMO should be the ultimate decision maker on how and which projects should be implemented by TNSPs under the network capability component. This is consistent with the Productivity Commission's draft report recognising the need to have a national planner-decision maker in order to ensure that projects identified provide the most efficient outcome for the market
- AEMO should be supplied with the relevant information on TNSP network expenditure programs when assessing the NCIPAP. This will ensure there is an appropriate consideration given to the trade off between existing network capability and investing in additional infrastructure, and
- the network capability component should specify approaches towards the improvement of capacity of interconnectors. As interconnector capacity improvements are an important factor in providing an efficient grid to customers, this should be encouraged through the network capability incentive.

AEMO also stated it would work with the AER and SP AusNet on whether there are additional requirements that need to be included in the STPIS to accommodate the separate roles and responsibilities in Victoria.

Grid Australia supported the introduction of the network capability component, considering it is consistent with the requirements of clause 6A.7.4 of the Electricity Rules and the objectives of the scheme. However, Grid Australia considered that the network capability component may be overly complex and simplification of the design should be explored. Similarly, Transend also encouraged the AER to consider opportunities to simplify the network capability component in consultation with affected stakeholders.

Grid Australia also considered that the AER could include worked examples to provide guidance to TNSPs and other stakeholders in the initial implementation of the network capability component.

Grid Australia proposed an amendment to the network capability to allow for a TNSP's NCIPAP to be amended annually through an AER approval process. Grid Australia considered this was prudent as circumstances may change during the regulatory control period such that the NCIPAP approved at the commencement of the regulatory control period is no longer applicable or relevant.

Grid Australia noted that it would consider lodging a rule change proposal to allow TNSPs to seek early application of the network capability component as this would contribute to the national electricity objective.

SP AusNet supported the inclusion of the network capability component, but noted that it may be limited to the type of projects it can propose due to the requirements of its transmission licence. Under the licence, SP AusNet can only augment the network in accordance with Essential Services Commission of Victoria guidelines, pursuant to a network agreement with VENcorp (now part of AEMO) or a connection agreement with a distributor, generator or customer. SP AusNet considered an exception could be made to allow it to carry out minor augmentation works under the network capability component. SP AusNet also noted that AEMO would be the most appropriate body to undertake a benefits assessment and a whole of network study of the limits on its transmission network as it does not have access to the tools or data required. SP AusNet stated both issues would be resolved if the planning recommendations in the TFR were implemented in Victoria.

The MEU was supportive of the introduction of the network capability component.

4.2.1 Issues raised in the stakeholder forum

AEMO sought greater clarification on how the network capability component could address coordinated projects between TNSPs to improve interconnector capacity. Following the stakeholder forum, the MEU provided a supplementary email stating that it considered the network capability component could be used to incentivise the projects to address intra-regional constraints which constrain interconnector flows at times most needed.

Alinta Energy considered that some projects improving network capability in one region may adversely affect network capability in an adjoining region.

Powerlink stated that it did not support AEMO's proposal that AEMO be the ultimate decision maker on projects implemented by TNSPs under the network capability component. Powerlink considered this was inconsistent with the current regulatory arrangements and may be pre-emptive of current reviews of the planning arrangements under the Electricity Rules.

SP AusNet sought clarification on whether the network capability component applied to both capital and operational projects.

Several stakeholders considered that TNSPs and AEMO would benefit from a workshop to discuss in detail the implementation of the network capability component.

4.2.2 Issues raised in the network capability component workshop

In response to stakeholder feedback a further workshop focussed solely on implementation of the network capability component comprising of TNSP and AEMO representatives was held.

SP AusNet pointed out the short timeframe in which it has to submit its upcoming revenue proposal may make it difficult to provide its NCIPAP. SP AusNet further asked whether the incentive arrangements of the network capability component in the final year of the regulatory control period could be amended. SP AusNet noted that as its upcoming regulatory control period was three years, the worst case scenario of a minus two percent incentive payment in its final year is proportionately higher than it would be for other TNSPs with the standard five year regulatory control period.

Other issues considered included:

- what was meant by 'load injection point' in the draft network capability component and whether this excluded shared network at injection points which connected generation

- what limits should be identified in the NCIPAP, noting that circuits or injection points may have multiple limits, especially if the lines had dynamic ratings which would vary based on weather conditions

- the types of projects which could be included under the network capability component. For example, TNSPs queried whether projects to address limits in network capability that only occurred at certain times of the year or that reduced the length of planned outages or the likelihood of unplanned outages on super critical network elements could be included, and

- how projects should be prioritised in the NCIPAP and how the benefits associated with projects should be assessed and/or quantified, especially wholesale market outcomes. In particular, stakeholders queried whether the AER should publish a guideline on how to prioritise projects and assess and/or quantify benefits.

4.3 AER considerations and final decision

Proposal for AEMO to be the ultimate decision maker

As the body that has oversight and responsibility for the STPIS, it is appropriate that the AER is responsible for making decisions about projects that will be undertaken by a TNSP during its regulatory control period. While the AER will give significant weight to AEMO's technical expertise, the AER will not fetter its discretion in this regard, particularly given that it is the AER that has to approve any performance payments to TNSPs under the STPIS.

The AER therefore considers that AEMO's proposed amendment to be the ultimate decision maker on the projects to be implemented under the network capability component should not be adopted at this time. Any changes to NEM transmission frameworks will be assessed by the AER in its next review of the scheme.

Proposal for AEMO to be supplied with network expenditure programs

As stated in the explanatory statement, AEMO's consultative role in the development of the NCIPAP by TNSPs will play a part in prioritising the projects which deliver the best value for money for consumers. Accordingly, the AER considers it is appropriate that AEMO have access to a TNSP's capital expenditure program for the purposes of consulting on the NCIPAP. This will ensure AEMO has the necessary information to assess and provide advice on the projects a TNSP should undertake to ensure the objectives of the scheme are achieved. The AER has included a clause in the network capability component to require TNSPs to provide AEMO with a copy of their capital expenditure programs for the upcoming regulatory control period when consulting on their NCIPAP.

Proposal to specify approaches towards the improvement of the capacity of interconnectors

The AER considers projects that include the improvement of the capability of interconnectors may be included in a TNSP's NCIPAP. Whether such a project is included in a TNSP's NCIPAP should be assessed on a case by case basis, taking into account the potential benefits the project may provide and how this compares to other potential projects that the TNSP may include in its NCIPAP. Low-cost projects that improve interconnector capability and deliver substantial benefits are consistent with the objectives of the network capability component and the STPIS.

While interconnector projects may require co-ordination between TNSPs, the AER considers this should not pose significant barriers to the consideration and assessment of interconnector projects. As the current ongoing TransGrid and Powerlink Development of Queensland–New South Wales

Interconnector regulatory investment test for transmission (RIT-T) and AEMO and ElectraNet Heywood interconnector upgrade RIT-T show, there is co-operation between TNSPs in exploring interconnector upgrades. Further, given its responsibilities to publish the National Transmission Network Development Plan (NTNDP), AEMO is in a position to assist TNSPs identify interconnector projects for inclusion in the NCIPAP. Consistent with this role, the draft scheme has been amended to specifically require TNSPs, as part of the NCIPAP consultation, to consult with AEMO about the potential for coordinated projects. Following AEMO's comments in the stakeholder forum, the AER does recognise that further guidance is required as to how interconnector projects that involve two or more TNSPs should be treated in the NCIPAP. The AER has amended the network capability component to clarify that where a proposed priority project is coordinated project between multiple TNSPs, the TNSPs should include in their proposal a copy of their individual costs associated with the co-ordinated project and a written agreement from all TNSPs committing to the co-ordinated project.

The AER agrees with the MEU that the network capability component may be used by TNSPs to address intra-regional constraints that bind flows on the interconnector. Interconnector capability is not only affected by the capacity of the interconnector, but often by limiting elements on transmission circuits which do not form part of the interconnector. Thus, projects to improve the capability of interconnectors should not only focus on improving interconnector capacity, but on interconnector capability by addressing constraints on intra-regional transmission circuits which bind the flow of interconnectors.

Simplification of the network capability component and provision of worked examples

In response to Grid Australia's and Transend's proposal to simplify the network capability the AER reviewed the draft scheme to see if further simplification of the scheme was possible. However, the AER was not able to simplify the network capability component without making changes which may have comprised the ability of the component to meet the objectives of the STPIS. While the AER has re-ordered some of the provisions of the network capability component to group related sub-clauses together, it has not substantially changed the network capability component.

The AER agrees with Grid Australia's proposal to include worked examples to assist in the implementation of the scheme. Worked examples are provided in appendix A of this final decision.

Amendment of the NCIPAP during the regulatory control period

The AER agrees with Grid Australia that it is appropriate to include a provision to allow for the annual amendment of a TNSP's approved NCIPAP during the regulatory control period where there has been a change in circumstances. The AER considers this is consistent with the requirements of clause 6A.7.4 and the objectives of the STPIS, as it will ensure TNSPs are not incentivised to undertake projects to increase capability where, due to a change in circumstances, there are no benefits to wholesale market outcomes or reliability of supply to customers.

Accordingly, the AER has included in the network capability component a provision to allow TNSPs to propose removal of a priority project in their NCIPAP. The TNSP must show that there has been a change in circumstances outside the control of the TNSP such that the completion of the priority project will no longer result in a material benefit and, taking into account the circumstances, it is reasonable to remove the priority project.

The TNSP may then also propose replacement priority project(s) to be included in its NCIPAP. To ensure consistency, the development and assessment of the replacement priority project(s) will be similar to the process for the development and assessment of the TNSP's original NCIPAP. The

TNSP must consult with AEMO prior to submitting a proposal to the AER. The AER may approve the replacement priority project if it is satisfied that the priority project improvement target will likely result in a material benefit and is otherwise consistent with the scheme.

To ensure TNSPs are still appropriately incentivised, the combined cost of the replacement priority project(s) and remaining priority projects in the NCIPAP approved by the AER cannot exceed 1 per cent of the TNSP's proposed MAR for the regulatory control period.

Interaction with Victorian arrangements

Based on AEMO's and SP AusNet's submissions, the AER considers it is not necessary to amend the STPIS to accommodate the Victorian transmission planning arrangements to ensure SP AusNet can fully participate in the network capability component.

Identification of limits

The AER considers that the identification of limits in the NCIPAP should not be a detailed outline of all the technical limitations of the line. Rather, the NCIPAP as submitted to the AER should be an identification of the limits that, if addressed, would resolve the existing limitations on the transmission circuit or injection point and benefit wholesale market outcomes, benefit consumers or defer the need for major network investment. The technical analysis of the limits and decision as to what limits should be included in the NCIPAP, should be made by the TNSP in consultation with AEMO. Thus, TNSPs would be required to share with AEMO the detailed technical information regarding the limitations of their transmission circuits and injection points and the reasons for those limits. This is not onerous as TNSPs already use information about the limitation of their transmission networks in the day to day running of their transmission network (and provide a subset of this information to AEMO) and would know the underlying reasons for those network limitations.

The identification, prioritisation and assessment of projects

The AER confirms that the following types of projects, as discussed in the network capability component workshop, would be included under the network capability component so long as those projects deliver material benefits:

- projects to address any limit on the relevant element, whether thermal, voltage stability, transient stability or otherwise
- projects that alleviate a limit that occurs only during certain times of the year or under certain conditions
- projects that reduce the length of planned outages or likelihood of unplanned outages on super critical network elements, and
- joint projects between TNSPs to increase the capability of interconnectors.

The AER does not consider it is necessary to publish a guideline on the prioritisation and assessment and quantification of benefits associated with projects. The network capability component incentivises TNSPs (with assistance and independent oversight from AEMO) to develop innovative and creative low cost projects which materially improve network capability. Thus, to have a guideline on the criteria for the prioritisation and assessment of benefits would likely stifle innovation and creativity by restricting the range of projects considered by TNSPs and AEMO. Further, given the low cost of projects under the network capability component, the AER considers it is not necessary that the

assessment of benefits be as rigorous or prescriptive as the RIT-T. This would also likely reduce the incentive on TNSPs to propose innovative and creative projects.

The AER will continue to assist in the implementation of the network capability component by continuing to engage with TNSPs and AEMOs. This will provide greater clarity around the type of projects that can be included and what benefits these projects should be measured against. Further, as part of the final decision, the AER has provided worked examples of priority projects as an attachment in appendix A.

SP AusNet request to delay submission of the NCIPAP and amend the incentive arrangements for the final year of the regulatory control period

The AER notes SP AusNet's concerns about the short timeframe it will have to prepare its NCIPAP to submit as part of its revenue proposal. The AER also notes the close arrangements between AEMO and SP AusNet in Victoria, which facilitates AEMO's oversight role in the NCIPAP. The AER will continue to engage with SP AusNet in relation to this issue.

The AER does not consider it is necessary to amend the incentive arrangements for the third, which is the final, year of the regulatory control period. The AER has significant discretion whether to reduce the incentive payment of TNSPs in the final regulatory year for not achieving the priority project improvement target. The AER will consider factors such as whether the priority project has still resulted in a material benefit, whether failure to achieve the improvement target has been due to factors outside the control of the TNSP and whether completion of the project will still result in material benefit in the future. Thus, SP AusNet's concern that it could receive a minimum incentive payment of minus two percent is a worst case scenario that is unlikely to occur unless they are negligent in the application of the scheme.

Injection point clarification

The AER considers that it is appropriate that the injection points limit identified by TNSPs in the NCIPAP include not just customer load injection points, but also generator connection injection points. For example, projects to improve the network capability at generation injection points could improve wholesale market outcomes and thus should be considered by TNSPs when developing their NCIPAP.

To clarify this, the AER has amended the network capability component to require TNSPs to include in their NCIPAP the current limits for all injection points rather than 'load' injection points.

5 Market impact component

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

5.1 Market impact component

The MIC provides an incentive to TNSPs to minimise planned transmission outages that can affect wholesale market outcomes. 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 that a TNSP receives in each calendar year is calculated by measuring the TNSP's annual performance against its target. The asymmetric nature of the scheme means there is no revenue at risk for the TNSP for performance over the target number of dispatch intervals.

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		1762		**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 1502.
`` 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

Table 5.2 shows the s-factors and respective incentive payments arising from the MIC 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.[9]

When the MIC was introduced, a TNSP's annual performance target was set as equal to the TNSP's average performance history over the five years prior to the revenue reset being determined. This value was set as the annual performance target for the 5 years of the coming regulatory period and did not vary for that period.

5.2 Draft decision

In the draft decision, the AER proposed amending the MIC to take into consideration the ability of TNSPs to strongly influence their performance under the scheme. The AER had identified that around 80 per cent of outages affecting the MIC result from planned maintenance, which can be varied to significantly influence performance against the MIC. The AER considered that this high level of control over market impacts flowing from outages may have allowed TNSPs to engage in strategic behaviour to influence the outcomes of the scheme. The controllability of outages that affect market impact was higher than anticipated when the scheme was first designed.

[9] 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.

The AER advocated that using historical performance to set a fixed target for the duration of a TNSP's regulatory control period may not be the most appropriate target for the MIC, 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. The AER considered that using network congestion in 2005, for example, to set a performance target for 2014 was not appropriate as substantial market changes may have occurred over this 10 year period. The AER considered it was 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 proposed a rolling three year performance target.

In its deliberations on how to amend the MIC to address potential gaming, the AER had considered various options to make the MIC symmetrical. The AER noted, however, 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.

The AER considered that a rolling performance measure in addition to a rolling performance target would incentivise TNSPs to provide continual improvement on performance. A rolling performance measure would mean that TNSP performance against the MIC parameter, for the purpose of determining TNSP incentive payments in each regulatory year, would be measured on a multi-year basis instead of single year. 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 addresses the incentive for a TNSP to schedule all critical outages in one year at a time likely to deliver high market impacts (that also flow into an easier target) and no critical outages in the next period. Under a rolling performance measure, artificially spiking the performance in one year will 'penalise' the TNSP with very low incentive payments for two years before benefiting from high targets.

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 amend the scheme by increasing the financial incentive, the AER considered 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.

5.3 Issues raised in submissions

Setting of performance target and measure

The submissions from SP AusNet, Grid Australia and the MEU were supportive of the AER's proposal to have a rolling performance measure and target for the MIC. The MEU did raise concerns that there would still be the potential for gaming in the scheme under the AER's proposal due to the fact that the performance target was being set "so far in the past" and there was no overlap year in the target and measure. The MEU proposed to have some overlap between the performance measure and performance target (a common year). The MEU argued that this will reduce the potential for gaming as it aligns the target and performance measure to a greater extent. Two suggestions were made by the MEU:

1. the target for year N be the average of years (N-3, N-2, N-1) with the measure being the average of (N, N-1), or
2. the target for year N be the average of years (N-4, N-3, N-2, N-1) with the measure being the average of (N-2, N-1, N).

Inclusions and exclusions

SP AusNet and Grid Australia both submitted that the AER should reconsider the types of events that were included when setting targets and/or measuring performance for the MIC.

While SP AusNet supported using a rolling target to better reflect current network conditions, SP AusNet was concerned that only using three years of data to set the performance target increases the likelihood that the impact of infrequent, large-scale projects such as generator connections would not be included in the target. The AER understands SP AusNet's concern to be that large-scale projects significantly impact on performance; using a rolling three year benchmark may mean a lower target than a target derived using five years of historical data and is thereby more difficult to achieve during those years when a TNSP is implementing a large-scale project. SP AusNet considers outages on the prescribed network associated with the connection of non-prescribed assets should be excluded from the performance measure of the MIC (and thereby the target). SP AusNet considers that these outages should fall within the current exclusion 4, which excludes outages on assets that are not providing prescribed transmission services.

Grid Australia also suggested a number of changes to the scheme. Grid Australia noted that:

> "4.2(a) requires each TNSP to submit in its revenue proposal a performance target for the market impact parameter. As the performance target will be set using a rolling average based on future years at the time of submitting the revenue proposal, it will not be possible for TNSP to submit performance targets in a revenue proposal".

Grid Australia proposes that the AER amend paragraph 4.2(a) of the scheme to account for this.

Furthermore, Grid Australia also noted:

> "Paragraph 4.2(d) specifies matters for which the proposed performance target may be reasonably adjusted. Grid Australia proposed the addition of a fourth matter, namely: "acquisition or disposal of assets for which constraints exist in the market system"."

Grid Australia considers that, as targets under MIC are set on historical performance, the targets for incentivised assets should be calculated using those same assets.

SP AusNet also advocated that the MIC be tailored to address particular characteristics of the SP AusNet network. In particular, SP AusNet proposed ring fencing the Heywood interconnector assets[10] from the remainder of the SP AusNet network, with separate targets for the two areas. SP AusNet proposed the weighting for the two areas be calculated with reference to relative annual energy contributions of the relevant assets. SP AusNet considered this would address an ability for performance against the MIC to be 'swamped' by outages associated with a small number of new generator connections that impact the Heywood interconnector assets. This was illustrated by the large count of dispatch intervals (with a marginal value greater that $10/MWh) associated with the recent connections of the Mortlake Power Station and Macarthur Wind Farm, which shows the ability for a relatively few outages on a small number of localised assets to have a significant impact on MIC performance. SP AusNet considered that this causes a disproportionate focus on managing outages on a relatively small proportion of the network. SP AusNet considered that this distorted the scheme such that it no longer achieves a socially optimal outcome.

5.4 AER considerations and final decision

Setting of performance target and measure

The AER has amended the MIC performance target to a 3 year rolling target and the performance measure to a 2 year rolling average. AER considers that a rolling performance measure and target will incentivise TNSPs to provide continual improvement on performance, and reduce perverse outcomes. The AER agrees with the MEU that setting the performance measure and performance target to include a common year, will further reduce the potential of gaming. The AER decision is to implement the first option proposed by the MEU, where the performance target for year N is calculated based on the average of years (N-3, N-2, N-1) and the performance measure is the average of (N and N-1). An example is set in Table 5.4 below.

Table 5.4: Example of 3-year rolling average performance target and 2-year rolling average performance measure, with a common year

Year	2009	2010	2011	2012
Performance	900	800	700	600
Target	-	-	-	800 (Avg performance of 2009-11)
Measure	-	-	-	650 (Avg performance of 2011-12)

In line with Grid Australia's suggestion, the AER has amended the requirement under paragraph 4.2(a) of the scheme for a TNSP to submit a performance target for the MIC in its revenue proposal. TNSPs are required to provide historical performance data for the previous two calendar years in their revenue proposals.

Exclusions

SP AusNet is concerned that a small number of outages in congested areas may disproportionately affect the MIC count. Whilst the AER recognises this might be the case, there is value for these constraints to remain in the scheme as it currently stands and to not be ring-fenced. The AER considers that network elements, whether a small number or large, that have significant binding counts correctly identifies the area of focus for TNSPs, and is consistent with the objective of the scheme. The AER believes as long as the parameter is calculated consistently (constraints affected

[10] In particular, the HYTS – APD – MOPS/TRTS – MLTS lines and terminal stations.

by generators included) in the performance target and performance measure, TNSPs will not be disadvantaged by elements that have large binding counts

The AER also considers that ring-fencing particular assets in the manner proposed by SP AusNet adds unnecessary complexity to the scheme. The AER considers that any such ring-fencing for SP AusNet raises consequential procedural fairness issues for other TNSPs. The AER also notes that ring-fencing of high impact congested assets is a long term solution to a potentially short term issue, particularly in light of the introduction of the network capability component.

Exclusion clause four in the current scheme allows outages on assets that are not providing prescribed transmission services to be excluded from the scheme. This encompasses connection outages. The AER does not agree with SP AusNet's interpretation that this clause provides for the exclusion of outages on the prescribed network that are associated with connecting non-prescribed assets. The AER considers that if connection outages require the implementation of a constraint that manages the outage of both prescribed and non-prescribed assets, then the binding count of that constraint will be included in the MIC count.

The AER notes that infrequent large-scale projects would increase the constraint binding count for a TNSP and, depending on the year it occurs, it can either benefit or disadvantage the TNSP in its ability to outperform its performance target. The AER does not propose to adjust the annual performance count to account for large scale projects. Non-adjustment will incentivise TNSPs to implement these projects in ways that will have least impact to the market. This is consistent with the objective of the scheme.

At one of the stakeholder forums, Powerlink suggested a further exclusion to be introduced to the MIC. Powerlink raised that at times during longer outages of critical network equipment, a TNSP may build temporary equipment that allows for continual energy supply (for example to bypass a substation). This temporary reconfiguration may result in a reduced energy transfer capability than would exist without the outage (the system normal level) and may be classified as an outage by AEMO. The temporary configuration, however, results in an increased energy transfer capability than would have existed as a result of the outage. Powerlink raised that the current design of the MIC discourages TNSPs to implement these temporary bypass solutions as they currently could incur a market impact count. The unintended incentive of MIC warrants an exclusion clause to be introduced. The AER proposes to exclude market impact counts associated with a temporary reconfiguration of network elements to provide an increase in network capability than would occur otherwise. However, due to the lack of data available to assess the materiality of such exclusion, the AER proposes that TNSPs must notify the AER of such network outage and temporary reconfiguration before it occurs and the AER must agree to the exclusion prior to the event. Shorter outages to enable construction of the temporary bypass (and restoration to normal following completion of the longer outage) would still be included in the MIC.

Acquisition or disposal of assets

Network augmentation of each region changes from time to time. Grid Australia in its submission proposed that the scheme should allow for adjustment to a TNSP's performance target or measure to allow for the acquisition or disposal of assets for which constraints exist in the market system. The AER considers that such adjustment is not appropriate for the scheme. The scheme aims to be a relatively mechanical and simple measure. By allowing such adjustment, the AER will have to re-calculate a performance target to account for disposed and acquired equipment, which increases the complexity of the scheme without necessarily achieving significant benefits to the market. Given the

change to rolling 3 year targets, the AER considers that any potential disadvantage to TNSPs is relatively short lived.

Financial incentive

The AER will not be amending the revenue at risk for the MIC at this time. As previously indicated, the AER considers that 2 per cent provides a sufficient level of incentive, as demonstrated by the responsiveness by TNSPs to date. The AER may reconsider the incentive structure for the MIC at a later date.

6 Weightings, targets and performance measurement

This chapter sets out the AER's amendments to the weightings, the setting of targets, caps and collars and performance measures of service component parameters.

6.1 Setting of performance targets and performance measures

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.

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 generally determined through the use of two standard deviations around the mean.

Performance for each parameter is currently measured by comparing a TNSP's performance during the year against the targets, caps and collars specified in the TNSP's transmission determination.

6.1.1 Draft decision

The AER considered in its draft decision that maintaining the current approach of setting targets, caps and collars with reference to historic performance was appropriate. The AER did flag that 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 committed to exploring alternate methodologies in those circumstances. The AER noted that the wording of the scheme already provides for the setting of targets, caps and collars through the use of a sound methodology.

The AER recognised that its proposed amendments to the average outage duration parameter would reduce the number of events measured by the parameter. The AER also acknowledged that, with a smaller population of events, this created challenges in the setting of appropriate targets and performance measures to ensure that the parameter incentivises consistent improvement or maintenance of TNSP performance.

6.1.2 Issues raised in submissions

Grid Australia and SP AusNet submitted that the revised average outage duration parameter was likely to be volatile as there would be a very low and volatile number of qualifying outage events. Based on internal analysis SP AusNet also stated that the average circuit outage rate parameter was also likely to be volatile.

Grid Australia also considered that the AER should maintain clause 3.3(j) of Version 3 of the scheme, which provides TNSPs the ability to propose alternative methodologies for determining performance targets when the TNSP is operating at the performance frontier on a parameter. Grid Australia proposed that clause 3.3(j) should be amended to include caps and collars, and to remove the requirement that targets (calculated using the alternative methodology) are not of a lower threshold than the targets that applied to the relevant parameter in the previous regulatory control period.

SP AusNet submitted that the changes proposed by the AER had the general effect of narrowing the focus of service performance measurement to events that are more infrequent and, hence have a

more volatile distribution. SP AusNet noted that the AER would need to be mindful of this when setting targets for these parameters, to incentivise TNSPs to improve performance that was not 'repeatedly swamped by random variation'.

During the stakeholder forum, TNSPs were generally supportive of a move towards using rolling performance measures for service component parameters. Powerlink considered that it would also smooth out incentive payments and the resulting impact on prices. The MEU raised concerns that, particularly if a three year rolling performance measure was applied, the incentives on TNSPs to improve performance during the current year could be blunted. Where a rolling performance measure was required to smooth out volatility predominantly caused by events outside a TNSP's control, generator representatives questioned the need for the relevant parameter.

6.1.3 AER considerations and final decision

Performance targets and measures

As previously flagged in sections 3.1.1 and 3.1.3, the AER intends to implement a two year rolling average performance measure for the average circuit outage rate and average outage duration parameters to address volatility concerns.

The AER has contemplated whether to use a two year or three year rolling performance measure for the relevant parameters. The AER considers that measuring performance on a rolling average basis, using a minimum of two years of performance should be sufficient to smooth out volatility. In addition, the AER considers a two year performance measure maintains the incentive in the current performance year better than a three year measure. In this regard, two years is also appropriate to ensure that poor performance in a single year does not unnecessarily persist in the performance measure in future years. Using a rolling average performance measure will also incentivise TNSPs to continually improve performance even if the cap is reached early in one year. The AER will re-examine the volatility of these parameters, and whether a different number of years is more appropriate for calculating the rolling average performance measure, during the next review of the scheme.

The rolling average performance measure during the current performance year will be calculated as the mean of a TNSP's performance against the relevant parameters in that year and the year before it. To calculate this in the first year that the new scheme will apply, the AER will require TNSPs to recollect historic data on performance for the previous year. The AER notes that TNSPs will also need to provide historic performance data against the requirements of the new scheme in order to set targets.

The two year rolling average performance measure for the relevant parameters would be compared against a five to ten year benchmark for each TNSP. Clause 3.2(h) of the scheme has been amended to explicitly provide the AER the flexibility to require a performance target to be based on a period other than five years. During the reset for each TNSP the AER will determine what period is appropriate to set targets for the average circuit outage rate and average outage duration parameters.

Performance frontier

The AER considers that the proposed changes to the service component narrow the measures such that TNSPs are less likely to be operating at the performance frontier. However, the AER agrees that there should be an option in the scheme for a TNSP to propose alternative methodologies for determining performance targets when the TNSP is operating at the performance frontier on a parameter. Therefore, the AER proposes to maintain clause 3.3(j) of Version 3 of the scheme in the

revised scheme. The AER does not agree with Grid Australia's proposal to include caps and collars in the revised wording. This is because clause 3.2(e) of the scheme already allows for caps and collars to be set in accordance with the performance target methodology, including when that is an alternative methodology proposed in accordance with clause 3.3(j).

In addition, the AER does not agree with Grid Australia's proposal to remove the requirement that targets (calculated using the alternative methodology) are not of a lower threshold than the targets that applied to the relevant parameter in the previous regulatory control period. Grid Australia did not provide further reasons supporting the removal of this clause. To satisfy clause 3.3(j) a TNSP would have been performing at a high level above targets in previous years. The AER considers that TNSPs should be incentivised to maintain good performance, and so alternative methodologies that arrive at higher targets should not be allowed.

6.2 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).

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 flexibility in setting weightings was provided to account for 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.

6.2.1 Draft decision

The AER considered that there was no sound basis for allowing parameter weightings to vary across TNSPs. The AER considered the different operational circumstances and network characteristics for most TNSPs should be accounted for by setting targets based on historical performance. Accordingly, 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. Therefore, the AER proposed setting the parameter weightings during this 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 proposed that the average circuit outage rate parameter have the highest weighting of 0.5 per cent of MAR, followed by the loss of supply event frequency parameter and the average outage duration parameter at 0.30 per cent and 0.20 per cent of MAR respectively. The AER considered 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 considered 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). The two parameters that measure loss of supply have equal weighting to the average circuit outage rate parameter of 0.50 per cent of MAR. The AER proposed that the average outage duration parameter have a lower weighting of 0.20 per cent of MAR to take account of the concerns raised by Grid Australia that narrowing the parameter may reduce its effectiveness.

Within each parameter, the AER also proposed weightings for sub-parameters. Of the average circuit outage rate sub-parameters, the AER considered that transmission line and transformer fault sub-parameters should have equal weight 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 had a lower weighting. In recognition of the issues surrounding a lack of consistent methodology of measuring forced outages, the AER proposed that forced outage sub-parameters have a zero weighting. For the loss of supply event frequency sub-parameters the AER proposed that the 'x' and 'y' system minute sub-parameters have the same weighting, as each sub-parameter incentivises desirable behaviour.

The AER also considered that different parameter weightings for Directlink and Murraylink should be maintained in light of the unique characteristics of their networks. The AER proposed that the average circuit outage rate parameter for Directlink and Murraylink have a weighting of 1 per cent of MAR.

The AER proposed 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.

6.2.2 Issues raised in submissions

Transend was concerned that the proposed service components contained overlapping measures with standardised weightings which may not reflect the outcomes most valued by customers. Transend was particularly concerned that the weighting for the loss of event supply event parameter proposed by the AER was significantly less than Transend's current weighting.

Transend also supported Grid Australia's submission that the scheme should allow TNSPs to propose alternative weightings during a reset to apply to that TNSP's parameters and sub-parameters (including weightings of zero), as this would focus incentives on parameters which prove most customer value. Grid Australia considered that the AER should maintain this flexibility in light of the individual nature of TNSP networks.

Grid Australia also sought clarification regarding the AER's ability to reduce the weighting of parameters and sub-parameters to zero when there is insufficient data available. Grid Australia queried whether the reduction of a sub-parameter weighting to zero would meant the total weighting of the parameter was reduced by the weighting of the sub-parameter, or whether the weighting of the sub-parameter would be distributed over the remaining sub-parameters to maintain the total parameter weight.

6.2.3 AER considerations and final decision

The AER has decided to maintain the standardised weightings proposed in its draft decision. The only alteration is that the average outage duration parameter no longer has sub-parameters. The final weightings are set out in appendix B.

The AER does not consider that the amendments to the service component result in significant overlap. The revised service component has three different measures for three different types of events. These are the number of failure events (with or without loss of supply), the number of loss of supply events (large and small), and the average duration of loss of supply events.

The AER notes that, should its standardised 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.

The AER considers that when the weighting of a sub-parameter is reduced to zero the total weighting of the parameter would be reduced by the weighting of that sub-parameter, rather than increasing the weighting of other sub-parameters.

6.3 Timing of performance

Under the scheme, TNSPs are required to measure their performance against the service component and MIC parameters on a calendar year basis. Where a TNSP's new regulatory control period commences midway through a calendar year, TNSPs are required to measure their performance against the STPIS for that calendar year against two different sets of targets, caps and collars.

The AER did not propose any changes to this requirement in its draft decision.

6.3.1 Issues raised in submissions

Grid Australia suggested that the requirements around the timing of performance could be simplified by extending the target, caps and collars from the first half of the calendar year for the full overlapping year. The new targets, caps and collars would commence in the first full calendar year of a regulatory period. Grid Australia noted that this would require further consideration by the AER and TNSPs to ensure that the incentives remain consistent across regulatory periods given that the expenditure allowances may be set on a different basis.

6.3.2 AER considerations and final decision

While the AER considers that Grid Australia's suggestion is worthy of consideration, the AER does not propose to amend the scheme at this time. The AER notes that the transitional arrangements associated with the changes to chapter 6A of the Electricity Rules raise some complexities surrounding the application of the STPIS during the transitional period. In this regard, the AER considers that this issue should be deferred until the next review of the STPIS.

7 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 amendments to the current arrangements.

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.

Under Version 3, 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.

7.2 Draft decision

The AER proposed in its draft decision to change 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 considered 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, the AER intends to conduct the next review of the STPIS two years after the current review has been finalised.

The AER considered that its proposed change did not limit TNSPs' ability to put forward proposals to improve the effectiveness of the scheme, noting that TNSPs are uniquely positioned to identify potential innovations. The AER expressed the view 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 to do so. The AER also considered 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. Where a TNSP does put forward an amendment to improve the scheme, that amendment should be applied to all TNSPs. Under the current process, improvements may not have been carried across from the originating TNSP to other TNSPs. The AER considered 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.

7.3 Issues raised in submissions

Gird Australia supported the AER's proposal to conduct regular reviews of the STPIS to ensure that incentives respond to developments in the NEM. Grid Australia considered that the AER should conduct reviews every five years, as this aligns with the length of most regulatory control periods. Grid Australia considered the reviews should be considered in line with the *transmission consultation procedures.*

Grid Australia did, however, consider that the ability for TNSPs to propose amendments to the scheme ought to be maintained. Grid Australia did not consider that this ability necessarily created

divergence; the design of the scheme itself is the main determinant of divergence or convergence. Under the scheme, proposed changes must be considered by the AER and are only accepted if they align with the scheme's objectives. Grid Australia considered this ability encourages innovation, rather than differences between TNSPs.

7.4 AER considerations and final decision

The AER has decided to remove the clauses of the scheme that provide TNSPs with the ability to propose amendments to the scheme. As previously articulated, the AER considers regular reviews would allow for a more holistic approach to amending the scheme, allowing for greater stakeholder involvement than the current process. The AER notes that this arrangement does not prohibit TNSPs from proactively requesting the AER conduct a review of the scheme.

The AER does not consider that this will inhibit innovation. Rather, the AER considers the review process is likely to enhance innovation by providing TNSPs with a greater incentive to propose scheme-wide rather than individual amendments as has been the trend to date. While the AER accepts Grid Australia's observation that the divergence was not solely driven by TNSPs ability to suggest amendments, the AER does consider that this promoted a focus on individual changes, which has not been conducive to the consideration of scheme wide changes. The AER notes that under the review process, TNSPs would be able to propose individual tailoring of the scheme to their circumstances, where this was justifiable.

The AER generally agrees with Grid Australia's comments about the timing of the reviews. The AER considers that reviews should be conducted at least every five years. This does not prohibit the AER from conducting reviews more regularly in response to significant policy or market developments. The AER notes that clause 1.7 of the STPIS stipulates that the AER will follow the *transmission consultation procedures* when amending a scheme.

In line with the recent amendments to clause 6A.7.4 of the Electricity Rules, the AER has removed references in the scheme to the content of deleted sub-clauses.[11] These changes are not substantive.

[11] Clause 6A.7.4(f) of the Electricity Rules allowed the AER to amend or replace a service target performance incentive scheme from time to time. 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) provided that, subject to certain exceptions, the AER may from time to time amend or replace the values attributed to the performance incentive scheme parameters.

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, noting that there is a limited timeframe in which the AER can assess the information provided.

Under the current arrangements, information or data used as the basis for the final annual compliance information reported under the TNSP 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.

Further, some TNSPs are not required to submit historical performance data relating to the MIC as they are not subject to the MIC under the current STPIS. However, the AER encourages these TNSPs to submit data relevant to the MIC to the AER in preparation for the application of the new STPIS to those TNSPs.

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.[12]

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.[13] 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,[14] 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.[15] 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.[16]

8.3 Draft decision

The AER proposed to amend the scheme to specify that the AER could use RINs as an information gathering tool. The AER proposed 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.

[12] Section 28D, Electricity Law.
[13] Section 28J, Electricity Law.
[14] For a RIN to be considered urgent it must meet the requirements listed in section 28J(3) of the Electricity Law.
[15] Section 28K, Electricity Law.
[16] Section 28K, Electricity Law.

The AER proposed 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 indicated its intention 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 also foreshadowed issuing 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 AER proposed the RINs require them to maintain and provide information in accordance with the requirements of the revised STPIS.

8.4 Issues raised in submissions

Grid Australia submitted that it did not consider that the use of RINs was warranted. Grid Australia considered that the existing information gathering regime of clear guidelines and systematic audits is efficient and has not proven to be problematic. Grid Australia raised concerns that RINs could increase the evidentiary burden of data compliance on TNSPs in the circumstances where there was no justification for using RINs.

No other stakeholders commented on the use of RINs.

8.5 AER considerations and final decision

In line with its draft decision, the AER has amended the STPIS to allow the AER to make information requests of TNSPs using the TNSP Information Guidelines, the TNSP Submission Guidelines and/or RINs. The AER considers that the option of using RINs is warranted in light of concerns the AER has about the quality of data and supporting material for exclusions provided by some TNSPs in previous years. The AER does not agree with Grid Australia's assessment that the information provided under the TNSP Information Guidelines has not proven problematic. The AER considers RINs have an additional benefit of being forward looking in requiring TNSPs to record information about a forthcoming calendar year in a specified format, as opposed to TNSP Information Guidelines which specifies that the AER provides templates towards the end of a calendar year. RINs can also be beneficial in specifying TNSPs record performance against the requirements of the scheme as it will

apply in the future, which cannot be achieved under the TNSP Information Guidelines. The AER considers this would provide greater certainty to TNSPs about how to record performance against the new scheme and prove more efficient than retrospectively amending performance data.

The AER does not intend to issue annual reporting RINs to all TNSPs to apply to the performance reporting for the 2013 calendar year.

The AER will, however, consider the use of RINs in the forthcoming year. When the AER does so, it will take into consideration the adequacy of the information provided by each TNSP for their 2012 calendar year performance against the STPIS as well as the STPIS component of SP AusNet's revenue proposal. The AER will focus on information provision relating to exclusions in particular. As previously indicated, any transition to the use of RINs will involve consultation with TNSPs to ensure that an undue regulatory burden is not being imposed.

A Network capability component worked examples

This appendix provides worked examples of priority projects submitted under the NCIPAP for the network capability component.

Worked example 1: Replacement of secondary current transformer

Lines 145A and 145B are a double circuit transmission line (each circuit is identical) in the TNSP's network that connects to the distribution network (and downstream customers) via substation A. In the next regulatory control period, peak customer demand at substation A is forecast to increase from 97 MW to 105 MW. The maximum rating of 145A (and 145B) is 100 MW, so the TNSP will have to undertake network augmentation to be able to supply customer load during an outage of 145B (or 145A) during peak load conditions. Upon examination of the reasons for the limit on each line, the TNSP identifies that there is a secondary (ie low voltage) current transformer (CT) used in metering and control for each circuit of this double circuit transmission line that is overloaded when the load on the relevant line exceeds 100 MW. Replacing this CT would increase the limit of the line by 15 MW (which is the thermal limit of the high voltage transmission conductor that can only be increased at significantly greater cost by restringing of the entire line). By increasing the limit of the line in this manner the TNSP is likely to defer the need for major network augmentation. Thus, the TNSP includes this project on its list of potential priority projects.

The TNSP consults with AEMO, providing AEMO information on all the technical limits of the line, the peak demand forecast for substation A and the potential priority project. After reviewing the information, AEMO agrees that the key limit is the secondary CT for each circuit and that the proposed priority project would result in a material benefit as the replacement will increase network capability and defer the need for investment.

Thus the TNSP includes the priority project in its proposed NCIPAP to the AER. The information regarding the limit and proposed priority project is presented in the NCIPAP as outlined below:

Transmission circuit	Lines 145A and 145B
Limit and reason for the limit	The limiting factor of each line is 100 MW. The limit is due to secondary current transformer (CT) rating
Project	Replacement of secondary CTs for lines 145A and 145B
Limit addressed	Outage condition rating for supply to Substation A
Project description	Replacement secondary CTs for lines 145A and 145B to increase rating beyond thermal limit for the lines
Capital Cost	$10 000
Operating Cost	$5000
Priority project improvement target	Increase limiting factor of each line to 115 MW

Reasons to undertake the project:

The limit of lines 145A and 145B is 100MW each. As outlined in the latest annual planning report, peak summer demand at substation A is forecast to increase to 105MW. The thermal limit is primarily caused by secondary CTs associated with lines 145A and 145B. The replacement of these CTs will increase the network transfer capability into substation A by 15MW. The key benefits of this would be:

1. An increase in the rating of the lines to meet increased forecast demand
2. The deferral of network investment to meet reliability standards and supply requirements. Likely network investment options would have been additional circuit into Substation A at a cost of $4.5 million.

Worked example 2: Generator runback scheme during planned transformer outage

During a planned outage of one of three transformers at substation B, (where two critical 150 MW generators and a 100 MW customer load are connected to the transmission network), a generator must normally be taken offline (that is limited to 0 MW) to prevent the overload of a second transformer in the event of a contingent trip of the third transformer. This provides little opportunity to schedule planned outages for any of these transformers. The installation of a fast runback scheme that would only trip a generator in the event of a contingent transformer trip (under transformer outage conditions) would allow the generators to continue generating unconstrained during a planned transformer outage. The project would then provide more opportunities for transformer outages without requiring the pre-contingent shutdown of a generator.

The TNSP consults with AEMO, providing AEMO information on all the technical limits of the transformer, the demand forecast for substation A and historical generator output. After reviewing the information, AEMO agrees that the runback scheme would result in a material benefit as the replacement will increase substation injection capability and increase the efficiency of dispatch outcomes.

Thus the TNSP includes the priority project in its proposed NCIPAP to the AER. The information regarding the limit and proposed priority project is presented in the NCIPAP as outlined below:

Injection point	Substation B
Limit and reason for the limit	The limiting factor of each of three transformers is 100 MW. This limits generation to 100 MW under transformer outage conditions.
Project	Installation of a fast runback scheme that would trip a generator in the event of a transformer contingent trip (under transformer outage conditions)
Limit addressed	Pre-contingent constraint on generation during transformer outage conditions
Project description	Installation of a fast runback scheme that would trip a generator in the event of a transformer contingent trip (under transformer outage conditions)
Capital Cost	$50 000
Operating Cost	$5000
Priority project improvement target	Remove limitation on generation output so that 300 MW is able to be dispatched during transformer outage conditions.
Reasons to undertake the project: Reduce market impacts that currently occur by constraining output from the critical 300 MW station to 100 MW during planned transformer outage conditions.	

Worked example 3: Post-contingent load transfers and short term emergency ratings

A DNSP has requested the commencement of joint planning on installing an additional transformer in the TNSP's network to meet demand at a connection point (substation C) that is forecast to exceed the firm rating of existing transformers within ten years. However, the major capital works could be deferred by using short term emergency overload ratings on the existing TNSP transformers and short term ratings on DNSP feeders to allow post-contingent load transfers within the DNSP's network. The project would require the installation of ambient weather monitors on the feeders in the DNSP network.

The TNSP consults with AEMO, providing AEMO information on all the technical limits of the TNSP transformers, DNSP feeders, the demand forecast for substation C and the post-contingent DNSP feeder load transfer plans. After reviewing the information, AEMO agrees that the use of short term emergency overload transformer ratings, combined with improved monitoring of DNSP feeders (against short term ratings) and load transfer plans would result in deferral of major capital works.

Thus the TNSP includes the priority project in its proposed NCIPAP to the AER. The information regarding the limit and proposed priority project is presented in the NCIPAP as outlined below:

Injection point	Substation C
Limit and reason for the limit	The limiting factor of firm TNSP transformer capability is a continuous rating of 100 MW.
Project	Use of post-contingent load transfers and short term emergency ratings
Limit addressed	100 MW firm limit on supply to customers
Project description	Use short term emergency overload ratings (115 MW) on the existing TNSP transformers and short term ratings on DNSP feeders (with ambient weather monitors on the feeders) to allow post-contingent load transfers within the DNSP's network
Capital cost	$150 000
Operating cost	$15 000
Priority project improvement target	Increase firm limit on supply to customers to 115 MW

Reasons to undertake the project:

The limiting factor of firm TNSP transformer capability is a continuous rating of 100 MW. As outlined in the latest annual planning report, peak summer demand at substation C is forecast to increase to 105 MW. Using short term emergency overload transformer ratings and short term ratings on DNSP feeders (with ambient weather monitors on the feeders) to allow post-contingent load transfers within the DNSP's network within the allowable short term timing. The key benefits of this would be:

1. An increase in the rating of the transformers by 15 MW to meet increased forecast demand
2. The deferral of network investment to meet reliability standards and supply requirements. Likely network investment options would have been additional transformer into Substation C at a cost of $4 million.

B Service component parameter weightings

The standard parameter weightings for TNSPs are set out in Tables 1 and 2 below:

Table A.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**
Proper operation of equipment:	**0.00**

Table A.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 equipment:	**0.00**

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*.