Final decision

Electricity transmission network service providers

Service target performance incentive scheme (incorporating incentives based on the market impact of transmission congestion)

March 2008

AUSTRALIAN ENERGY REGULATOR

Contents

Shortened forms

ACCC	Australian Competition and Consumer Commission
AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
ERAA	Energy Retailers Association of Australia
ETNOF	Electricity Transmission Network Owners Forum
EUAA	Energy Users Association of Australia
MAR	maximum allowed revenue
MCC	marginal cost of constraint
MITC	market impact of transmission congestion
MWh	megawatt hour
NEM	national electricity market
NEMMCO	National Electricity Market Management Company
NER	National Electricity Rules
NGF	National Generators Forum
OCC	outage cost of constraint
SAHA	SAHA International
TCC	total cost of constraint
TNSP	transmission network service provider

1 Introduction

The Australian Energy Regulator (AER) is responsible for regulating the revenues of transmission network service providers (TNSPs) in the national electricity market (NEM) in accordance with the National Electricity Rules (NER).

In 2006 the Australian Energy Market Commission (AEMC) reviewed the framework for regulating electricity transmission services and replaced relevant sections of chapter 6 of the NER with new provisions. The new provisions required the AER to release guidelines on its approach to regulation.

Consistent with this requirement the AER published its service target performance incentive scheme (the initial scheme) on 31 August 2007. This scheme fulfilled the requirement in clause 6A.7.4 of the NER that the AER publish a service target performance incentive scheme by 28 September 2007. This initial scheme focuses on network availability and reliability and provides incentives for TNSPs to improve their performance against these parameters by rewarding them when performance standards increase and penalising them when they decline.

Concurrently the AER has been developing performance incentive scheme parameters based on the market impact of transmission congestion (MITC). In June 2007, the AER released an issues paper *Service target performance incentive scheme—developing incentives based on the Market Impact of Transmission Congestion* (the issues paper).[1] In the issues paper, the AER noted that the development of any incentive based on the MITC measures would form part of the broader service target performance incentive scheme.

In November 2007 the AER released an amended draft of the service target performance incentive scheme (the draft scheme) which incorporated a market impact parameter. This draft scheme comprised two elements:

- The initial scheme (parameters set out in appendix A and B of the draft scheme), which provides incentives for TNSPs to minimise the number and duration of loss of supply events and maximise circuit availability.
- The market impact component (parameter set out in appendix C of the draft scheme), which provides an incentive for TNSP's to minimise the market impact of outages.

In its final decision on the initial scheme, the AER indicated that it would review the parameters applying to each TNSP before each transmission determination. The AER completed this review for Transend, TransGrid and EnergyAustralia and included amendments to the parameters that applied to these businesses in the draft scheme.

The AER received eight submissions from interested parties on the draft scheme. All of the parties who made submissions are listed in appendix A of this document. This final decision sets out the AER's service target performance incentive scheme (the scheme) and the AER's reasons for the scheme. Its preparation satisfies the AER's obligations under clause 6A.20(e) of the NER.

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[1] AER, *Service target performance incentive scheme—developing incentives based on the market impact of transmission congestion—issues paper*, Canberra, June 2007.

1.1 NER requirements

Under the NER, the AER must publish a service target performance incentive scheme which complies with the principles set out in clause 6A.7.4(b).

The AER may amend or replace this scheme at any time however, under clause 6A.7.4(f) of the NER, for an amendment or replacement to apply to a TNSP, the final scheme must be published at least 15 months before the commencement of the TNSP's next regulatory control period.

The AER must follow the transmission consultation procedures set out in clause 6A.20 when amending or replacing the scheme.

1.2 Purpose and objectives of the scheme

The scheme outlines the approach to setting a service target performance incentive within the transmission determination framework. The objectives of the scheme are to:

- contribute to the national electricity objective
- be consistent with the principles in the NER
- promote transparency in the information provided by a TNSP and AER decisions
- promote efficient TNSP capital and operating expenditure by balancing the incentive to reduce actual expenditure with the need to maintain and improve reliability for customers and minimise the market impact of transmission congestion.

1.3 Structure of this document

The remainder of this document is structured as follows:

- Section 2 sets out the reasons for the scheme
- Section 3 outlines and addresses each of the issues raised in submissions on amendments to the parameters that apply to EnergyAustralia, Transend and TransGrid under the initial component of the scheme and the AER's decisions on them.
- Section 4 outlines and addresses each of the issues raised in submissions on the development of the market impact component of the scheme and the AER's decisions on them.
- Appendix A lists the parties who made submissions on the draft scheme.

2 The reasons for the scheme

The revenue cap form of regulation allows TNSPs to earn up to a maximum allowed revenue (MAR) within a regulatory year. The MAR is based on forecast efficient costs. During the regulatory control period, a TNSP can maximise its profits by reducing its costs below the forecast levels. While cost reductions could occur because of improved efficiency, they could also result from reduced service quality. A TNSP may have an incentive to maximise its profits at the expense of service quality delivered to customers and the market.

The initial scheme aims to address this incentive by linking regulated revenues to the TNSPs' performance against defined performance parameters:

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

The initial scheme provides incentives for TNSPs to improve performance against these parameters by rewarding them when performance standards increase, and penalising them when performance standards decline.

This initial scheme has some limitations. In many cases reduced circuit availability and higher outage levels do not directly affect customers (for example, virtually no outages cause blackouts). Further, some two thirds of outages do not result in the dispatch of more expensive generation, so do not have an effect on price outcomes in the wholesale electricity market.

The market impact component of the scheme supplements the initial scheme by targeting outages that have an adverse impact on dispatch outcomes (see box 1). The market impact parameter is based on MITC data and provides financial rewards for improvements in performance standards against a performance target.

The scheme promotes the national electricity objective and principles set out in the NER by encouraging TNSPs to consider how customers value their actions and how their operational decisions may affect market outcomes. TNSPs are encouraged to improve the availability, security and ultimately reliability of the transmission system at the times most valued by transmission network users.

Box 1: Market impact of transmission congestion

Generators lodge offers with the National Electricity Market Management Company (NEMMCO) for every five-minute period in the day. NEMMCO uses the offers to determine which generators are dispatched and at what level of output. Subject to transmission and other constraints, NEMMCO dispatches on the basis of offer prices in ascending order until demand is met.

Transmission constraints sometimes prevent NEMMCO from selecting the lowest priced generation. As an example, consider flows across the Victoria to South Australia interconnector. At times, there is an abundance of low-priced brown coal generation in the Latrobe Valley and flows across the interconnector reach the interconnector's limit. In these circumstances transmission congestion forces NEMMCO to limit the dispatch of cheap brown coal generation in Victoria and dispatch more expensive gas plant in South Australia in its place. In this example the transmission constraint has an impact on end users who are likely to face higher prices in South Australia.

From an economic efficiency perspective transmission congestion increases the total cost of dispatch as low cost generation is displaced by more expensive generation. The AER measures the cost of transmission congestion by comparing dispatch costs with and without congestion.

More congestion in the transmission network is typically associated with a higher market impact, though the end impact depends on the respective costs of generators that are constrained on and off. If low cost generation is constrained off and replaced by high-cost generation the market impact can be substantial. By contrast, congestion which constrains off one low cost generator and requires the dispatch of another low cost generator may have little impact.

3 Amendments to existing parameters—Issues raised in submissions and AER response

3.1 The draft scheme

In the draft scheme the AER proposed minor amendments to the parameters that currently apply to EnergyAustralia, Transend and TransGrid under the service component of the draft scheme. These amendments were proposed to ensure that this component of the scheme was suitable to apply from the commencement of these businesses next regulatory control period.

Three submissions were received in response to these proposed amendments, which generally supported the amendments. This chapter addresses the issues raised in these submissions and the AER decisions on them. Section 3.4 also addresses application of the transmission service target performance incentive scheme to EnergyAustralia during its regulatory control period commencing 1 July 2009.

3.2 Transend parameter amendments

The proposed amendments to the parameters applying to Transend under the service component of the draft scheme were primarily made in response to a request from Transend. These amendments included splitting the transmission line circuit availability sub-parameter into transmission line circuit availability (critical circuits) and transmission line availability (non critical circuits). This amendment was included to ensure that the scheme meets the requirements in clause 6A.7.4 of the NER, specifically that it provide incentives for each TNSP to improve and maintain reliability of those elements that are most important to determining spot prices. This is necessary as the market impact parameter will not apply to Transend in its next regulatory control period due to the limited performance data available.

The draft scheme also revised one of the time thresholds at which loss of supply events are measured under the scheme (the 'y' system minute threshold). This amendment was proposed to ensure that a meaningful performance target can be established for the loss of supply event frequency parameter.

In addition, the AER proposed placing an obligation on Transend to report against the average outage duration parameter during its next regulatory control period. The AER considered that this parameter should not affect Transend's financial incentive because its performance results are highly volatile and vary significantly from year to year.

In response to the draft scheme, Transend proposed the following minor drafting amendments to the parameter definitions that apply to it under appendix B:

- replacing references to the code in the parameter definitions with the National Electricity Rules
- clarifying that the transformer availability sub-parameter applied to the entire transformer circuit

- clarifying that the source of data is the Transend performance reporting system
- amending the definition of the average outage duration parameter to ensure that it is consistent with the definition previously provided to the AER.

Transend also provided a list of circuits that it considers currently meet the definition of 'critical circuits' included in part 3 appendix B of the scheme and noted that it supported the AER's proposal to put a zero weighting on the average outage duration parameter.

AER response

The AER accepts all of the additional amendments to the parameter definitions proposed by Transend. These amendments clarify the definitions of the parameters and ensure that the scheme accurately states the definitions applied by Transend for performance reporting.

The AER notes that Transend provided a list of circuits that it considered currently meet the critical circuit definition included in part 3, appendix B of the scheme. The AER also notes that it is still of the view that it is appropriate to apply a zero weighting to the average outage duration parameter for Transend's next regulatory control period.

AER decision

The AER has made the minor drafting amendments proposed by Transend to part 3, appendix B of the scheme.

3.3 TransGrid parameter amendments

The proposed amendments to the parameters applying to TransGrid under the service component of the draft scheme mostly were in response to a request from TransGrid. These amendments included providing additional detail in the scheme on the exclusions TransGrid applies when reporting its service performance and applying a peak critical circuit availability sub-parameter (with the peak periods and critical circuits to be established in the transmission determination). This parameter was included to meet the principle in clause 6A.7.4(b) of the NER that the scheme should provide an incentive for TNSPs to improve reliability at times most valued by users and on those elements of the network that are most important for determining spot prices. The AER noted that this parameter would only apply to meet this requirement in the event that the market impact parameter was not sufficiently developed to apply during TransGrid's next regulatory control period.

In addition, the AER proposed that the thresholds at which loss of supply events are measured under the scheme (the 'x' and 'y' system minute thresholds) be established in the transmission determination. The AER was concerned that the thresholds applying under TransGrid's current determination may not be appropriate during the next regulatory control period. The AER, however indicated that it would consider prescribing the current (or alternative) thresholds in the final scheme if TransGrid provided additional analysis and evidence which supported the use of these (or alternative) thresholds.

In response to the draft scheme, TransGrid proposed the following amendments to the definitions of the parameters applying to it under the service component:

- removing the peak/critical circuit availability sub parameter as the market impact parameter is sufficient to meet the requirements in clause 6A.7.4(b) of the scheme.
- making minor drafting amendments to further clarify which exclusions apply to each availability sub-parameter.
- proposing that the scheme prescribe the 'x' system minute threshold for the loss of supply event frequency parameter at 0.05 system minutes. This threshold currently applies to TransGrid under its revenue determination.
- proposing that the scheme prescribe the 'y' system minute threshold for the loss of supply event frequency parameter at the revised level of 0.25 system minutes. This is lower than the 0.4 system minute threshold currently applying to TransGrid under its revenue determination, and will capture more loss of supply events.

TransGrid engaged statistical consultants SAHA International Limited (SAHA) to analyse TransGrid's performance data against the loss of supply event frequency parameters and make recommendations on suitable system minute thresholds.

SAHA reviewed TransGrid's loss of supply event data over several time horizons ranging from five to eleven years. SAHA's analysis revealed that the data has a bimodal distribution. This suggests that outages generally fall into two categories, those that are resolved quickly and are brief and those that are more complex and affect either a large number of customers or a small number of customers for an extended period.

SAHA considered that the 0.05 system minute threshold should remain unchanged as it is very close to the mean value of 0.053 system minutes for the five year data set and 0.062 system minutes for the eleven year data set. TransGrid advised the AER that the average annual number of events for the 0.05 system minute threshold was 3.6 and 4.1 for the 2003–07 and 1997–2007 periods.

However, SAHA considered that the current 0.4 system minute threshold should be revised. Its analysis of the historical data indicated that the threshold is no longer relevant as it is only measuring less than 1 per cent of all loss of supply events. To determine an alternative threshold, SAHA produced a separate distribution for the tail events of the bimodal data set. Based on this analysis, SAHA proposed that the 'y' system minute threshold should be set at 0.25 system minutes. At this threshold, TransGrid has experienced on average 0.6 and 0.9 events per calendar year over the 2003–07 and 1997–2007 time horizons. SAHA noted that these thresholds are comparable with other TNSPs in the NEM.

Based on SAHA's recommendations TransGrid proposed that the AER amend the scheme to apply the proposed alternative 'y' system minute threshold of 0.25 and retain the 'x' system minute threshold of 0.05 for its loss of supply event frequency parameters.

AER response

The AER accepts the minor drafting amendments proposed by TransGrid and the removal of the peak/critical availability sub-parameter from the parameters that apply to TransGrid under the scheme. This sub-parameter was initially proposed by TransGrid to satisfy the requirement in clause 6A.7.4(b) of the NER that the scheme provide incentives for TNSPs to improve and maintain the reliability at times most valued by users and on those elements of the network most important for determining spot prices. TransGrid proposed that this parameter would only apply in the event that the market impact parameter was not finalised in time to apply to its next regulatory control period.

The AER accepted this proposal in the draft scheme and noted in the explanatory statement that it would remove the peak/critical sub-parameter from the final scheme if the market impact parameter was sufficiently developed to apply during TransGrid's next regulatory control period. Given the market impact parameter will be incorporated into the final scheme and will apply to TransGrid during its next regulatory control period, the peak/critical availability sub parameter can be removed from the parameters applying to TransGrid under the service component of the scheme.

The AER also accepts the revised 'y' system minute threshold of 0.25 proposed by TransGrid and retaining the 'x' system minute threshold of 0.05 for the loss of supply event frequency parameters. The analysis undertaken by SAHA to recommend these thresholds is both sound and reasonable as it determined the threshold by examining the distribution of the available loss of supply data. The 0.05 and 0.25 thresholds meet the objectives of the scheme and will effectively measure both short duration outages and more extended events or events that affect a large number of customers. The AER is satisfied that an effective performance target, which provides TransGrid with an opportunity to optimise its performance, can be established with these thresholds.

The AER also notes that in the next regulatory control period, TransGrid will record events above 0.25 system minutes as both an 'x' and a 'y' system minute event for the purpose of performance reporting.

AER decision

The AER has made the following amendments to part 4, appendix B of the scheme:

- removed the peak/critical circuit availability sub parameter
- made minor drafting amendments to clarify which exclusions apply to each availability sub-parameter
- replaced 'y' system minute threshold in the loss of supply event frequency parameter with 0.25 system minutes and retain the 'x' system minute threshold of 0.05 system minutes.

3.4 EnergyAustralia parameter amendments

On 29 February 2008 the AER published its decision to treat EnergyAustralia's transmission network assets as distribution network assets for the purpose of any service performance incentive arrangement for the regulatory control period commencing 1 July 2009. The chapter 6A transmission service standards incentive regime will therefore no longer apply to EnergyAustralia from the commencement of its next regulatory control period. Further detail on this decision is contained in the AER's *Preliminary positions paper–matters relevant to distribution determinations for the ACT and NSW DNSPs for 2009–2014*[2] and *Final decision–matters relevant to distribution determinations for the ACT and NSW DNSPs for 2009–2014*.[3] These documents are available from the AER's website www.aer.gov.au.

In its submission, EnergyAustralia re-iterated its preference to be excluded from the scheme.

AER decision

Given EnergyAustralia's transmission assets will be treated as part of its distribution network for the purposes of any service standards incentive arrangement during its next regulatory control period, the AER has removed the parameters applying to EnergyAustralia under the scheme.

2 AER, *Preliminary positions paper – matters relevant to distribution determinations for ACT and NSW DNSPs for 2009-2014*, Canberra, December 2007.

3 AER, *Final decision– matters relevant to distribution determinations for ACT and NSW DNSPs for 2009-2014*, Canberra, February 2007.

4 Incentives based on the market impact of transmission congestion— Issues raised in submissions and AER response

4.1 Development of incentives based on the market impact of transmission congestion

The market impact indicators

In 2003 the Australian Competition and Consumer Commission (ACCC) released its *Statement of principles for the regulation of transmission revenues–service standards guidelines*[4] (the service standards guidelines) and in 2005 the AER adopted these guidelines as part of its compendium of regulatory guidelines. The ACCC acknowledged that these guidelines did not directly address the market impact of transmission congestion and committed to undertake further work to develop market impact indicators.

The ACCC formed a service standards working group to assist it develop these indicators. The working group members included representatives of consumers, generators, retailers, TNSPs and NEMMCO. After extensive consultation with industry, the ACCC published a draft decision in July 2004 recommending publication of data against two measures– the total cost of constraint (TCC) and the marginal cost of constraint (MCC). In June 2006 the AER released its final decision, electing to publish the TCC and MCC as well as an additional indicator– the outage cost of congestion (OCC).

The AER has worked with NEMMCO to calculate data against these measures using available generator bidding data and has released data on these measures for the 2003–04, 2004–05, 2005–06, and 2006–07.[5] The publication of these reports would not have been possible without NEMMCO's assistance.

The issues paper

In June 2007, the AER released an issues paper[6] for the further development of the existing service target performance incentive regime. This issues paper reviewed the MCC, OCC and TCC data, outlined various incentive options based on the MITC indicators, outlined potential economic and regulatory criteria with which to assess various incentive options, discussed some of the lessons learnt with respect to the practicality of the indicators, and then assessed each of the options against the assessment criteria.

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4 ACCC, *Statement of principles for the regulation of electricity transmission revenues—service standards guidelines*, Canberra, November 2003.

5 AER, *Indicators of the market impact of transmission congestion reports 2006–07, 2005–06, 2004–05* and *2003–04*, Adelaide.

6 AER, *Service target performance incentive scheme—developing incentives based on the market impact of transmission congestion—issues paper*, Canberra, June 2007.

The draft scheme

Following a further working group meeting on the possible incentive options outlined in the issues paper, the AER published a draft scheme in November 2007. In this draft scheme the AER proposed incorporating a new market impact component in the scheme, which provides incentives for TNSPs to minimise the market impact of their outages. It was proposed that TNSP's performance would be measured against a new market impact parameter set out in appendix C of the scheme. This parameter was based on the MCC indicator and counted the number of dispatch intervals where an outage results in a constraint with a marginal value greater than $10/MWh.

It was proposed that the market impact component of the scheme would operate as an asymmetric bonus only scheme and would provide a TNSP with an opportunity to receive a bonus of up to 2 per cent of its maximum allowed revenue (MAR) if it eliminated all outage constraints with a marginal value greater than $10/MWh. The performance targets for this component of the scheme would be based on a TNSP's average historical performance.

The AER received seven submissions on the market impact component of the draft scheme. The submissions were generally supportive of the AER's proposal to incorporate a parameter that provides incentives for TNSPs to minimise the market impact of their outages. However, interested parties raised several concerns regarding the proposed method for setting performance targets, the asymmetric nature of the market impact component and the proposed level of the financial incentive. This chapter addresses each of the issues raised in these submissions and the AER decisions on them.

4.2 The market impact parameter

The draft scheme incorporated a market impact parameter based on the MCC indicator. VENCorp stated that it supports a scheme that provides TNSPs with incentives to make efficient and effective use of the existing transmission system.

The National Generators Forum (NGF) noted that its members have mixed views on the appropriate balance between certainty of transmission outage timing and minimisation of market impact. However, it considered that this should not interfere with the timely implementation of the market impact component of the scheme and it reiterated its strong support for the establishment of performance incentives based on the market impact indicators. The Energy Retailers Association of Australia (ERAA) also expressed its strong support for the establishment of performance incentives based on market impact indicators.

The Energy Users Association of Australia (EUAA) supported encouraging TNSPs to consider the market impact of their asset management arrangements. The EUAA considered that the scheme would be more effective if generators and large customers were required to advise all TNSPs of their outage plans where their output affects a TNSP's flow constraints and could have an adverse impact on customers and TNSPs. This would allow TNSPs to adapt to planned generator outages by rescheduling their own outages. The EUAA noted that this would need to be investigated further to assess the risk of unintended effects on the energy market.

The Electricity Network Owners Forum (ETNOF) generally supported the inclusion of a parameter in the scheme to reflect the market impacts of transmission congestion but expressed concerns over the use of the MCC indicator as a basis for measuring performance. ETNOF considered that this indicator may not correctly reflect the cost of transmission congestion as the MCC may appear high even when spot prices remain within their normal range. This can occur when intra-regional constraints provide incentives for some to generators to bid at -$1000/MWh in an attempt to get dispatched. ETNOF considered that in these circumstances, the MCC only reflects the generation side of the market and customers do not experience any impact from the outage.

AER response

The MCC indicator has been assessed as the best basis for establishing a parameter that provides an incentive for TNSPs to minimise the impact of outages on other NEM participants and the market. The MCC indicator was selected as the basis for the market impact parameter over the TCC or the OCC indicators because it performed favourably against the evaluation criteria set out in the AER's issues paper.[7] In particular, the MCC indicator uses publicly available information, the incentive is verifiable and administratively simple and the measure is an incremental development of the existing service target performance incentive scheme.

The AER notes ETNOF's concerns that the MCC indicator may not correctly reflect the cost of transmission congestion when intra-regional constraints provide an incentive for generators to bid -$1000/MWh in an attempt to be dispatched. In these circumstances the MCC indicator may overstate the market impact of the network outage.

However, the market impact parameter incorporated into the scheme measures market impact differently to the MCC indicator. The parameter counts the number of five-minute dispatch intervals where a network outage results in a network constraint with a marginal value of greater than the high impact threshold of $10/MWh. If a generator bids at -$1000/MWh due the existence of an intra-regional constraint caused by a network outage, the potential overstatement of the MCC indicator will not be captured by the market impact parameter because this measure does not capture the extent to which the market impact is greater than the high impact ($10/MWh) threshold.

The AER does not accept ETNOF's argument that customers do not experience any impact from intra-regional constraints. Such constraints can have a significant effect on customers as the lowest priced generation will not be dispatched and this can increase the spot price. An outage in the circumstances described by ETNOF should be captured by the market impact parameter as generator rebidding is usually in response to the generator being constrained off for a significant length of time or by a large volume. In these circumstances, the outage clearly has a high market impact and should be captured under the scheme.

Regarding the EUAA's concern that the scheme does not require generators and large customers to advise TNSPs of their outage plans, the AER considers that it would not

[7] AER, *Developing an incentive based on the market impact of transmission congestion—Issues paper*, June 2007, Canberra

be appropriate to include these types of requirements on generators and customers in the scheme. The scheme is primarily concerned with providing economic incentives to change TNSP behaviour rather than placing obligations on other NEM participants. The aim of the market impact component is to provide incentives to TNSPs to minimise the impact of transmission congestion in the NEM through a range of measures. These measures may include effective engagement with generators, retailers and customers to coordinate outages and provide adequate notice and information on planned outages.

AER decision

The AER has not amended the scheme in response to these submissions.

4.3 Exclusions and the treatment of planned outages

ETNOF and TransGrid noted that the definition of the market impact parameter in the draft scheme excludes force majeure events and constraints that are invoked to manage the reclassification of non-credible contingency events.

ETNOF considered that the market impact component of the scheme should be limited to planned outages as the existing parameters adequately cover unplanned outages on the transmission network and the market impact component aims to provide incentives to TNSPs to minimise congestion by planning and coordinating outages.

ETNOF and TransGrid also proposed that the following additional outage events should be excluded from a TNSP's performance:

- any outages shown to be caused by a fault or other event on a 'third party system' – e.g. intertrip signal, generator outage, customer installation
- constraints due to the following causes:
  - manifestly incorrect input events
  - occurrences in which a constraint applied by NEMMCO does not accurately reflect market conditions
  - occurrences of a dispatch error by NEMMCO
- times during which the normal market operations are modified such as:
  - periods of mandatory restriction
  - periods of market intervention by NEMMCO
  - periods in which the market is suspended or price caps are in effect
- non-prescribed transmission assets/services
- forced outages
- outages for personal safety
- outages for operational security.

AER response

Unplanned outages should not be excluded from performance data on the market impact component of the scheme. The market impact parameter is not exclusively aimed at ensuring TNSP's plan and coordinate outages to minimise congestion, but also to limit the duration and frequency of unplanned outages at times of high market impact or on critical network elements. Applying the parameter to forced and unplanned outages will provide the TNSPs with an incentive to minimise the duration of unexpected outages (particularly at times of high spot prices). This is consistent with the principles in clause 6A.7.4(b)(1)(ii) of the NER that the scheme should provide incentives for TNSPs to improve and maintain the reliability of those elements of the transmission system that are most important for determining spot prices.

The AER accepts ETNOF and TransGrid's proposal to exclude some additional events from the market impact performance data. It is appropriate to exclude events from performance data where a TNSP cannot control the event or mitigate the impact of the event by adopting better practices.

However, the drafting on the exclusions proposed by ETNOF was far too broad. For example, the outages for personal safety exclusions proposed by ETNOF could have the effect of capturing nearly every planned outage undertaken by TNSPs as these outages will generally require a TNSP to de-energise and isolate equipment for personal safety. This is clearly not a desirable outcome, however it may be appropriate to exclude emergency outages where a member of the public is in danger of death or injury from coming into contact with high voltage equipment.

The AER has made the following drafting amendments to the list proposed by ETNOF:

- where appropriate the AER has adopted the drafting in the NER and has limited the exclusions to clearly defined events in the NER
- occurrences in which a constraint applied by NEMMCO does not accurately reflect market conditions has been redrafted so these events are only excluded where the constraint applied by NEMMCO does not reflect or is otherwise inconsistent with the network capability that the TNSP advised NEMMCO
- outages for personal safety will only be excluded where they are not related to the activity of owning or operating a transmission network.

The exclusion of periods where normal market operations are modified through market intervention by NEMMCO has not been accepted as the vast majority of interventions by NEMMCO are due to network issues and should be captured by the scheme. The remaining interventions are extremely rare and it is unlikely that they will materially affect a TNSP's performance against the market impact parameter.

AER decision

The AER has amended the definition of the market impact parameter in appendix C of the draft scheme to exclude the following:

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

4.4 Establishing performance targets

Use of historical performance

In the draft scheme, the AER proposed to require performance targets to be set by averaging a TNSP's historical performance. The EUAA, ETNOF and TransGrid raised a number of concerns with this approach.

The EUAA considered that using historical performance as a basis for setting performance targets will need to be carefully monitored. It considered that the scheme lacked an explicit requirement to ensure that performance targets represent a realistic economic balance between the resources needed by TNSPs and the value of reducing

exposure to market impacts. The EUAA submitted that historical values may not be a good indicator of future performance because the role of the transmission grid is changing and emissions trading may alter energy flows and that the scheme should be amended to allow adjustments where declining performance affecting the historical average cannot be justified by economic analysis.

Both TransGrid and ETNOF argued that the occurrence and impact of constraints in the NEM is increasing at an exponential rate and noted that the number and duration of outages is not increasing at a similar rate. ETNOF considered that many of these constraints are unrelated to transmission network outages or events and that a TNSP could reduce its MCC as a percentage of the TCC or OCC, but the MCC could still increase. This is because the exponential trend in TCC and OCC tends to overshadow the reductions that may be made by TNSPs in scheduling outages.

ETNOF and TransGrid considered that TNSPs are taking a number of measures to reduce the market impact of their outages and therefore the scope for further improvement is diminishing. ETNOF and TransGrid both submitted that if the performance targets are too difficult for TNSPs to attain, then the scheme will fail to provide any effective incentive. ETNOF noted the need for the scheme to provide an effective incentive under clause 6A.7.4 of the NER and that using an historical average for setting targets is unlikely to provide robust incentives. ETNOF suggested that TNSPs should be permitted to propose a formulation for setting the performance targets for the market impact parameter in their revenue proposals.

TransGrid proposed an alternative method for setting performance targets. Under this method, the target is calculated by expressing the number of high impact outages as a percentage of the total number of binding constraints caused by outages. This method results in an increased allowance for high impact constraints in the target where the total number of binding constraints is increasing and a tighter target where network augmentations reduce the total number of binding constraints.

Adjustments for capital works

TransGrid noted that nearly all outages with significant market impact are due to major capital works projects and there is limited scope to minimise the duration of these outages. Similarly, ETNOF considered that performance targets should be adjusted to reflect the potential impacts of a TNSPs forecast works program on network congestion.

AER response

Use of historical performance

The AER notes the concerns raised by ETNOF and TransGrid on the use of historical data for establishing performance targets for the market impact parameter. However, it considers that averaging historical performance data is the best method for setting performance targets at this time. This approach is relatively simple and does not require extensive analysis of each TNSP’s network to determine an appropriate benchmark.

Calculating performance targets by averaging historical performance data against the market impact parameter may provide TNSPs with a challenging target. The AER notes that the TCC and OCC are increasing over time and the number of dispatch intervals in which outages have a market impact is generally increasing. The incentive mechanism outlined in the draft scheme only captures MCC events greater than $10/MWh. When MCC events of $10/MWh or less are excluded, the trend is more variable with both increases and reductions over the period. In addition, the market impact parameter only measures the duration of network outages that cause a significant market impact. The parameter does not capture other market events, such as generator outages, which may cause a significant market impact.

Further, while calculating performance targets by averaging historical performance data may provide TNSPs with a challenging target, this does not necessarily mean that the scheme will fail to provide any effective incentive as suggested by ETNOF. There is scope for TNSPs to make improvements to their historical performance with appropriate incentives, and the potential to earn a financial bonus under the scheme of up to 2 per cent should provide sufficient incentive for TNSPs to pursue further performance improvements.

As stated above, the trend in high impact MCC events (above $10/MWh) is variable (rather than increasing). The AER notes TransGrid's alternative suggestion for setting performance targets, but considers that it is more complex and conceptually more difficult than using an historical average. The AER also does not accept ETNOF's suggestion to allow TNSPs to propose a method in their revenue proposals for setting performance targets. This approach is likely to result in inconsistent approaches to setting performance targets across TNSPs. It also provides incentives for gaming as the TNSPs gain commercially by selecting targets that are easy to meet.

The AER notes the EUAA's suggestion that the scheme should allow adjustments to performance targets where declining performance cannot be justified by economic analysis. However, this adjustment would be extremely difficult to model, would add an additional level of complexity to the scheme and is not warranted at this time. The AER will continue to monitor the use of historical data as the basis for setting performance targets and will revisit the issues raised by the EUAA, TransGrid and ETNOF in the future when further experience is gained on operation of the scheme. The AER intends to seek further views on alternative benchmarks through an ongoing consultation process with industry stakeholders. This consultation may be facilitated through the AER's working group.

Adjustments for capital works

The AER does not accept ETNOF and TransGrid's proposal to allow adjustments to performance targets for the potential impacts of a TNSPs forecast works program. While these adjustments are permitted under the service component of the scheme, they are not appropriate under the market impact component. Unlike the circuit availability parameters in the service component of the scheme which sums the duration of all outages regardless of their impact, a TNSP has considerable scope to minimise the risk that an outage caused by capital works would have a high market impact. For example, a TNSP who wants to minimise the risk that an outage associated with capital works will cause a high market impact event could schedule the outage during a period of typically low demand and provide market participants

with as much notice as possible on its upcoming works program. This would provide affected market participants with time to respond and minimise the impact.

In addition, it would be a difficult and complex process to model the likely effect of an increase in capital works on a TNSP's performance against the market impact parameter. Unlike the circuit availability parameters in the service component of the scheme, the modelling would need to predict the bidding behaviour of generators and predict outage events with a high market impact (greater than $10/MWh).

AER decision

The AER has decided to set performance targets for the market impact parameter by averaging historical performance data; however, it will continue to monitor the use of historical data for setting performance targets and may review this aspect of the scheme in the future.

Given that performance targets will be set by averaging historical data and all TNSPs subject to the market impact component will have sufficient performance data at the commencement of their next regulatory control periods, the AER has removed clause 4.2(f) the draft scheme. This clause permitted a TNSP to propose an alternative methodology or benchmark for setting performance targets for the market impact parameter where historical performance data was not available.

4.5 The financial incentive

The nature of the financial incentive

In the draft scheme, the AER proposed that the market impact component operate as an asymmetric bonus only scheme. Under this proposal, a TNSP could receive a maximum bonus of 2 per cent of its maximum allowed revenue (MAR) if it eliminates all outages with a marginal value greater than $10/MWh and it could not receive a financial penalty.

ETNOF and TransGrid supported an asymmetric bonus only scheme because there are a number of factors that are outside a TNSP's control which can influence the outcomes of the scheme. ETNOF considered that a bonus only scheme is justified because:

- there are limitations on the extent to which TNSPs can improve their performance
- TNSPs are likely to incur costs to improve their performance
- there are significant financial gains available to the market from the operation of the scheme
- there are limitations associated with the data upon which the market impact parameter is based
- the parameter is untried and it is unproven whether it is able to accurately capture a TNSP's efforts to respond to the incentive.

The EUAA considered that for incentive arrangements to be effective, they should be symmetrical and that the AER should make a commitment towards the introduction of a symmetrical scheme. The scheme should be designed so that both underperformance

and out performance have a material financial impact on TNSPs. The EUAA suggested that to overcome concerns regarding the implementation of a new untried scheme, the AER could implement targets in the form of performance deadbands or impose penalties on TNSPs at a lower rate than they receive bonuses.

The magnitude of the financial incentive

ETNOF and TransGrid did not support the AER's proposal to set the maximum level of the bonus at 2 per cent of a TNSP's MAR if a TNSP eliminates all outages with a marginal value greater than $10/MWh. They considered that a TNSP is unlikely to attain this level of performance and the AER should instead cap the incentive at 1 per cent if a TNSP reduces the number of outages with a market impact greater than $10/MWh by at least 50 per cent. ETNOF considered that this approach was consistent with the other parameters under the scheme, which do not have caps set at unrealistic 'perfect' results (such as 100 per cent circuit availability).

AER response

The nature of the financial incentive

The market impact component of the service target performance incentive scheme should operate as a bonus only scheme. As outlined in the explanatory statement to the draft scheme, this approach is appropriate because at this stage the scheme is to some extent experimental and unproven. Given it is difficult to predict TNSPs potential performance against the market impact parameter, it is appropriate that a TNSP cannot receive a penalty under the market impact component of the scheme. However, the AER notes the EUAA's concerns and may review whether a bonus only scheme is appropriate in the future.

The magnitude of the financial incentive

The AER notes the concerns raised by ETNOF and TransGrid regarding the level of the financial incentive and the implications of setting the cap at a potentially unrealistic level of performance. However, the proposed approach under the draft scheme does not subject a TNSP to any increased level of risk compared to the approach outlined by ETNOF. As with ETNOF's preferred approach, the draft scheme permits a TNSP to earn a bonus of up to 1 per cent of its MAR if it improves its performance by 50 per cent. However, the draft scheme does not limit the possible incentive payment at this point and allows a TNSP to receive an additional bonus of up to 1 per cent if it can improve its performance beyond the 50 per cent mark.

The level of performance improvement required to receive the full 2 per cent bonus is probably an unrealistic aim. However, it is difficult to determine what a realistic level of performance is at this time because the scheme is untried. Given this, it is not appropriate to cap the possible performance incentive at 1 per cent for a 50 per cent improvement. It may be possible for a TNSP to improve its performance beyond this point and the scheme should reward TNSPs for these improvements, particularly when market participants will receive significant financial benefits.

AER decision

The AER has decided to maintain the 2 per cent asymmetric financial incentive and has not made any amendments to the scheme in response to these submissions.

4.6 Application of the scheme

In the draft scheme the AER proposed to apply the market impact parameter to all TNSPs (except VENCorp, EnergyAustralia and Transend) from the commencement of their next regulatory control periods.

VENCorp noted that SP AusNet is currently subject to a separate incentive scheme with VENCorp (known as the Availability Incentive Scheme (AIS)). The primary objective of this scheme is to "encourage SP AusNet to seek plant outages at times when the expected cost to wholesale electricity market participants of an outage is minimal". VENCorp noted that the market impact parameter in the draft scheme and the AIS target the same behaviour. Given this, SP AusNet might be eligible for incentive payments under both schemes for the same market cost minimising act. However, VENCorp concluded that this was not of substantial concern, as there is limited scope for SP AusNet to further reduce the number of outages with market impacts.

EnergyAustralia reiterated its position that it would be inappropriate to apply the market impact component of the scheme to EnergyAustralia as its transmission assets primarily provide a distribution service and do not affect dispatch in the wholesale electricity market.

AER response

The AER notes the issues raised by VENCorp regarding the application of the market impact parameter to SP AusNet, and on balance considers that it is not of significant concern if there is potential for SP AusNet to receive incentive payments for the same cost minimising act. If this does occur, the cost of incentive payments are likely to be outweighed by the financial gains that market participants receive.

The AER agrees with EnergyAustralia's arguments for excluding EnergyAustralia from the market impact component of the scheme on the basis that its assets do not affect MITC outcomes.

The market impact parameter apply to all TNSPs during their next regulatory control periods with the exception of EnergyAustralia, VENCorp and Transend. The scheme will apply to TransGrid in 2009, Powerlink in 2012, SPAusnet in 2013 and ElectraNet in 2013. The AER has decided not to apply the market impact parameter to Transend in its next regulatory control period as there is only two years of market impact data available for Transend and two years of data is not a sufficient basis on which to develop a robust benchmark.

AER decision

The AER has not made any changes to the scheme in response to these submissions.

4.7 Data collection and reporting

Several interested parties commented on data collection and reporting requirements. The ERAA and the NGF submitted that, regardless of the plan to implement the scheme progressively from 2009, the AER should require TNSPs to collect and publish relevant information within six months of the commencement of the scheme.

This information would be useful to prepare for revenue determinations and provide transparency to the market.

ETNOF and TransGrid noted that clause 5.2 of the draft scheme requires TNSPs to collect data and report on all parameters for annual compliance (including the market impact parameter). ETNOF and TransGrid submitted that to make the compliance process more efficient and minimise costs associated with separate audits the AER and NEMMCO should continue to work cooperatively on the development of a single centrally administered data management system. However, ETNOF noted that TNSPs, the AER and NEMMCO need to undertake further development of the existing systems and once these systems have matured then further consideration can be given to where they should be managed in the long term. ETNOF also noted that there are discrepancies between the data published in the AER's explanatory statement and its own calculations.

AER response

The AER agrees with the ERAA and the NGF that the collection and publication of market impact data is useful for both preparing for future revenue determinations and providing transparency to NEM participants. However, the parameter is based on data published by NEMMCO and therefore the AER considers that it is not necessary to require TNSPs to collect it. Similar data is published annually in the AER's *Indicators of market impact of transmission congestion reports*.[8] In the future, the AER intends to publish performance against the market impact parameter on a regular basis (for example in weekly reports). This will further enhance market transparency.

The AER supports ETNOF's proposal to centrally collect data on any exclusions and information that assists in the allocation of outages between TNSPs. Given the nature of the NEMMCO systems that are used to collect data, ETNOF's suggestion is the most practical and efficient approach to data collection and the annual compliance review. The AER will continue to work with TNSPs and NEMMCO to further develop the existing systems and identify any problems or discrepancies in these systems.

The *information guidelines*[9] currently require TNSPs to collect data and report on all parameters applying to TNSPs under the scheme. This includes both parameters under the market impact component and service component of the scheme. The AER recognises that the information guidelines need to be amended to facilitate the development of centralised data collection systems. These amendments would remove the requirement for TNSPs to report performance against the market impact parameter individually and would only require TNSPs to provide information on any exclusions it wants to claim and information that assists in the allocation of particular outages between TNSPs.

Under clause 6A.17.2(b) of the NER, amendments to the information guidelines must be made in accordance with the transmission consultation procedures. Given this, the AER plans to make the necessary amendments to the information guidelines

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8 AER, *Indicators of the market impact of transmission congestion reports 2006–07, 2005–06, 2004–05* and *2003–04*, Adelaide.

9 AER, *Electricity Transmission Network Providers Information Guidelines*, Canberra, September 2007.

separately to this process. The first TNSP subject to the market impact component (TransGrid) will not need to report its performance against the market impact parameter until the end of the 2009 calendar year (that is, during the compliance review in early 2010). The AER will finalise any necessary amendments to the information guidelines before TransGrid is due to submit its first performance data in 2010. It is likely that the process for incorporating these amendments will form part of a broader review of the information guidelines.

AER decision

The AER has not amended the scheme in response to these submissions.

The AER notes, however, it will need to make consequential amendments to the information guidelines. These amendments will be finalised before the first TNSP subject to the market impact component is due to submit information on its performance in 2010. It is likely that any necessary amendments will be incorporated into a broader review of the information guidelines.

Appendix A: Submissions received

The following interested parties provided submissions to the AER on the draft scheme:

- Electricity Transmission Network Owners Forum (ETNOF)
- Energy Retailers Association of Australia (ERRA)
- Energy Users Association of Australia (EUAA)
- EnergyAustralia
- National Generators Forum (NGF)
- TransGrid
- Transend
- VENCorp

Copies of these submissions are available on the AER website (www.aer.gov.au).