

FINAL DECISION

AusNet Services Transmission Determination 2022 to 2027

Attachment 10

Service target performance incentive scheme

January 2022

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Note

This attachment forms part of the AER's final decision on AusNet Services' 2022–27 transmission determination. It should be read with all other parts of the final decision.

As a number of issues were settled at the draft decision stage or required only minor updates, we have not prepared all attachments. The final decision attachments have been numbered consistently with the equivalent attachments to our draft decision. In these circumstances, our draft decision reasons form part of this final decision.

The final decision includes the following attachments:

Overview

Attachment 1 – Maximum allowed revenue

Attachment 2 – Regulatory asset base

Attachment 3 – Rate of return

Attachment 4 – Regulatory depreciation

Attachment 5 – Capital expenditure

Attachment 6 – Operating expenditure

Attachment 7 – Corporate income tax

Attachment 8 – Efficiency benefit sharing scheme

Attachment 9 – Capital expenditure sharing scheme

Attachment 10 – Service target performance incentive scheme

Attachment 12 – Pricing methodology

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10 Service target performance incentive scheme

The service target performance incentive scheme (STPIS) provides a financial incentive to transmission network services providers (TNSPs) to maintain and improve service performance. Our final decision is to apply version 5 of the STPIS to AusNet Services for the 2022–27 regulatory control period. Under this version of the scheme, three components are applicable: the service component, market impact component and network capability component.¹

The service component provides a reward or penalty of +/- 1.25 per cent of the maximum allowed revenue (MAR) to improve network reliability by focussing on unplanned outages. The service component is designed to encourage TNSPs to seek to reduce the number of unplanned network outages and to promptly restore the network in the event of unplanned outages that result in supply interruptions. This component is also designed to indicate potential reliability issues.

The market impact component (MIC) provides a reward or penalty of up to +/- 1 per cent of the MAR to minimise the impact of transmission outages that can affect wholesale market outcomes. The MIC measures performance against the market impact parameter, which is 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 (MIC count).²

Each TNSP's annual MIC count is measured against its target, where the target is calculated by averaging the median five of the last seven years of performance data.³ Further, the dollars per dispatch interval (\$/DI) associated with the reward/penalty for each count can be directly calculated for the regulatory control period by dividing the MAR by the MIC target. Both the target and the \$/DI are fixed for the regulatory control period.

The network capability component is designed to encourage TNSPs to develop projects (up to a total of one per cent of the proposed MAR per year) in return for a pro-rata incentive payment of up to 1.5 per cent of MAR depending on the successful completion of proposed projects.⁴ This component encourages TNSPs to examine their networks to identify suitable one-off operational and capital expenditure projects. These projects are expected to have a high net benefit and a short payback period and deliver improvements in the capability of the transmission network at times when it is most needed.

¹ AER, *Final – Service Target Performance Incentive Scheme*, October 2015, cl. 2.2(a).

² AER, *Final – Service Target Performance Incentive Scheme*, October 2015, Appendix C.

³ The target will be calculated from the average of the five values remaining from the last seven years of data, excluding the largest and smallest annual values.

⁴ AER, *Final – Service Target Performance Incentive Scheme*, October 2015, cl.5.2.

10.1 Final decision

We will apply all components of version 5 of the STPIS to AusNet Services for the 2022–27 regulatory control period. We propose to apply the STPIS to AusNet Services in accordance with the details set out below.⁵

Table 10-1 Final decision —Values for service component caps, floors and targets for 2022–27

Parameter	Distribution	Cap (5th percentile)	Target	Floor (95th percentile)
Average circuit outage rate				
Line event rate – fault	Gamma	12.43%	17.09%	22.37%
Transformer event rate - fault	Erlang	6.49%	11.97%	18.80%
Reactive plant event rate - fault	Dagum	14.90%	20.67%	30.43%
Line event rate – forced	FatigueLife	3.82%	10.14%	20.74%
Transformer event rate - forced	Burr12	7.54%	11.97%	15.88%
Reactive plant event rate - forced	Burr12	19.65%	27.78%	34.66%
Loss of Supply Event Frequency				
Number of events greater than 0.05 system minutes per annum	Poisson	0	1	4
Number of events greater than 0.30 system minutes per annum	Poisson	0	1	2
Average Outage Duration				
Average Outage Duration	Triang	10.2	45.6	87.2
Proper operation of equipment (number of events):				
Failure of protection system	Poisson	22	31	40
Material failure of SCADA	Geometric	0	1	3
Incorrect operational isolation of primary or secondary equipment	Poisson	3	6	11

Source: AER analysis.

⁵ AER, *Final – Service Target Performance Incentive Scheme*, October 2015, cl. 2.2.

Table 10-2 Final decision for MIC parameter values for 2022–27

MIC parameter values	
Performance target	1525
Unplanned outage event limit	259
Dollar per dispatch interval (\$/DI)	\$3,741

Source: AER analysis.

Table 10-3 Final decision — Network capability component for 2022–27 (\$2020–21)

Project	Proposed cost
RealTime System Restoration Manager	\$800,000

Source: AER analysis.

10.2 AusNet Services' revised proposal

AusNet Services revised revenue proposal:

- accepted our draft decision on the service component and provided 2020 performance data to calculate the final targets for the next regulatory control period. However, AusNet Services considered that the Loss of Supply parameter should be amended where a TNSP's performance is approaching the performance frontier.⁶
- rejected the draft decision on the market impact component.
- submitted a network capability component project for approval for this final decision.⁷

10.3 Assessment approach

A revenue determination for a TNSP is to specify, amongst other things, the annual building block revenue requirement for each regulatory year of the regulatory control period.⁸ In turn, the annual building block revenue requirement must be determined using a building blocks approach, under which, one of the building blocks is the revenue increments or decrements (if any) for that year arising from the application of

⁶ AusNet Transmission Group, *Transmission Revenue Review 2023-2027 Revised Revenue Proposal*, 1 September 2021, p. 139.

⁷ AusNet Transmission Group, *Transmission Revenue Review 2023-2027 Revised Revenue Proposal*, 1 September 2021, pp. 138–147.

⁸ NER, cl. 6A.4.2(a)(2).

any STPIS (and other schemes).⁹ We have assessed AusNet Services' revenue proposal against the requirements of version 5 of the STPIS.

10.3.1 Service component

We assessed whether AusNet Services' proposed performance targets, caps and floors comply with the STPIS requirements for the:¹⁰

- average circuit outage rate, with six sub parameters¹¹
- loss of supply event frequency, with two loss of supply event sub-parameters¹²
- average outage duration
- proper operation of equipment, with three sub-parameters.¹³

Under the STIPIS, we must accept AusNet Services' proposed parameter values if they comply with the requirements of the STPIS. We may reject them if they are inconsistent with the objectives of the STPIS.¹⁴ We measure actual performance for the 'average circuit outage rate' and 'average outage duration' parameters on a two calendar year rolling average in accordance with Appendix E of the STPIS.

We assessed AusNet Services' service component proposal against the requirements of the STPIS – that is, whether:

- AusNet Services' data recording systems and processes produce accurate and reliable data and whether the data is recorded consistently based on the parameter definitions under the STPIS¹⁵
- the proposed performance targets were equal to the average of the most recent five years of performance data¹⁶
- any adjustments to the proposed targets are warranted and reasonable¹⁷
- AusNet Services applied a sound methodology, with reference to the performance targets, to calculate the proposed caps and floors¹⁸

⁹ NER, cl. 6A.5.4(a)(5), 6A.5.4(b)(5) and 6A.7.4.

¹⁰ AER, *Final – Service Target Performance Incentive Scheme*, October 2015, cl. 3.2.

¹¹ Six parameters include Line event rate–fault, Reactive plant event rate – fault, Lines event rate – forced, Transformer event rate –forced and Reactive plant event rate – forced.

¹² They are the number of events greater than 0.05 system minutes per annum and the number of events greater than 0.30 system minutes per annum.

¹³ They are failure of protection system, material failure of SCADA system and incorrect operational isolation of primary or secondary equipment.

¹⁴ AER, *Final – Service Target Performance Incentive Scheme*, October 2015, cl. 3.2(l).

¹⁵ AER, *Final – Service Target Performance Incentive Scheme*, October 2015, cl. 3.2(d).

¹⁶ AER, *Final – Service Target Performance Incentive Scheme*, October 2015, cl. 3.2(g).

¹⁷ AER, *Final – Service Target Performance Incentive Scheme*, October 2015, cl. 3.2(j).

¹⁸ AER, *Final – Service Target Performance Incentive Scheme*, October 2015, cl. 3.2(e).

- any adjustment to a performance target was applied to the cap or floor of that parameter.¹⁹

We assessed the probability distributions applied by AusNet Services to calculate caps and floors to determine whether a sound methodology was used.

10.3.2 Market impact component

We assessed AusNet Services' market impact component proposal against the requirements of the STPIS – that is, whether:

- data used to calculate the market impact parameter is accurate and reliable, and consistently recorded based on the parameter definition in Appendix C²⁰
- the proposed performance target was calculated in accordance with the requirements of clause 4.2(g) of version 5 of the STPIS
- the proposed unplanned outage event limit has been calculated in accordance with the requirements of clause 4.2(h) of version 5 of the STPIS
- the proposed dollar per dispatch interval has been calculated in accordance with clause 4.2(j) of version 5 of the STPIS.

Where AusNet Services' proposed values for the market impact parameter do not comply with the requirements of the STPIS or are otherwise inconsistent with the objectives of the scheme,²¹ we will reject the proposed values and provide substitute values which comply with the STPIS.

10.3.3 Network Capability Component

We are required to assess the network capability component (NCC) against the requirements of clause 5.2 of version 5 of the STPIS.

A TNSP can propose projects with an average total expenditure in each regulatory year of not greater than 1 per cent of the TNSP's average annual maximum allowed revenue proposed in its revenue proposal for the regulatory control period.²² For AusNet Services this amount is \$5.4 million (\$2021–22) per year or \$27.0 million (\$2021–22) in total.

The projects included in the NCC must not have been included in the proposed opex and capex revenue allowance.²³

¹⁹ AER, *Final – Service Target Performance Incentive Scheme*, October 2015, cl. 3.2(e).

²⁰ AER, *Final – Service Target Performance Incentive Scheme*, October 2015, cl. 4.2(c).

²¹ AER, *Final – Service Target Performance Incentive Scheme*, October 2015, cl. 4.2(d).

²² AER, *Final – Service Target Performance Incentive Scheme*, October 2015, cl. 5.2(b)(2)(vi).

²³ AER, *Final – Service Target Performance Incentive Scheme*, October 2015, cl. 5.2(r).

The projects are expected to be high benefit/low-cost projects with short payback periods. They are expected to be directed towards directly addressing transmission constraints.²⁴

10.4 Interrelationships

The STPIS takes into account any other provisions in the NER that incentivise TNSPs to minimise capital or operating expenditure.²⁵ One of the objectives of the STPIS is to assist in the setting of efficient capital and operating expenditure allowances 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.²⁶

The STPIS will interact with the capital expenditure sharing scheme (CESS) and the opex efficiency benefit sharing scheme (EBSS). The STPIS allows us to adjust the performance targets of the service component for the expected effects on the TNSP's performance from any increases or decreases in the volume of capital works planned during the regulatory control period.²⁷ In conjunction with CESS and EBSS, the STPIS will ensure:

- any additional investments to improve service quality are based on prudent economic decisions
- reductions in capex and opex are achieved efficiently, rather than at the expense of service levels to the network users.

10.5 Submissions

CCP23 acknowledged that AusNet Services had undertaken substantive engagement with its Consumer Advisory Panel (CAP) on the MIC issues. This included AusNet Services' preferred option to extend the application of exclusion criteria of the MIC to address the impact of the changing energy mix in the NEM.

CCP23 stated that while it was initially drawn to the AusNet Services' conclusion that the extent of the exclusions makes it clear that the current MIC scheme is not fit-for-purpose, on further reflection this might not be the case.²⁸

CCP23 supported efforts to increase mutual understanding of the scheme and the exceptions regime between the AER, AusNet Services, and all consumer and other stakeholders. CCP23 reiterated that stakeholders were supportive of the need for continued incentives for AusNet Services to optimise its outage planning.

²⁴ AER, *Final – Service Target Performance Incentive Scheme*, October 2015, cl 5.2(a).

²⁵ NER, cl. 6A.7.4(b)(5).

²⁶ AER, *Final – Service Target Performance Incentive Scheme*, October 2015, cl. 1.4.

²⁷ AER, *Final – Service Target Performance Incentive Scheme*, October 2015, cl. 3.2(j).

²⁸ Consumer Challenge Panel 23 (CCP23), *Submission to AER on the Draft Decision and AusNet Services Transmission 2022-27 Revised Proposal*, October 2021, p. 39.

The submission from the Australian Energy Market Operator (AEMO) started that:²⁹

Given that the AER accepted the position that outages required to connect AEMO initiated augmentations and funded outside the revenue determination process should not be included in the scheme, AEMO considers that the implementation of the final determination exclusion 3A in Appendix C did not allow for this important exclusion.

Accordingly, AEMO considers that as a general proposition, outages needed to connect any AEMO initiated augmentation should receive this exemption.

The submission from AusNet Services' CAP stated that detailed assessment of this AusNet Services' proposal is a job for the AER. It submitted that it supported an approach to applying the MIC that:

- Will maintain the incentive for AusNet to optimise its outages to deliver wholesale market price benefits for customers; and
- Will not create windfall bonus payments for AusNet if future transmission network developments reduce the impact of the issues currently being experienced.

The CAP also submitted that the AER should conduct a review of the MIC as soon as practicable, to ensure it is fit for purpose in the context of the energy transition.³⁰

10.6 Reasons for final decision

We will apply version 5 of the STPIS to AusNet Services and our reasons for this decision are outlined below.

10.6.1 Service component

Performance targets

Performance targets must equal the TNSP's average performance history over the past five years unless they are subject to an adjustment under clause 3.2(i) or (j) of the STPIS. We have determined performance targets that are equal to the arithmetic mean of the 2016–20 performance data. AusNet Services followed this approach for its proposed performance targets.³¹ Our final decision performance targets for the service components are shown in Table 10-1 above.

²⁹ AEMO *Submission to AER on the Draft Decision and AusNet Services Transmission 2022-27 Revised Proposal*, October 2021, p. 5.

³⁰ AusNet Services Transmission's, *CAP Submission to AER on the Draft Decision and AusNet Services Transmission 2022-27 Revised Proposal*, October 2021.

³¹ AusNet Transmission Group, *Transmission Revenue Review 2023-2027 Revised Revenue Proposal*, 1 September 2021, p. 139.

Caps and floors

Proposed caps and floors must be calculated with reference to the proposed performance targets using a sound methodology.³² In the past, we have generally accepted approaches that use five years of performance data to determine a statistical distribution that best fits the data, with the caps and floors set at two standard deviations either side of the mean (if using a normal distribution), or at the 5th and 95th percentiles (if using a distribution other than the normal distribution).

The distribution selected to calculate the caps and floors for a particular parameter must be conceptually sound. We have established the following principles for selecting a distribution to calculate caps and floors:³³

- the chosen distribution should reflect any inherent skewness of the performance data
- the distribution should not imply that impossible values are reasonably likely. For example, the distribution for an average circuit outage rate sub-parameter should not imply that values below zero per cent are reasonably likely
- discrete distributions should be used to represent discrete data. For example, a discrete distribution such as the Poisson distribution should be used when calculating caps and floors for loss of supply sub-parameters. Continuous distributions should not be used.

Using standard deviations to set caps and floors is appropriate when a normal distribution is selected. However, when a normal distribution is not selected, the better measure to use is the percentiles approach.

AusNet Services set out its methodology for choosing the distribution and target, cap and floor result for the service component sub-parameters.³⁴ We accept AusNet Services' proposed caps and floors as they are similar to our own calculations using the @risk modelling program.³⁵ We have however substituted the value of the cap and floor values for the average outage duration (minutes) parameter with updated information provided by AusNet Services.³⁶

³² AER, *Final – Service Target Performance Incentive Scheme*, October 2015, cl. 3.2(e).

³³ AER, *Draft decision, SP AusNet Transmission determination 2014–15 to 2016–17*, August 2013, pp. 184–185.

³⁴ AusNet Services, *2023-27 Transmission Revenue Reset Appendix 9A: Fitting probability distributions to Service Component data Updated for 2020 data*, 1 September 2021.

³⁵ Our @risk model has been used to set the cap and floor range in most of our recent determinations.

³⁶ AusNet Services, *Response to AER Information request #22*, 20 January 2022.

Table 10-4 AusNet Services proposed — distribution, targets, caps and floors for 2022–27

Parameter	Distribution	Cap (5th percentile)	Target	Floor (95th percentile)
Average circuit outage rate				
Line event rate – fault	Gamma	12.43%	17.09%	22.37%
Transformer event rate - fault	Erlang	6.49%	11.97%	18.80%
Reactive plant event rate - fault	Dagum	14.90%	20.67%	30.43%
Line event rate – forced	FatigueLife	3.82%	10.14%	20.74%
Transformer event rate - forced	Burr12	7.54%	11.97%	15.88%
Reactive plant event rate - forced	Burr12	19.65%	27.78%	34.66%
Loss of Supply Event Frequency				
Number of events greater than 0.05 system minutes per annum	Poisson	0	1	4
Number of events greater than 0.30 system minutes per annum	Poisson	0	1	2
Average Outage Duration				
Average Outage Duration	Triang	10.2	45.6	87.2
Proper operation of equipment (number of events):				
Failure of protection system	Poisson	22	31	40
Material failure of SCADA	Geometric	0	1	3
Incorrect operational isolation of primary or secondary equipment	Poisson	3	6	11

Source: AusNet Services, *Regulatory Proposal 2023–27*, 29 October 2020, pp. 172–173.

Our approved distribution, target, cap and floor values for AusNet Services are set out in Table 10-1.

10.6.2 Market impact component (MIC)

AusNet Services' submission

In its revised proposal, AusNet Services submitted that the MIC is no longer fit-for-purpose because it does not recognise the impact of renewable energy generation penetration or the challenges in managing the change in generation mix.³⁷ To emphasise this point, AusNet Services stated that in 2020, over 99 per cent of its

³⁷ AusNet Transmission Group, *Transmission Revenue Review 2023-2027 Revised Revenue Proposal*, 1 September 2021, pp. 140-141.

constrained dispatched intervals were excluded from the performance measure. Accordingly, AusNet Services considers that the MIC requires a fundamental redesign.

In lieu of a fundamental redesign of the MIC, AusNet Services submitted that the AER should adopt a more pragmatic approach in interpreting and applying the MIC's exclusion criteria to accommodate the increase in renewable generation. It listed several MIC exclusions for AER consideration outlined in Table A-1 of Appendix A.

AER's consideration

Fundamentally, AusNet Services' submission relates to how the exclusion criteria should be applied to ensure only outages within the reasonable control of AusNet Services are counted under the scheme.

We acknowledge that there has been a significant increase in semi-dispatched renewable generators in Victoria, particularly in the north-western regions. The management of the integration of these semi-dispatched renewable generators has resulted in a large number of excluded dispatch intervals, that were outside the control of AusNet Services. However, we do not consider that the MIC requires a fundamental redesign at this time.

In order to consider AusNet Services' submission, we will first explain the purpose of the MIC.

Purpose of the MIC

Every 5 minutes, AEMO dispatches the generators with the lowest cost bids to meet demand, subject to transmission power transfer capacity and other constraints. Transmission outages can reduce the power transfer capacity in certain locations. Such reductions in power transfer capacity sometimes prevent AEMO from selecting the available lowest priced generation resource. If this happens, it will lead to sub-optimal dispatching of available generation resources and resulting in a higher spot market price.

The MIC is intended to incentivise TNSPs to consider the impacts on the spot market when planning network outages. This approach should deliver an optimal outcome to consumers because it would aim to result in the NEM operating in the most efficient manner possible.

The MIC measures the number of five-minute dispatch intervals where the network planned outage results in a network constraint with a marginal value greater than \$10/MWh.

The scheme acknowledges that the timing and extent of some planned outages are outside the control of a TNSP. For example, AEMO may impose additional conditions and timing constraints in order to manage system security from time to time. The scheme permits events that are outside the control of a TNSP to be excluded from the measurement of performance data.

If an increasing number of constraints are outside the control of the TNSP, then the scheme is operating as it was designed, in this case leading to the exclusion of a large number of constraints. The MIC is still an important driver for TNSPs to manage their planned outages to minimise the impact on the NEM where the timing and duration of the outages are within the control of the TNSPs.

Reviewing the operation of the MIC

Currently, there are several important reviews into market design reform and system constraints that will affect the operation of the NEM. These include the Energy Security Board's post-2025 Market Design, AEMC's Investigation into system strength frameworks in the NEM, the outcomes of the Coordination of Generation and Transmission Investment (COGATI) review, and the general implementation of actionable projects under AEMO's integrated system plan.

We will continue to monitor the progress of these reviews.

How to address the concerns raised by AusNet Services

Given the recent significant level of semi-dispatch generation in Victoria, we have identified a number of issues arising from the way these generators bid into the market. For example, some constraints arising from planned network outages previously counted under the MIC are actually outside the control of the TNSPs. These constraints are caused by these generators bidding into the market with an export level higher than the actual network configuration would allow. These bids are outside the control of AusNet Services.

We consider that further clarification is required on how the exclusion criteria should be best interpreted and applied under the current market operating environment, such that only events that are within the reasonable control of the TNSP are measured.

Details of the clarification are explained in section 10.6.2.2. We consider this clarification will largely address the concerns raised by AusNet Services while preserving the integrity and objective of the scheme.

We consider that our clarification of the operation of the exclusion criteria also addresses the concerns raised by AusNet Services' CAP that we should maintain the incentive for AusNet Services to optimise its outages to deliver wholesale market price benefits for customer. It is also unlikely to create windfall bonus payments for TNSPs if future transmission network developments reduce the impact of the issues currently being experienced.

This clarification will create a step-change in performance targets and how performance outcomes are measured in future. We do not expect this clarification will alter the operation of the MIC, as long as the performance outcomes are measured in the same way as the performance target is set.

10.6.2.1 Our decision

Our role in this regulatory determination is to accept or reject AusNet Services' proposed MIC performance targets for the upcoming regulatory period.

As version 5 of the STPIS is being applied to AusNet Services for the second time, the performance target is to be calculated in accordance with clause 4.2(g) of version 5 of the STPIS.

Under this methodology:

- the performance target for the 2022–27 regulatory control period is calculated as the average of the annual performance measure using the median five out of seven preceding calendar year values of the performance measure. The performance measure is the raw annual performance adjusted for the unplanned outage event limit.³⁸ The annual performance measure is the result reported at each annual STPIS review. The annual MIC financial incentive is calculated using this result.

Based on feedback from some TNSPs, we will be publishing a guidance note to provide clarity on which seven years will be relevant for setting the MIC performance target. A draft version of the guidance note has been published for consultation.³⁹

- the unplanned outage event limit to be applied for the 2022–27 regulatory period is calculated as 17 per cent of the performance target calculated for the 2022–27 regulatory period, in the step above.

AusNet Services submitted a performance target of 1408 dispatch intervals based on its 2014–20 data.⁴⁰

Based on the method of how to apply the exclusion criteria as explained in section 10.6.2.2, we have examined the MIC count data history and determined the performance targets. The incentive rate per DI is \$3,741/DI.

³⁸ AER, *Final – Service Target Performance Incentive Scheme*, October 2015, cl.4.2(h).

³⁹ AER, Draft Guidance Note, *Transmission Service Target Performance Incentive Scheme Data period for calculation of Market Impact Component performance target*, November 2021.

⁴⁰ AusNet Transmission Group, *Transmission Revenue Review 2023-2027 Revised Revenue Proposal*, 1 September 2021, pp. 140-141.

Table 10-5 Final decision — MIC parameter values for 2022–27 (pending)

Regulatory period (RP)	Raw performance count			Capped unplanned count	Adjusted performance count
	Planned	Unplanned	Total (Planned + Unplanned)	Min of Raw Unplanned or 0.17x(M)	planned + capped unplanned
(RP)	(a)	(b)	(a)+(b)	(d)	(e)
2014	630.5	221	851.5	221	851.5
2015	698.49	268	966.49	268	966.49
2016	6133	763	6896	348	6481
2017	2070.5	2527	4597.5	348	2418.5
2018	217	100	317	100	317
2019	2080	686	2766	348	2428
2020	615	447	1062	348	963
Max			6896		6481
Min			317		317
Average of 5 median			2049		1525
			[M]		[T]
PR2:					
MAR [2]: \$5,707,174					
Dollar per dispatch interval: \$3,741					
PR3:					
Performance target: 1525					
Unplanned outage event limit 2022–27: 259					
Unplanned outage event limit current period: 348					

Source: AusNet Services and AER analysis.

10.6.2.2 Clarification on the application of exclusions

AusNet Services' revised proposal outlined its interpretation of the exclusions most relevant to outage planning. AusNet Services' proposed changes to the definitions of the existing exclusion criteria and our response to each exclusion are outlined in Appendix A of this attachment.

In particular, we agree that the application of exclusions 1 (force majeure events) and 3A (New asset connections requested by third party or AEMO exclusion) require further clarification. The reasons for the clarification are explained below. The adjusted performance target is now 1,525. Our adjusted target is higher than AusNet Services'

revised proposal of 1,408 because we have not accepted all the proposed approaches regarding the application of exclusions criteria suggested by AusNet Services.

Exclusion 1: force majeure events

AusNet Services' revised revenue proposal sought to include, in exclusion 1, AEMO-imposed Frequency Control Ancillary Services (FCAS) constraints for outages on assets associated with the VIC-SA interconnector, and fixed limit constraints below 250MW.

AusNet Services noted that AEMO's Power System management policy changes following the South Australia system black event has led to the introduction of new, more restrictive constraints which frequently bind during outages and put South Australia on a single contingency. This was partly addressed by the AER in its 2017-22 determination but AusNet Services considered that, as the operational situation in SA had become increasingly complex, the AER's approach to exclusion 1 needed to evolve.

The key driver of a high number of current exclusions is due to semi-dispatched renewable generators bidding into the NEM. Soon after wind and solar farms first entered the market, the previous market operator the National Electricity Market Management Company Limited (now AEMO) recommended that there be a central forecasting system. The Australian Wind Energy Forecasting System and Australian Solar Energy Forecasting System were created for that purpose. These two systems use local solar radiance and wind speed in conjunction with the number of inverters or wind turbines that are available in conjunction with a power curve to produce an energy dispatch level. The participant is therefore not entirely able to control the level of output that feeds into the dispatch mechanisms.

Consequently, when there is a planned outage on the network that directly or indirectly impacts a generator, the Variable Renewable Energy generators (wind or solar farms known as VREs) are not in control of the representation of their capacity bidding into the market systems. Most of these participants may typically offer all their capacity at the market price floor to ensure that they get dispatched.

The MIC of the STPIS counts the number of dispatch intervals (5-minute intervals) where a network constraint for a network outage has a marginal value of \$10/MWh or greater.

Where VREs make offers to the NEM in excess of their nominated export level their output levels will appear as being constrained by a planned outage. We consider that constraints arising from renewable generators not modifying their bids into the market while knowingly aware that a planned network outage is in place should not be counted, because this is outside the control of the TNSPs.

TNSPs cannot control or have influence on semi-dispatch generators offering their maximum potential capacity even though they know that a planned network outage is in place. Therefore, in such situations we agree with AusNet Services that this event would meet the force majeure criteria and should be excluded from the MIC count.

Exclusion 1 will exclude events where a semi-dispatch generator offers its maximum potential capacity even though it knows that a planned network outage is in place. This situation can arise because AEMO imposes dispatch limits on these generators to match the network configuration at the time. As a result of AEMO's capping on output capacity of such generators, the system constraint report shows a binding constraint on the generator. This situation is uncontrollable with respect to the TNSP and so should be excluded from the MIC count.

For example, we have identified and excluded the following constraint codes from the performance measures that relate to changes in AEMO's frequency management policy. If additional constraints of similar nature arise in the forthcoming regulatory period, we will consider whether the new requirements imposed by AEMO are within AusNet Services' reasonable control.

F_ESTN+LREG_0210, F_ESTN+MG_R6, F_ESTN+MG_R60,
F_QNV++MG_R6, F_QNV++MG_R60, F_QNV+DYN_RREG,
F_S+RREG_0035, F_QNV++MG_R5, F_ESTN+MG_R5, F_QNV+MG_R5,
F_QNV+MG_R6, F_QNV+MG_R60, F_ESTN+RREG_0220,
F_QNV+DYN_LREG, F_QNV++ML_L6_0400, F_QNV+ML_L6_0400,
F_QNV+LREG_0210, F_QNV+RREG_0220, F_S+LREG_0035,
F_QNV++RREG_0220, F_QNV++LREG_0210, F_S+RREG_0070,
F_S_HPRG_RREG, F_S_HPRL_LREG, F_S_LBBG1_LREG,
F_S_LBBG1_RREG, F_S_LBBL1_RREG, F_S_LBBL1_LREG,
F_ESTN+ML_L6_0400, F_S_LBBG1_RREG-5MW, F_S_LBBL1_LREG-5MW,
F_S_HPRL_LREG-5MW, F_S_HPRG_RREG-5MW, F_QNV+MLMO_L6,
F_ESTN+TL_L6_0600, F_ESTN+TL_L5_0600.

Exclusion 3A: any planned outage of an asset that is providing prescribed transmission services shown to be primarily caused or initiated for the connection of a new asset that is not providing prescribed transmission services as requested by a third-party or by AEMO

This exclusion is for any planned outage of an asset that is providing prescribed transmission services shown to be primarily caused or initiated for the connection of a new asset that is not providing prescribed transmission services as requested by a third-party or by AEMO.

AusNet Services' proposal submitted that this exclusion should include all AEMO or VicGrid-initiated contestable and non-contestable projects, including those that will provide prescribed transmission services.

We consider that whether the planned outage is included or excluded will depend on the nature of the project.

AEMO's initiated projects are distinguishable from generation connection projects within AusNet Services' network. Therefore, we consider that outages required for the connection of AEMO initiated contestable projects, that can be identified and separated from generation connection projects in AusNet Services' network, should be excluded.

This view is consistent with AEMO's submission which concluded that outages needed to connect any AEMO initiated augmentation should receive this exemption.⁴¹

However, the final decision accompanying the STPIS states that only planned outages of assets that are providing prescribed transmission services shown to be primarily caused or initiated for the connection of a new asset that is not providing prescribed transmission services as requested by a third-party or by AEMO are excluded. As such, we do not consider the exclusion should be extended to non-contestable projects.

Exclusion 11: Outages to connections with negotiated lower service standards

In addition to the above clarification, we also clarify the operation of this exclusion criterion because it is related to the matters discussed earlier.

AusNet Services sought to extend the exclusion definition to include any constraint that constrained an individual participant. Its reason is that, currently, there are an unprecedented number of renewable generators operating in Victoria. If these generators continue to bid into the market during an outage (to which AusNet Services has no control over this) a constraint on each individual participant is introduced. Up to 22 DIs can bind simultaneously for each dispatch interval over the duration of the outage. For example, a single 8-hour outage could result in 2,112 binding DIs (170% of the current target), which would have been zero in 2018. This impact cannot be mitigated by outage timing.

We do not accept AusNet Services' proposal.

This clause was designed for participants/TNSPs who negotiated T style connections. Any outages on the main transmission line providing the T-off connections will result in outages to such T-off connections. This exclusion is specifically designed to limit TNSPs' exposure since the connecting parties knowingly accepted a lower level of service as part of a trade-off for a lower connection cost.

It is not appropriate to apply this exclusion clause to the situations described by AusNet Services where a generator is connected conventionally and has not accepted a lower service level. However, situations where generators are constrained as a result of their bidding behaviour, or additional constraints are imposed by AEMO to manage the complex interconnected network during an outage, would meet the requirements of Exclusion 1.

⁴¹ AEMO *Submission to AER on the Draft Decision and AusNet Services Transmission 2022-27 Revised Proposal*, October 2021, p. 5.

10.6.3 Network Capability Component (NCC)

AusNet Services' revised revenue proposal submitted a single NCC project, the Realtime System & Restoration Manager (RTSRM), for AER approval. The RTSRM will enable AusNet Services to plan and validate switching order plans and accelerate the power grid restoration after planned and unplanned outages. This would increase the capability of AusNet Services for creating and analysing small-scale outage and restoration plans typically needed for daily maintenance and fault restoration purposes, thereby providing wider market benefits. By improving the capability of realistic predictions of system conditions, this application would enable effective detection and response, as well as a reduction in restoration times. As a result, this is likely to allow more electricity to be transmitted through the network.⁴²

Therefore, the RTSRM will allow for the capacity of the network to transmit or distribute additional energy.⁴³

We accept AusNet Services' proposed priority projects and priority project improvement targets because they are consistent with the STPIS. The total expenditure of \$800,000 for the RTSRM priority projects in 2017–22 is not greater than 1 per cent of AusNet Services' proposed average maximum allowed revenue as required by clause 5.2(b) of the STPIS.

The RTSRM project will provide additional capacity or throughput of energy and has a net benefit with a payback of between 1 and 2 years. Further, this project was endorsed by the transmission network planner in Victoria, AEMO.⁴⁴

⁴² AusNet Transmission Group, *2023-27 Transmission Revenue Reset Revised Regulatory Proposal Network Capability Incentive Parameter Action Plan (2023-27)*, 1 September 2021, p. 2.

⁴³ AER, *Final Electricity transmission network service provider Service target performance incentive scheme, version 5 (corrected)*, October 2015, Clause 5.2(a)(1).

⁴⁴ AusNet Transmission Group, *Transmission Revenue Review 2023-2027 Revised Revenue Proposal Appendix 9D: AusNet Services NCIPAP proposal – AEMO letter*, 1 September 2021, pp. 2–3.

Appendix A – Supporting analysis on exclusions

This appendix sets out AusNet Services' proposed MIC exclusions extension and our assessment and recommendation for each MIC exclusion criteria.

A.1 AusNet Services' proposed changes

Table A-1 Summary of AusNet Services exclusions extension

Exclusion	AusNet Services proposal to extend the application of the exclusion
1. Force majeure events	Extend exclusion definition to include AEMO-imposed Frequency Control Ancillary Services (FCAS) constraints for outages on assets associated with the VIC-SA interconnector, and fixed limit constraints below 250MW.
2. Non-credible to credible contingency event reclassifications	No comment
3. Third party assets	No comment
3A. New asset connections requested by third party or AEMO	Extend exclusion definition to include all AEMO or VicGrid-initiated contestable and non-contestable projects, including those that will provide prescribed transmission services.
4. Non-prescribed transmission services assets	Extend exclusion definition to include O&M outages taken by AusNet's contestable business on assets it owns
5. Personal safety	No comment
6. Operational security	Extend exclusion definition to include outages on assets required by AEMO to manage operational security to enable a concurrent outage to proceed.
7. Network support services	No comment
8. Dispatch intervals affected by manifestly incorrect inputs, inaccuracies or inconsistencies	No comment
9. Temporary network configurations	No comment
10. Ramping constraints	No comment
11. Negotiated lower service standards allowing disruptions	Extend exclusion definition to include any constraint that constrained an individual participant.
12. System tests for priority projects	No comment

Source: AusNet Transmission Group, *Transmission Revenue Review 2023-2027 Revised Revenue Proposal*, 1 September 2021, pp. 143-145.

A.2 The AER's assessment

Force majeure exclusion

Matter	Comments
Exclusion criteria as set out in the STPIS	Exclusion criteria 1 A detailed definition of force majeure events is set out in Appendix G of the scheme.
AusNet Services' proposal	Extend exclusion definition to include AEMO-imposed Frequency Control Ancillary Services (FCAS) constraints for outages on assets associated with the VIC-SA interconnector, and fixed limit constraints below 250MW.
AusNet Services' reasons	AEMO's Power System management policy changes following the SA system black event, which has led to the introduction of new, more restrictive constraints which vary frequently bind during outages which put SA on a single contingency. This was partly addressed by the AER in its 2017-22 determination but as the operational situation in SA has got increasingly complex, needs to further evolve.
AER assessment and consideration	<p>We do not accept AusNet Services' proposal.</p> <p>We consider that most of these events should not be excluded. Most of these events result from planned outages, and the TNSP has control over the timing of these outages.</p> <p>That said, the impact of some of these constraints could be 'extraordinary', as these constraints are interconnector constraints to manage the risk of South Australia islanding. Furthermore, some of these events can be categorised as force majeure events (i.e., where an event is unforeseeable and its impact extraordinary, uncontrollable, and not manageable). For example, additional constraints imposed by AEMO that are outside the control of AusNet Services should be excluded.</p> <p>The STPIS scheme instrument contains a specific definition of force majeure to match the design of the scheme. The non-exhaustive definition of force majeure event is "an event that can be considered unforeseeable and its impact extraordinary, uncontrollable and not manageable".</p> <p>For example, semi-scheduled renewable generators typically offer to the market purely based on the available local solar radiance and wind speed input resources in conjunction with the number of inverters or wind turbines that are available, irrespective of whether the network has the capacity to receive the available output such as during network outages that would reduce the power transfer capacity. Consequently, these generators will have a semi dispatch cap imposed by AEMO.</p> <p>Such examples of semi-dispatch generators offering their potential capacity without adjusting their offers into the market while knowingly aware that a planned network outage is in place should not be counted. This situation is outside the control of the TNSP and is inconsistent with the purpose of the scheme.</p>

New asset connections requested by third party or AEMO exclusion

Matter	Comments
Exclusion criteria as set out in the STPIS	Exclusion criteria 3A Any planned outage of an asset that is providing prescribed transmission services shown to be primarily caused or initiated for the connection of a new asset that is not providing prescribed transmission services as requested by a third-party or by AEMO.
AusNet Services' proposal	Extend exclusion definition to include all AEMO or VicGrid-initiated contestable and non-contestable projects, including those that will provide prescribed transmission services.
AusNet Services' reasons	The Victorian planning arrangements must also be considered. AusNet Services

Matter	Comments
	suggests that the AER has been clear that works associated with the commissioning of contestable augmentations are exempt, and has also previously exempted non-contestable works – these are driven by AEMO and AusNet Services has no control over the number, nature or timing of these projects. AusNet Services is seeking for this approach to be clarified in its determination, and extended to include projects initiated by VicGrid, to provide clarity for AusNet Services, AEMO, customers and the AER going forward.
AER assessment and consideration	<p>We do not accept AusNet Services' proposal.</p> <p>We consider that the exclusion clause does not make clear that it only covers contestable works. The final decision accompanying the STPIS states that outages associated with non-contestable works were not intended to be excluded from the MIC count. As such, we do not consider the exclusion should be extended to non-contestable projects.⁴⁵</p>

Non-prescribed transmission services assets exclusion

Matter	Comments
Exclusion criteria as set out in the STPIS	<p>Exclusion criteria 4</p> <p>Outages on assets that are not providing prescribed transmission services</p>
AusNet Services' proposal	Extend exclusion definition to include operating and maintenance outages taken by AusNet's contestable business on assets it owns which require outages on prescribed assets.
AusNet Services' reasons	This exclusion criterion is anticompetitive and disadvantages AusNet Services' contestable businesses in tender processes, as the same outages would be exempt if owned by another provider.
AER assessment and consideration	<p>We do not accept AusNet Services' proposal</p> <p>We consider that AusNet Services has not clearly explained the rationale for this change or linked it to one of the four problems it considers exists with the scheme.</p> <p>Further, this issue was directly addressed in the final decision accompanying the STPIS. Further, the AER is unable to extend the exclusion, even though the issue arises due to the peculiarities of the Victorian scheme.⁴⁶</p>

Operational security

Matter	Comments
Exclusion criteria as set out in the STPIS	<p>Exclusion criteria 6</p> <p>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</p>

⁴⁵ AER, *Final Decision Electricity transmission network service providers service target performance incentive scheme, September 2015*, p. 34.

⁴⁶ AER, *Final Decision Electricity transmission network service providers service target performance incentive scheme, September 2015*, p. 34.

Matter	Comments
	across an interconnector
AusNet Services' proposal	Extend exclusion definition to include outages on assets required by AEMO to manage operational security to enable a concurrent outage to proceed
AusNet Services' reasons	Deteriorating system strength issues, minimum demand and solar shake off, partly driven by the increasing penetration of renewables, resulting in smaller windows for AusNet Services to take outages at a time which is acceptable to AEMO Operations. The increasing risk to power system security means that during outages for essential maintenance, AEMO may dictate that additional assets also be taken out, increasing the MIC count beyond AusNet Services' control. Directions by AEMO Operations on this basis commenced in September 2020 and is not in AusNet Services' benchmark (nor, unlike the above, has there been an exemption claim made to the AER on this matter).
AER assessment and consideration	<p>We accept AusNet Services' proposal because the proposed approach is consistent with the intent of this exclusion criterion.</p> <p>The scheme allows us to use our discretion for this exclusion clause to cover this type of event. Outages can be excluded where additional assets are taken out only for the purpose of assisting with operational security while other assets are out for essential maintenance.</p>

Negotiated lower service standards allowing disruptions exclusion

Matter	Comments
Exclusion criteria as set out in the STPIS	<p>Exclusion criteria 11</p> <p>Transmission connection agreements where a lower service standard has been negotiated giving the TNSP the right to disrupt service under certain network conditions where the constraint only affects the parties subject to the agreement.</p>
AusNet Services' proposal	Extend exclusion definition to include any constraint that constrained an individual participant.
AusNet Services' reasons	The connection of an unprecedented number of renewable generators in Victoria (to both transmission and distribution networks) and South Australia. If these generators continue to bid into the market during an outage (AusNet has no control over this) a constraint on each individual participant is introduced, and up to 22 DIs can bind simultaneously for the duration of the outage – in 2018 the equivalent number was zero. For a single 8 hour outage, this could result in 2,112 binding DIs (170% of the current target), which would have been zero in 2018. This impact cannot be mitigated by outage timing.
AER assessment and consideration	<p>We do not accept AusNet Services' proposal.</p> <p>This clause was designed for participants/TNSPs who negotiated T style connections. In these situations, the connecting parties are directly and unavoidably affected by an outage of the line to which they are connected but they have knowingly accepted that situation as part of a trade-off for a lower cost connection.</p> <p>It is not appropriate to apply this exclusion clause to the situations where a generator is connected conventionally. However, situations where generators are constrained as a result of their behaviour, or additional constraints are imposed by AEMO to manage the complex interconnected network during an outage, would meet the requirements of Exclusion 1.</p>

Shortened forms

Shortened form	Extended form
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
capex	capital expenditure
CCP23	Consumer Challenge Panel, sub-panel 23
CESS	capital expenditure sharing scheme
EBSS	efficiency benefit sharing scheme
MAR	maximum allowed revenue
ISP	AEMO's integrated system plan
NEL	National Electricity Law
NEM	National Electricity Market
NEO	National Electricity Objective
NER	National Electricity Rules
NSP	network service provider
opex	operating expenditure
STPIS	service target performance incentive scheme
TNSP	transmission network service provider
