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# REVIEW

**Australian Energy Market Commission**

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## **FINAL REPORT**

**Review of the national framework for  
distribution reliability**

27 September 2013

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Reference: EPR0033

## **Citation**

AEMC 2013, Review of the national framework for distribution reliability, Final report, 27 September 2013, Sydney

## **About the AEMC**

The Council of Australian Governments (COAG), through its then Ministerial Council on Energy (MCE), established the Australian Energy Market Commission (AEMC) in July 2005. In June 2011, COAG established the Standing Council on Energy and Resources (SCER) to replace the MCE. The AEMC has two main functions. We make and amend the national electricity, gas and energy retail rules, and we conduct independent reviews of the energy markets for the SCER.

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## Executive summary

Reliability refers to the extent to which customers have a continuous supply of electricity. Distribution networks facilitate the supply of electricity to end use customers within each jurisdiction of the National Electricity Market (NEM). The level of reliability that distribution networks are required to provide affects the level of investment that networks undertake. This ultimately feeds through to the electricity prices paid by customers.

As it would not be cost effective or feasible to remove all potential supply interruptions faced by customers, determining the appropriate level of reliability involves a trade-off between the cost of building and maintaining the networks and the value placed on reliability by customers.

As monopoly services, the price charged for distribution services is regulated. Regulation of reliability complements this price regulation to guard against any incentive for networks to reduce reliability levels in order to increase their profits.

The Australian Energy Market Commission (AEMC or Commission) has developed a framework for setting and regulating distribution reliability in the NEM to promote greater efficiency, transparency, and community consultation in how reliability targets are set. This final report sets out the AEMC's recommended framework for distribution reliability in the NEM and the next steps for the implementation of this framework.

This final report sets out the benefits the framework can deliver, explains how the framework will be applied, and describes the possible different roles played by key participants in the process.

### Framework for distribution reliability

The recommended framework includes:

- an economic assessment process to inform setting of reliability targets. This will involve evaluating the way network costs vary with different levels of reliability and explicitly assessing the expected costs of investments against the value that customers place on reliability and the probability of interruptions;
- a transparent and public process for setting reliability targets which requires the assessment and considerations used in setting reliability targets to be published;
- decision making on reliability targets by a body which is independent of the distribution network service providers (DNSPs);
- expressing distribution reliability targets based on the duration and frequency of unplanned interruptions;
- jurisdictional ministers being responsible for determining the appropriate level of reliability with the option to delegate responsibility to the Australian Energy Regulator (AER) or a jurisdictional body;

- the ability for jurisdictional ministers to specify additional reliability requirements for areas of economic or social importance;
- greater opportunities to consult with customers and consider community preferences;
- the use of the Service Target Performance Incentive Scheme (STPIS) to encourage DNSPs to perform to the level of their reliability targets; and
- national reporting and auditing of distribution reliability performance and planning.

To implement the framework, we recommend that work commences on developing common definitions for expressing distribution reliability targets immediately. The definitions, in addition to the values of customer reliability (VCR) which are currently being developed by the Australian Energy Market Operator (AEMO), can be used in existing arrangements.

These initial steps will improve existing jurisdictional arrangements for setting distribution reliability targets by enabling an assessment of the trade-off between costs of reliability and the value consumers place on reliability. This will also facilitate benchmarking of reliability performance across the NEM.

The Commission has amended some aspects of the framework after considering submissions received on its consultation paper. These include:

- keeping the level of reliability targets unchanged during a regulatory control period; and
- a five yearly audit requirement.

These changes will support efficient reliability outcomes and enable the expected costs of the framework to be proportionate to its benefits.

### **Benefits of the framework**

The adoption of the framework will deliver three key benefits for customers, including:

- economically determined reliability targets so that customers, as a group, pay for a level of reliability consistent with their preferences;
- transparency around the reliability target setting process to improve awareness and enabling customers to contribute to the process of determining the appropriate level of reliability; and
- consistency in how reliability performance is reported to improve understanding and facilitate benchmarking.

### *Economically determined targets*

The framework will deliver a more economically efficient, transparent, and robust process for setting distribution reliability targets. It involves assessing the way that the cost of investments in networks changes expected reliability, and the trade-off between the cost of investments and the value placed on reliability by customers. The efficient level of distribution reliability will be determined by selecting the reliability scenario which maximises the value of customer benefits given the costs of providing that level of reliability. In considering the benefits of reliability, the impact and probability of interruptions under different reliability scenarios will be assessed.

All stakeholders agreed with the need for an economic assessment process where the benefits of reliability for customers and the probability of interruptions are taken into consideration. This will lead to more efficient investments by DNSPs and electricity prices which are more consistent with the value placed on reliability by customers.

### *Transparency*

The explicit and transparent consideration of the value placed on reliability by customers, along with a number of opportunities for stakeholder consultation during the target setting process, are also likely to improve the potential that reliability targets reflect the preferences of customers within each distribution network.

Setting reliability targets ahead of the need to invest would provide transparency and certainty to market participants and customers regarding the level of reliability they can expect to receive and increase accountability for the level of reliability provided by DNSPs.

### *Consistency*

Consistency in the expression of distribution reliability targets across the NEM and the information from the economic assessment process would allow the AER to better benchmark performance and improve its ability to determine revenues that are consistent with the efficient delivery of a DNSP's reliability targets. It would also allow stakeholders to compare and identify trends and innovations in the performance of DNSPs, which may assist in driving further efficiencies.

The framework should result in more efficient reliability outcomes for customers. This will be delivered by implementing an effective framework for setting, delivering, and reporting on distribution reliability targets which includes greater consideration of the value customers place on reliability. The framework will not result in a single harmonised level of reliability that will apply across the NEM.

### **Applying the framework**

The framework will also establish a process for developing estimates of VCR through making this AER's responsibility. The framework recognises the limitations of depending solely on VCR measures. Firstly, VCR cannot be observed directly but must be estimated through survey based approaches. Secondly, VCR estimates may not be a

precise reflection of all customer preferences or the full benefit that the community places on reliability. For example, customers may place additional value on avoiding extended interruptions which, although are unlikely to occur, would have major disruption costs. While we note that work that AEMO is currently doing to develop NEM VCR estimates will be a considerable step forward, we recognise that it will be some time before stakeholders have full confidence in these estimates.

Furthermore, given the technical characteristics of distribution networks it is impossible to supply each customer with a level of reliability which is consistent with their individual preferences. This is because common parts of the network serve a number of different customers. As a result, all customers supplied through the same part of the network will receive the same level of reliability. This ultimately means that determining the level of reliability that DNSPs should provide involves trading off the reliability preferences of different customers in the same supply area.

Making these trade-offs involves exercising judgement. The framework allows jurisdictional ministers the ability to exercise these judgements in an informed and transparent manner. Economic assessments on the quantitative trade-off between cost and reliability will be provided to the jurisdictional minister or their delegated standard setter. Any considerations which are taken into account beyond the quantitative assessment will need to be outlined and published to improve transparency around how these judgements are made.

There are a number of options for various bodies to perform the required steps of the framework. This is consistent with the terms of reference for this review and the Council of Australian Government's (CoAG's) decision in December 2012 for jurisdictions to have the opportunity to transfer responsibility for applying the framework to the AER. We consider that the benefits will be the same irrespective of which bodies are applying the framework.

### **Implementing the framework**

We also consider that given current expectations of network augmentation investment and demand growth, that this is the opportune time to reform existing regulatory arrangements for network reliability. Changing the arrangements in such circumstances is unlikely to result in significant shifts in reliability performance or cost in the short term but allows the framework to be introduced and adapted under relatively stable network conditions. While the potential for efficiency savings might be limited in the short run, given the current capacity on the ground relative to demand, implementing the framework now will deliver robust and efficient regulatory arrangements for the future. This will reduce the risks of inefficient network investments over the longer term.

The full implementation of the framework for distribution reliability is likely to require a number of changes to the National Electricity Rules, jurisdictional legislation, as well as the National Electricity Law and the Australian Energy Market Agreement. A plan which sets out the stages for the implementation of the framework has been included in this final report.

There is the opportunity to capture some of the benefits in the near term through establishing key elements of the framework. Therefore we have set out an interim stage which can be undertaken to improve the existing arrangements for setting, delivering, and reporting on distribution reliability targets and outcomes ahead of the necessary changes to NEM legislative arrangements for the full implementation of the framework.

This interim stage would include the Standing Council on Energy and Resources (SCER) requesting that:

1. the AER, or alternatively the AEMC, works with industry and jurisdictional governments to develop an agreed methodology for measuring the duration and frequency of unplanned interruptions; and
2. the AER becomes responsible for VCR estimates to assist jurisdictions to assess reliability levels.

Common definitions for distribution reliability targets, supported by measures of the VCR being developed by AEMO, will allow existing jurisdictional arrangements to be improved in the short term. With these interim tools, jurisdictions will be able to better compare the costs of reliability against the benefits to consumers and allow both the AER and customers to have a fuller understanding of reliability performance in the NEM. We recommend that SCER proceeds with the interim stage.

Jurisdictions could choose to build on the interim stage and start to apply a transparent economic assessment process for setting distribution reliability targets as recommended in this report. Customers will benefit from a more open and efficient process for setting reliability targets before the framework is fully implemented.

The AEMC has also been requested by SCER to develop a framework for transmission reliability in parallel with the distribution framework. A substantially common set of arrangements has been developed for the distribution and transmission reliability frameworks, to reduce the regulatory costs of implementing these frameworks. As a result, most of the elements of the framework for transmission reliability will be the same as those that have been recommended in this report.

The AEMC's final report on its recommended framework for transmission reliability will be submitted to SCER by 18 October 2013 and published by 1 November 2013.

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# 1 Features of the framework for distribution reliability

This chapter sets out a summary of the features of the Australian Energy Market Commission's (AEMC or Commission) recommended framework for distribution reliability. It also outlines the main changes that have been made to the framework following the AEMC's consultation paper and details of the next steps for the implementation of the framework.

We consider that our framework will promote the National Electricity Objective (NEO), consistent with the Standing Council on Energy and Resources' (SCER) terms of reference. In particular, the framework would:

- provide for an independent economic assessment process to inform setting of distribution reliability targets, which would provide for more efficient network investment and pricing outcomes for customers;
- improve customer consultation and consideration of community needs during the target setting process, which would provide for customer preferences to be more explicitly taken into account in the reliability targets; and
- provide greater consistency in how distribution reliability targets are expressed and reported on across the National Electricity Market (NEM), to allow the Australian Energy Regulator (AER) to more effectively compare the performance of distribution network service providers (DNSPs) and set more efficient revenue allowances.

Further detail on each of the features of the framework, as well as the Commission's reasoning, is set out in chapters 4 to 10.

The key features of the framework are consistent with the best practice recommendations based upon international practice contained in the report prepared by the Brattle Group in January 2012.<sup>1</sup> As part of its review of distribution reliability outcomes and standards in NSW, the Commission asked Brattle to survey approaches to setting and regulating distribution reliability standards in eight areas and identified a list of key principles consistent with best practice. Specifically, the recommended framework achieves these principles through:

- supporting transparency and predictability in the setting of distribution reliability targets by establishing targets prior to the revenue determination and investment planning processes;
- applying incentives instead of compliance obligations to encourage the efficient behaviour of DNSPs;

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<sup>1</sup> The Brattle Group report to the AEMC, *Approaches to setting electric distribution reliability standards and outcomes*, January 2012.

- requiring DNSPs to provide detailed reporting regarding reliability performance; and
- incorporating an economic consideration of the trade-off between the cost of investing in networks and the value placed on reliability by customers to allow for more efficient network investments.

We consider that current market conditions provide a good opportunity to reform the distribution reliability arrangements. Stable network conditions will enable DNSPs and jurisdictions to adapt to the new reforms without the risk of significant disruption of reliability performance for customers. Implementing the framework now will deliver robust and efficient regulatory arrangements for the future and reduce the risks of inefficient network investments over the longer term.

Effective regulation of reliability is essential to protect customers. In the absence of appropriate incentives to provide an efficient level of reliability, there is the risk of under-investment as the businesses could be incentivised to reduce costs by reducing reliability. Likewise if reliability levels are not set at an efficient level, there is a risk that network costs are not consistent with customers' preferences.

This chapter sets our recommendations for implementing the framework, including an interim stage which establishes tools to improve existing arrangements. Measures of the value of customer reliability (VCR), supported by common definitions for distribution reliability targets, will allow existing jurisdictional arrangements to be improved in the short term.

The Commission's recommended framework for transmission reliability, which will be outlined in a final report in early November 2013, will share a number of common features with the framework for distribution reliability. The main differences between the frameworks will relate to the expression of transmission reliability standards, the compliance requirements for transmission network service providers (TNSPs), and opportunities for updates to transmission reliability standards within a regulatory control period.

## **1.1 Expression of distribution reliability targets**

The framework for distribution reliability would be based on an outputs approach to provide flexibility to DNSPs to achieve reliability outcomes through efficient and innovative means. As a result, the framework would not require compliance with input planning standards, which are currently in place in some jurisdictions. Distribution reliability targets, rather than standards, would be set under the framework as DNSPs would not be required to comply with these targets in every year. Instead, the AER's Service Target Performance Incentive Scheme (STPIS) will provide financial incentives on DNSPs to perform at least to the level of their output reliability targets.

Published distribution output reliability targets would be based primarily on the duration and frequency of supply interruptions. At a minimum, all DNSPs would have

reliability targets relating to unplanned System Average Interruption Duration Index (SAIDI) and unplanned System Average Interruption Frequency Index (SAIFI) for each feeder type. The AER, working with industry and jurisdictional governments, would develop common definitions and exclusions for the calculation of reliability measures to provide consistency in how distribution reliability targets are expressed across the NEM. This would enable benchmarking to be undertaken by the AER and allow stakeholders to compare reliability targets and performance levels across different DNSPs.

The body responsible for setting reliability targets would be known as the standard setter. The standard setter would have the ability to require DNSPs to meet other output reliability targets, such as planned SAIDIs and SAIFIs, where customer consultation indicated that these measures were particularly important to them. This would allow the relevant standard setters to have regard to the local circumstances for each DNSP, so that the targets reflect the preferences of the customers in each distribution network.

The framework would not preclude the use of alternative classifications or definitions of reliability measures if these are considered necessary for internal jurisdictional reporting purposes, such as the use of community and region categories in Tasmania and South Australia respectively.

The DNSP would have the flexibility to determine how best to meet their output based reliability targets. Therefore the framework does not preclude DNSPs from determining their own planning criteria to supplement the targets in order to guide investment decision making.

### **1.1.1 Additional reliability measures**

The framework has the flexibility to include additional reliability measures to accommodate specific areas of the distribution network. These can be broadly classified into three separate categories associated with:

- network assets that serve areas of high load and as such are more characteristic of elements of the transmission or sub-transmission network;
- areas of the network associated with high economic or social importance; and
- areas of the network that have a history of poor reliability performance.

This allows for specific reliability measures in relation to matters that the minister considers are not adequately captured by the VCR estimate to be included in the targets. This could include areas of high economic importance such as CBD, or requirements for worst performing feeder areas.

The common definitions for expressing distribution reliability targets would include detail on the classification of transmission and sub-transmission assets, and the definitions of relevant reliability measures which could be adopted.

## 1.2 Structure of the target setting process

The target setting process<sup>2</sup> under the framework for distribution reliability would involve three main stages:

1. a process for the selection of a range of feasible reliability scenarios for the next revenue determination period;
2. an economic assessment process to assess the costs and benefits of each reliability scenario; and
3. a process to select and publish the reliability targets and any other reliability measures for each DNSP.

Each of these stages is discussed in further detail below in Figure 1.1 and would involve different responsibilities for a range of participants. A more detailed A3 version of this figure has been published on the AEMC website.

The principal roles under the framework would include:

- **Standard setter** – Responsible for selecting the reliability scenarios to be economically assessed and setting reliability targets. This role may be retained by the jurisdictional minister or delegated by the minister to the AER or a jurisdictional body.
- **Economic adviser** – Responsible for undertaking an economic assessment of the costs and reliability impact for each reliability scenario, based on information obtained from the DNSPs, and providing advice to the standard setter. The jurisdictional minister would decide who performs this role but it may be delegated to an appropriate jurisdictional government body, jurisdictional regulator, the AER, or any other body independent of the DNSPs.
- **Compliance monitor** – Monitors the reported reliability performance and the results of audits which assess the effectiveness of DNSPs' plans and internal systems to meet their reliability targets.

Existing jurisdictional arrangements differ in how these roles are performed. For South Australia, the Australian Capital Territory, and Tasmania, the current role of the standard setter is undertaken by the jurisdictional regulator. Standard setting powers are conferred on these jurisdictional regulators under jurisdictional legislation at the authority of the minister. In New South Wales and Queensland, the form and level of the standards are within the control of the minister. However, in Queensland the standards are typically determined in consultation with the jurisdictional regulator. Victoria's approach largely leaves DNSPs to determine their own reliability targets.

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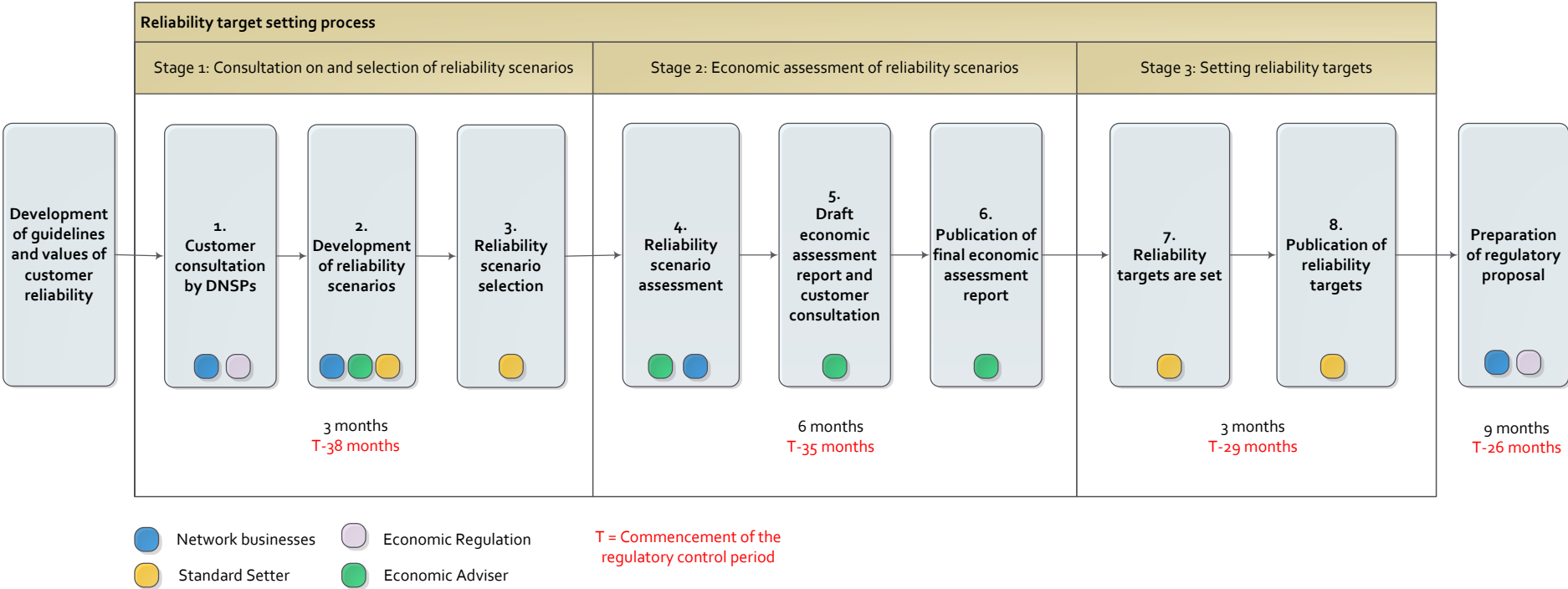
<sup>2</sup> For the remainder of this paper, where we refer to "the target setting process", this refers to the setting of distribution reliability targets under the national framework.

The majority of NEM jurisdictions do not currently incorporate a full economic assessment of reliability. The exception is Victoria where DNSPs undertake a project-by-project comparison of the efficient costs of network augmentation with the value placed on reliability by customers. South Australia, Tasmania, and the Australian Capital Territory have all previously used variations of customer value of reliability, such as willingness to pay, in the development of reliability standards. However, there is no consistent framework developed for the application of these measures.

All NEM jurisdictions require DNSPs to undertake some form of reliability reporting. Jurisdictional reliability reporting is undertaken on an annual basis in most jurisdictions and may, according to the individual jurisdiction, involve the preparation by the DNSP of a network development and planning report or a report on achieved performance against reliability standards or both. Jurisdictions differ in the definitions and methodologies used for measuring reliability performance.

Further detail on the regulation of reliability in NEM jurisdictions, and how the existing jurisdictional arrangements will be affected by the Commission's framework, is provided in chapter 11.

**Figure 1.1 Proposed process flow for setting reliability targets**





The main steps during the proposed standard setting process would include:

- selecting the reliability scenarios to be economically assessed, which would be performed by the standard setter;
- the economic adviser assessing how the cost of network investments affects expected reliability, and estimating the costs and customer benefit of achieving different reliability scenarios based on data obtained from the DNSPs;
- undertaking an economic assessment of the costs and benefits of each reliability scenario, which would be performed by the economic adviser on behalf of the standard setter, and publishing the results of the economic assessment;
- setting the reliability targets that will apply to each DNSP, which would be performed by the standard setter with its decisions made public;
- determining revenues for DNSPs which are consistent with the efficient delivery of their reliability targets over the next regulatory control period, which would be performed by the AER in its capacity as the economic regulator; and
- monitoring and reporting on the compliance of DNSPs against their targets. We have recommended that the AER would undertake this role, which is consistent with their current economic regulation role to develop the STPIS.<sup>3</sup>

Further explanation on how each of these steps are performed is set in the remaining chapters of this final report.

Jurisdictional ministers would be responsible for setting distribution reliability targets, but would be able to delegate this to the AER or jurisdictional body. Therefore, under the framework, a number of these responsibilities could be performed by the same body. The possible models for how these responsibilities could be allocated are set out below in Figure 1.2.

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<sup>3</sup> DNSPs in Queensland, South Australia, Tasmania, and Victoria are currently subject to the STPIS. DNSPs in the Australian Capital Territory and New South Wales will be subject to the STPIS from the start of the next regulatory control period.

**Figure 1.2 Possible responsibilities under the framework**

Possible responsibilities under the recommended framework	Economic Advice	Standard Setting	Economic Regulation	Compliance Monitoring
Model A	Jurisdictional body	Jurisdictional Minister	AER	
Model B	Jurisdictional body		AER	
Model C	AER	Jurisdictional Minister	AER	
Model D	AER			

Where a jurisdictional minister has delegated responsibility for setting targets to the AER or a jurisdictional body, the standard setter and economic adviser roles would be performed by the same body. As a result, this body would be responsible for undertaking the economic assessment of the costs and benefits of each scenario, as well as determining which reliability scenarios should be economically assessed and the reliability targets that will apply to each DNSP.

In delegating responsibility for setting targets, jurisdictional ministers would be able to provide instructions and guidance on how the reliability targets are set. For instance, this could include a requirement to not lower reliability in certain areas by specifying minimum average duration of supply interruptions for the worst performing feeders.

The AER or jurisdictional body would be required to set reliability targets on the basis of the reliability scenario with the highest net economic benefits, as identified through the economic assessment process.

Where a jurisdictional minister retains responsibility for setting targets, they will be informed by an economic advisor. This means that the minister will have appropriate information on the trade-offs between cost and reliability for the selected reliability scenarios, including the level of reliability derived solely from the estimates of VCR. The economic adviser would be independent from the DNSPs.<sup>4</sup>

<sup>4</sup> This could include any body appointed by the jurisdictional minister which is independent and without financial interest in the target setting process. For instance, this could be a jurisdictional government body, jurisdictional regulator, AER or any other body.

Jurisdictional ministers would be able to consider additional factors which may not be fully accounted for in the economic assessment process in setting reliability targets. This could include factors such as the risk aversion of customers or the potential for high impact low probability events, which are difficult to quantify in estimates of the VCR.<sup>5</sup>

The standard setting process would be supported by the development of guidelines by the AER, which would set out the details of the standard setting process, the key assumptions to be used during the economic assessment process, and how DNSPs should undertake the process of customer consultation. This would provide consistency in how the standard setting process is run across the NEM.

VCRs would also need to be developed as they will be used to assess the potential customer impact of reliability scenarios during the standard setting process. VCRs would need to be developed to reflect the range and geographic locations of customers in each distribution network. As a result, separate VCRs would be developed for each customer type in each NEM jurisdiction. It is recommended that the AER would be responsible for developing VCRs for each jurisdiction, as this would be consistent with its roles as the economic regulator including designing the STPIS and monitoring the regulatory investment test assessments.

VCRs would be updated every five years and escalated annually. The AER would also be responsible for the methodology used to determine VCRs and also the escalation method, but would be required to use AEMO's national VCR methodology, which is currently being finalised, as a starting point. This would allow the AER to improve the methodology over time using the experience it would gain through repeated application. This should allow customer preferences to be more accurately revealed over time. AEMO's measures of VCRs will be used initially until the AER consider that these need to be re-estimated.

### **1.3 Customer consultation and selection of reliability scenarios**

The standard setting process would commence with a customer consultation process by the relevant DNSP. This process would be used to determine which areas of reliability are particularly important to customers within each DNSP's network. These views would be used in the development of reliability scenarios in consultation between the DNSP, economic adviser, and the standard setter.

The reliability scenarios would be ultimately determined by the standard setter. Each reliability scenario selected would be assessed under the economic assessment process to determine its costs and benefits. The standard setter would be required to select one of the reliability scenarios at the end of the standard setting process in determining the reliability targets that should apply to each DNSP.

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<sup>5</sup> As a result of considering additional factors, there is the potential that jurisdictional ministers could select a scenario with net costs.

Customer consultation at the commencement of the standard setting process would facilitate the development of reliability scenarios which reflect the preferences of customers and are considered in a transparent manner. Determining reliability scenarios on a consultative basis with each DNSP should result in the scenarios being both technically and financially feasible. This should assist in promoting efficient and effective investments by DNSPs.

#### **1.4 Economic assessment of reliability scenarios**

Under the economic assessment process the costs and benefits of each reliability scenario would be assessed by the economic adviser against a baseline scenario. The baseline scenario would reflect the reliability level that would arise where the expected cost of investment was equal to the value of expected unserved energy, which would represent the efficient level of reliability that could be provided by the DNSP. Determining the value of expected unserved energy would require an assessment of the probability of an interruption occurring. The economic adviser would also assess the costs and benefits of any additional reliability measures, such as measures for worst performing feeders.

DNSPs would be required to submit information to the economic adviser to enable it to perform this assessment of each scenario. The economic adviser would assess whether the information provided by the DNSP represented a reasonable forecast of the expected changes in costs and reliability performance. However, the economic assessment process would not be a substitute for the AER's revenue determination process.

The economic adviser would prepare a draft report on the costs and benefits of each scenario for public consultation, before publishing a final report. This information would then be used by the standard setter to make an informed decision on the appropriate trade-off between cost and reliability that should apply in the relevant distribution network.

An independent economic assessment process would increase transparency around the costs and benefits of each reliability scenario, which would lead to a more efficient level of reliability being set and more efficient pricing outcomes for customers. It would also allow the value placed on reliability by customers to be explicitly considered, which should improve the likelihood that customer preferences will be reflected in the targets which are set.

The number of reliability scenarios needed to be tested under the economic assessment process will depend upon the circumstances at the time. Once the standard setter is confident that reliability level reflects the preferences of customers then there will be less need to undertake an assessment of multiple scenarios.

The level of assessment which is undertaken will depend on:

1. the extent of changes in customer preferences and the costs of investment since targets were last set; and

2. whether the jurisdictional minister considers that additional factors not captured by the VCR, should be taken into account.

As a result, unless there are significant changes in these factors from one regulatory control period to the next, the need for step changes in reliability targets may reduce once the standard setting process has been run once or twice for each DNSP.

This could result in the standard setting process involving more of a review of the level of the existing reliability targets, rather than a full assessment of a range of alternative reliability scenarios for each feeder type. Therefore, as the number of scenarios and level of assessment required will depend on the circumstances of each network, the costs of applying the framework will be proportionate.

**Box 1.1                      Inputs to the economic assessment process**

The economic assessment process would involve evaluating expected levels of unserved energy using the probability of equipment failures and forecast loads for the range of reliability scenarios, multiplying this by the relevant VCR, and comparing against the expected changes in network costs.

Table 1.1 sets out the inputs to the economic assessment process and the relevant sources for obtaining information.

**Table 1.1                      Inputs to the economic assessment process**

<b>Input</b>	<b>Source</b>
VCR	Estimates provided initially through AEMO's review and then AER's responsibility to update the estimates
Levels of unserved energy	Economic advisor to determine based upon estimates of forecast loads and the probability of equipment failures provided by the DNSP consistent with the economic assessment guidelines
Costs of network investment	Economic advisor to determine based upon estimates provided by the DNSP consistent with the economic assessment guidelines

## **1.5                      Setting reliability targets**

After considering the economic adviser's report, the standard setter would determine the reliability targets which should apply to the relevant DNSPs. In doing so, the standard setter will consider whether it is appropriate for the DNSP to transition to the targets it has determined where there is a step change in the required level of reliability.

Where a jurisdictional minister retains responsibility for setting targets, they would have discretion to set the output reliability targets at any level that they considered to be appropriate to meet the needs and expectations of customers within their jurisdiction. The jurisdictional minister would be required to publicly disclose the reasons for this selection.

## **1.6 Links to the revenue determination process**

There would be three main links between the standard setting process and the revenue determination process. The first link would be that the customer consultation process to commence the standard setting process would be aligned with a DNSP's customer consultation process on the development of its regulatory proposal for the next regulatory control period. There would be administrative benefits associated with merging these two consultation processes.

The second link is that the reliability targets and any additional reliability measures determined through the standard setting process would be used by DNSPs in forecasting the expenditure they require to meet these targets and measures in their regulatory proposal. DNSPs would also be required to explain any differences between the cost forecasts they submitted during the standard setting process and those they submit during the revenue determination process. The AER would also have access to the costs forecasts submitted by DNSPs during the standard setting process, and the final cost forecasts used by the economic adviser. This would assist the AER in determining the revenues and prices which are consistent with the efficient delivery of a DNSP's reliability targets and measures.

The third link is that, as noted above, the reliability targets determined through the standard setting process would be used by the AER as a basis for the STPIS targets that would apply to each DNSP over the regulatory control period. Further, the level of reward and penalty payments under the STPIS would be based on the VCR which had been used to set targets during the standard setting process.

We note that where there is a step change in reliability targets from one regulatory control period to the next or where additional factors beyond the VCR have been considered in setting targets, the AER may need to adjust the level of STPIS targets and payments which apply. This may be needed to enable the incentives on DNSPs to meet their targets to remain effective under the STPIS. We consider that the AER currently has sufficient flexibility under the National Electricity Rules (NER) to make these adjustments.

We have decided to not include a mechanism for DNSPs to update their reliability targets or adjust associated expenditure allowances within a regulatory control period. This position differs from the position set out in our consultation paper. This decision was made as DNSPs are able to adjust their reliability performance in response to changes in the costs and benefits of meeting their targets during the regulatory control period. DNSPs would not have a regulatory obligation to meet their reliability targets in every year. We also considered that mid-period changes to a DNSP's revenue

allowance could reduce incentives for efficient investment and be administratively complex and time consuming.

## **1.7 Compliance obligations and performance reporting**

Under the framework, DNSPs would not be required to comply with their reliability targets in every year, including any additional reliability measures. DNSPs would be free to deviate from their reliability targets in any given year but would be subject to incentive payments under the STPIS arrangements and would need to report on the reasons for the departure from their targets.

DNSPs would also be required to undertake audits, conducted by an independent auditor on a five-yearly basis, to demonstrate that they have undertaken adequate planning and have systems and procedures in place to meet their reliability targets. This represents a change to the approach in the consultation paper which proposed that independent audits would be undertaken on an annual basis.

DNSPs would be required to publicly report on their performance against their reliability targets, and plans for meeting their reliability targets, each year. The AER would be required to include this information in its annual benchmarking report on the efficiencies of DNSPs, which would minimise the administrative burden of this reporting for the AER, DNSPs, and other stakeholders.

## **1.8 Changes to the framework following the Commission's consultation paper**

The framework for distribution reliability set out in this paper is broadly similar to the framework that was set out in the Commission's July 2013 consultation paper. The main changes that have been made to the framework include:

- further consideration of how jurisdictions can express distribution reliability targets to accommodate specific areas of the distribution network, including transmission and sub-transmission assets, areas of high economic importance, and areas with a history of poor reliability performance (chapter 4);
- bringing forward the standard setting process by three months, so that DNSPs have nine months rather than six months to prepare their regulatory proposals following the setting of their reliability targets and any additional measures (chapter 5);
- further details on how the AER would use distribution reliability targets and jurisdictional VCRs in setting STPIS targets and incentive payments (chapter 9);
- the decision to not include a mechanism to update distribution reliability targets or adjust associated expenditure allowances within a regulatory control period (chapter 9); and

- a requirement on DNSPs to undertake an independent audit of the plans they have in place to meet their reliability targets every five years, instead of the annual requirement that was previously proposed (chapter 10).

Further details on the reasoning for these changes to the framework are set out in the relevant chapters of this paper.

## **1.9 Implementation of the framework**

The full implementation of the framework for distribution reliability is likely to require a number of changes to the National Electricity Rules, jurisdictional legislation, as well as the National Electricity Law (NEL) and the Australian Energy Market Agreement (AEMA).

There is the opportunity to capture some of the benefits in the near term through establishing key elements of the framework. Therefore we have set out an interim stage which can be undertaken to improve the existing arrangements for setting, delivering, and reporting on distribution reliability targets and outcomes ahead of the necessary changes to NEM legislative arrangements for the full implementation of the framework.

The steps of the interim stage are:

- SCER to request the AER to work with industry and jurisdictional governments to develop common definitions for expressing distribution reliability targets across the NEM and to be responsible for VCR measures after the completion of AEMO's review.
- AER to develop and publish common definitions for use in jurisdictional arrangements.
- Jurisdictions to incorporate VCR measures and common definitions into existing arrangements.

We consider that the AER is the most appropriate body to undertake the tasks in the interim stage given the interactions with its economic regulation functions, especially with the STPIS. Developing common definitions will require the AER to work closely with industry and jurisdictional governments. We note that there could be some uncertainty about the AER's legal ability to do this task in the absence of the required changes to the NEL. SCER could alternatively ask the AEMC to undertake the tasks in the interim stage.

Common definitions will allow the reliability performance of DNSPs across the NEM to be compared, which will promote better regulation and benchmarking by the AER.

Following the finalisation of AEMO's estimation of VCRs in early 2014, the AER will need to consider how the VCR measures can be updated and incorporated into the existing jurisdictional reliability arrangements. The AER would also consider the



timing for when VCR measures should be re-estimated and assess whether AEMO's methodology needs to be updated.

Consumers could benefit from a more transparent and efficient process for setting reliability targets before the framework is fully implemented. For these reasons, we recommend that SCER proceeds with the interim stage.

We note that the application of common definitions and the use of the VCR to value expected unserved energy will not constrain the ability of jurisdictional governments to determine the appropriate level of reliability targets for DNSPs operating in their jurisdiction.

Jurisdictions could choose to build upon these tools established in the interim stage and employ a transparent economic assessment process for setting distribution reliability targets through applying the reliability setting process as recommended in this report.

If SCER agrees to adopt the framework, the next stage would be to request the AEMC to develop a detailed implementation plan. We have set out a four-stage process to implement the full framework:

- Stage 1 - Require AEMC to develop a detailed implementation plan setting out the legislative changes to implement the framework.
- Stage 2 - The Council of Australian Governments (CoAG), SCER, AEMC and jurisdictions to implement the various legislative changes as proposed in stage 1.
- Stage 3 - Develop the other components necessary for the application of the framework (such as jurisdictions making decisions on delegations, and the AER developing the guidelines for the standard setting process).
- Stage 4 - Applying the framework prior to the commencement of a DNSP's regulatory control period.

## 2 The review

### 2.1 Terms of reference for the review

On 8 February 2013, the Australian Energy Market Commission (AEMC or Commission) received terms of reference from the Standing Council on Energy and Resources (SCER) to undertake a review to develop a national framework for expressing, setting, and reporting on electricity distribution reliability in the National Electricity Market (NEM). The terms of reference build on prior projects conducted by the AEMC to develop national frameworks for transmission and distribution reliability.

In developing a framework for distribution reliability in the NEM, the AEMC is required to:

- develop a nationally consistent approach for expressing distribution network reliability outcomes, which would allow distribution reliability outcomes to be compared and reported on across the NEM;
- develop a national approach for establishing distribution reliability settings, which takes into account the trade-off between the cost of investing in and maintaining networks and the value placed on reliability by customers;
- assess the costs and benefits of the above approaches in line with the National Electricity Objective (NEO), with particular focus on assessing the outcomes delivered by different approaches with regard to the balance between customers' willingness to pay and the costs of delivering different reliability outcomes;
- with the Australian Energy Market Operator (AEMO), and in consultation with jurisdictions, develop a mechanism for measuring and regularly updating the value of customer reliability (VCR), which takes into account an appropriate range of customer types, geographical differences and demographic differences;
- consider options to take into account local circumstances which may require different levels of reliability;
- develop a consistent approach for reporting on distribution reliability across the NEM, with any weightings and assumptions applied to different network elements made explicit; and
- ensure that any proposed framework and methodology for distribution reliability makes explicit the opportunity for jurisdictions to transfer responsibility for applying the framework to the Australian Energy Regulator (AER).

This paper sets out the design of the recommended framework for distribution reliability including an implementation plan. SCER will consider the framework and decide whether it should be adopted and further progressed.

In parallel to this work, the AEMC has also been requested by SCER to develop a framework for transmission reliability in the NEM. A substantially common set of arrangements has been developed for the distribution and transmission reliability frameworks as there are many similar issues to be resolved. High level consistency in the reliability frameworks will also minimise the regulatory costs of implementing these frameworks, as well as facilitate joint planning between distribution network service providers (DNSPs) and transmission network service providers (TNSPs). We note that SCER has also requested there be consistency in the reliability frameworks for transmission and distribution to the greatest extent appropriate in its terms of reference for this review.<sup>6</sup>

As a result, most of the elements of the framework for transmission reliability will be the same as those that have been recommended for the framework for distribution reliability. The AEMC's final report on its framework for transmission reliability will be submitted to SCER by 18 October 2013 and published by 1 November 2013.

## **2.2 Related projects**

There are a number of related projects that served as precursors to, or are being conducted in parallel, with this review. These related projects are briefly summarised below.

### **NSW and national workstreams of the Review of Distribution Reliability Outcomes and Standards**

As a precursor to the review, the AEMC undertook the Review of Distribution Reliability Outcomes and Standards. In particular, the draft report for the national workstream of this review, which was published in November 2012, set out a high level national framework for distribution reliability which is being further developed in this review. The NSW workstream of the Review of Distribution Reliability Outcomes and Standards provided advice on the costs and benefits of different levels of distribution reliability in NSW and developed a VCR for NSW customers.<sup>7</sup>

### **AEMO Review of the Value of Customer Reliability**

In March 2013, AEMO commenced work on its Review of the Value of Customer Reliability. AEMO was requested to undertake the review by SCER, following SCER's response to the AEMC's 2010 Review of the Effectiveness of NEM Security and Reliability Arrangements in light of Extreme Weather Events.

Under the review, AEMO is considering the existing methodologies to measure the VCR and will then commission surveying to develop VCRs for use across the NEM.

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<sup>6</sup> SCER, Terms of reference: National Electricity Network Reliability Framework and Methodology, February 2013, p. 3.

<sup>7</sup> Further details on the AEMC's Review of Distribution Reliability Standards and Outcomes can be found on the AEMC website at [www.aemc.gov.au](http://www.aemc.gov.au).

The review by AEMO interacts with both the distribution and transmission workstreams of the AEMC's review as SCER has requested that reliability levels under the national frameworks for distribution and transmission reliability be set with reference to the value placed on reliability by customers. As a result, the successful implementation of these frameworks will in part depend on the availability of sufficiently granular and regularly updated VCRs.

### **Productivity Commission Inquiry on Electricity Network Regulation**

The Productivity Commission was requested to undertake an inquiry into electricity network frameworks by the Commonwealth Treasurer in January 2012. The Productivity Commission's final report was published in late June 2013 and set out a proposed approach for a national framework for transmission reliability and a national framework for distribution reliability.<sup>8</sup>

The Productivity Commission's proposed approach for transmission reliability was based on AEMO setting transmission reliability standards for all transmission connection points in the NEM using an economic cost benefit assessment process. The proposed approach for distribution reliability was based on replacing all existing jurisdictional distribution reliability standards with performance targets under the AER's Service Target Performance Incentive Scheme (STPIS). Under the Productivity Commission's proposed approach, DNSPs would be incentivised to meet reliability performance targets through financial incentives and penalties only, with performance targets based on the historical five year average of performance.

The Commonwealth Government released its response to the Productivity Commission's final report with the publication of the report in late June 2013.<sup>9</sup> The response noted the Productivity Commission's proposed approach for transmission and distribution reliability and that the AEMC is developing national frameworks and methodologies for setting network reliability standards under this review. The Commonwealth Government also supported in principle the use of the AER's STPIS to improve distribution reliability performance by providing a direct financial link between revenue and reliability performance.

## **2.3 Structure of this paper**

The remainder of the paper is structured as follows:

- Chapter 3 sets out the challenges, approach, and principles for the review;
- Chapter 4 discusses the expression of distribution reliability targets and additional reliability measures;
- Chapter 5 specifies the structure of the target setting process;

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<sup>8</sup> Productivity Commission, Final report, Inquiry into electricity network regulation, April 2013. Available at [www.pc.gov.au](http://www.pc.gov.au).

- Chapter 6 sets out the process of customer consultation and selection of reliability scenarios under the target setting process;
- Chapter 7 outlines the economic assessment process for the reliability scenarios;
- Chapter 8 describes the process for setting distribution reliability targets;
- Chapter 9 explains interactions between the target setting process and the revenue determination process, including the Commission's recommendations relating to updating reliability targets within a regulatory control period;
- Chapter 10 outlines the compliance and performance reporting arrangements;
- Chapter 11 sets out implementation considerations;
- Appendix A sets out a summary of submissions on the consultation paper;
- Appendix B sets out a draft list of tasks for the AER to commence the interim stage of the framework's implementation; and
- Appendix C outlines further information on the main differences between the AEMC's framework and the existing frameworks for regulating distribution reliability in each NEM jurisdiction.

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<sup>9</sup> Australian Government, The Australian Government Response to the Productivity Commission Inquiry Report: Electricity Network Regulatory Frameworks, June 2013.

### **3 Challenges, approach and principles**

This chapter sets out the challenges associated with developing a framework for distribution reliability. It also sets out how the AEMC has approached the development of its framework in light of these challenges, and the principles we have used in forming our advice.

#### **3.1 Challenges in developing a framework for distribution reliability**

The regulation of distribution reliability remains one of the few areas of the electricity market which is still a jurisdictional responsibility. Differences in jurisdictional approaches to regulating network reliability, along with issues associated with accurately and effectively measuring the value placed on reliability by customers, mean that there are a number of challenges to developing a national approach to network reliability in the NEM.

##### **3.1.1 Differences in jurisdictional approaches**

As jurisdictions have developed their own regulatory approaches to network reliability over a number of years, a range of differences in how network reliability is regulated across the NEM have emerged. In some jurisdictions, these differences relate to how reliability targets are defined or set, while in other jurisdictions there remain more substantial differences relating to the philosophy which underpins the regulatory frameworks.

The continuation of jurisdictional frameworks has meant that DNSPs in each jurisdiction have developed their internal planning and investment processes to comply with their separate jurisdictional frameworks. Differences in the characteristics of distribution networks across the NEM have also contributed to differences in how these networks are regulated.

Jurisdictional differences are particularly noticeable when comparing the economic approach to network reliability used in Victoria to the approaches used in other NEM jurisdictions.

Under the approach used in Victoria, reliability levels are not determined in advance of the need to invest, as the level of reliability which is provided is an outworking of the economic assessment process for each project.<sup>10</sup> This economic assessment process

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<sup>10</sup> For projects where the most expensive and credible option to address an identified need is expected to cost \$5m or more, DNSPs and TNSPs in the NEM must undertake a regulatory investment test under requirements set out in the NER. These tests involve a public economic assessment to determine the option to meet an identified need that maximises the present value of net economic benefits.

compares the expected cost of each project against the value placed on reliability by customers, with the process undertaken by each Victorian DNSP.<sup>11</sup>

In other NEM jurisdictions reliability targets are determined in advance of the need to invest and are fixed for a given period of time. Reliability targets in these jurisdictions are generally determined by a body which is independent from the DNSP and are usually set by the relevant jurisdictional minister or regulator. In some jurisdictions, a high level economic assessment process, rather than a project by project assessment, is used by the jurisdictional regulator to set targets.

### **Benefits of setting reliability targets in advance of the need to invest**

While the Commission acknowledges that there are costs and benefits in relation to all existing jurisdictional approaches, the Commission considers that there are substantial benefits to setting reliability targets ahead of the need to invest. This is because transparent targets provide a degree of certainty to stakeholders regarding the level of reliability they can expect to receive and also allow DNSPs to be held accountable for the level of reliability that they provide in practice. Certainty about the level of reliability that DNSPs are required to deliver may also provide a degree of reassurance to jurisdictional governments on the level of reliability that the broader community will receive.

Setting reliability targets ahead of the need to invest also allows the AER to determine ex-ante revenue allowances for DNSPs. This provides incentives for efficient investment by allowing DNSPs to retain a portion of any savings they are able to achieve over their regulatory control period relative to the allowance that has been set.

The Commission notes that setting targets using an economic assessment process, in advance of the need to invest, is consistent with previous recommendations made by the AEMC.<sup>12</sup> SCER's terms of reference for this review has requested we build on these previous recommendations.<sup>13</sup>

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11 The Commission notes that Victorian DNSPs also face incentives to meet the reliability targets which have been set by the AER through the STPIS. Under clause 3.1A of the Victorian Electricity Distribution Code, the Melbourne CBD distributor (currently CitiPower) is also required to take steps to strengthen the security of supply in the Melbourne CBD. CitiPower is required to submit a plan to the Essential Services Commission of Victoria that specifies strengthened security of supply objectives for the Melbourne CBD and the capital and other works to achieve the objectives in the plan. All Victorian DNSPs are also required to report to the AER on their worst performing feeders following the transfer of this function from the Essential Services Commission of Victoria.

12 This includes recommendations made in the AEMC's draft report on the national workstream of the Review of Distribution Reliability Outcomes and Standards, which was published in November 2012.

13 SCER, Terms of reference: National Electricity Network Reliability Framework and Methodology, February 2013, pp. 5, 7-8.

### **3.1.2 Recognition of the potential benefits of national reliability frameworks**

There is stakeholder agreement regarding the potential benefits of national frameworks for network reliability. In particular, as discussed in chapter 2, national frameworks will allow reliability targets to be more transparently compared and benchmarked across the NEM. It would also improve the ability for DNSPs to plan their networks. These factors can promote more efficient planning and investment decisions by DNSPs, which could in turn result in more efficient prices for customers.

There is also recognition that a best practice approach could promote reliability targets being set in a manner which allows the trade-off between the costs of investing in and maintaining networks and the value placed on reliability to be more transparently assessed. This would allow the preferences of customers to be considered in the development of reliability targets.

A consistent, public and independent economic assessment to set reliability targets will lead to reliability levels being set at a more efficient level. An independent process may also improve the rigour of the assessment which is undertaken as it may allow for a broader consideration of the expected costs and benefits of providing a reliable supply of electricity.

Submissions on the consultation paper provided strong support for the development of a national framework for distribution reliability which is based on an economic assessment process, provides for greater consideration of the value placed on reliability by customers, and allows for the consistent expression of reliability targets.<sup>14</sup> However, stakeholders differed in their views on whether the process set out in the AEMC's proposed framework, or an alternative process, should be used to achieve these objectives.<sup>15</sup> A number of DNSPs suggested that undertaking the economic assessment process would be too costly and complex.<sup>16</sup> Further discussion on the alternative process proposed by DNSPs, which is based on setting reliability targets through the incentives under the STPIS, is set out in chapter 7.

### **3.1.3 Challenges associated with determining the trade-off between cost and reliability**

There are a number of challenges in using an economic assessment process to set reliability standards and targets. A principal challenge arises from the uncertainty that exists in relation to determining both sides of the trade-off between cost and reliability.

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<sup>14</sup> See submissions on the consultation paper from: NSW Independent Pricing and Regulatory Tribunal (IPART), p. 1; SA Power Networks, pp. 3-4; Energy Australia, p. 2; Origin Energy, p. 1; Alinta Energy, p. 1; AER, pp. 1-2

<sup>15</sup> See submissions on the consultation paper from: Networks NSW, p. 2; AER, pp. 1-2; Energy Networks Association, pp. 3-4; Victorian Department of State Development, Business and Innovation, pp. 1-3; SP AusNet, pp. 1-4.

<sup>16</sup> See submissions on the consultation paper from: ENA, p. 2; Networks NSW, p. 1; SP AusNet, p. 2; SA Power Networks, p. 3; Ergon Energy, p. 10.



Determining the cost of meeting reliability targets requires a range of data to be provided by DNSPs, which is generally underpinned by a number of assumptions regarding matters such as future demand levels and the costs of materials and labour, amongst other factors. These costs need to be independently assessed and verified to determine if DNSPs have taken into account all relevant factors, which can be a highly technical and extensive task. Costs will also differ depending on the characteristics of each network.

Determining the value placed on reliability by customers is significantly more difficult and uncertain than assessing the expected costs of meeting reliability standards or targets. VCR cannot be directly observed and there remains no universally accepted methodology for estimating the value placed on reliability by customers. In Australia, the VCR has only been assessed a handful of times and results have varied extensively.

Developing a methodology which can accurately estimate the VCR is difficult, as the VCR is inherently subjective. For instance, some of the variables which can affect a customer's value of reliability include: the characteristics of the customer; whether the customer has recently experienced a supply interruption; the length, duration and timing of the supply interruption; the time of day of the supply interruption; and whether the supply interruption was planned or unplanned, amongst a number of other variables. This was noted by Energex in its submission who indicated that following a series of storms in early 2004, public perceptions of reliability performance changed significantly.<sup>17</sup>

As each distribution feeder serves a large number of customers, the VCR will always need to be aggregated to some extent across a number of different customers to determine the appropriate reliability level which should apply. This is because different levels of reliability cannot be provided by DNSPs for individual customers which are being served by the same network assets. This ultimately means that determining the level of reliability that DNSPs should provide involves trading-off the reliability preferences of different customers in the same supply area. As noted by the NSW Independent Pricing and Regulatory Tribunal (IPART), for customers which place a relatively high value on reliability, this issue could be addressed by customers undertaking their own measures to improve their reliability through uninterruptible supply equipment.<sup>18</sup>

In addition, there are a number of factors which may affect the value that customers place on reliability, which are difficult to capture in the calculation of the VCR. For example, the potential broader costs to society from high impact, low probability events such as city wide supply interruptions, and concerns around equity and fairness associated with the need to provide customers in rural and remote areas with a reliable supply of electricity.

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<sup>17</sup> Energex, Submission on the consultation paper, p. 7.

<sup>18</sup> IPART, Submission on the consultation paper, p. 2. Uninterruptible supply equipment allows power to be maintained where there is a supply interruption generally through the use of batteries.

High impact, low probability events such as city wide supply interruptions are difficult to value as they tend to have wider ranging social and economic impacts on society as a whole in addition to the measurable impacts that they have on individual customers. Moreover, they are difficult to account for in VCRs because the high cost of these events is weighted by the very low probability of their occurrence, which results in a low overall impact on the final value.

Submissions from the ENA and Ergon Energy noted that the VCR may not fully account for the impact of these types of events where an outputs based approach is adopted for distribution networks.<sup>19</sup> Networks NSW agreed that VCR values may be too simple to deal with more complex projects which are required to ensure the long term security of supply.<sup>20</sup>

Social equity concerns for rural and remote customers are also difficult to fully consider and account for in VCRs. This is because the low population density in these areas means that the costs of providing a reliable supply of electricity are unlikely to pass an economic assessment which is based on measurable factors only. The ENA, SA Power Networks, and Ergon Energy suggested that additional measures would need to be considered to address these areas.<sup>21</sup>

As a result of the difficulties associated with assessing the trade-offs between cost and reliability, there may be the need for a degree of judgement in setting reliability targets to supplement assessments based on the VCR. How these judgements should be made under the AEMC's recommended framework are explored in further detail in chapters 6 to 8 of this paper. Over time with the repeated application of the target setting process, the quality of inputs and experience of participants in the process are likely to develop and improve, which may reduce the reliance on the need for subjective judgement.

In particular, AEMO's work to develop a national approach to estimating the VCR should improve the accuracy of this measure, particularly once the VCR is measured on a regular, consistent and independent basis across the NEM. The explicit consideration of the preferences of customers during the target setting process through the VCR will also be an improvement on the current processes used in some jurisdictions, as it will allow the value placed on reliability by customers to be transparently and consistently considered. Our recommendations relating to the calculation of the VCR are set out in chapter 5.

#### **3.1.4 Broader implications for regulatory frameworks**

As well as considering how the AEMC's recommended framework should be designed, the Commission also had regard to the implications that the framework may have for the broader regulatory frameworks which are currently in place. This is

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<sup>19</sup> Energy Networks Association, p. 4; Ergon Energy, p. 8.

<sup>20</sup> Networks NSW, Submission to the consultation paper, p. 12.

<sup>21</sup> See submissions on the consultation paper from: Energy Networks Association, p. 12; SA Power Networks, p. 12; Ergon Energy, p. 8.

because the way that reliability targets are set has impacts for the way DNSPs plan and invest in their networks and the way the AER determines the revenue that DNSPs can recover to meet their targets.

Further discussion on our recommendations relating to links between the target setting process and the AER's revenue determination process is set out in chapter 9. Chapter 10 of the paper sets out recommendations relating to compliance and performance reporting requirements for DNSPs, which will have implications for the way DNSPs plan to meet their targets.

The Commission has also considered the appropriate governance arrangements for the framework. In particular, the Commission has enabled these governance arrangements to remain workable in circumstances where jurisdictions retain responsibility for applying the recommended framework, and in circumstances where this responsibility has been delegated to the AER or a jurisdictional body. Further discussion on the governance arrangements under our recommended framework is outlined in chapter 5.

### **3.2 Approach**

The Commission has had regard to a range of factors in developing its advice. These factors include:

- previous work undertaken by the AEMC to develop national frameworks for transmission and distribution reliability and to provide advice on the costs and benefits of different distribution reliability levels in NSW;
- existing jurisdictional frameworks for regulating transmission and distribution reliability;
- submissions received from stakeholders during the review and discussions held with stakeholders;
- related work undertaken by other bodies;
- the need to provide for high level consistency between the frameworks which are developed for distribution and transmission reliability, where appropriate;
- the need to enable either jurisdictions or the AER to be responsible for applying the frameworks;
- the National Electricity Objective (NEO) and the principles for the development of the national frameworks, which are discussed below;
- the implications of the frameworks for how DNSPs plan and undertake investments needed to meet their reliability standards and targets; and
- the impact of the frameworks on the broader regulatory frameworks and institutional arrangements that are currently in place.

In providing its advice the Commission has sought to develop a framework for distribution reliability which can be consistently applied across all NEM jurisdictions. While the AEMC has been required to design the framework so that it can be applied by either jurisdictions or the AER, the Commission has sought to limit the variation possible in the application of the framework to preserve its national approach.

### 3.3 Principles for the development of the framework

The following principles have been used in the development of the recommended framework for distribution reliability:

1. **Transparency:** The process for setting reliability targets should be open and transparent. The targets themselves should also be transparent.

Stakeholders should have the ability to provide input on proposed changes to targets. The process and reasons for setting reliability targets should be clearly explained and the consequences for not meeting the targets should be clearly defined.

2. **Fit for purpose and reflective of customer preferences:** The frameworks should allow targets to differ across networks according to the value placed on reliability by customers and the costs of providing different levels of reliability.

Customer preferences should be taken into account in determining the types of targets which are set, the level of the targets, and any other key reliability obligations placed on DNSPs.

3. **Economic efficiency:** Reliability targets should be set using an economic assessment process that compares the value placed on reliability by customers and the costs of undertaking and maintaining investments needed to meet the targets.

4. **Governance:** Reliability targets should be set by a body which is separate from the DNSP that must apply the target. However, the frameworks should allow targets to be determined through a consultative process between the standard setter, DNSP, and stakeholders.

DNSPs should be held accountable for meeting their targets and the consequences for not meeting targets should be enforced.

5. **Effectiveness:** The framework should allow investments to proceed in a timely manner and limit the potential for inefficient investments. The framework should allow targets to be met through innovative and efficient means and should not be biased towards network solutions where non-network options can provide a comparable level of reliability.

The frameworks should allow joint planning to be undertaken between network service providers (NSPs) to meet their respective standards and targets.

In addition to these principles, we have also had regard to the NEO in developing our advice, as required under the National Electricity Law (NEL) and SCER's terms of reference.<sup>22</sup>

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<sup>22</sup> Under section 32 of the NEL, the AEMC must have regard to the NEO in performing or exercising any function or power under the NEL, Regulations or the NER.

## 4 Expression of distribution reliability measures

This chapter outlines how distribution reliability measures would be expressed under the framework.

### 4.1 Expression of distribution reliability measures

This section outlines the recommended approach and benefits for the consistent expression of distribution reliability measures.

#### 4.1.1 Recommended approach

Our framework would base the measurement of reliability performance by DNSPs on the achievement of output reliability targets.

A common set of definitions would be developed by the AER to provide consistency on the range of possible output reliability measures that could be used.

Published distribution output reliability targets would be based primarily on the duration and frequency of supply interruptions and would therefore be required to include unplanned System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI) as a minimum. However, the standard setter would have discretion to include additional measures listed in the document which sets out the common definitions, such as Momentary Average Interruption Frequency Index (MAIFI) or planned SAIDI and SAIFI to meet the preferences of customers in their respective networks.

Distribution output reliability targets would be disaggregated by feeder type (eg CBD, urban, rural) in accordance with the defined categories outlined in the set of definitions. The actual level of the distribution reliability targets would vary by feeder type and by jurisdiction and would be determined by the standard setter based on the outcomes of the economic assessment process. An example of the disaggregation of output reliability targets is provided in Box 4.1.

Some interruption incidences would be excluded from output reliability targets, and the measurement of performance against those targets. The purpose of exclusions is to avoid distorting the measurements through events that are beyond the reasonable control of the DNSP.<sup>23</sup> The document setting out common definitions would also provide a consistent methodology for the treatment of these excluded events, such as the classification of a major event day.

The AER would develop and update the definitions for distribution reliability measures in accordance with the principles, content requirements, and review

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<sup>23</sup> An example of an exclusion methodology is to define Major Event Days as occurring when the daily total system SAIDI exceeds a pre-determined threshold based on a statistical measurement of historical SAIDI values.

processes that will be set out in the National Electricity Rules (NER). Common principles will be used to guide the development of the definitions for both distribution and transmission, thereby maintaining compatibility between networks for the purposes of joint planning arrangements.

The Commission proposes the following principles to be included in the NER to guide the development of the definitions for distribution and transmission reliability measures:

- **Applicability** - Definitions of reliability measures and events to be excluded from the measurement of reliability performance should be developed in consideration of the operating environments of NSPs in the NEM.
- **Measurability** - Reliability performance measures should be developed so as to be able to be practically and objectively calculated by a third party with knowledge or expertise in the area.
- **Transparency** - DNSPs, market participants, and consumers should be able to interpret the content of the set of definitions and its implications for the level of supply reliability they can reasonably expect to receive.
- **Quality** - Reliability performance measures should be based upon best practice engineering and technical analysis performed by expert practitioners within the field.
- **Accountability** - DNSPs should be able to report on their performance against their reliability targets to enable them to be held accountable for meeting their reliability targets.
- **Economic efficiency** - Reliability performance measures should promote economically efficient decisions and should not be biased towards network solutions when non-network options can provide a comparable level of reliability.

The AER would be required to actively involve DNSPs and jurisdictional governments in the development of the definitions and would be required to update the definitions as appropriate through a process of review and stakeholder consultation. The AER would need to be mindful of consistency with the expression of reliability measures in the STPIS guidelines in any updates to the set of definitions.

The framework would not preclude the use of alternative classifications or definitions of reliability measures if these are considered necessary for internal jurisdictional reporting purposes, such as the use of community and region categories in Tasmania and South Australia respectively. The framework would also not preclude DNSPs from voluntarily setting their own planning criteria to guide investment decision making.

#### **Box 4.1 Output reliability measures**

Output reliability targets specify the level of service that a DNSP is required to meet. The range of output reliability measures would be specified in the common set of definitions. Example may include:

- System Average Interruption Duration Index (SAIDI), which is a measure of the average aggregate number of minutes that supply is lost to the average customer in a year;
- System Average Interruption Frequency Index (SAIFI), which is a measure of the average number of supply interruptions that a typical customer will experience in a year;
- Customer Average Interruption Duration Index (CAIDI), which is a measure of how long the average supply interruption lasts, usually measured in minutes; and
- Momentary Average Interruption Frequency Index (MAIFI), which is a measure of how many supply interruptions occurred of a specific very short duration.

Table 4.1 provides an example of the expression of average output reliability targets. The levels of reliability targets have been determined arbitrarily. The categories of feeder types would be outlined in the common set of definitions. While output reliability targets based on unplanned SAIDI and SAIFI would be required at a minimum, the use of MAIFI would be at the discretion of the standard setter. The levels of reliability targets would be determined by the standard setter.

**Table 4.1 Example of the expression of output reliability targets under the recommended framework**

<b>Feeder type</b>	<b>Unplanned SAIDI</b>	<b>Unplanned SAIFI</b>	<b>MAIFI</b>
CBD	20 minutes	0.2	1.2
Urban	150 minutes	1.5	2.5
Short rural	400 minutes	2.8	5.5
Long rural	950 minutes	8.4	12.5



## 4.1.2 Reasoning for the recommended approach

### Consistent expression of reliability measures

We consider the use of output reliability targets to be preferable to prescriptive input planning standards for the regulation of reliability in distribution networks. Input planning standards dictate requirements for the design of the network. We consider that strict input planning standards blur the bounds between the respective functions of the jurisdictional regulator or government and the DNSP. Where DNSPs are subject to input planning standards, the jurisdictional regulator or government is effectively taking on the responsibility for determining the level of security or redundancy that is required, which is a responsibility that may be more appropriately performed by the DNSP.

The use of prescriptive input planning standards reduces flexibility and may also inhibit DNSPs from meeting their reliability targets through innovative and potentially more cost effective means. For example, demand side participation or distributed generation options.

In contrast, output methods specify the desired reliability outcomes based on customer preferences and allow DNSPs to determine the most efficient way to plan and operate their networks in order to meet the desired outcomes. The AER notes that an outputs-based regime would give DNSPs the ability to decide how to deliver the required reliability outputs in the most efficient manner without having to conform to prescriptive standards about how those targets should be met.<sup>24</sup>

The adoption of output measures should improve the efficiency of network expenditure, which should ultimately provide long-term benefits to consumers. We note that the ex-ante setting of output reliability measures provides transparency and certainty to DNSPs and network users and is consistent with regulatory frameworks currently applied in overseas jurisdictions, as set out in a report prepared for the Commission by the Brattle Group in January 2012.<sup>25</sup>

The recommended framework would not preclude DNSPs from also voluntarily setting their own planning criteria to support targets and guide investment decision making. The Commission considers that the voluntary adoption of planning criteria by DNSPs may give rise to additional benefits in the form of increased transparency, while at the same time avoiding the jurisdictional regulator or government being overly involved in the planning process. Voluntary planning criteria by nature would be only used as a guide by the DNSPs and would not form a regulatory obligation that DNSPs would be required to comply with or use as an input to the revenue determination process.

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<sup>24</sup> AER, Submission on the consultation paper, p. 2.

<sup>25</sup> The Brattle Group report to the AEMC, *Approaches to setting electric distribution reliability standards and outcomes*, January 2012.

The voluntary use of planning criteria is supported in the submission from Energex which notes that there is a need to distinguish between the removal of input planning standards from a regulatory perspective, and the continued implementation of network plans and planning standards within DNSPs.<sup>26</sup> SA Power Networks notes that they have developed internal input planning standards which are designed to support compliance with their current output based reliability standards.<sup>27</sup>

The Commission notes that stakeholders have unanimously supported the AER as the body responsible for the development of a common set of definitions for distribution reliability measures.<sup>28</sup> The Commission agrees with the ENA that DNSPs should be involved in the development of definitions to resolve any issues concerning the measurement and application of reliability performance targets.<sup>29</sup>

### **Consistency across jurisdictions**

The Commission considers that consistent expression of output reliability targets will allow DNSPs, stakeholders, and jurisdictional regulators to accurately compare and evaluate levels of reliability performance in the NEM. This will also allow trends and variations in performance across different networks to be assessed.

In current jurisdictional frameworks not all supply interruptions are included in the measurement of performance against reliability standards or targets. For example, in different jurisdictions the calculation of SAIDI may exclude supply interruptions that occur as a result of different events. Specific exclusions have been developed over time in each jurisdiction to accommodate specific locational factors and the characteristics of the networks. While this is effective in assessing the performance of the DNSP at a local level, it makes comparison of reliability performance and benchmarking across jurisdictions problematic.

Differences in the expression of jurisdictional reliability standards also make it difficult for market participants to understand differences in performance. In addition, differences between the definitions and exclusions used by jurisdictions and those used by the AER in the STPIS are an administrative burden for DNSPs and may create confusion for regulatory bodies and the public.

The Commission considers that while distribution reliability measures should use a single consistent set of definitions, locational differences between jurisdictions can be addressed through different reliability targets for different parts of the network. Therefore, under the recommended framework reliability targets could vary by jurisdiction, and by feeder type within jurisdictions, to accommodate the specific locational characteristics of different distribution networks.

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<sup>26</sup> Energex, Submission on the consultation paper, p. 4.

<sup>27</sup> SA Power Networks, Submission on the consultation paper, p. 8.

<sup>28</sup> See submissions on the consultation paper from: Networks NSW, p. 6; ENA, p. 16; Energex, p. 4; Ergon Energy, p. 6; MEU, p. 20; SA Power Networks, p. 9; EUAA, p. 3; Alinta Energy, p. 2.

<sup>29</sup> ENA, Submission on the consultation paper, p. 16.

In addition, the Commission considers that the use of SAIDI and SAIFI measures as a minimum would promote consistency and allow for the benchmarking of DNSP performance. At the same time, there would be flexibility for additional measures to be adopted to meet the needs of customers in each network.

The Commission notes that reliability outcomes at a more granular level than by feeder type may provide a more accurate reflection of the experience of customers. This was noted by Networks NSW who suggested that, as different types of customers can be supplied from the same feeder, sub-classification at levels below the individual feeder based on the nature of the customers served may be more appropriate.<sup>30</sup> However, the Commission also recognises the benefits of a consistent approach to the expression of reliability measures across the NEM, and that tailoring reliability measures to meet the unique aspects of individual networks will compromise the ability to compare reliability performance between networks.

The Commission notes that submissions from Energex, the Major Energy Users (MEU), Networks NSW, SA Power Networks and the Energy Users Association of Australia (EUAA) supported consistency in the expression of distribution reliability measures and have asserted that a single set of definitions and exclusion criteria is feasible while still accommodating the specific locational characteristics of different jurisdictions.<sup>31</sup> However, the ENA and Ergon Energy remain concerned about a nationally consistent approach to the expression and measurement of reliability performance.<sup>32</sup>

We note the frameworks that currently exist in some jurisdictions have been developed over time to meet the distinct aspects of the local jurisdictional network and may not lend themselves to being expressed in the same way as in other jurisdictions. This is particularly true with regard to the framework that is currently applied in Tasmania and is also true to some extent in South Australia.<sup>33</sup>

The Commission considers that the adoption of feeder categories should be able to be supplemented by the requirement for DNSPs to report according to other classifications. This would enable the current practice where some jurisdictions set reliability targets according to alternative classifications, while reporting to the AER by feeder type, to continue. This approach was supported by the ENA, SA Power Networks and Energex.<sup>34</sup>

While the framework would disaggregate distribution reliability targets by feeder type, the framework would not preclude the use of alternative classifications or definitions of reliability measures if these are considered necessary for internal jurisdictional

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<sup>30</sup> Networks NSW, Submission on the consultation paper, p. 6.

<sup>31</sup> See submissions on the consultation paper from: Energex, p. 4; MEU, p. 20; Networks NSW, p. 6; SA Power Networks, p. 8; EUAA, p. 3.

<sup>32</sup> See submissions on the consultation paper from: ENA, p. 18; Ergon Energy, p. 5.

<sup>33</sup> Tasmania and South Australia base the categorisation of reliability standards on types of communities and geographical regions respectively.

<sup>34</sup> See submissions on the consultation paper from: ENA, p. 16; SA Power Networks, p. 8; Energex, p. 4.

reporting purposes. For example, the framework would not prevent the continued use of region and community categories of reliability measures in South Australia and Tasmania.

Our recommended framework would require that measurements of reliability performance are reported to the standard setter in accordance with the common definitions of reliability measures. This could lead to the possibility of networks having to measure and report reliability performance differently for the AER and for jurisdictional purposes. To avoid this, we recommend jurisdictions adopt the consistent definitions of reliability measures for any supplementary jurisdictional reporting purposes. Further information on reporting requirements is set out in section 10.2.

The use of alternative reliability measures is supported by Energex who noted that the establishment of a standard set of reporting measures across NEM jurisdictions should not preclude supplementary reporting by individual DNSPs at a company/jurisdictional level to maintain historical perspectives or jurisdictional needs.<sup>35</sup> SA Power Networks considered that disaggregation by feeder type is appropriate for benchmarking but may need to be supplemented by a requirement for DNSPs to annually report their reliability performance for localised geographical areas, or parts of the network, to better inform customers on the performance they receive.<sup>36</sup> The ENA noted that some jurisdictions currently set reliability targets for regions or customer categories rather than by feeder type, while reporting performance to the AER for the STPIS is on the basis of feeder type.<sup>37</sup> The Commission supports a continuation of this flexibility.

## **4.2 Additional reliability measures**

This section outlines the recommended approach to expressing measures to address areas of the distribution network associated with high load, high economic importance, or have a history of poor reliability performance.

### **4.2.1 Recommended approach**

The standard setter can include additional reliability measures to accommodate specific areas of the distribution network. These can be broadly classified into three separate categories associated with:

- network assets that serve areas of high load and as such are more characteristic of elements of the transmission or sub-transmission network;
- areas of the network associated with high economic or social importance; and

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<sup>35</sup> Energex, Submission on the consultation paper, p. 4.

<sup>36</sup> SA Power Networks, Submission on the consultation paper, p. 8.

<sup>37</sup> ENA, Submission on the consultation paper, p. 16.

- areas of the network that have a history of poor reliability performance.

Network assets that serve high load and are classified as transmission or sub-transmission, yet fall within the ownership of a DNSP, would be subject to the framework for transmission reliability.<sup>38</sup> The classification of transmission and sub-transmission assets would be defined under that framework.

Additional measures may be set for areas of the network that are considered to be economically important such as CBD areas or other areas which serve a large number of customers. These additional measures may be in the form of minimum performance standards and would be applied to address the broader societal costs which are not captured in estimates of the VCR but which may result from high impact low probability events.

The framework would also include a provision for the standard setter to include additional measures to address the requirements of poor performing parts of the network. These measures would be consistently defined under the recommended framework.

While not an exhaustive list, examples of measures for worst served customers include the following:

- Separate SAIDI and SAIFI minimum standards for the feeders with the lowest levels of reliability (eg average SAIDI for the worst x number of feeders). The identification of poor performing feeders would be based on whether historical performance data for individual feeders failed to exceed minimum threshold levels of reliability. The DNSP would be required to build and maintain the network in order to ensure that minimum levels of reliability are met. The minimum performance standards and the appropriate methodologies to be employed in the application of these standards would be consistently defined.
- Reporting on individual poor performing feeders or areas that fail to meet minimum SAIDI or SAIFI standards and any actions proposed. The identification of poor performing areas of the network would once again be based on whether historical performance data met minimum threshold levels of reliability, or may simply represent the worst performing x per cent or x number of individual feeders. The development of actions to address poor performance may be based on detailed analysis of the factors driving the poor performance and how a program of capital or operational works may be used to improve performance;

The recommended framework would also not preclude the use of additional measures for customers that receive lower than average levels of supply reliability such as:

- Guaranteed service level (GSL) schemes where DNSPs make payments directly to customers when certain reliability targets are not achieved. GSL schemes may

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<sup>38</sup> The AEMC's final report on a national framework for transmission reliability is expected to be published on 1 November 2013.

act as incentives to DNSPs if the payments to customers are higher than the cost of improving reliability to avoid making those payments.<sup>39</sup>

- A separate component of the STPIS that provides incentives to address poor performing parts of the network. The incentive rates on different feeder types may be adjusted under the STPIS to influence the economic justification for investing in different areas of the network.

#### **4.2.2 Reasoning for the recommended approach**

##### **Transmission and sub-transmission**

The Commission considers that a role exists for the appropriate use of input planning standards where output reliability measures are not sufficient. The Commission acknowledges the concerns that some stakeholders have regarding the use of output measures for some network assets that fall within the ownership of DNSPs but are classified as transmission or sub-transmission.<sup>40</sup>

The potentially widespread consequences of failure on these elements of the network mean that a higher level of reliability may be required. In addition, prolonged under-investment may not translate to short-term observable reductions in reliability to the same extent that may occur for the rest of the distribution network.

The Commission considers that network assets would be subject to the AEMC's recommended frameworks for transmission or distribution reliability based on the characteristics of the asset rather than ownership. The consultation paper proposed the expression of transmission reliability standards on an N-x basis. The AEMC's final recommendations on a framework for transmission reliability will be published in November 2013.

##### **Areas of economic importance**

The recommended framework would allow for additional measures to be included where average output based reliability measures would fail to adequately capture the significant impacts of supply interruptions to areas of economic importance or broader costs to society from low probability high impact events such as wide-area outages.

The use of additional measures would be at the discretion of the jurisdictional minister and would be consistently defined and applied. The AER or jurisdictional body could also apply the additional measures if guidance had been provided by the jurisdictional minister as part of the delegation process.

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<sup>39</sup> GSL payments are likely to be higher where they are made automatically to customers with high or no annual cap on payments.

<sup>40</sup> See submissions on the consultation paper from: Ergon Energy, p. 4; ENA, p. 12; Networks NSW, pp. 3-6

These measures would be focused on addressing security of supply and may for example be expressed as minimum performance standards. Alternatively, SP AusNet noted that reliability management plans may be developed to ensure security of supply to areas of critical load.<sup>41</sup> The Commission notes submissions from Networks NSW, Energex, Ergon Energy, and SA Power Networks which have advocated that certain areas of their respective networks, which serve areas of economic importance or large numbers of customers, may require specific measures supplementary to average output reliability targets.<sup>42</sup>

### **Worst served customers**

For practical reasons, distribution output reliability measures tend to focus on average or aggregated performance across a network.

The principal risk of average reliability targets is that it is often more cost effective to improve average reliability by providing even better reliability to those customers that already receive better than average levels of reliability than targeting customers with poor performance.

Disaggregating targets so that different targets apply to different types of distribution feeders partially addresses this issue. However, there is a limit to the level of disaggregation that is possible and tailoring the structure of targets to meet the characteristics of each jurisdictional network risks reducing the level of consistency and comparability between jurisdictions.

The costs required to provide a reliable supply of electricity to some customers is likely to outweigh the measurable value that those customers place on reliability. This is generally true of more remote areas of a distribution network. However, there are other factors, such as social and equity considerations, which jurisdictional ministers may wish to take into account in the provision of reliability to poor performing areas.

The majority of submissions from stakeholders recognised the need for additional measures to address the requirements of poor performing areas of the network.<sup>43</sup> The Commission has noted that the ENA supports consistency in the definitions of options to address the requirements of worst-served customers.<sup>44</sup> Stakeholder submissions generally considered that disaggregation by feeder type would provide for the level of reliability received by different customers to be consistent with their preferences and expectations. However, it was also recognised that average reliability measures, classified according to feeder type, would not address the requirements of all network

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41 SP AusNet, Submission on the consultation paper, p. 5.

42 See submissions on the consultation paper from: Networks NSW, p. 3; Energex, p. 4; Ergon Energy, p. 4; SA Power Networks, p. 8.

43 See submissions on the consultation paper from: Networks NSW, p. 11; Energex, p. 7; MEU, p. 14; ENA, p. 12; Ergon Energy, p. 9; Alinta Energy, p. 2, SP AusNet, p. 6; AER, p. 2.

44 ENA, Submission on the consultation paper, p. 17.

consumers and that additional measures may be warranted to protect the interests of worst served customers.<sup>45</sup>

Networks NSW and the AER noted that the establishment of minimum service standards could serve an important function in protecting the interests of worst served customers.<sup>46</sup> The Commission notes that minimum standards for the poorest performing areas of the distribution network provide transparency and certainty to network users but may lead to high costs if imposed as an absolute obligation on DNSPs. Where measures for worst served customers had been set by the standard setter, DNSPs would be required to outline their plans to meet them in Distribution Annual Planning Reports (DAPR). Adjustments to the operation of the STPIS would also be used to incentivise DNSPs to meet these measures. Compliance with reliability measures under the recommended framework is discussed in chapter 10.

Ergon Energy noted the importance of understanding the drivers behind worst performing areas of the network and the benefits of reporting on plans to identify the actions that are able to be undertaken to address the poor performance and lessen the impact of future events.<sup>47</sup> SP AusNet reiterated this view and noted the benefits of direct consumer consultation to provide the opportunity for local communities and DNSPs to engage on local reliability issues.<sup>48</sup>

The Commission considers that direct consultation may provide for lower cost or more innovative non-network solutions to address poor performance, consistent with views put forward by the ENA and Ergon Energy.<sup>49</sup>

The ENA and the MEU both noted the opportunities for addressing the requirements of worst served customers that may potentially be available through a properly designed national GSL scheme.<sup>50</sup> One option for a national GSL scheme would be for the AER to administer arrangements under the STPIS provisions. Alternatively, jurisdictions could retain their existing schemes but review the arrangements to provide consistency with the national framework and in consideration of any other requirements that they have for worst served customers.

All NEM jurisdictions currently have some form of GSL scheme. However, none of the jurisdictions have so far subscribed to the AER's scheme and a customer who experiences an interruption to supply can expect to receive a very different GSL payment depending on their residing jurisdiction. The varying size of payments in different jurisdictions reflects the role of the GSL scheme in improving service to customers in some jurisdictions, while in other jurisdictions it is used to provide recognition to customers for poor reliability performance.

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45 See submissions on the consultation paper from: ENA, p. 12; SP AusNet, pp. 5-6; SA Power Networks, p. 12; MEU, p. 14; Energex, p. 7; Networks NSW, p. 11; EUAA, p. 6; Alinta Energy, p. 2.

46 See submissions on the consultation paper from: Networks NSW, p. 11; AER, p. 2.

47 Ergon Energy, Submission on the consultation paper, p. 9

48 SP AusNet, Submission on the consultation paper, p. 6.

49 See submissions on the consultation paper from: ENA, p. 12; Ergon Energy, p. 9.

50 See submissions on the consultation paper from: ENA, p. 12; MEU, p. 14.



The impact of a GSL scheme on improving reliability performance is only ever likely to be significant when the size of the payments is sufficient to incentivise the DNSP to invest in the network. A GSL scheme with payments linked to the VCR may provide the necessary incentive, or where payments are made automatically to customers with high or no annual cap on payments. In order to create the proper incentive, DNSPs should not be able to recover the cost of the GSL payments in their current or future revenue allowances.

While the Commission notes these issues, the Commission has not provided any specific recommendations relating to the appropriate design of a national GSL scheme, as these matters are beyond the scope of the terms of reference.

## 5 Structure of the target setting process

This chapter discusses the responsibilities of participants and provides an overview of the process for setting distribution reliability targets. It also outlines the Commission's approach to key components of the framework, including the development of guidelines for the target setting process and VCRs for use in the economic assessment process.

### 5.1 Overview of the target setting process

Chapters 6 to 8 outline the proposed design of the target setting process in three separate stages, which can be broadly considered to follow a chronological path. The three stages include:

1. a process for the selection of a range of feasible reliability scenarios, which will involve consideration of the outcomes of customer consultation and advice from the DNSPs on physical and financial constraints of achieving different levels of reliability;
2. an economic assessment process to compare the level of expected capital and operating expenditure against the value that customers place on reliability for each selected scenario; and
3. a process for the selection and publication of reliability targets for each DNSP.

The sequence of these stages is presented in Figure 5.1. Within each of the three stages, a number of individual steps are listed. These steps are presented in further detail in Figure 5.3.

**Figure 5.1 Stages of the target setting process**



### 5.2 Responsibilities under the target setting process

Table 5.1 outlines the responsibilities under the target setting process. Five separate responsibilities are identified, with a number of these responsibilities able to be performed by the same body.

**Table 5.1 Responsibilities under the target setting process**

Responsibility	Tasks	Responsible body
Provision of information on reliability scenarios	Providing information on the costs, reliability impact, and the physical and financial constraints associated with achieving different reliability scenarios and reporting on reliability performance	Distribution network businesses.
Provision of economic advice	Undertaking an economic assessment of the costs and reliability impact for each reliability scenario and providing advice to the standard setter.	Determined by the jurisdictional minister. May be delegated to an appropriate jurisdictional government body, jurisdictional regulator, the AER, or any other body independent of the DNSPs.  In the case that the body is responsible for setting reliability targets then that body would also take on the responsibility of providing economic advice.
Selection of reliability scenarios and target setting	Selecting the reliability scenarios which should be economically assessed and setting reliability targets.	Determined by the jurisdictional minister. This functions of this role may be delegated to the AER or a jurisdictional body.
Economic regulation	Determining the revenues required by DNSPs to efficiently meet the targets that are set.	AER
Compliance monitoring	Monitoring the results of audits to assess the effectiveness of DNSPs' plans and internal systems to meet their reliability targets and whether they are applying their plans correctly.  Monitoring and reporting on DNSP performance against reliability targets.	AER

Jurisdictional ministers would be responsible for setting distribution reliability targets under the framework. However, jurisdictional ministers would have the ability to delegate the target setting functions to the AER or a jurisdictional body.

The jurisdictional body would need to be independent from the DNSPs and without financial interest in any aspect of the target setting process. It would not be possible to delegate target setting to a DNSP.

The possible models for how the various responsibilities could be allocated are set out below in Figure 5.2.

**Figure 5.2 Possible responsibilities under the framework**

Possible responsibilities under the recommended framework	Economic Advice	Standard Setting	Economic Regulation	Compliance Monitoring
Model A	Jurisdictional body	Jurisdictional Minister	AER	
Model B	Jurisdictional body		AER	
Model C	AER	Jurisdictional Minister	AER	
Model D	AER			

Jurisdictional ministers would have the ability to decide whether to delegate the target setting functions prior to each five yearly target setting process. This could allow jurisdictional ministers to change the body which is responsible for setting reliability targets if considered appropriate. Jurisdictional ministers would also have the ability to delegate the target setting role for one type of network (eg transmission), but retain responsibility for target setting for another type of network (eg distribution).

The default position for target setting responsibilities would be a continuation of the arrangements for the preceding target setting process. This would apply unless a formal decision was made by the minister to change the delegations prior to the commencement of the target setting process.

All standard setters would be informed on the costs and benefits of each reliability scenario being considered through the economic assessment process, prior to making their decision on which reliability targets should apply.

Where a jurisdictional minister has delegated the responsibility for target setting, the economic adviser role would also be performed by the same body. As a result, the body would be responsible for undertaking the economic assessment process for each reliability scenario, as well as determining which reliability scenarios should be economically assessed and the reliability targets that will apply to each DNSP.

In delegating responsibility, jurisdictional ministers would be able to provide the AER or jurisdictional body with guidance on how they should select reliability scenarios and determine the economically derived reliability targets.

This guidance would be in the form of information that the AER or jurisdictional body would use to determine the range of feasible reliability scenarios to be economically evaluated. For instance, this could include a requirement to not lower reliability in certain areas that receive poor levels of supply reliability or are considered to be economically important.

The AER or jurisdictional body would be required to select the reliability scenario with the highest net economic benefits, as identified through the economic assessment process.

Where a jurisdictional minister retains responsibility for setting reliability targets, they could appoint a separate body to perform the economic adviser role. In setting targets, jurisdictional ministers would be able to take into account any factors that are not incorporated in the economic assessment process. This could include the risk aversion of customers or the broader costs to society from wide-area outages. As a result of considering these additional factors, there is the potential that jurisdictional ministers could select an alternative scenario to the one of highest net economic benefit.

Following the economic assessment process, the jurisdictional minister would have the discretion to include additional measures to accommodate specific areas of the network that are associated with high economic importance or have a history of poor reliability performance. For example, these measures could include maximum duration or frequency of interruptions to specific areas of the network.

Alternatively, the jurisdictional minister may determine these factors up front for evaluation under the economic assessment process. However, as they are not easily quantified by the VCR, the benefits to the community may not be able to be fully accounted for in the results of the economic assessment process. As discussed further in chapter 7, there are likely to be limits to the extent to which the costs of these factors can be objectively assessed.

Further discussion on how distribution reliability targets would be set is outlined in chapter 8.

The Commission notes that a number of concerns were raised by NSPs and the Victorian Government in submissions regarding the structure of the target setting process and the proposed economic assessment process. The ENA considered that the proposed economic assessment process is likely to be complex and costly, and in consideration of the fact that much of the required capital expenditure on distribution networks for the foreseeable future has already been committed, advocated a lighter-handed approach to the regulation of reliability outcomes.<sup>51</sup>

The Commission considers that its recommended framework is likely to promote more efficient investment outcomes than the alternative approach proposed by the NSPs. The NSPs' preferred approach, and the Commission's response and reasoning for its recommended approach, are discussed in chapter 7.

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<sup>51</sup> ENA, Submission on the consultation paper, p. 11.

### 5.3 Process flow for setting reliability targets

Figure 5.3 provides further detail on the design of the target setting process and outlines the process flow and interactions between the relevant responsibilities of participating bodies. A colour code is provided to identify those who are either principally responsible or required to contribute. The colour code used to define the roles in Figure 5.3 corresponds to the colours used in Table 5.1 and Figure 5.2. While the responsibility for monitoring compliance is defined in Table 5.1, as this responsibility is not part of the target setting process it has not been included in Figure 5.3.

A more detailed A3 version of Figure 5.3 has also been published on the AEMC website.

The expected timeframe for completion of each stage of the target setting process is provided at the bottom of Figure 5.2. Overall, the target setting process is expected to take 12 months:

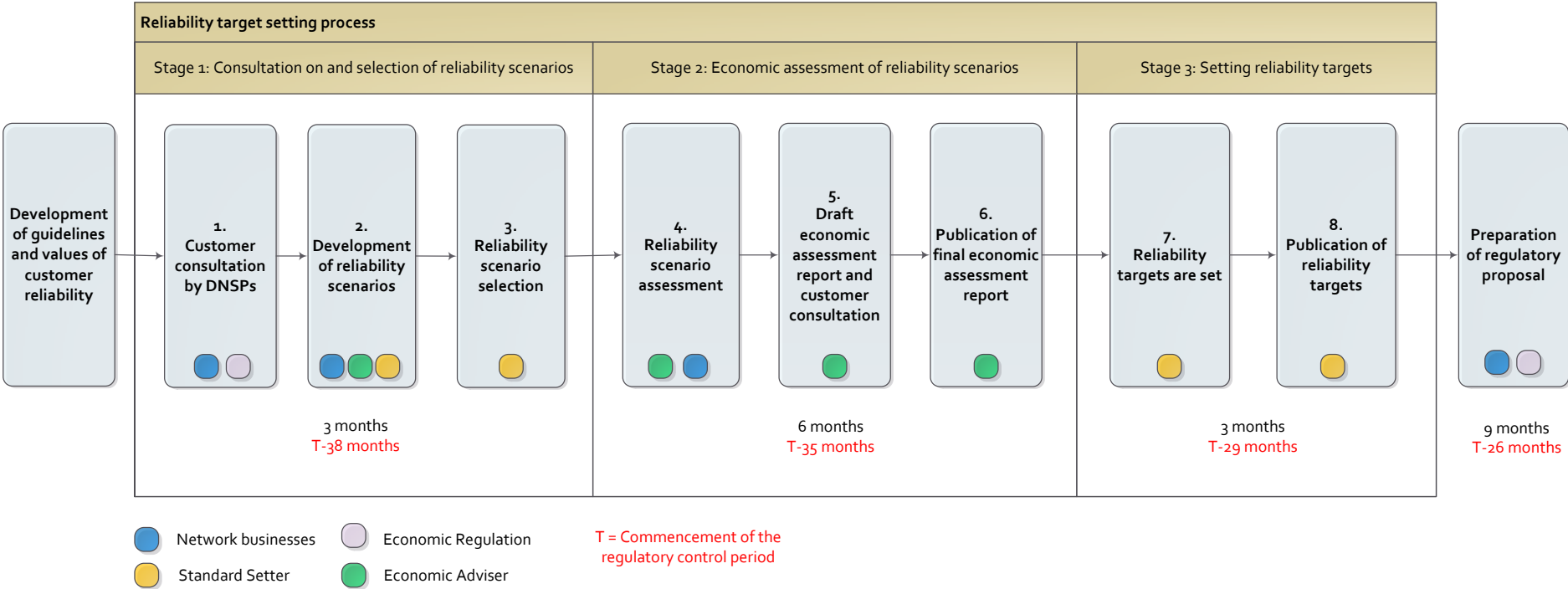
- three months for consultation on and selection of reliability scenarios;
- six months to undertake the economic assessment of reliability scenarios; and
- three months to set the reliability targets.

Taking into account a timeframe of 17 months for the AER to undertake the revenue determination process, and allowing nine months for the NSPs to prepare their regulatory proposals once targets have been set, the target setting process will commence 38 months prior to the start of each regulatory control period, denoted by “T” in Figure 5.2. The timeframe commences three months earlier than the timing that was proposed in the AEMC's consultation paper. The Commission has extended the time for NSPs to prepare their regulatory proposals in consideration of submissions from the AER and the ENA.<sup>52</sup>

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<sup>52</sup> See submissions on the consultation paper from: AER, p. 3; ENA, p. 6.

**Figure 5.3 Process flow for setting reliability targets**



During the target setting process there would be a number of opportunities for public consultation. DNSPs would undertake public consultation at the beginning of the target setting process to assist in the development of reliability scenarios. Public consultation would also be undertaken by the economic adviser during the economic assessment process on the methodologies and assumptions used and the costs and benefits of the reliability scenarios being considered.

Public consultation would also occur prior to the commencement of the target setting process as part of surveying to develop VCRs for each jurisdiction. Each of these consultation processes is discussed in further detail in the relevant chapters of this paper.

As multiple consultation processes will be undertaken by different bodies there may be a risk that different customers will be consulted during each process, which may lead to different and potentially inconsistent responses. This risk is addressed in part by requiring each of the bodies to co-ordinate their consultation process with other bodies in the target setting process to provide a degree of consistency in how customers are consulted. Each body which is responsible for running each of the consultation processes would also need to undertake consultation with a representative set of customers in each DNSP's network.

## **5.4 Development of guidelines for the target setting process**

The framework would include the development of a set of guidelines which provides the necessary detail for the consistent economic assessment of reliability scenarios across the NEM and customer consultation by DNSPs during the target setting process.

This section sets out the proposed contents of the guidelines and which body should be responsible for the development of the guidelines.

### **5.4.1 Recommended approach**

The guidelines would outline the methodologies to be followed for consulting with customers, selecting reliability scenarios, and in the application of the economic assessment process. The development of the guidelines would form part of the implementation of the frameworks and would act as the primary tool through which national consistency in the customer consultation process and economic assessment process would be achieved. There would be separate guidelines developed for transmission and distribution. The Commission's recommendation for the guidelines to cover the entire target setting process is an expansion on the approach in the consultation paper which proposed for the guidelines to be focused on the economic assessment process.

The AER is the appropriate body for developing, publishing and revising the guidelines. The AER is considered to have a sufficient technical understanding of the processes and measures used in the framework and is independent and without financial interest in any aspect of the framework. The AER would be required to



develop the guidelines in consultation with DNSPs and relevant jurisdictional bodies. The guidelines will be prepared to be consistent with a set of principles and obligations set out in the NER.

The guidelines would cover the following aspects of the customer consultation process:

- the stages of the customer consultation process;
- requirements for the types of customers to be surveyed in order that consultation is undertaken with a representative set of customers from each network;
- minimum relevant information to be requested from customers to determine customer expectations regarding network reliability; and
- the method by which results of the customer consultation should be compiled and presented for discussion with the standard setter and economic adviser.

The guidelines would cover the following aspects of the scenario selection process and economic assessment process:

- relevant considerations that should be taken into account by the standard setter in the selection of reliability scenarios, including any guidance provided by the jurisdictional minister;
- the stages of the economic assessment process;
- information requirements and assumptions to be used as inputs to the process, including how data from DNSPs and estimates of the VCR should be considered;
- the methodology to be applied to determine the costs and benefits of each reliability scenario, including proposed options to address the requirements of worst served customers or areas of high economic importance and how costs that are not captured in estimates of VCR can be objectively assessed; and
- the range of sensitivities to be applied and the methodologies to be adopted in evaluating the sensitivities.

#### **5.4.2 Reasoning for the recommended approach**

The jurisdictional minister will have responsibility for determining the appropriate body to undertake the economic assessment process. While the jurisdictional minister may elect the AER as economic adviser, they may also delegate the responsibility to another independent body. As such, the Commission considers that there is the possibility that a number of different economic advisers could be responsible for applying the economic assessment process across the NEM. Guidelines will therefore be important in establishing and maintaining consistency when consulting with customers and in the application of the economic assessment process between jurisdictions. This will facilitate the meaningful comparison of reliability targets developed for different networks.

As the AER would be responsible for developing the guidelines, it would also be responsible for further updating and refining the guidelines based on the repeated application of the customer consultation process and economic assessment process in the development of reliability targets.

A number of stakeholders supported the role of the AER as responsible for developing and updating the guidelines.<sup>53</sup> The MEU noted that the AER has expertise in independent economic analysis and its involvement in the development of the guidelines will support both national consistency and ongoing links to the revenue determination and performance monitoring responsibilities of the AER.<sup>54</sup>

## **5.5 Development of the value of customer reliability**

The VCR will form a key component of the recommended framework as it will be used to assess the potential customer impact of reliability scenarios during the target setting process. This will assist in determining the costs and benefits of each scenario.

This section sets out which body should be responsible for updating the VCR under the framework and the process that should be used in updating it.

### **5.5.1 Recommended approach**

The AER would be responsible for updating VCRs. VCRs would need to be developed to reflect the range of customers and geographic locations of customers in each distribution network. As a result, separate VCRs would be developed for each customer type for each NEM jurisdiction.<sup>55</sup>

These VCRs would be updated at least every five years to align with the target setting process and revenue determination process for each DNSP, where possible. In between five yearly updates, the VCR would be escalated by an appropriate methodology each year by the AER. The AER would be required to publish a report setting out any changes to VCR values and the methodology it has used in changing the VCR, following any updates or annual escalations in VCRs.

VCRs will be used in the economic assessment process to quantify the value of expected unserved energy for each feeder type. Determining the extent of unserved energy will involve estimating the probability of supply interruptions for each feeder type and the extent of load supplied. This is because, as discussed in chapter 4, reliability targets will be set at the feeder level. This level of expected unserved energy would then be multiplied by the applicable VCRs to determine the value of expected unserved energy for each feeder type.

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<sup>53</sup> See submissions on the consultation paper from: MEU, p. 25; Energex, p. 6; Networks NSW, p. 9; Ergon Energy, p. 8; SA Power Networks, p. 10.

<sup>54</sup> MEU, Submission on the consultation paper, p. 25.

<sup>55</sup> Individual feeders within each feeder type (eg urban feeders) may have different VCR estimates due to differences in the composition of customer types at each feeder.

The AER would be required to initially use AEMO's national VCR methodology as a starting point.<sup>56</sup> AEMO's measures of VCRs should also be used initially until it is considered that the measures need to be re-estimated.

As discussed in chapter 2, AEMO has been requested to develop a national VCR methodology and VCR measures by SCER and this review is expected to be finalised in early 2014. As AEMO has responsibility for undertaking this review, the Commission does not intend to provide any further recommendations at this time on the appropriate methodology which should be used.<sup>57</sup>

The AEMC will continue to work with AEMO as it develops its recommendations so that the methodology which is developed is appropriate for target setting under the frameworks for transmission and distribution reliability.

The AER would have the ability to further develop and refine AEMO's methodology as it develops VCRs into the future. The AER would be required to undertake public consultation in making any changes to the VCR methodology to allow stakeholder views to be taken into account. In developing this methodology, the AER would be required to take into account the range of possible uses of the VCR. As well as setting network reliability targets, we note the VCR could also be used to assess network investments and in setting the market price cap, amongst other purposes.<sup>58</sup>

### **5.5.2 Reasoning for the recommended approach**

The AER's role in updating the VCR would be consistent with its roles as the economic regulator and standard setter on a national level, where this responsibility has been delegated by a jurisdiction. This is because the VCR is a key input into the target setting process, which in turn has significant implications for the revenue allowance which is set for a NSP. The VCR is also used in the application of regulatory investment tests and in the calculation of incentive payments under the STPIS, both of which fall within the responsibilities of the AER.

Developing VCRs for each customer type for each NEM jurisdiction will allow the economic adviser to derive specific VCRs for each DNSP, based on the composition of customer types within each distribution network.

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<sup>56</sup> Further information on AEMO's Value of customer reliability review can be found at [www.aemo.gov.au](http://www.aemo.gov.au).

<sup>57</sup> The Commission notes that a number of submissions to the distribution and transmission workstreams of this review have provided comments on the appropriate methodology which should be used to determine the VCR. The Commission has noted these submissions and encourages all interested stakeholders to raise their concerns relating to the VCR methodology with AEMO as it undertakes its review.

<sup>58</sup> In June 2012, SCER published its policy response to the AEMC's Review of the Effectiveness of NEM Security and Reliability Arrangements in light of Extreme Weather. As part of this response, SCER agreed to seek further advice from the AEMC on linking the VCR to the reliability standard for generation and reliability settings, including the market price cap.

Submissions on the consultation paper broadly supported the AER being responsible for the VCR.<sup>59</sup> However, the MEU and the EUAA considered that AEMO should undertake this role instead because it has expertise in this area and it would complement its role as the National Transmission Planner.<sup>60</sup>

As the AER will be required to use AEMO's VCR methodology as a starting point in developing VCRs, the Commission considers that the AER will be able to build on the existing expertise that AEMO has in this area. The AER would also be required to undertake public consultation in making any changes to the VCR methodology, which would allow the AER to draw on the views and expertise in the broader market.

Given the applications of the VCR in the economic regulation framework, the Commission also considers that the AER is the appropriate body to undertake responsibility for the VCR. This is consistent with the AER's existing responsibilities.

With this responsibility the AER can improve the VCR methodology using the experience gained through repeated application. This will allow customer preferences to be more accurately revealed over time. In its submission to the consultation paper, the AER supported a cycle of continuous improvement in the VCR methodology.<sup>61</sup> The Commission also notes that while the AER would be ultimately responsible for the VCR methodology and updating VCRs, it would be able to use experts, such as the Australian Bureau of Statistics, in undertaking this task.

To reduce the regulatory burden of VCR updates, the Commission has also recommended that the AER should initially use the VCR estimates that will be developed by AEMO in early 2014 until it is considered that the measures need to be re-estimated. While AEMO is currently developing VCR for transmission connection points, we understand that such VCR measures can be adapted to apply at distribution feeder levels as well.

Where possible, the future timing of VCR updates would be aligned to the target setting process and revenue determination process. The Commission notes that as the timing of the regulatory control periods for TNSPs and DNSPs within each jurisdiction are not aligned, there is the potential that the VCR may not be updated prior to the target setting process for all NSPs. The Commission considers that the AER would need to determine the appropriate timing for each VCR update after having regard to the timing of the target setting process for NSPs.

The ENA considered that the AER should first determine if a "reset" of the VCR is required before updating the VCR every five years, as changes in the VCR should be gradual given the long planning horizons of networks.<sup>62</sup> Grid Australia also agreed that there should be reasonable stability in the VCR over time so that investment plans

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<sup>59</sup> See submissions on the consultation paper from: EnergyAustralia, p. 3; Networks NSW, p. 9; SA Power Networks, p. 10; Grid Australia, p. 26; Alinta Energy, p. 3; Energex, p. 6.

<sup>60</sup> See submissions on the consultation paper from: MEU, p. 26; EUAA, p. 4.

<sup>61</sup> AER, Submission on the consultation paper, p. 2.

<sup>62</sup> ENA, Submission on the consultation paper, p. 21.

are not distorted by factors such as survey error or timing differences between revenue reviews.<sup>63</sup> However, Grid Australia considered that it is preferable to have the best available VCR in determining reliability levels and revenue requirements.<sup>64</sup>

The ENA and ActewAGL also noted that some NSPs have undertaken their own research into local VCRs and willingness to pay for network planning purposes.<sup>65</sup> The ENA considered that local VCRs which have been developed by NSPs should be given primacy over VCR estimates which are derived by AEMO.<sup>66</sup>

The Commission notes that while existing VCR estimates have been variable, over time as the VCR is undertaken on a more regular and consistent basis and the VCR methodology develops, stakeholders will gain greater confidence that the values which are developed reflect the preferences of customers.

While we agree that stability in the VCR is important for long term network planning, we also consider that the VCR should be updated on a regular basis to reflect changes in customer preferences. We also note that where customer preferences change significantly, NSPs should adjust their network plans to that reliability levels reflect customer preferences. As a result, the Commission continues to consider that updating VCRs every five years provides an appropriate balance between stability and maintaining the relevance of VCRs. We also note that the costs of undertaking VCRs should reduce over time as it is undertaken on a more regular basis.

The Commission considers it is preferable to have VCRs which are developed by a single independent body (ie the AER) using a consistent methodology, rather than a number of different VCRs for each NSP which have been developed by different bodies using different methodologies. This is because a range of differing estimates of the VCR for the same jurisdiction could create uncertainty and confusion as to which measure should be used, which could lead to inefficient reliability targets being set and inefficient investment decisions. Therefore, while the Commission supports work being undertaken by NSPs to engage with their customers and understand the value placed on reliability, it considers that VCRs should only be estimated by the AER.

In terms of escalating VCRs between five yearly updates, we consider that the AER should have the flexibility to determine the appropriate escalation methodology.

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63 Grid Australia, Submission on the consultation paper, p. 27.

64 Ibid.

65 See submissions on the consultation paper from: ENA, p. 21; ActewAGL, pp. 1-2.

66 ENA, Submission on the consultation paper, p. 21.

## **6 Customer consultation and selection of reliability scenarios**

This chapter explores the design of the initial stage of the target setting process under the framework. The initial stage relates to consultation with customers on reliability matters and selection of reliability scenarios for the purposes of establishing distribution reliability targets.

### **6.1 Customer consultation**

This section outlines the initial step of customer consultation by DNSPs for the target setting process.

#### **6.1.1 Recommended approach**

The target setting process would commence with a customer consultation process. This process would be undertaken by each DNSP to determine which aspects of reliability are particularly important for customers in their distribution networks. Prior to this consultation, the DNSP will discuss the content and form of the consultation with the economic adviser and standard setter, to establish that the consultation is adequate and appropriate.<sup>67</sup>

Some customers may be concerned about interruptions to supply that last longer than a specified period of time, while others may be more concerned about shorter more frequent interruptions. Where a network could be facing the need for investment due to an emerging constraint, consultation with relevant customers is likely to be valuable in determining the appropriate levels of reliability for that area. DNSPs could use the process of customer consultation to inform matters such as:

- The types of standards or targets that should apply. Unplanned SAIDI and SAIFI targets at a minimum would be set by the standard setter. However, based on customer preferences, the standard setter would be able to select from a range of additional reliability measures or parameters as set out in the common definitions of distribution reliability measures. For example, this could include MAIFI targets if customers considered that momentary interruptions were a particular concern.
- Social objectives or areas of economic importance that require specific levels of supply reliability. This may include areas of the network that serve large numbers of customers or that have historically experienced poor levels of supply reliability.

The consultation would provide the standard setter with the necessary information to establish a range of potential reliability scenarios that should be considered. DNSPs

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<sup>67</sup> As discussed in chapter 5, where the target setting responsibility has been delegated to the AER or a jurisdictional body, this body would also undertake the role of the economic adviser.

would have the flexibility to adapt customer consultation to the specific circumstances of their networks, having regard to discussions with the economic adviser and standard setter.

Where the jurisdictional minister has retained the responsibility for target setting, the process of customer consultation could be used to determine whether there are specific social or community objectives that may not be captured by the use of the VCR, and which therefore could benefit from further consideration and judgement during the target setting process.

The AEMC's recent determination on the 'Economic Regulation of Network Service Providers' rule change introduced an obligation on NSPs to consult with customers prior to submitting their regulatory proposal.<sup>68</sup> Under the recommended framework, this requirement would be combined with the process of customer consultation for setting reliability targets. Further detail on aligning these two consultation processes is provided in chapter 9.

### **6.1.2 Reasoning for the recommended approach**

A process of customer consultation supports the principle of basing the reliability targets that are assessed on customer preferences. Consultation will allow customer preferences to be taken into account when determining the types of targets which are set, the level of the targets, and whether other reliability obligations are needed. For instance, for a DNSP this may include the extent to which customers value interruptions with a shorter duration or less frequent interruptions.

Customer consultation would also be important in establishing specific social objectives or areas of economic importance to customers and the community. The consultation would provide the standard setter with information that could be used to establish the range of potential reliability levels that the community would be comfortable receiving and in determining areas of the network that may justify receiving specific levels of reliability.

In the process of setting distribution reliability targets, customer consultation would be important to determine the relevance of using other reliability measures in addition to unplanned SAIDI and SAIFI.

As discussed in chapter 5, this process of consultation by DNSPs to assist in the development of reliability scenarios would form the first of a number of opportunities for public consultation during the target setting process. Consultation with customers will also be necessary for the development of the VCR. Co-ordination with other bodies undertaking consultation processes during the target setting process may be required to provide consistency in how customers are consulted and to limit the potential for inconsistencies in the responses provided. Each body running a

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<sup>68</sup> See AEMC, Economic Regulation of Network Service Providers, and Price and Revenue Regulation of Gas Services, final determination, 29 November 2012.

consultation process would also need to consult with a representative set of customers in each DNSP's network.

During this review, a number of DNSPs have noted the possibility of including the development of customer communication systems as part of the framework. The Commission maintains the view that the decision on whether customer communications systems be implemented would not form part of the target setting process. However, jurisdictional ministers could decide if separate regulatory obligations should be placed on DNSPs in relation to customer communications. DNSPs would also be able to seek expenditure from the AER to implement communications systems. The Commission notes that customer consultation may provide jurisdictional ministers and DNSPs with information on whether customers value improved communications.

The Commission notes that submissions from SA Power Networks and Energex support a longer timeframe for the implementation of the customer consultation process.<sup>69</sup> SA Power Networks has suggested that an appropriate timeframe is more likely to be in the order of six to eleven months, rather than the proposed three months. As the customer consultation process is the initial stage of the target setting process and the revenue determination process, the Commission considers that DNSPs will be able to commence customer consultation at a time that they consider to be necessary.

## **6.2 Selection of reliability scenarios**

This section outlines how the reliability scenarios would be selected under the target setting process.

### **6.2.1 Recommended approach**

Under the recommended framework, the process of public customer consultation would be followed by a requirement for the DNSP, the economic adviser, and the standard setter to work together to develop the range of feasible reliability scenarios that could be applied over the next regulatory control period. The standard setter would have ultimate discretion over the selection of the reliability scenarios and would be able to select reliability scenarios which provided both higher or lower levels of reliability than was currently provided. The DNSP and economic adviser would provide advice to the standard setter on the physical and financial constraints of achieving different levels of reliability performance.

As discussed in chapter 5, where a jurisdictional minister has delegated the role for target setting to the AER or a jurisdictional body, the standard setter would take into consideration any guidance that was provided by the jurisdictional minister when selecting reliability scenarios. This could include guidance on the treatment of areas of the network associated with high economic importance or areas with a history of poor reliability performance.

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<sup>69</sup> See submissions on the consultation paper from: SA Power Networks, p. 11; Energex, p. 5.



The process of customer consultation and selection of reliability scenarios would need to be completed 35 months prior to the commencement of the regulatory control period.

The standard setter would select a number of reliability scenarios to be evaluated under an economic cost-benefit assessment process in accordance with the methodology set out in the relevant guidelines for the frameworks. An example of some of the reliability scenarios that the AEMC assessed as part of its review of the distribution reliability levels in NSW is set out in Table 6.1.

**Table 6.1 Example of reliability scenarios assessed during the AEMC's review of distribution reliability levels in NSW<sup>70</sup>**

Reliability measure	Existing standard	Scenario 1: Modest reduction in reliability outcomes	Scenario 2: Large reduction in reliability outcomes	Scenario 3: Extreme reduction in reliability outcomes	Scenario 4: Improvement in reliability outcomes <sup>71</sup>
Unplanned SAIDI and SAIFIs for each feeder type for each NSW DNSP.	<p>DNSPs are obligated to meet their unplanned SAIDI and SAIFI targets each year.</p> <p>Current SAIDIs range from interruptions of 45 minutes a year in the Sydney CBD to 700 minutes a year for long rural feeders.</p> <p>Current SAIFIs range from 0.3 interruptions a year in the Sydney CBD to 4.5 interruptions a year for long rural feeders.</p>	<p>DNSP to be 75% confident that current standards will not be exceeded each year (ie standards could be exceeded in one of every four years).</p>	<p>DNSP to be 50% confident that current standards will not be exceeded each year (ie standards could be exceeded in one of every two years).</p>	<p>DNSP to be 50% confident that current standards will not be exceeded each year.</p>	<p>DNSP to be 99% confident that current standards will not be exceeded each year.</p>

<sup>70</sup> The AEMC also assessed changes to the design planning criteria and individual feeder standards set out in the NSW DNSPs' licence requirements relating to reliability. Further details on the scenarios assessed by the AEMC can be found in the AEMC's final report on the NSW workstream of the Review of distribution reliability outcomes and standards. This report is available on the AEMC website at [www.aemc.gov.au](http://www.aemc.gov.au).

<sup>71</sup> As reliability can vary from year to year due to a range of uncontrollable factors (eg number of storms), DNSPs cannot be completely certain that they will comply with the standards in any year, they can only plan to meet them at a specific confidence level.

At least one scenario would involve setting reliability levels at a level where the expected cost of investment was as close as possible to the value of expected unserved energy. The number of other reliability scenarios that are selected would be at the discretion of the standard setter. For example, the standard setter may select two reliability scenarios above existing levels of reliability and two scenarios below. Alternatively, if the customer consultation process had suggested that customers were comfortable with existing levels of reliability, the standard setter may choose to only evaluate the reliability scenario which corresponds to a maintenance of existing levels of reliability.

The standard setter would need to consider the extent to which the scenarios that are selected are compatible between the transmission and distribution networks in the relevant jurisdiction. For example, the standard setter could not select a range of reliability scenarios for a DNSP which, if applied, could not be feasibly achieved under the reliability standards which have been set for the relevant TNSP in that jurisdiction. As discussed previously, for distribution networks, additional measures to address worst served customers or areas of economic importance could also be selected for evaluation.

### **6.2.2 Reasoning for the recommended approach**

The development of feasible reliability scenarios would be undertaken collaboratively between the standard setter, the economic adviser, and the relevant DNSP. While the standard setter would have ultimate discretion over the targets that are set, the DNSPs are the best placed to determine the physical and financial constraints on the achievement of different levels of reliability. The purpose of developing a number of scenarios is to establish a range of feasible reliability outcomes and to provide flexibility to the standard setter to choose a level of reliability that best meets community expectations, given the costs of network investment.

Allowing the standard setter to select scenarios with higher and lower levels of reliability will allow the costs and benefits of a range of scenarios to be tested, which would assist in establishing the efficient range of possible reliability levels. If the standard setter considers that the economic assessment process is unlikely to point to a step-change in reliability, the ability to determine the number of reliability scenarios to be evaluated allows the economic assessment process to be scaled up or down to suit the requirements of the jurisdiction.

While the Commission agrees that the framework provides flexibility for jurisdictional ministers to determine the appropriate level of reliability targets, the process of customer consultation will assist jurisdictional ministers to develop reliability scenarios which reflect the levels of reliability expected by the community.

## 7 Economic assessment of reliability scenarios

As discussed in chapter 6, the target setting process would commence with a customer consultation process by DNSPs. This consultation process would assist the standard setter to determine which reliability scenarios would be economically assessed. This chapter sets out how the economic assessment process of these reliability scenarios would be undertaken by the economic adviser.

### 7.1 Recommended approach

The role of the economic adviser would be to undertake a transparent economic assessment of the costs and benefits of each reliability scenario which has been selected by the standard setter. This economic assessment would take six months and would be used by the standard setter in determining the reliability targets that will apply to each DNSP over the next regulatory control period.

The economic assessment process would also include an evaluation of any additional reliability measures which have been selected by the standard setter. As discussed in chapter 4, this could include additional measures to address areas of the network which are more characteristic of transmission or sub-transmission networks, areas of high economic importance, or poor performing parts of the network.

As discussed in chapter 5, where jurisdictional ministers retain responsibility for target setting, they would have the discretion to determine which body should act as the economic adviser prior to the commencement of the target setting process. Where a jurisdictional minister has delegated the target setting responsibility to the AER or a jurisdictional body, the economic adviser functions would be performed by the same body.

The detail of the economic assessment process, including the key assumptions to be used, would be set out in guidelines. In chapter 5, we recommended that the AER would be responsible for developing guidelines for the target setting process in accordance with requirements set out in the NER. Each economic adviser would be required to undertake economic assessments under the recommended framework in a manner consistent with these guidelines.

The economic assessment process would always be required to include a scenario which involved setting reliability levels at a level where the expected cost of investment was as close as possible to the value of expected unserved energy, based on the relevant VCR for the feeder type.<sup>72</sup> This represents an additional requirement from the proposals included in the Commission's consultation paper.

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<sup>72</sup> As discussed in chapter 5, separate VCRs for each customer type or geographic location in each NEM jurisdiction would be developed by the AER. This would allow the economic adviser to derive the VCRs that should be used for each feeder type, based on the composition of customer types at each feeder.

This scenario would effectively represent the efficient level of reliability which could be provided by the DNSP. The costs and benefits of each reliability scenario selected by the standard setter would be assessed against this scenario to assist stakeholders to understand the differences between the efficient level of reliability and any other scenarios which have been selected by the standard setter. As a result, this scenario would act as a baseline scenario.

Other scenarios considered by the standard setter could include the maintenance of existing reliability targets or reliability targets which provide for higher or lower levels of reliability than the existing levels. In some cases, the efficient level of reliability scenario could be the same as the maintenance of existing reliability targets, where existing reliability levels are already set at an efficient level.

The economic assessment would involve:

- evaluating the expected unserved energy under the efficient level of reliability scenario (ie baseline scenario). As discussed further in Box 7.2, this will involve applying a probabilistic approach through assessing the probability of supply interruptions under each scenario;
- evaluating the expected network costs under the baseline scenario;
- evaluating the expected change in expected unserved energy for each additional reliability scenario and any other reliability measures compared to the baseline scenario and multiplying this by the relevant VCR for the DNSP;
- evaluating the expected change in network costs for each additional reliability scenario and any other reliability measures compared to the baseline scenario; and
- comparing the expected change in network costs against the value of the expected change in unserved energy for each additional reliability scenario and any reliability measures.

**Box 7.1                      Inputs to the economic assessment process**

The economic assessment process would involve evaluating expected levels of unserved energy using the probability of equipment failures and forecast loads for the range of reliability scenarios, multiplying this by the relevant VCR, and comparing against the expected changes in network costs.

Table 7.1 sets out the inputs to the economic assessment process and the relevant sources for obtaining information.

**Table 7.1                      Inputs to the economic assessment process**

<b>Input</b>	<b>Source</b>
VCR	Estimates provided initially through AEMO's review and then AER's responsibility to update the estimates
Levels of unserved energy	Economic advisor to determine based upon estimates of forecast loads and the probability of equipment failures provided by the DNSP consistent with the economic assessment guidelines
Costs of network investment	Economic advisor to determine based upon estimates provided by the DNSP consistent with the economic assessment guidelines

The economic adviser would prepare and publish a draft report for public consultation which would set out the expected change in costs and value of expected unserved energy for each reliability scenario and any additional reliability measures. The report would also include a description of the process and key assumptions used in the economic assessment process and the results of the sensitivities undertaken. After considering any submissions received during the public consultation process, the economic adviser would prepare and publish a final report, which would be submitted to the standard setter.

The required contents of the economic adviser's reports would be specified in the NER to provide standard setters with sufficient information on customer preferences and, importantly, the trade-offs between cost and reliability for each distribution network.

During the economic assessment process, the relevant DNSP would be required to provide information to the economic adviser on the expected change in capital and operating expenditure and expected unserved energy for each reliability scenario and any additional reliability measures. The economic adviser would assess whether the information provided by the DNSP represented a reasonable forecast of the expected changes in costs and reliability performance. This would include the ability for the economic adviser to interrogate, and if necessary, amend the DNSP's forecasts, if the economic adviser does not consider that they represent a reasonable forecast of the expected changes under each scenario.

If the DNSP did not provide sufficient information to the economic adviser for it to perform its assessment, the economic adviser would also have the ability to develop its own forecast of the expected changes under each scenario.

The economic adviser's assessment would not be a substitute for the requirement on DNSPs to prepare detailed expenditure forecasts as part of their regulatory proposals to the AER, or a substitute for the AER's assessment of the efficiency of these forecasts during the revenue determination process.

The economic adviser would also undertake a range of sensitivities to test the key assumptions and inputs for each scenario. The range of sensitivities to be undertaken by the economic adviser would be set out in guidelines. However, it is anticipated that at a minimum sensitivities would be undertaken around the expected costs of each scenario, demand forecasts, and the VCR. The sensitivities would be assigned probabilities by the economic adviser to assist stakeholders to understand the relative likelihood of each sensitivity occurring.

### **Box 7.2 Probabilistic approach to determining reliability targets**

A probabilistic approach to setting reliability targets involves evaluating the probability and impact of an interruption occurring to determine the expected costs or benefits to customers from a change in reliability levels. This allows the network costs of providing a specific level of reliability to be compared against the expected value placed on reliability by customers, based on the probability of the interruption occurring. This process allows the trade-off between the costs and benefits of different reliability levels to be examined.

The probabilistic approach is quite different to the use of a deterministic planning approach. Deterministic planning involves evaluating the outcomes of a predetermined set of contingencies, without reference to the probability of the contingencies occurring. This means that probabilistic methods have the advantage of quantifying the probability of interruptions for different network conditions, rather than just the 'worst' case that may be captured by deterministic methods. Probabilistic methods can also be used to capture multiple asset failures, which are not usually captured by deterministic analysis.

Our recommended framework incorporates the advantages of probabilistic planning through the economic assessment process conducted by the economic adviser. Specifically, the calculation of expected unserved energy for this assessment would involve assessing the probability and impact of interruptions occurring under each reliability scenario being considered. The level of expected unserved energy would then be multiplied by the relevant VCR for the DNSP to quantify the customer impact of each scenario. The value of expected unserved energy would then be compared against the expected cost of meeting that level of reliability. This would provide transparency around the expected costs and benefits of each reliability scenario being considered to allow the standard setter to make an informed decision when setting reliability targets.

## 7.2 Reasoning for the recommended approach

### 7.2.1 Benefits of the economic assessment process

The use of an economic assessment process will promote distribution reliability targets being set at an economically efficient level consistent with customer preferences. This will lead to more efficient network investment and ultimately more efficient pricing outcomes and reliability levels for consumers. An independent economic assessment process, which is undertaken by a body which is separate from the DNSP, will assist in revealing the efficient trade-off between cost and reliability.

We consider that our recommended process is necessary to fulfil the requirements in SCER's terms of reference and is consistent with the principles for the review as set out in chapter 3. As the economic adviser's reports will be published, this process will increase transparency around the costs and benefits of achieving different levels of reliability in the target setting process. This information would assist stakeholders to understand the implications of each reliability scenario and any additional reliability measures being considered, such as measures for worst served customers.

The information from the economic assessment process should aid the standard setter to make an informed decision on which targets should apply and whether any additional measures should be adopted. An explicit consideration of the VCR, along with a number of public consultations during the target setting process, should improve the likelihood that customer preferences will be reflected in the targets which are set.

A requirement to assess a scenario where reliability levels are set at a level where the expected cost of investment is as close as possible to the value of expected unserved energy will provide the standard setter and other stakeholders with information on the efficient level of reliability. Comparing the outcomes of other scenarios to this scenario will assist in revealing the extent to which other scenarios deviate from the efficient reliability level.

Submissions from IPART, Alinta Energy, the AER, and Origin Energy supported the Commission's proposed economic assessment process, as they considered it would result in more efficient targets and encourage NSPs to deliver services that are most valued by customers.<sup>73</sup>

However, submissions from NSPs, the MEU, and the Victorian Government raised concerns regarding the cost, complexity, and efficiency outcomes that would arise under the Commission's proposed economic assessment process. NSPs and the Victorian Government suggested that a lighter handed approach, which is based on historical performance under the STPIS, should instead be used to set distribution

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<sup>73</sup> See submissions on the consultation paper from: IPART, p. 1; Alinta Energy, p. 4; AER, p. 1; Origin Energy, p. 1.



reliability targets.<sup>74</sup> Further details on how the STPIS would be used to set distribution reliability targets under the lighter handed approach proposed by the NSPs is set out in Box 7.3 below.

The Commission considers that only using the STPIS to determine reliability targets is likely to be insufficient to drive efficient levels of network reliability. A separate independent assessment of the trade-offs between different levels of reliability is required to achieve this. This is because:

- an independent process provides an opportunity to examine existing reliability levels and set targets at a more efficient level, which is likely to result in a faster transition to more efficient network investment and pricing outcomes for customers;
- a separate process for setting targets will improve the capacity for customers to be consulted, which will allow targets to reflect customer preferences; and
- using the STPIS alone to set targets is reliant on the VCR accurately reflecting customer preferences and customer preferences remaining constant over the longer term. As discussed in chapter 3, we consider that current estimates of the VCR are unlikely to have these qualities.

The Commission also notes that setting distribution standards in a separate economic assessment prior to the investment planning process is more consistent with international best practice.<sup>75</sup> The alternative approach of determining reliability targets as an outcome of the individual project assessments does not seem to be employed in international approaches. A more detailed assessment of the STPIS approach to setting distribution reliability targets and the concerns raised by NSPs in their submissions is set out in section 7.2.4.

### **7.2.2 Level of assessment required will vary by the circumstances of each DNSP**

The economic assessment process is likely to impose additional time, cost and resource requirements on DNSPs, economic advisers, and stakeholders compared to the current processes for setting reliability targets in most jurisdictions. However, it is likely that over time less reliability scenarios will need to be tested under the economic assessment process, as reliability targets are set in a manner which more closely reflects the preferences of customers. The level of assessment required will depend on:

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<sup>74</sup> See submissions on the consultation paper from: Energy Networks Association, pp. 11-14; Ergon Energy, p. 7; SA Power Networks, p. 13; SP AusNet, pp. 3-4; Networks NSW, pp. 1-2; Grid Australia, p. 19; ActewAGL, p. 1; Major Energy Users, p. 30; Victorian Department of State Development, Business and Innovation, pp. 1-3.

<sup>75</sup> The Brattle Group, *Approaches to setting electric distribution reliability standards and outcomes*, January 2012. The Brattle Group's report was commissioned by the AEMC as part of the NSW workstream of the AEMC's Review of distribution reliability outcomes and standards.

- whether the preferences of customers have changed significantly since targets were last set and customer views on whether existing levels of reliability are adequate;
- whether the costs of undertaking investments has changed substantially; and
- whether the jurisdictional minister considers that additional factors, which are not captured by the VCR, should be taken into account.

As a result, unless there are significant changes in the three factors discussed above from one regulatory control period to the next, the need for step changes in reliability targets may reduce once the target setting process has been run once or twice for each DNSP. This could result in the target setting process involving more of a review of the level of the existing reliability targets, rather than a full assessment of a range of alternative reliability scenarios for each feeder type.

Therefore, as the number of scenarios and level of assessment required will depend on the circumstances of each network, the costs of applying the recommended framework will be proportionate. This should minimise the costs for DNSPs of participating in the economic assessment process over the longer term. Further, as DNSPs will be required to undertake economic assessments to determine how to respond to incentives under the STPIS and during Regulatory Investment Test for Distribution (RIT-D) assessments, the incremental costs of providing information for the target setting process may not be as costly as anticipated.

We also note that an independent economic assessment process will also assist the AER in assessing the efficient level of expenditure which is required to meet the reliability targets which have been set in making its revenue determinations. This should reduce the costs associated with the revenue determination process and further improve the potential for efficient investment.

### **7.2.3 Application of the economic assessment process**

The Commission notes that setting targets ahead of the decision to invest will require a number of assumptions to be made during the target setting process. However, as discussed above, the Commission considers that the benefits of transparency and accountability that come from setting targets on an ex ante basis are likely to outweigh the potential costs of doing so.

Submissions from Energex, Ergon Energy, and SA Power Networks noted that it may be difficult for DNSPs to accurately estimate changes in performance under the economic assessment process, as reliability outcomes are subject to significant external influences.<sup>76</sup> The Commission agrees that the economic adviser would need to consider the impact of any reliability scenarios over a suitable time period to understand the longer term trends that may occur.

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<sup>76</sup> See submissions on the consultation paper from Energex, p. 7; Ergon Energy, p. 10; SA Power Networks, p. 13.

As discussed in Box 7.3, the ENA has raised concerns that high impact, low probability events and measures for worst served customers may not be able to be fully accounted for through an economic assessment process.<sup>77</sup> The Commission considers that to the extent possible, the costs and benefits of high impact, low probability events and measures for worst served customers should be considered through the economic assessment process. However, as discussed in chapter 5, where jurisdictional ministers remain concerned that these issues may not be fully accounted for, they would be able to exercise discretion in how reliability targets are set or provide guidance to the AER or jurisdictional bodies where target setting has been delegated.

In their submissions to the consultation paper, Energex and Ergon Energy raised concern about the inputs that would be used during the economic assessment process.<sup>78</sup> Guidelines for the target setting process would set out how key assumptions should be considered to provide consistency in how the process is undertaken across the NEM. The AER would be required to undertake a public consultation process in the development of these guidelines to allow stakeholder views to be taken into account.

The use of sensitivities during the target setting process should assist in addressing any uncertainties that may exist around key assumptions. It should also aid the economic adviser and the standard setter in understanding whether the overall costs and benefits of a scenario are likely to change if key assumptions changed within a reasonable range. Submissions from Ergon Energy and Origin Energy noted that sensitivities around the VCR should be undertaken to address risks around the accuracy of this measure.<sup>79</sup> The Commission notes that further detail regarding the use of sensitivities and how they should be considered during the economic assessment process would be set out in guidelines for the target setting process.

#### **7.2.4 Assessment of the STPIS approach to setting distribution reliability targets**

A range of concerns were raised by NSPs and the Victorian Government in submissions regarding the Commission's proposed economic assessment process for distribution reliability targets. These concerns included:

- increased costs and resource requirements associated with the need to undertake the target setting process every five years;
- potential step changes in reliability targets through regular re-setting, which would be incompatible with the reliability improvement regime under the STPIS and could affect the potential for dynamic efficiency that would arise through steady targets;

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<sup>77</sup> ENA, Submission on the consultation paper, p. 4.

<sup>78</sup> See submissions to the consultation paper from: Energex, p. 2; Ergon Energy, p. 10.

<sup>79</sup> See submissions on the consultation paper from: Ergon Energy, p. 10; Origin Energy, p. 2.

- the use of tried and tested solutions during the economic assessment process as the industry would propose solutions that it has experience and confidence with, which would result in inefficient reliability targets;
- overlap with the RIT-D, which already places a discipline on network businesses to undertake efficient investments and is applied much closer to the time of the investment; and
- limited benefits from the Commission's proposed framework as for the foreseeable future there is little or no substantial investment planned by DNSPs for improving reliability as reliability has been significantly improved in recent years.<sup>80</sup>

In response to these concerns, NSPs suggested that a lighter handed framework should be adopted which is based on setting reliability targets using the average of the historical level of performance which was achieved in the previous regulatory control period. A summary of how this would work in practice is set out in Box 7.3 below.

**Box 7.3 STPIS approach to setting distribution reliability targets**

Under an alternative framework proposed by NSPs, reliability targets would be set as part of the AER's revenue determination process and the STPIS would be used to adjust reliability performance to more efficient levels. The VCR would be used to set rewards and penalties under the STPIS to incentivise DNSPs to perform at more efficient levels by providing a level of reliability which is consistent with the value placed on reliability by customers.

On this basis, where reliability levels are higher than the efficient level, it is assumed that a DNSP would over time provide a lower level of reliability as it would be cheaper for it to pay the penalty for not meeting its reliability targets than undertake the investment needed to maintain historical levels of reliability. The penalties paid by the DNSP would represent the costs to customers of lower reliability levels.

Conversely, where reliability levels are lower than the efficient level, it is assumed that a DNSP would provide a higher level of reliability over time as the rewards it would gain under the STPIS would be greater than the costs of providing a higher level of reliability. The reward payments to the DNSP would represent the customer benefits of an improved level of reliability.

Therefore, there would be no explicit process to set reliability targets as reliability targets would be effectively based on the way that a DNSP responds to incentives under the STPIS over time. Changes in historical performance over time would result in changes in targets, as the average level of performance

<sup>80</sup> See submissions on the consultation paper from: ENA, pp. 11-14; Ergon Energy, p. 7; SA Power Networks, p. 13; SP AusNet, pp. 3-4; Networks NSW, pp. 1-2, 8-9; Grid Australia, p. 19; ActewAGL, p. 1; Victorian Department of State Development, Business and Innovation, pp. 1-3.

adjusts.

The framework proposed by NSPs is similar to that proposed by the Productivity Commission in its recent Inquiry on Electricity Network Regulation.<sup>81</sup>

### **Common elements between the Commission's framework and the NSPs' alternative framework**

The Commission's recommended framework shares a number of common aspects with the alternative framework proposed by NSPs. This includes:

- the use of an outputs based approach for expressing distribution reliability targets;
- national consistency in the expression of distribution reliability targets;
- the use of the STPIS to incentivise reliability performance and the setting of rewards and penalties using the VCR; and
- the use of an economic assessment process to compare the costs of investment against the value of customer reliability in determining reliability targets.

The main difference between the Commission's recommended framework and the alternative framework proposed by the NSPs relates to the process which is used to set distribution reliability targets. While both frameworks rely on an economic assessment process, under the Commission's framework this process would be undertaken by a body which is independent from the DNSP prior to the commencement of the revenue determination process. Under the alternative framework proposed, the economic assessment process would be effectively undertaken by DNSPs during the regulatory control period as they make decisions on what level of reliability should be provided in response to the incentives under the STPIS.

The Commission notes that some stakeholders have referred to "probabilistic planning approaches" when referring to economic assessments which are undertaken on a project by project basis.<sup>82</sup> As discussed in Box 7.2, the Commission notes that the term "probabilistic planning" refers to assigning probabilities of failure to different network assets to determine the expected level of unserved energy that may arise.

The Commission's framework would require the economic adviser to consider the level of expected unserved energy that would arise under each reliability scenario, which would require "probabilistic planning". However, in contrast to the current approach used in Victoria, this "probabilistic planning" process would be used to set reliability targets prior to the decision to invest rather than on a project by project basis.

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<sup>81</sup> Productivity Commission, Final report, Inquiry into electricity network regulation, April 2013.

<sup>82</sup> For example, see the submission on the consultation paper from the Victorian Department of State Development, Business and Innovation.

## The Commission's concerns regarding the NSPs' alternative framework

As discussed above, the Commission considers that its recommended framework is likely to promote more efficient investment outcomes than the alternative framework proposed by the NSPs. In addition, the Commission has the following concerns with the alternative framework:

- **Independence in the economic assessment process:** The alternative framework is based on DNSPs undertaking economic assessments either internally or through the public RIT-D process.<sup>83</sup>

In contrast, under the Commission's recommended framework, a separate economic assessment process will be undertaken to set reliability targets by a body which is independent from the DNSP. A separate process to set reliability targets across a DNSP's network is likely to provide greater opportunities for customer engagement and consultation, than a number of economic assessments which are undertaken by DNSPs as part of their RIT-Ds for specific projects.

An independent and experienced standard setter is also likely to place more scrutiny over a DNSP's expected costs and benefits of meeting reliability levels than may occur through a RIT-D process or an internal assessment by a DNSP.

SP AusNet and the ENA raised concerns that the Commission's framework would be based around tried and tested reliability solutions, which may lead to less efficient reliability levels.<sup>84</sup> However, the Commission considers that an independent review of a DNSP's forecast costs, in addition to public consultation on these forecasts, is likely to identify areas where a more efficient solution is feasible.<sup>85</sup> We also note DNSPs would be able to propose more innovative and efficient reliability solutions to the economic adviser under the Commission's recommended framework.

A process to allow for the consideration of the reliability levels that should apply across a DNSP's network, compared to a project by project assessment, is also likely to allow for a broader more holistic assessment of the expected costs and benefits of providing a reliable supply of electricity. These factors may lead to a more efficient level of reliability being set by the standard setter.

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<sup>83</sup> The RIT-D must be applied by DNSPs under the NER where the most expensive and credible option to address an identified need is expected to cost \$5m or more.

<sup>84</sup> See submissions on the consultation paper from: SP AusNet, p. 2; ENA, p. 13.

<sup>85</sup> The Commission also notes that under the incentive based revenue regulation that exists for DNSPs, there are incentives for DNSPs to find more efficient means to meet their reliability targets as they are able to retain a share of any savings they are able to achieve relative to their revenue allowance. This provides the AER with information that it can use in making the DNSP's next revenue determination on the efficient costs of achieving reliability levels. We note that this information could also be used by standard setters in setting reliability targets for the next regulatory control period, which would lead to more efficient targets over the longer term.

- **Timeframes to reach efficient levels of reliability:** Under the alternative framework, it could take a number of regulatory control periods to reach an efficient level of reliability, where existing reliability levels are at a level which is significantly higher or lower than existing levels. This is because where reliability levels are significantly higher than efficient levels, DNSPs would be required to not meet their targets and take a penalty under the STPIS every year for a number of regulatory control periods before their five year average level of reliability would reduce. As a result, customers would be effectively required to pay higher network charges for a longer period.

In their submissions to the consultation paper, SP AusNet, SA Power Networks, and the ENA noted that a transparent economic assessment process similar to that proposed by the AEMC may be needed to transition to a more efficient level of reliability where a step change in reliability levels is required, rather than solely relying on incentives under the STPIS.<sup>86</sup> This issue was also acknowledged by the Productivity Commission, who noted that the AEMC's approach could "motivate an instantaneous shift to efficient reliability levels" while the reliance on STPIS incentives alone would take a number of regulatory periods to reveal efficient reliability levels.<sup>87</sup>

The Commission considers that its recommended approach could provide for a faster transition to more efficient levels of reliability as it allows for a step change in reliability to occur through an independent assessment of reliability levels, compared to the slower transition that would occur under the STPIS. However, the Commission acknowledges that any significant change in reliability levels would take some time to occur because of the lag between changes in investment and changes in performance.

- **Reliance on the accuracy and stability of the VCR:** The alternative framework is based on the assumption that the VCR provides an accurate assessment of the value placed on reliability by customers. This is because the VCR is used to set incentives payments under the STPIS. As discussed in chapter 3, the Commission has concerns regarding the accuracy of existing VCRs which are shared by a number of stakeholders. There are also a range of factors which are difficult to quantify through the VCR, such as high impact, low probability events and the need to provide minimum levels of reliability in rural areas or areas with poor reliability performance. These issues were noted by the ENA, who suggested that additional measures would be required, outside of the STPIS, to address these issues.<sup>88</sup>

In order to provide a steady transition to efficient reliability levels under the STPIS there needs to be a relatively consistent level of incentives over a number

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<sup>86</sup> See submissions on the consultation paper from: SP AusNet, pp. 6-7; SA Power Networks, p. 3; ENA, p. 13.

<sup>87</sup> Productivity Commission, Final report, Inquiry into electricity network regulation, April 2013, p. 578.

<sup>88</sup> ENA, Submission on the consultation paper, p. 4.

of regulatory control periods. This would require the level of the VCR to remain relatively stable over a number of regulatory control periods. However, the Commission notes that since the VCR has been undertaken there has been relatively significant increases in the VCR over time. We also note that as technology changes and further develops, customers' reliance on a reliable supply of electricity is likely to increase significantly, which suggests that VCR values are unlikely to remain stable over time.

Under the AEMC's recommended framework jurisdictional ministers would be able to take into account additional factors, which are difficult to quantify in the VCR, in setting reliability targets. Issues relating to changes in the VCR would be addressed through an assessment of reliability targets every five years.

- **Transparency, certainty and accountability regarding future reliability levels:** Under the alternative framework as reliability levels will be effectively determined by DNSPs on a project by project basis in response to the incentives under the STPIS, there would be a lack of transparency and certainty for customers and other stakeholders regarding the reliability levels they will receive. It may also be more difficult to hold DNSPs accountable for meeting their reliability targets particularly where existing levels of reliability are significantly higher or lower than efficient levels, as in these circumstances there would only be a limited expectation that a DNSP would meet their targets.

In contrast, where reliability targets are set prior to the commencement of the regulatory control period, as proposed under the AEMC's framework, stakeholders will have greater transparency and certainty regarding expected reliability levels. It would also be possible to hold DNSPs accountable for meeting their reliability targets, as the standard setter would be required to not only consider the efficient level of reliability, but also the physical and financial feasibility of meeting reliability levels as part of the target setting process.



## 8 Setting reliability targets

This chapter sets out how reliability targets will be set under the recommended framework and our reasoning for this approach.

### 8.1 Recommended approach

Jurisdictional ministers would be responsible for setting distribution reliability targets under the recommended framework, but would be able to:

- delegate this role to the AER or a jurisdictional body; and
- delegate standard setting for one type of network (eg transmission), but retain responsibility for standard setting for the other network type.

All standard setters whether they are a jurisdictional minister, the AER, or a jurisdictional body, would be informed on the costs and benefits of each reliability scenario being considered. The economic assessment of the reliability scenarios will be the same irrespective of which body performs the role of standard setter.

As discussed in chapter 6, standard setters would need to consider the extent to which reliability levels for transmission and distribution are compatible when setting reliability targets. Standard setters would have three months after receiving the economic adviser's final report to make their decision on the targets which should apply.

The standard setter would also be required to take into account current levels of reliability and the extent to which NSPs could realistically achieve the reliability targets. The standard setter may justify the selection of a reliability scenario with a lower net benefit, but which is closer to current levels of reliability, if it considers that the step-change associated with the scenario of highest net benefit is too substantial to be achieved over the next regulatory control period. Alternatively, the standard setter could choose to develop a path to transition to its selected reliability scenario over the regulatory control period.

The decision making criteria for a jurisdictional minister would be slightly different to that of the AER or a jurisdictional body.

#### 8.1.1 Decision making criteria for the AER or a jurisdictional body

Where the AER or a jurisdictional body is responsible for setting reliability targets, they would be required to make their decision on the reliability targets which should apply on the basis of measurable factors only. As a result, they would be required to select the reliability scenario with the highest net economic benefits, as identified through the economic assessment process.

Jurisdictional ministers, in delegating the target setting role to the AER or a jurisdictional body, would have the ability to provide guidance on the treatment of areas of the network associated with high economic importance or areas with a history of poor reliability performance. For instance, this could include a requirement to not lower reliability in certain areas or for certain types of customers.

### **8.1.2 Decision making criteria for a jurisdictional minister**

Where a jurisdictional minister retains responsibility for setting reliability targets, they would be able to take into consideration other factors which may not be fully accounted for in the economic assessment process. This could include factors such as the risk aversion of customers or the potential for high impact low probability events, which are difficult to quantify in the VCR.

The jurisdictional minister would have discretion to set the output reliability targets at any level that they considered to be appropriate to meet the needs and expectations of network users within their jurisdiction. The level of output reliability targets would not be required to correspond to any of the individual reliability scenarios that were evaluated under the economic assessment process. This represents a change from the approach in the consultation paper which proposed that jurisdictional ministers would be required to set output reliability targets that correspond to a specific reliability scenario.

If a jurisdictional minister sets output reliability targets at a level that does not correspond to the reliability scenario with the highest net economic benefits, they would be required to publicly disclose the reasons for this selection, such as the accommodation of community preferences or the pursuit of reliability levels deemed necessary to meet the needs of specific areas of the network.

Reliability targets would be set and published by the standard setter for each DNSP. The timing for setting and publishing targets in each jurisdiction would be consistent with the AER's regulatory control period to allow reliability standards and targets to be set nine months prior to the submission of regulatory proposals for the AER. This is an additional three months from the six months proposed in our consultation paper.

After setting reliability targets, standard setters would be required to submit the targets they have set to the AER. The AER would be required to maintain the details of the current reliability targets for all DNSPs in the NEM on their website.

## **8.2 Reasoning for the recommended approach**

The framework would provide transparency on the costs and benefits of the reliability targets which are selected, as all standards setters would be required to consider the outcomes of the economic assessment process. An ability to set lower reliability targets, as well as either maintaining or increasing reliability levels, would allow the standard setter flexibility in determining the most appropriate reliability level for each network.

A requirement for jurisdictional ministers to specify their reasoning for any departures from the scenario with the highest net economic benefits would also provide for the exercise of judgement to be transparent and accountable.

The Commission considers that the exercise of judgement and the consideration of additional factors, such as social equity concerns, are best performed by elected officials rather than regulatory bodies. This is because jurisdictional ministers are held responsible by the community for the provision of adequate levels of service, and therefore bear accountability for meeting the needs and expectations of the community.

SCER's terms of reference required the Commission to develop a framework and methodology which makes explicit the opportunity for jurisdictions to transfer responsibility for applying the framework to the AER.

The Commission considers that its proposed approach provides common arrangements for jurisdictional ministers or the AER or any other jurisdictional body. However, the Commission's approach also recognises the inherent differences in these bodies. As a result, the recommended approach provides a balance between providing for targets to be set in a transparent and accountable manner, while also providing flexibility for matters which cannot be fully accounted for in the economic assessment process can be considered.

## **9 Implications for the revenue determination process**

This chapter sets out how distribution reliability targets set under the recommended framework will interact with the AER's revenue determination process and the STPIS. The chapter also outlines the reasons why the Commission has decided to keep the level of reliability targets unchanged over the regulatory control period, in contrast to the position proposed in the consultation paper.

### **9.1 Links between the target setting process and the revenue determination process**

#### **9.1.1 Recommended approach**

Under the recommended framework there are two main linkages between the target setting process and the AER's revenue determination process, which relate to:

- aligning the DNSP's customer consultation process during the target setting process with its consultation process to develop its regulatory proposal; and
- the use of reliability targets and any other reliability measures determined under the target setting process in setting a DNSP's revenue allowance.

#### **Alignment of consultation processes**

As discussed in chapter 6, DNSPs would be required to consult with customers at the beginning of the target setting process to determine which aspects of reliability are particularly important to their customers. This information would be used by the standard setter in determining which reliability scenarios should be economically evaluated. This consultation process would occur 21 months prior to the submission of a DNSP's regulatory proposal for the next regulatory control period. As a result, this consultation process could be undertaken as part of a DNSP's customer consultation on the development of its regulatory proposal for the revenue determination process.<sup>89</sup>

We note that this recommendation is consistent with the AER's 'Draft Consumer Engagement Guideline for Network Service Providers', which suggested that a NSP's customer consultation process could include consultation on making price and reliability trade-offs and setting reliability standards and targets.<sup>90</sup>

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<sup>89</sup> Under recent changes to the NER as part of the 'Economic Regulation of Network Service Providers' rule change proposal, NSPs are required to indicate in their regulatory proposals the extent to which they have engaged with consumer representatives in the development of their regulatory proposal.

<sup>90</sup> AER, 'Draft Consumer Engagement Guideline for Network Service Providers', July 2013, pp. 11-12.

## Use of reliability targets in setting revenue allowances

Under the NEL and NER, the AER is required to set the maximum allowed revenue that DNSPs can recover from their customers over each regulatory control period, which generally spans five years. This revenue must be set at a level by the AER which enables DNSPs to comply with all applicable regulatory obligations or requirements.<sup>91</sup>

The intention is for the distribution reliability targets to be treated in the same way as regulatory obligations and requirements under the NER for the purposes of the revenue determination process.<sup>92</sup> As a result, DNSPs would be required to include the forecast capital and operating expenditure associated with complying with their reliability targets in their regulatory proposals for the next regulatory control period. The AER would then be required to provide DNSPs with a level of revenue which reflects an efficient, prudent, and realistic expectation of the costs of complying with their reliability targets and other reliability measures in making its determinations.<sup>93</sup>

As discussed in chapter 5, the timeframes for setting distribution reliability targets would be aligned to the timeframes for each DNSP's regulatory control period. Reliability targets and any other measures would be determined every five years by the relevant standard setter nine months prior to the due date for the submission of a DNSP's regulatory proposal to the AER. This would allow DNSPs adequate time to incorporate the impact of their reliability targets and measures on their forecast capital and operating expenditure.

DNSPs would have already undertaken high level modelling of the costs of meeting the reliability targets and measures selected by the standard setter during the target setting process. A more detailed forecast of the costs of meeting their reliability targets and reliability measures would be included in a DNSP's regulatory proposal. Any differences between a DNSP's forecast costs submitted to the standard setter and the costs submitted to the AER in its regulatory proposal would need to be fully explained by the DNSP in its regulatory proposal. Where the AER is not the economic adviser, it will be able to obtain access to the forecast costs submitted during the target setting process and the final forecasts used by the economic adviser to assist it in developing its revenue determinations.

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<sup>91</sup> See clauses 6.5.6(a)(2) and 6.5.7(a)(2) of the NER. Until recently, the AER was also required to provide DNSPs with sufficient capital and operating expenditure to allow DNSPs to maintain the reliability of their standard control services and distribution system. In September 2013, the AEMC amended the NER, in response to a rule change proposal from SCER, to limit the expenditure that DNSPs can seek in their regulatory proposals to meeting their reliability targets or standards, rather than maintaining reliability levels.

<sup>92</sup> "Regulatory obligation or requirement" when used defined in the NER has the meaning given to it in the NEL. Under section 2D(a)(ii) of the NEL, "regulatory obligation or requirement" includes a distribution reliability standard. However, as discussed in chapter 10, DNSPs would not be required to comply with their reliability targets in every year. The AEMC notes that the implementation process for the recommended framework may need to include consideration of whether any changes to the NER are required to allow distribution reliability targets to be treated in the same way as a "regulatory obligation or requirement" for the purposes of forecasting expenditure for a DNSP's regulatory proposal.

<sup>93</sup> See clauses 6.5.6(c) and 6.5.7(c) of the NER.

## 9.1.2 Reasoning for the recommended approach

### Alignment of consultation processes

Aligning a DNSP's customer consultation process during the target setting process with its consultation process during the development of its regulatory proposal will improve the quality and transparency of the consultation process. Customers will gain a clearer understanding of the broader factors affecting a DNSP's network and how they may impact on the level of reliability they receive. Aligning these consultation processes would also reduce the administrative burden on DNSPs and customers and improve the efficiency of the consultation process.

Submissions on the consultation paper broadly supported the alignment of consultation processes.<sup>94</sup> However, submissions from the MEU and Ergon Energy noted that consulting so far in advance of the commencement of the regulatory control period could reduce the relevance of the consultation process.<sup>95</sup>

The Commission notes that customers will also have an opportunity to comment as part of the consultation process on the economic adviser's economic assessment. The Commission also considers that the consultation process to develop a DNSP's regulatory proposal should form part of the ongoing consultation process used by DNSPs to understand community concerns regarding their reliability levels and other aspects of network performance.

### Use of reliability targets in setting revenue allowances

The use of reliability targets in the AER's revenue determination process should allow DNSPs to recover sufficient revenue from their customers to meet their targets and measures. This will, in turn, allow DNSPs to be held accountable for their performance against their targets and measures.

The Commission has decided to extend the timeframe between the setting of reliability targets and the submission of a DNSP's regulatory proposal from six months to nine months to allow DNSPs additional time to take into account the impact of the targets and measures which have been set on their broader capital and operating expenditure program.

Submissions on the consultation paper from the ENA and Grid Australia suggested that NSPs should have 12 months rather than six months to prepare their regulatory proposal, while SA Power Networks considered that at least nine months would be required.<sup>96</sup> The MEU noted that the timeframe for setting targets and incorporating

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<sup>94</sup> See submissions on the consultation paper from: Energex, p. 6; MEU, p. 32; Networks NSW, p. 10; SA Power Networks, p. 14; Alinta Energy, p. 4; Ergon Energy, p. 10.

<sup>95</sup> See submissions on the consultation paper from: MEU, p. 32; Ergon Energy, p. 10.

<sup>96</sup> See submissions on the consultation paper from: ENA, p. 20 ; Grid Australia, p. 25; SA Power Networks, p. 9.

them into regulatory proposals was challenging, but considered that the timeframes should not be extended as it would increase the risk of targets becoming out of date before coming into effect.<sup>97</sup>

The Commission considers that providing DNSPs with nine months rather than six months provides an appropriate balance between allowing DNSPs sufficient time to develop their regulatory proposals after targets have been set and minimising the length of time between when targets are set and when they will apply. The Commission also notes that DNSPs will have already considered the impact of the targets which have been set as part of the target setting process, albeit at a higher level. This should assist in reducing the time required to prepare their regulatory proposals.

As part of their regulatory proposals, DNSPs will be required to explain any differences between the costs forecasts submitted during the target setting process and those submitted during the revenue determination process. This should assist the AER in determining the efficient, prudent, and realistic level of expenditure needed to meet the targets.

A requirement for DNSPs to explain any differences between their cost forecasts will also assist in encouraging the forecasts submitted by DNSPs during the target setting process to have a degree of rigour. This will provide greater transparency around the likely costs and benefits of each reliability scenario and improve the ability of the standard setter to make an informed decision in setting targets.

In its submission to the consultation paper, the AER proposed that NSPs should be required to submit the same cost forecasts during the revenue determination process as those submitted during the target setting process.<sup>98</sup> The AER noted that this would further strengthen incentives on NSPs to submit robust cost information to both the standard setter and the AER and that there should only be extremely limited circumstances in which a NSP's cost forecasts should change significantly because of the short time lag between the processes.<sup>99</sup>

Submissions from network users and some DNSPs considered that NSPs should be required to explain differences in the costs forecasts provided.<sup>100</sup> DNSPs and TNSPs suggested that there would be differences in costs forecasts due to differences in: the timing; level of sophistication; and the timeframes to undertake modelling.<sup>101</sup>

The Commission agrees that there could be some differences in the costs forecasts submitted during the target setting process and the revenue determination process. This is because the costs forecasts prepared during the target setting process will be modelled at a relatively high level because of the relatively short timeframe to

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<sup>97</sup> MEU, Submission on the consultation paper, pp. 23-24.

<sup>98</sup> AER, Submission on the consultation paper, p. 3.

<sup>99</sup> Ibid.

<sup>100</sup> See submissions from: MEU, p. 33; EUAA, 7; SA Power Networks, p. 14.

<sup>101</sup> See submissions on the consultation paper from: Energex, p. 8; Networks NSW, p. 13; Ergon Energy, p. 10.; Grid Australia, p. 29

undertake this modelling. In contrast, the costs forecasts submitted during the revenue determination process will be far more detailed as DNSPs will have had longer to prepare them and may also have updated information. We also note that the economic adviser may have amended a DNSP's forecasts where it does not consider that they are reasonable.

The Commission considers that in most cases the differences in cost forecasts provided by DNSPs during the target setting process and the revenue determination process should not be significant. The Commission suggests that a requirement on DNSPs to explain any differences and for the AER to be provided with access to the forecasts used during the target setting process will provide sufficient incentives on DNSPs.

## **9.2 Use of reliability targets in setting STPIS targets**

### **9.2.1 Recommended approach**

The AER would be required to base a DNSP's STPIS targets for the regulatory control period on the reliability targets that had been set by the standard setter. As discussed in chapter 7, this differs from the way the STPIS currently operates as STPIS targets are based on the average performance level which had been achieved by the DNSP over the previous regulatory control period.

The Commission notes that under the recommended framework there may be step changes in targets from one regulatory control period to the next when the framework is first applied in some jurisdictions, as reliability requirements may have been set at levels which did not reflect the value placed on reliability by customers.

Where there is a step change in reliability targets the AER may need to consider how STPIS targets should transition to the reliability targets which have been set. This may be needed as there will be a lag between any step changes in targets and changes in performance. This lag could result in DNSPs receiving either windfall gains under the STPIS, where targets are stepped down, or windfall losses, where targets are stepped up compared to the previous regulatory control period.

Step changes in targets could be addressed by mechanisms such as the use of a glide path to allow for incremental changes in the STPIS targets over the regulatory control period. The use of a dead band to limit the windfall gains or losses that may occur could also be used. Where a dead band is set no rewards or penalties are provided for a set band around the DNSP's STPIS target. Under the current NER, we consider that the AER has sufficient flexibility and discretion in setting STPIS targets to allow these types of mechanisms to be applied.

The Commission also notes that the standard setter would be required to consider the physical constraints of achieving different levels of reliability, as well as existing performance levels, in setting reliability targets. This should limit the potential of reliability targets being set which cannot be practically achieved by the DNSP over the regulatory control period. As discussed in chapter 8, the standard setter would also be



able to set a transition path in setting reliability targets, where it considers that a step change in reliability targets is required.

The per cent of revenue tied to the STPIS would remain at the discretion of the AER. Consistent with the setting of distribution reliability targets, the level of incentive rewards or penalties under the STPIS would be based on the same VCR used to set the targets for each DNSP.

The Commission notes that the distribution reliability targets could include factors not captured by the VCR. This could occur where the jurisdictional minister considers that additional factors need to be taken into account.

The consideration of additional factors may result in reliability targets which are set at a higher level than if only the VCR was used when taking customer preferences into account. The consideration of these factors may effectively mean that a higher VCR is assumed than the VCR which has been calculated.

In these circumstances the AER may need to adjust the level of incentive rewards and penalties under the STPIS to take into account the higher assumed VCR, to enable the incentives on DNSPs to meet their targets to be maintained under the STPIS. The Commission considers that the AER already has sufficient discretion to take these matters into account.

### **9.2.2 Reasoning for the recommended approach**

The Commission considers that a transparent and effective incentive structure is likely to reduce the long-term costs of promoting improvements in reliability, thereby reducing costs to consumers. Linking STPIS targets to those set in the target setting process and STPIS incentive payments to the VCR should enable the STPIS to create the necessary incentives to deliver an efficient level of reliability as valued by customers.

As noted by Networks NSW, once the AER has set a DNSP's STPIS targets and revenue allowance, DNSPs would be responsible for managing their reliability performance against their targets.<sup>102</sup> In addition to incentives under the STPIS, DNSPs will also face efficiency incentives to manage their expenditure during the regulatory control period.

We note that DNSPs currently have both STPIS targets and jurisdictional reliability targets, which may be set at different levels. This could create uncertainty in relation to which level of reliability DNSPs should be providing. Consistency in these targets should provide greater clarity for DNSPs in how they undertake planning for their networks. It should also limit any unnecessary costs associated with collecting and reporting two sets of data.

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<sup>102</sup> Networks NSW, Submission on the consultation paper, pp. 8-9.

Submissions from the AER and SP AusNet raised concern about the potential impact on the STPIS targets, where there are step changes in reliability targets.<sup>103</sup> SA Power Networks agreed that incentive payments may need to be adjusted where the jurisdictional minister has taken additional factors into account in setting targets.<sup>104</sup> However, as noted above, we consider that the AER already has sufficient powers under the NER to address these matters through how it applies the STPIS.

The AER would also continue to have the same level of discretion that it currently has under the current NER to further develop and improve the STPIS over time. We note that this could include the application of the STPIS to additional reliability measures, such as worst served customer measures, where considered appropriate. The maintenance of this flexibility was supported by the AER in its submission to the consultation paper.<sup>105</sup>

### **9.3 Updating reliability targets within the regulatory control period**

#### **9.3.1 Recommended approach**

The Commission has decided that the level of reliability targets should be kept unchanged over a regulatory control period. As a result, once distribution reliability targets have been set by the standard setter they would remain in place for the whole regulatory control period until they are reviewed for the next regulatory control period.

The Commission notes that this position differs from the proposed approach outlined in its consultation paper. The Commission's reasoning for this change in position is outlined below.

#### **9.3.2 Reasoning for the recommended approach**

##### **Summary of the Commission's reasoning**

An update mechanism had been proposed in the Commission's consultation paper to allow the standard setter to update reliability targets within a regulatory control period where there had been a material change in the costs and benefits of meeting the targets which had been set. This was proposed to:

- (a) allow the standard setter an opportunity to update reliability targets where it would no longer be efficient for the DNSP to meet them; and
- (b) if targets were updated, allow amendments to be made to the DNSP's allowed expenditure to reflect changes in the targets for the remainder of the regulatory control period.

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<sup>103</sup> See submissions on the consultation paper from: AER, p. 5; SP AusNet, p. 7.

<sup>104</sup> SA Power Networks, Submission to the consultation paper, p. 15.

<sup>105</sup> AER, Submission on the consultation paper, p. 5.

However, on further reflection, the Commission considers that a mechanism to update distribution reliability targets within a regulatory control period would not be efficient. There are four key reasons for this change in position:

- as DNSPs will not have an obligation to comply with their distribution reliability targets in every year, they have flexibility and incentives to adapt their reliability levels to changes in circumstances;
- making amendments to DNSPs' allowed expenditure during the regulatory control period would undermine ex-ante efficiency incentives;
- mid-period changes to targets and expenditure would be an administratively complex and time consuming process; and
- mid-period changes in expenditure would increase volatility in network charges over the regulatory control period which could be difficult for retailers and customers to manage.

For these reasons, the Commission considers that the costs of introducing an update mechanism are not proportionate to the benefits.

### **Implications of changes in the costs and benefits of meeting distribution reliability targets**

The Commission considers that DNSPs would be able to manage their own reliability performance in response to changes in the costs and benefits of meeting their reliability targets over the regulatory control period. Under our recommended framework, DNSPs face financial penalties instead of a regulatory compliance obligation to meet their reliability targets. Therefore DNSPs have flexibility to decide how best to manage reliability performance within their regulated expenditure allowance.

In practice, where there is a material change in the assumptions used during the target setting process which means that reliability targets have been set at a level which is higher than the efficient level, DNSPs would be able to:

- re-prioritise their expenditure to enable them to continue to meet their reliability targets; or
- not meet their reliability targets and pay any penalty that would arise under the STPIS. Any non-compliance with targets would also need to be explained by the DNSP as part of their performance reporting requirements, which are discussed further in chapter 10.

Conversely, where there is a material change in assumptions which means that reliability targets have been set at a level which is lower than the efficient level, DNSPs would be able to:

- meet their reliability targets at lower cost and retain any savings in expenditure;  
or

- provide a higher level of reliability than their target level using their allowed revenue and receive any reward payments under the STPIS.

The majority of submissions considered that an update mechanism was not required for distribution reliability targets. Networks NSW considered that it was unlikely there would be any circumstances where there would be a need to update reliability targets as reliability impacts generally require longer than five years to manifest.<sup>106</sup> As a result, Networks NSW considered that the relatively high materiality threshold for an update proposed by the Commission may never be reached.<sup>107</sup> Ergon Energy also agreed that an update would only occur in highly unusual circumstances, but considered that if such circumstances did occur it could be worth updating the targets.<sup>108</sup>

SA Power Networks also considered that the update mechanism would not be required.<sup>109</sup> However, SA Power Networks suggested that if a jurisdictional minister proposed a step change in reliability performance or establishes a new reliability measure and target, this should be treated as a service standard pass through event and there should be no materiality threshold on the pass through amount.<sup>110</sup>

Alinta Energy and the MEU provided support for the proposed update mechanism, but noted that updates should only occur where material changes in the assumptions used during the target setting process have arisen.<sup>111</sup>

We note that any changes in costs or benefits borne by DNSPs over the regulatory control period would only be borne for the remainder of the period. This is because under the framework, reliability targets would be reviewed prior to the next regulatory control period to test whether they were still set at an appropriate level. This would provide an opportunity for the standard setter to change a DNSP's reliability targets for the next regulatory control period, where there had been a significant and sustained change in the costs and benefits of meeting their targets.

### **Implications of an update mechanism for a DNSP's revenue allowance**

The Commission has also decided to not include an update mechanism. Determining the revenue implications within a regulatory control period of any change in reliability targets would be an administratively complex and lengthy task. This is because as investments often have multiple drivers, a change in reliability targets would be likely to affect a significant portion of a DNSP's investment program. Further, as DNSPs

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<sup>106</sup> Networks NSW, Submission to the consultation paper, p. 13.

<sup>107</sup> Ibid.

<sup>108</sup> Ergon Energy, Submission to the consultation paper, p. 11.

<sup>109</sup> SA Power Networks, Submission to the consultation paper, p. 14.

<sup>110</sup> Ibid. The Commission notes that pass through events for DNSPs in the NER, which includes service standard events, currently have a materiality threshold of 1 per cent of the relevant DNSP's annual revenue requirement, following recent changes to the NER as part of broader changes to the network regulation regime. See the definitions of "positive change event", "negative change event" and "materially" in chapter 11 of the NER.

<sup>111</sup> See submissions on the consultation paper from: Alinta Energy, p. 4; MEU, pp. 34-35.

undertake a large number of small investments, undertaking an efficiency assessment of the impact of a change in targets could be time consuming.

The Commission also notes that prior to the AER considering any changes in revenue, the standard setter would need to firstly consider whether an update should occur. Determining this would require an economic assessment of the updated costs and benefits of meeting a DNSP's reliability targets, which in itself would impose administrative costs on the standard setter, DNSP, economic adviser, and other stakeholders.

As a result, the potential efficiency benefits that may arise from a mid-period update to distribution reliability targets could be offset by the administrative burden of both updating reliability targets and assessing the revenue implications of the change in targets.

We also note that mid-period changes in revenue have the potential to affect the incentives for efficient investment that arise under ex-ante revenue allowances and other incentive measures that have been put in place for NSPs following recent changes to the NER.<sup>112</sup> This is because it may reduce the incentives on DNSPs to manage changes in costs during the regulatory control period, if they consider that they are able to seek a mid-period revenue adjustment to address these changes. This issue was raised by the AER in its submission who also noted that a mid-period revenue adjustment could effectively shift the risk of cost overruns onto consumers, who are less able than NSPs to manage this risk.<sup>113</sup>

Mid-period changes in revenue could also result in greater volatility in network charges over the regulatory control period, which could be difficult to manage for retailers and consumers.

### **Update mechanism for transmission reliability standards**

While the Commission has taken this position for the recommended framework for distribution reliability, it notes that there may be merit in an update mechanism for the framework for transmission reliability. This is because under the proposed framework for transmission reliability, TNSPs would have an obligation to comply with their transmission reliability standards in every year. Therefore, if TNSPs are unable to comply with their transmission reliability standards because of a material change in the assumptions that were used during the target setting process, there is a risk that they will be subject to compliance penalties under the NER.

We also note that there may be a greater need for an update mechanism for TNSPs as they undertake a small number of large projects and will also be subject to input standards for each connection point. As a result, TNSPs may have less scope to effectively manage changes in the costs and benefits of meeting their standards.

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<sup>112</sup> For instance, this includes incentives for efficient investment under the capital expenditure incentive scheme and the ex-post review of capital expenditure that can be undertaken by the AER at the end of a regulatory control period.

<sup>113</sup> AER, Submission to the consultation paper, p. 4.

Further details on the Commission's recommended framework for transmission reliability, including the design of any update mechanism, will be set out in the Commission's final report for the framework for transmission reliability. This final report will be published by 1 November 2013.

## **10 Compliance obligations and performance reporting**

This chapter outlines the compliance obligations and reporting requirements associated with meeting distribution reliability targets under the recommended framework.

### **10.1 Compliance and audit obligations**

This section sets out the compliance and audit obligations for DNSPs under the framework.

#### **10.1.1 Recommended approach**

DNSPs would not be required to achieve their reliability targets every year. DNSPs would be free to deviate from their reliability targets in any given year but would be subject to incentive payments under the STPIS arrangements and would need to report on reasons for the departure from their targets.

Due to the incentives available under the STPIS, the DNSP would pay the financial penalties if they underperform relative to the annual target. Alternatively, the DNSP would receive a financial reward if they achieve a level of reliability higher than the annual target.

DNSPs would be required to report on plans they have in place to meet their reliability targets as part of their Distribution Annual Planning Reports (DAPR). This would include plans on how they expect to meet any additional reliability measures such as requirements for areas of high economic importance or worst served customers.

In addition, DNSPs would be required to undertake audits, conducted by an independent auditor on a five-yearly basis, to demonstrate that they have undertaken adequate planning and have systems and procedures in place to meet their reliability targets. The details of how these audits would need to be undertaken would be specified in the NER. This represents a change to the approach in the consultation paper which proposed that independent audits would be undertaken on an annual basis.

DNSPs would submit the outcomes of the five-yearly audit as part of their regulatory proposals for the AER's revenue determination process. The AER would have discretion to require an annual audit of the reported levels of reliability to assess whether performance is measured accurately in accordance with the consistent definitions of reliability measures under the framework.

The DNSPs will have a number of obligations relating to the provision of information, reporting and customer consultation. As these obligations will be contained in the NER, the DNSP would be subject to the normal NER compliance arrangements. The AER will have responsibility to check compliance against these obligations.

### 10.1.2 Reasoning for the recommended approach

Our recommended approach to compliance promotes the principles of transparency and good governance, both of which are closely related. Transparency and good governance would be achieved by providing clear regulatory consequences for DNSPs for not meeting their reliability targets, and by requiring DNSPs to undertake independent audits to clearly demonstrate they have adequate systems and plans in place to meet their targets.

As distribution reliability performance can be relatively readily observed and measured, financial incentives through the STPIS will promote compliance against reliability targets.

Audits will be used to assess whether a DNSP's plans to meet the reliability targets over the next regulatory control period are consistent with good industry practice. The Commission notes submissions from Networks NSW, SA Power Networks, Energex, and Ergon Energy which have raised concerns that the requirement for an annual audit of DNSPs' internal processes is unnecessary in light of other compliance obligations and is likely to be a complex and resource-intensive process.<sup>114</sup> In response, the Commission proposes changing the frequency of the audit from annually to once every five years in line with the timing of the regulatory control period. The Commission maintains the view that audits are an important part of promoting accountability and transparency.

The AER would be tasked with monitoring compliance, even where jurisdictions retain responsibility for target setting. This means that the compliance function could be separated from the standard setter function under the recommended framework. We consider that the transfer of the compliance function to the AER would assist in facilitating a NEM wide approach to network reliability and would be consistent with the AER's role as the economic regulator.

We recognise that the STPIS may not fully capture all factors that are considered by the jurisdictional minister in the setting of reliability targets. For example, where input planning standards have been retained for some areas of the DNSPs network, or where the AER has not been able to adjust the value of the VCR to account for requirements for worst served customers.

The Commission does not consider it appropriate to apply specific compliance requirements on DNSPs to meet these additional reliability measures. The Commission considers that the combination of reporting and the five-year audit requirements will be sufficient and proportionate.

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<sup>114</sup> See submissions on the consultation paper from: Networks NSW, p. 14; SA Power Networks, p. 15; Energex, p. 9; Ergon Energy, p. 11.



## 10.2 Performance reporting requirements

This section sets out the performance reporting requirements for DNSPs under the recommended framework.

### 10.2.1 Recommended approach

DNSPs would publicly report on their performance in relation to output reliability targets and any other reliability measures set by the standard setter in their annual DAPR. This would include an explanation of any deviations in their performance against their reliability targets. Reliability performance would be reported with and without exclusions in order that DNSPs can discuss factors beyond their control and reasons for departure from their targets. DNSPs would report on their performance against the targets in a manner that is consistent with the common set of definitions of reliability measures under the recommended framework.

As discussed in section 10.1, DNSPs would also report on the plans they have in place to meet their reliability targets including how they expect to meet any additional requirements for worst served customers.

The AER would summarise the performance outcomes of each of the DNSPs based on the information published in the DAPRs. This summary would form a component of the AER's annual benchmarking report on the relative efficiencies of NSPs, which is a requirement on the AER following changes to the NER under the Economic Regulation of Network Service Providers rule change.<sup>115</sup> The Commission considers that benchmarking reports will need to be carefully prepared by the AER so that the implications of differences in network characteristics are clearly explained.

### 10.2.2 Reasoning for the recommended approach

Public reporting by DNSPs on their performance against their reliability targets will be a key means of increasing accountability and promoting transparency.

Public reporting adopted in a consistent and comprehensive manner would enable sensible comparisons and benchmarks to be made across the NEM. The ENA supports public reporting through the DAPR of DNSPs' performance against their reliability targets to increase accountability, promote transparency, and facilitate benchmarking.<sup>116</sup>

The Commission considers that the use of a common set of definitions of reliability measures when reporting is undertaken will assist in facilitating consistent reporting throughout the NEM. This should improve the ability of targets to be compared within and across jurisdictions. Reporting in this manner would be likely to benefit

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<sup>115</sup> See AEMC, Economic Regulation of Network Service Providers, and Price and Revenue Regulation of Gas Services, final determination, 29 November 2012.

<sup>116</sup> ENA, Submission on the consultation paper, p. 15.

governments, regulatory bodies, market participants, and ultimately consumers. This is consistent with the submission from the AER which supports the clear expression and consistent definition of reliability measures to facilitate comparisons between DNSPs' performance.<sup>117</sup>

The Commission notes submissions from the ENA, SA Power Networks and Ergon Energy that reporting of performance against reliability targets should include all the components that contribute to variations in performance such as differences in network configurations and susceptibility to adverse weather patterns.<sup>118</sup> The Commission considers that detailed reporting as part of the DAPR, which takes into account the specific locational characteristics of a DNSP's network, should provide a platform for the understanding of performance outcomes and for communication with customers.

Schedule 5.8 of the NER sets out the requirements on DNSPs in relation to the preparation of DAPRs. The report must include, amongst other items, forecasts of the DNSP's performance against reliability targets, and information on the performance of the distribution network, including a description of reliability targets and the DNSP's processes to promote compliance with the reliability targets. The Commission notes that a significant variation currently exists in the level of detail provided by DNSPs in their respective DAPRs to meet their requirements under the NER. Further prescriptive detail will be required in the NER to outline the requirements for DNSPs and to guide the requirements of the auditor.

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117 AER, Submission on the consultation paper, p. 2.

118 See submissions on the consultation paper from: ENA, p. 15; SA Power Networks, p. 15; Ergon Energy, p. 6.

## 11 Implementation of the framework

In this chapter, we explain:

- the way forward on how to capture and implement the benefits of our framework both now and over time; and
- highlight the main changes that each NEM jurisdiction would need to make to adopt the framework.

### 11.1 Way forward

The framework will establish an independent, transparent process to inform the standard setter on the economic trade-off between the costs and benefits of providing reliability. The framework will also allow more opportunities for customers to be consulted and provides for consistent reporting on distribution reliability performance. As explained in this report, these would yield significant benefits in the interests of consumers. These benefits are:

- setting reliability targets in an economically efficient manner that are reflective of consumer preferences;
- transparency in the target setting process so that consumers understand what reliability levels they expect to receive; and
- consistent expression of reliability targets to enable benchmarking and facilitate more effective regulation.

To implement the framework, changes would need to be made to the Australian Energy Market Agreement (AEMA), the NEL, the NER, and to jurisdictional instruments. Once implemented, the framework would set out the common arrangements for the regulation of distribution reliability targets and performance across the NEM. Given the time involved to make the various legislative amendments needed, we are recommending that SCER proceed with an initial process where key parts of the framework are developed and applied in the interim prior to the implementation of the full framework.

This interim stage would involve SCER requesting the AER to have ongoing responsibility for reviewing and updating the VCR measures after the completion of AEMO's review of VCRs. Jurisdictional VCRs would enable economic assessment of reliability targets by specifying the benefits of certain reliability levels based upon consumers' preferences. Jurisdictional VCRs would also deliver benefits in economic regulation and network investment planning.

The interim stage would also involve SCER requesting the AER to develop common definitions for expressing distribution reliability targets in partnership with industry and jurisdictions. These common definitions refer to what is included and excluded from frequency and duration measures of reliability. Common definitions including

appropriate measurement methodologies are important in achieving economically derived targets and for understanding and assessing performance.

Jurisdictions could use the common definitions for expressing distribution reliability targets in their current jurisdictional arrangements. If there is any uncertainty in the legal ability for the AER to perform this function, then SCER could request the AEMC to develop the common definitions for expressing distribution reliability targets.

We recommend that the interim stage commence now. Consumers could potentially benefit from a more transparent and efficient process before the framework is fully implemented.

Once the interim stage is complete, jurisdictions may decide to implement further aspects of the framework to their jurisdictional arrangements. For example, jurisdictions could apply the economic assessment process proposed in this report to the target setting process in their jurisdiction. In this way, jurisdictions can reap further benefits of the framework.

If jurisdictions decide to delegate the target setting to the AER, this will require implementation of the full framework. This would involve amendments to:

- the AEMA in order to transfer responsibility for the reliability setting arrangements into the national electricity market arrangements;
- the NEL so that the AER has the legislative functions to perform its possible roles under the framework. These changes will enable jurisdictions to delegate target setting to the AER;
- the NER to introduce rules for applying the framework including obligations on participants and specifying the various steps involved under the framework; and
- jurisdictional instruments so that they are consistent with the framework.

Once implemented, the framework would set out the common arrangements for the regulation of distribution reliability targets and performance across the NEM.

If SCER agrees to adopt the framework, the next stage would be to request the AEMC to develop a detailed implementation plan. This plan would include proposed drafting of the necessary legislative amendments to the NER, AEMA, NEL and any necessary changes to jurisdictional instruments. It would also provide advice on the appropriate sequencing of those changes.

## **11.2 Interim stage - Develop supporting arrangements**

Under the interim stage, SCER would request the AER to:

- be responsible for reviewing and updating VCR measures after the completion of AEMO's review; and

- work with industry to develop common definitions for expressing distribution reliability targets across the NEM.

The merit of having an interim stage is that it would allow some of the benefits of the framework to be captured before the full framework can be implemented. Estimates of the VCR and common definitions would be useful tools to facilitate efficient investment, increase transparency, and improve regulatory outcomes.

We recommend that SCER request the AER to be responsible for reviewing and updating the VCR measures following the completion of AEMO's review of VCR in early 2014. As explained in chapter 5, the Commission considers that the AER is the most appropriate body to be responsible for the VCRs given the interactions with its economic regulation functions.

As the AEMO methodology and VCR measures will be finalised in early 2014, the work for the AER will be to consider how the VCR measures can be updated and incorporated into the existing jurisdictional reliability arrangements. This includes appropriately escalating the VCR each year. The AER would also consider the timing of when VCR measures would need to be re-estimated and whether AEMO's methodology needs to be updated. The use of VCRs would have wider benefits than just setting reliability targets because the VCR is used as an input into other regulatory processes such as for distribution investment through the RIT-D and for the STPIS.

We also recommend that the AER is asked to develop common definitions, including methodologies, for expressing distribution reliability targets.<sup>119</sup> The task would be to produce a document which sets out common definitions relating to what is included and excluded from frequency and duration measures of reliability and, in addition, possible methodologies for measuring reliability targets under the framework. These targets will be output-based and at a minimum will include unplanned SAIDI and unplanned SAIFI. The key aspects of this will be determining the exclusion methodology, classifying the various types of feeders (i.e., urban, rural), and describing possible measures that the standard setter could apply for worst served customers and areas of economic importance.

We consider that these tasks are connected to the AER's functions under section 15 of the NEL and chapter 6 of the NER relating to the development of schemes to provide incentives for NSPs to maintain and improve performance, and reporting on the operational performance of NSPs. However, if there is any uncertainty as to whether the AER could perform this function under the NEL, then SCER could request the AEMC to develop the common definitions, including methodologies, for expressing distribution reliability targets.

The development of common definitions for expressing distribution reliability targets would improve transparency and promote benchmarking. Having common definitions will also facilitate efficient reliability setting through establishing both the range of

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<sup>119</sup> Please refer to Appendix B which sets out these tasks.

appropriate targets and the appropriate measurement methodologies for economically derived output based distribution reliability targets.

Putting in place common definitions would not constrain the decision of jurisdictions on the appropriate reliability targets for DNSPs. We note that developing common definitions for expressing distribution reliability targets will be a technical process and therefore it would be important that the AER works closely with industry, including DNSPs, and jurisdictions when undertaking this task in a manner consistent with the proposals set out in this report.

Once the framework is implemented in full, the tools developed in the interim stage can be readily used within that framework. VCRs and AER's common definitions for expressing distribution reliability targets will be needed for the framework.

In deciding whether to proceed with this interim stage, SCER would need to consider the resource implications for the AER and how the common definitions for expressing distribution reliability targets and the use of VCRs will enhance current arrangements.

Figure 11.1 below summarises the key features of the interim stage.

**Figure 11.1 Interim stage**

Stage of Implementation	Implementation Action	SCER Action	Key Tasks	Responsibility	Considerations
Interim Stage	Develop supporting arrangements for potential implementation of the national framework	SCER would request the AER to develop the common definitions for expressing distribution reliability targets and to request the AER to be responsible for reviewing and updating the VCR measures.	Develop the term of reference for the AER to develop common definitions for expressing distribution reliability targets in accordance with the principles and guidance set out in this final report and request the AER to be responsible for reviewing and updating VCR measures.	SCER	The purpose of this Interim Stage is to establish common definitions for expressing distribution reliability targets and to apply the VCR measures reviewed and updated by the AER (but initially developed by AEMO) to facilitate the setting of reliability targets in a manner consistent with the recommended framework.
			In response to SCER's request, the AER to work in partnership with industry and jurisdictions to develop and publish common definitions for expressing distribution reliability targets.	AER	The AER could chair a working group with industry and jurisdictions to develop common definitions for expressing distribution reliability targets. If there is any uncertainty in the NEL as to whether the AER could perform this function, then SCER could request the AEMC to develop and publish common definitions for expressing distribution reliability targets.
			AER to have ongoing responsibility for reviewing and updating the VCR measures.	AER	While the AER would have ongoing responsibility for reviewing and updating the VCR measures, in the short term, jurisdictions could use the VCR methodology and values calculated by AEMO.

### **11.3 Implementing the framework**

Jurisdictions may decide to implement further aspects of the framework in their jurisdictional arrangements. For example, jurisdictions could decide to apply the target setting process and the economic assessment process proposed in this report to their jurisdictional arrangements. Jurisdictions can decide to apply these aspects of the framework in their own time.

If jurisdictions choose to delegate target setting to the AER, then this will require implementation of the full framework. Implementation of the framework will require time to make the necessary amendments to the AEMA, NEL, NER, and relevant jurisdictional instruments. We have identified four stages needed before the full framework could be applied to a DNSP's revenue determination.

In brief, these four stages of implementation would be as follows:

- Stage 1 would involve the AEMC developing a detailed implementation plan of the necessary legislative changes to implement the framework.
- Stage 2 would involve roles for the Council of Australian Governments (CoAG), SCER, the AEMC and jurisdictions to implement the legislative changes as set out in the detailed implementation plan in stage 1.
- Stage 3 would involve developing components of the framework such as the AER's guidelines for the target setting process and jurisdictions making a decision whether to delegate target setting to the AER or jurisdictional body. Jurisdictions would also provide any guidance to the AER or jurisdictional body at this stage.
- Stage 4 would involve applying the framework, as set out in this report, to the start of a NSP's regulatory control period.

The changes would also need to be correctly sequenced because NER changes could only be assessed after the relevant NEL changes have been made.

#### **11.3.1 Stage 1 - Identify and prepare legislative arrangements for the framework**

In Stage 1, SCER would need to decide whether to establish the recommended framework. A SCER decision to implement the framework would involve a commitment to develop and apply all aspects of the framework set out in this final report. Jurisdictions would then be able to adopt the framework.

If a decision is made by SCER to establish the framework, then SCER would request the AEMC to prepare a detailed implementation plan (stage 1A). The AEMC's detailed implementation plan would set out all the required changes to the AEMA, NEL, NER and changes to jurisdictional instruments, including jurisdictional application acts, in order to implement the framework.



The AEMC's detailed implementation plan could include, among other things, determining what changes need to be made to the:

- AEMA in order for jurisdictions to delegate the target setting process to the AER;
- AEMA and NEL to empower the AER to set reliability targets;
- NER changes to establish the framework;
- NER to empower the AER to develop guidelines for the target setting process; and
- jurisdictional instruments to roll back existing arrangements including compliance obligations so that it is consistent with the recommended framework.

After the AEMC has developed a detailed implementation plan, SCER would then need to consider and make a decision whether to implement the AEMC's detailed implementation plan (stage 1B). SCER's decision to implement the AEMC's detailed implementation plan would involve agreement on changes to the AEMA, NEL, and NER as well as any changes to jurisdictional instruments as a suite of legislative reforms. CoAG would need to make a decision on changes to the AEMA.

### **11.3.2 Stage 2 - Establish legislative arrangements for the framework**

In Stage 2, SCER would need to establish the legislative arrangements for the framework by implementing the AEMC's detailed implementation plan completed in Stage 1.

There would be a set of three legislative changes:

- CoAG would need to change the AEMA and SCER would need to change the NEL as set out in the AEMC's detailed implementation plan (stage 2A).
- The AEMC would assess a request to make changes to the NER received from SCER. In order for the AEMC to assess the rule change request, the NEL changes must first be completed. Also the advice from the AER in the interim stage could inform the development of the NER changes (stage 2B).
- Jurisdictions that adopt the framework would need to change their jurisdictional application acts and any other jurisdictional instruments in accordance with the drafting set out in the AEMC's detailed implementation plan (stage 2C).

To establish these legislative arrangements, there would be a need for coordination across all of the three tasks.

### **11.3.3 Stage 3 - Implement components needed for the framework**

Stage 3 relates to the implementation of components needed for the framework following the establishment of legislative changes in stage 2. These components

include the AER's guidelines for the target setting process and any decision by a jurisdiction to delegate target setting to another body.

The AER would develop the guidelines for the target setting process for use by the economic adviser in assessing reliability scenarios under the framework (stage 3A). This would include the use of the VCRs for each jurisdiction calculated by the AER in the interim stage.

Also, at this stage, jurisdictions could delegate target setting to the AER or jurisdictional body, including any instructions associated with that delegation, where it decides to do so. This may include instructions relating to the treatment of worst served customers (stage 3B).

#### **11.3.4 Stage 4 - Application of the framework**

Stage 4 involves the actual application of the target setting process under the framework. Stage 4 would commence 38 months prior to the start of the relevant regulatory control period.<sup>120</sup> This stage would involve roles for the NSP, economic adviser, standard setter, jurisdictions and the AER as set out in the framework.

Figure 11.2 below summarises the key features of the four stages of implementation.

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<sup>120</sup> As set out in Chapter 5 of this report, the 38 month time frame is comprised of 12 months for the target setting process, 9 months for the preparation by NSPs of the regulatory proposal and 17 months for the revenue determination process.

**Figure 11.2 Four stages of implementation of the full framework**

Stage of Implementation	Implementation Action	SCER Action	Key Tasks	Responsibility	Considerations
Stage 1	Identify and prepare legislative arrangements for the national framework by AEMC developing an implementation plan.	SCER would need to decide whether to establish the national framework for adoption by jurisdictions. If a decision is made, then SCER would need to request the AEMC to prepare a detailed implementation plan.	1A: AEMC to develop a detailed implementation plan. The AEMC's detailed implementation plan would comprehensively set out all the required changes to the AEMA, NEL and NER, including any changes to jurisdictional instruments to implement the recommended framework.	AEMC	Stage 1 should only be progressed following a commitment from SCER to adopt the national framework. Timing of stage 1 is not dependent upon completion of the interim stage.
		SCER to decide whether to implement AEMC's detailed implementation plan.	1B: SCER would need to consider and reach agreement on the AEMC's detailed implementation plan.	SCER	
Stage 2	Establish legislative arrangements for the national framework	SCER to establish legislative changes for the national framework.	2A: COAG would need to make AEMA changes and SCER would need to make NEL changes	COAG/SCER	COAG and SCER would need to adopt the AEMA and NEL changes that are set out in the AEMC's detailed implementation plan prepared and agreed upon in Stage 1.
			2B: AEMC to assess NER changes	AEMC	The Request for Advice from the Interim Stage could inform the development of the NER changes.
			2C: Adopting jurisdictions to change their jurisdictional application acts (and any other jurisdictional instruments) to implement the national framework.	Jurisdiction	Jurisdiction to adopt the jurisdictional changes set out in the AEMC's detailed implementation plan prepared and agreed upon in Stage 1.
Stage 3	Implement components needed for the national framework.	No SCER action required.	3A: AER to consult on and publish economic assessment guidelines.	AER	AER would be empowered to develop the economic assessment guidelines only after the NER changes have taken effect.
			3B: Jurisdictional minister to decide whether to delegate standard setting including any instructions to the delegated body.	Jurisdiction	These instructions may include any consideration of worst served customers.
Stage 4	Application of the national framework.	No SCER action required.	The proposed framework is applied 38 months prior to the start of the relevant regulatory control period.	NSP, economic advisor, standard setter, jurisdiction, AER	The 38 months comprises of 12 months for the standard setting process, 9 months for NSPs to prepare the regulatory proposal and 17 months for the revenue determination process.

## **11.4 Key changes to jurisdictional arrangements to adopt the framework**

This section summarises the key changes that each NEM jurisdiction would be required to make to their respective reliability arrangements in order to adopt the recommended framework. Appendix C provides further detail in tabular format for each NEM jurisdiction explaining current reliability arrangements and the changes to these arrangements necessary to adopt the framework.

### **11.4.1 South Australia**

In South Australia, SA Power Networks is required to comply with the output reliability standards set out in the South Australian Electricity Distribution Code. Output reliability standards are based on unplanned SAIDI and SAIFI measures and are set according to various regional areas within South Australia. SA Power Networks develops its own N-x type input planning criteria to meet the output reliability standards.

Under the recommended framework, output reliability targets would be developed for levels of unplanned SAIDI and SAIFI. Performance against output reliability targets would be reported to the AER by feeder type. Disaggregation of reliability performance by regional areas may be retained for supplementary jurisdictional reporting purposes. SA Power Networks would be free to retain its voluntary use of N-x input planning criteria to meet the output reliability targets.

Currently, compliance with reliability standards is done on a 'best endeavours' basis to meet the South Australian Electricity Code. Under the framework, compliance would be incentivised through the STPIS and there would be independent audits every five years to assess whether NSPs are meeting their plans to achieve their targets.

### **11.4.2 Queensland**

In Queensland, DNSPs are required to comply with output reliability standards set out in the Queensland Electricity Industry Code. The Queensland Competition Authority (QCA) sets output reliability standards in consultation with DNSPs. Output reliability standards are based on unplanned SAIDI and SAIFI measures and are set according to feeder types. DNSPs are also required to determine and comply with input planning standards set out in their respective network management plans.

Currently, the QCA does not economically justify the setting of reliability standards and there are no specific guidelines for DNSPs to examine economically efficient options for meeting the reliability standards that are set. Under the recommended framework, output reliability targets would be set on an economically derived basis in consideration of community expectations.

Compliance with output reliability targets would be incentivised through the STPIS with independent audits conducted every five years to assess whether DNSPs are meeting their plans to achieve their targets.

#### **11.4.3 New South Wales**

In New South Wales, DNSPs have obligations to comply with N-x input planning standards and output reliability standards contained in licence conditions. Output reliability performance standards are based on unplanned SAIDI and SAIFI measures and are disaggregated by feeder type. Input planning standards and output reliability standards are set by the NSW Minister for Energy.

While there is currently some consultation between the government and DNSPs, there is no established process for setting standards. Under the recommended framework, output reliability targets would be set on an economically derived basis in consideration of community expectations.

Compliance with input planning standards and output reliability standards would no longer be a licence condition. DNSPs would be free to voluntarily set input planning criteria to meet output reliability targets. Compliance with output reliability targets would be incentivised through the STPIS with independent audits conducted every five years to assess whether DNSPs are meeting their plans to achieve their targets.

#### **11.4.4 Australian Capital Territory**

In the Australian Capital Territory, there are no mandatory input planning standards but ActewAGL is required to meet output reliability performance standards based on unplanned SAIDI, SAIFI and CAIDI. Under the recommended framework, output based reliability targets would be similar to the output reliability standards already adopted. However, output reliability targets would be expressed in a manner consistent with the common definitions for expressing distribution reliability targets.

Output reliability targets are determined by ActewAGL within the parameters of their Electricity Distribution Code. Under the recommended framework, output reliability targets would be set by the jurisdictional minister or the AER or jurisdictional body on an economically derived basis and in consideration of community expectations.

Currently, compliance with reliability standards is stipulated in ActewAGL's distribution licence. Under the framework, compliance would no longer be a licence condition. Reliability performance would be incentivised through the STPIS and the requirement for five-yearly audits of plans to achieve the reliability targets.

#### **11.4.5 Tasmania**

In Tasmania, there are no mandatory input planning standards but Aurora Energy is required to meet output reliability performance standards. Output reliability standards are based on unplanned SAIDI and SAIFI and are disaggregated by 'community'

categories (eg critical infrastructure, low-density rural). However, under the recommended framework, Tasmania may retain the use of community categories for supplementary jurisdictional reporting purposes but would be required to report reliability performance by feeder type to the AER.

Currently, network planning is largely at the discretion of Aurora Energy in order to meet output reliability standards. The levels of reliability standards are based on historical reliability outcomes. Under the framework, output reliability targets would be economically derived in consideration of community expectations.

Aurora Energy is required to use 'reasonable endeavours' to meet reliability standards contained in the Tasmanian Electricity Code. Under the framework, network investments would be at Aurora Energy's discretion in order to meet the output reliability targets. Compliance would be incentivised through the STPIS and there would be independent audits every 5 years to assess whether the DNSP is meeting their plans to achieve their output reliability targets.

#### **11.4.6 Victoria**

In Victoria, there are no mandatory input planning standards and DNSPs set their own output reliability targets for unplanned SAIDI, SAIFI, MAIFI and CAIDI based on feeder types. Reliability performance is incentivised through the STPIS with targets based on the average reliability performance for the previous five years. DNSPs are required to use 'best endeavours' to meet their reliability targets.

Under the recommended framework, compliance would also be incentivised through the STPIS. However, STPIS targets would be based on the outcomes of the standard setting process rather than on the previous five years of historical performance.

Under the current Victorian framework, output reliability targets are an outworking of the cost-benefit analysis and are not set ex-ante for projects. Reliability targets set by the DNSPs are considered as a guide to performance and to provide transparency. Under the recommended framework, output reliability targets would be set ex-ante, prior to the start of the revenue determination process.

## Abbreviations

AEMA	Australian Energy Market Agreement
AEMC or Commission	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
CAIDI	Customer Average Interruption Duration Index
CoAG	Council of Australian Governments
DAPR	Distribution Annual Planning Report
DNSP	distribution network service provider
DSDBI	Victorian Department of State Development, Business and Innovation
ESCOSA	Essential Services Commission of South Australia
EUAA	Energy Users Association of Australia
ICRC	Independent Competition and Regulatory Commission
IPART	NSW Independent Pricing and Regulatory Tribunal
MAIFI	Momentary Average Interruption Frequency Index
MEU	Major Energy Users
NEL	National Electricity Law
NEM	National Electricity Market
NEO	National Electricity Objective
NER	National Electricity Rules
NSP	network service provider
OTTER	Office of the Tasmanian Economic Regulator
QCA	Queensland Competition Authority

RIT-D	Regulatory Investment Test for Distribution
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SCER	Standing Council on Energy and Resources
STPIS	Service Target Performance Incentive Scheme
TNSP	transmission network service provider
VCR	value of customer reliability
WTP	willingness to pay



## A Summary of submissions on the AEMC consultation paper

This appendix summarises the submissions received on the AEMC's consultation paper and the Commission's responses to the issues raised. 17 submissions were received in total. Copies of the submissions received can be found on the AEMC website.

This summary focuses on issues relating to the national framework for distribution reliability. A summary of issues raised in submissions relating specifically to the national framework for transmission reliability will be set out in the AEMC's final report on the transmission framework.

**Table A.1 Summary of submissions on the AEMC consultation paper**

Stakeholder	Comment	Commission's response
<b>General comments on the review</b>		
AER	The AER broadly supports the AEMC's proposed frameworks. In particular, the AER supports: the move towards more consistently defined standards; greater emphasis on output based reliability standards; greater consideration of the value placed on reliability and the costs of achieving different reliability levels; and enhanced customer engagement. The AER notes that the proposed frameworks, combined with the new NER arrangements for the economic regulation of NSPs, are likely to support efficient investment in networks (pp. 1-2).	The Commission agrees that the recommended framework will promote more efficient network investment.
Alinta Energy	Alinta Energy broadly supports the proposed national framework as it provides consistency in reliability standards and targets and improves benchmarking to assess and report in a consistent manner (p. 1).	The Commission agrees that the recommended framework will improve benchmarking.
ENA	ENA proposes a more light-handed approach where the AER would set reliability performance targets for distribution networks during the revenue determination process, through STPIS, based on the average past five year's performance (p.10).	The Commission considers that reliability targets should be set through an independent economic assessment process to allow the trade-off between the cost of investing in networks and the value placed on reliability by customers to be considered. The Commission considers

Stakeholder	Comment	Commission's response
		<p>that an independent economic assessment process is likely to lead to more efficient investments by DNSPs and electricity prices which are more consistent with the value placed on reliability by customers than an approach which is based solely on the STPIS.</p> <p>Further discussion on the Commission's reasons for not adopting ENA's proposed approach is set out in chapter 7.</p>
	<p>The AEMC approach is costly because it appears to require a cost-benefit analysis of all reliability targets at feeder level every five years, irrespective of past performance. Costs must also be verified and independently validated rather than scrutinised through the AER's regulatory processes (p. 12).</p>	<p>The Commission notes that its recommended framework will impose greater resource costs than the approach which is currently used to set distribution reliability targets in most jurisdictions. However, the Commission notes that the standard setter will be able to adapt the level of assessment under the standard setting process to the characteristics of each network. This should allow the costs of the recommended framework to be proportionate its benefits.</p> <p>Further discussion on the Commission's recommended economic assessment process is set out in chapter 7.</p>
EUAA	<p>EUAA considers that the AEMC should have explored the merits of the Victorian planning approach relative to other jurisdictions. It supports the Victorian arrangements and supports the Productivity Commission's recommendations (p. 1).</p>	<p>The Commission considers that reliability targets should be set advance of the decision to invest, because it provides transparency to stakeholders regarding the level of reliability they can expect to</p>

Stakeholder	Comment	Commission's response
		<p>receive and also allows DNSPs to be held accountable for the level of reliability they provide in practice.</p> <p>Further discussion on the Commission's reasoning for not adopting a approach which is based solely on the STPIS, as was recommended by the Productivity Commission, is set out in chapter 7.</p>
IPART	IPART supports setting reliability standards using a transparent framework that takes account of customers' willingness to pay. Also specifying distribution network standards through an outcome-based regime allows network businesses flexibility to deliver standards at lower cost (p. 1).	Agreed.
Networks NSW	Networks NSW considers that the framework is overly complex, costly and prescriptive compared to the current STPIS (p. 1). They agree with the Productivity Commission's recommendation that jurisdictions should adopt the STPIS to set efficient reliability requirements for distribution as long as there are mechanisms for worst served customers and a mechanism to guard against risk of high impact, low probability events (p. 2).	As discussed above, chapter 7 sets out further detail on the Commission's reasons for not adopting an approach which is based solely on the STPIS.
SA Power Networks	SA Power Networks proposes a more light handed approach to setting and establishing distribution reliability targets. This involves generally maintaining current reliability levels based on historic performance and only updating reliability levels where a step-change is required by customers or the minister (p. 3).	See response above.
	SA Power Networks supports: reliability targets which are based on feeder type and incentivised under the STPIS; the development of a national guideline/template for benchmarking; more granular VCRs; jurisdictions determining levels of reliability with the option to delegate responsibility; opportunities for greater consultation with customers; and national reporting on a consistent basis (pp. 3- 4).	Agreed.
SP AusNet	SP AusNet does not support imposing a target setting process which is inconsistent with the use of incentives to drive reliability outcomes (p. 1). It considers that a target setting process	As discussed above, chapter 7 sets out further detail on the Commission's reasons

Stakeholder	Comment	Commission's response
	<p>is costly and would have the following undesirable effects: duplication in network planning activity; incompatibility with the reliability improvement incentive regime; a conservative bias in network planning; and a neglect of dynamic efficiency factors (p. 2).</p> <p>SP AusNet supports the conclusions of the Productivity Commission, which recommended an incentive-based reliability framework where reliability improvement is driven by innovation (p. 3). SP AusNet also considers that an incentive based reliability framework is consistent with SCER's objectives and is transparent (p. 5).</p>	for not adopting an approach which is based solely on the STPIS.
Origin	Origin considers that there would be significant benefits from a national framework by facilitating comparison across jurisdictions and reducing the costs of regulation (p. 1).	Agreed.
ActewAGL	ActewAGL is supportive of the ENA submission and considers that the AEMC's proposed framework appears unnecessarily costly. It considers that a specific service incentive scheme would be administratively less expensive and foster innovation, leading to more efficient outcomes (p. 1).	As discussed above, chapter 7 sets out further detail on the Commission's reasons for not adopting an approach which is based solely on the STPIS.
Victorian Department of State Development, Business and Infrastructure	<p>The Victorian Government considers that the proposed national framework precludes significant benefits associated with the current Victorian arrangements. It considers that the Victorian probabilistic approach delivers a stronger and more dynamic focus on achieving a more economically efficient outcome than the AEMC's proposed framework (p. 1).</p> <p>The setting of ex ante reliability standards is not of critical importance. Rather, an incentive mechanism, as supported by the Productivity Commission, based on historical performance should deliver efficient levels of reliability (p. 2).</p>	See response above.
<b>Expression of distribution reliability targets</b>		
AER	<p>The AER considers that clearly expressed and consistently defined standards will facilitate comparisons between NSPs' performance and may assist the AER to more effectively compare DNSPs' cost forecasts and identify discrepancies. Consistency in standard definitions will also aid the ongoing development of performance incentive schemes (p. 2).</p> <p>The AER supports the use of outputs based reliability standards as they are more effective in</p>	<p>The Commission agrees that consistency in the expression of reliability targets will facilitate comparisons in performance by NSPs.</p> <p>The Commission also agrees that an</p>

Stakeholder	Comment	Commission's response
	<p>ensuring the regulatory regime rewards NSPs for delivering the services valued by consumers rather than simply rewarding building assets. They also give NSPs the ability to decide how to deliver the required reliability outputs in the most efficient manner. The AER supports providing flexibility in the frameworks to ensure the needs of worst served customers can be met (p. 2).</p>	<p>outputs based approach to distribution reliability targets will promote more efficient investment.</p> <p>The Commission has recommended that the standard setter have the ability to set reliability measures for worst served customers, where the jurisdictional minister considers that such measures should be set. Further discussion on the Commission's recommendations for worst served customers is set out in chapter 4.</p>
Alinta Energy	<p>Alinta Energy supports the establishment of a template for distribution to be developed by the AER and supports taking localised customer consultations into account when determining reliability targets. Alinta supports providing ministers with discretion to include additional reliability measures (p. 2).</p>	<p>Agreed.</p>
Energex	<p>Energex notes that some guidance on planning standards is required within NSPs as a reference for economic analysis to provide a safety net for major transmission and sub-transmission assets (p. 4).</p>	<p>As discussed in chapter 4, the Commission considers that network assets which are classified as transmission or sub-transmission, yet fall within the ownership of a DNSP, should be subject to the national framework for transmission reliability. As discussed in the Commission's consultation paper, it has been proposed that TNSPs would be subject to N-x reliability standards under the transmission framework.</p> <p>The Commission also notes that for other assets there would be flexibility for DNSPs to set their own input planning standards. However, these planning standards will</p>

Stakeholder	Comment	Commission's response
	<p>Energex considers that the broad classification of CBD/urban/ short and long rural is adequate from a reporting perspective but this should not preclude DNSPs and jurisdictions from using supplementary reporting measures (p. 4).</p> <p>Energex considers that consistency in definitions of reliability measures and inclusions and exclusions should be achieved, including the adoption of the international methodology for Major Event Days, where appropriate (p. 4).</p>	<p>not form regulatory obligations on DNSPs.</p> <p>Agreed. The Commission has recommended that the AER work closely with industry in developing common definitions for expressing distribution reliability targets across the NEM.</p>
ENA	<p>ENA proposes that high impact, low probability and worst-performing feeders may need to be addressed by additional jurisdictional measures (p. 10).</p>	<p>Agreed. As discussed in chapter 4, additional reliability measures could be adopted under the recommended framework to address high impact, low probability events and worst performing feeders if considered appropriate by the jurisdictional energy minister. The Commission considers that such measures should be assessed under the economic assessment process to ensure the costs and benefits of these measures are transparent.</p>
	<p>ENA suggests that adopting the AER's consistent definitions for reliability measures is achievable by adopting the ENA's more light-handed approach. Reliability measures could be consistent with those adopted by the AER for the STPIS (p. 15).</p> <p>ENA states that the development of the national reference standard template by the AER, with the active participation of DNSPs, is an opportunity to resolve any issues concerning the measurement and application of reliability performance targets (p. 16).</p>	<p>The Commission notes that if the AER is requested by SCER to develop common definitions for expressing distribution reliability targets, the AER will need to have regard to the current definitions used under the STPIS. The Commission has also recommended that the AER work closely with industry in developing these definitions.</p>
	<p>ENA considers that the current practice where some jurisdictions set reliability targets by</p>	<p>As discussed in chapter 4, the</p>

Stakeholder	Comment	Commission's response
	community and region, while reporting to the AER by feeder type, should continue (pp. 16-18).	<p>Commission considers that jurisdictions, such as Tasmania and South Australia, which currently set reliability targets by community or region type rather than feeder type could continue to do so under the recommended framework.</p> <p>However, all DNSPs would be required to report on their reliability performance by feeder type in a manner consistent with the common definitions for expressing distribution reliability targets that would be developed by the AER.</p>
	ENA states that the national reference standard template could address reporting on both average performance and worst served feeders or variations from the average (p. 17).	<p>As discussed in chapter 4, the Commission considers that reliability measures to address the requirements of poor performing parts of the network should form part of the common definitions for expressing distribution reliability targets. As discussed above, these common definitions would be developed by the AER.</p> <p>Measures for worst served customers could be set where the jurisdictional energy minister considers that such measures are appropriate.</p>
	ENA states that it can be difficult to adequately capture the broader costs and impacts to society from the loss of wide-area or high-security electricity supply in a value of customer reliability. ENA proposes that the AEMC approach be modified to apply input planning standards to networks on the basis of load served and community impact, rather than making	The Commission agrees that reliability targets should reflect network characteristics rather than ownership. The Commission considers that network assets which are classified as transmission or

Stakeholder	Comment	Commission's response
	the distinction based on ownership (p. 18).	<p>sub-transmission, yet fall within the ownership of a DNSP, should be subject to the national framework for transmission reliability.</p> <p>The Commission's final report on the national framework for transmission reliability will be published in early November 2013.</p>
	ENA considers that there could be benefit in reviewing a national approach to GSL regimes in the interests of consistency across the NEM (p. 12).	The Commission notes that the AER already has a national GSL scheme under the STPIS which jurisdictions are able to adopt. The Commission however has not made any specific recommendations relating to the appropriate design of a national GSL scheme as it considers that this is outside the scope of the terms of reference for this review.
EUAA	EUAA supports the proposed expression of distribution reliability standards using output based reliability measures (p. 3).	Agreed.
MEU	MEU does not believe that the removal of input standards for DNSPs compromises the ability of networks to deal with high impact, low probability events; rather the removal of input standards enhances the flexibility of DNSPs to manage performance while balancing the risks and costs of high impact events. The MEU also considers that it is important to have an effective regime of GSL penalty payments (p. 19).	<p>Agreed. The Commission also notes that under the recommended framework the standard setter would have flexibility to include additional reliability measures to accommodate areas of high economic importance, where the jurisdictional energy minister considers that such measures are appropriate.</p> <p>The Commission agrees that an effective regime of GSL penalty payments is</p>



Stakeholder	Comment	Commission's response
	<p>MEU considers that disaggregation at level of distribution reliability targets may assist in improving the validity and reliability of comparisons between different NSPs, but could add complexity.</p> <p>MEU considers that there are no substantive barriers to achieving consistency in definitions of distribution reliability.</p> <p>MEU considers that the AER is the most appropriate body for developing the template and has built experience in developing and implementing consistent standards. (p. 20).</p>	<p>important. However, as noted above, the design of a national GSL scheme is outside the scope of the Commission's terms of reference for the review.</p> <p>The Commission agrees that common definitions for expressing distribution reliability across the NEM should assist in facilitating comparisons of reliability performance.</p>
Networks NSW	<p>Networks NSW suggests that the important distinction is the size of the load served and recognises that some distribution assets serve loads similar to transmission assets. Networks NSW supports input planning standards particularly for higher voltage and higher volume supply functions, but recognises this can operate with probabilistic output-focused approaches (p. 5).</p> <p>Networks NSW supports disaggregation of reliability measures by feeder type but notes challenges in expressing by feeder type as a range of different customers are served by the same feeder. They support consistency in terms of definitions and common exclusions, but considers exclusions should differ depending on circumstance. Networks NSW supports the AER developing the template (p. 6).</p>	<p>As noted above, the Commission agrees that reliability targets should reflect network characteristics rather than ownership. Network assets which are classified as transmission or sub-transmission, yet fall within the ownership of a DNSP, should be subject to the national framework for transmission reliability.</p> <p>The Commission considers that there should be consistent exclusions for performance reporting by DNSPs to allow stakeholders to compare performance across the NEM and enable the AER to undertake benchmarking.</p> <p>The Commission notes that DNSPs will be able to provide further explanation and</p>

Stakeholder	Comment	Commission's response
		discussion around their performance as part of the Annual Planning Reports to enable stakeholders to understand their network characteristics. The AER's benchmarking reports will also need to be carefully prepared to ensure differences in network characteristics are clearly explained.
Origin	Origin supports consistent definitions within the standards framework (p. 2).	Agreed.
SA Power Networks	<p>SA Power Networks considers that output based reliability standards need to coexist with security of supply standards that are only specified for areas of economic significance (p. 8).</p> <p>SA Power Networks considers that the expression of reliability measures by feeder type is appropriate for benchmarking and maintaining/improving reliability performance (p. 8). SA Power Networks considers it is possible to obtain consistency of measures, including exclusion criteria, as long as there is suitable data prior to establishing performance levels (p. 8).</p> <p>SA Power Networks supports the AER developing the template for distribution (p. 9)</p>	<p>As discussed in chapter 4, under the recommended framework, the standard setter would have discretion to include additional reliability measures to address areas of economic importance, where the jurisdictional energy minister considers that such measures are appropriate. This could, for example, include minimum performance standards.</p> <p>The Commission has recommended that reporting should be undertaken by feeder type.</p>
Ergon Energy	Ergon Energy considers that the removal of input planning standards would be problematic for DNSPs with transmission and sub-transmission systems, in particular, radial single circuit lines with low customer numbers over large areas. This is because managing transmission or sub-transmission augmentations based on reliability targets may not be practical. Also, Ergon Energy is concerned that for substations, probability based planning may not capture risks of failure with large impacts. Ergon Energy therefore considers that it needs to operate in both the distribution and transmission frameworks (p. 4).	As noted above, the Commission agrees that reliability targets should reflect network characteristics rather than ownership. Network assets which are classified as transmission or sub-transmission, yet fall within the ownership of a DNSP, will be subject to the national framework for transmission

Stakeholder	Comment	Commission's response
	<p>Ergon Energy considers that comparing reliability outcomes based on feeder categories is not practical given the array of variables that lead to distinct characteristics of individual distribution networks, such as geographic or network specific factors (p. 5). Also, Ergon Energy notes the classification of parts of its sub-transmission network is used in the calculation of SAIDI and SAIFI and is therefore not comparable with those DNSPs with different sub-transmission networks, which thus impacts on distribution reliability outcomes (p. 5).</p> <p>Ergon Energy submits that while standard definitions of reliability measures and exclusion criteria is plausible in theory, the framework should not seek to implement numerically consistent targets across DNSPs for similar feeder categories. (p. 6).</p> <p>Ergon Energy does not benefit from Major Event Day exclusions as much as DNSPs with more compact distribution areas. Ergon Energy's performance is highly correlated to the number of days that are just below the major event day threshold. Measures of reliability should consider the variation of network performance due to configuration and weather, which can impact on STPIS (p. 6).</p> <p>Ergon Energy agrees that the AER would be the appropriate body responsible for the template (p. 6).</p>	<p>reliability.</p> <p>As noted above, the Commission agrees that reliability targets should reflect network characteristics rather than ownership. Network assets which are classified as transmission or sub-transmission, yet fall within the ownership of a DNSP, will be subject to the national framework for transmission reliability.</p> <p>The Commission notes that the intent of the recommended framework is not to provide for a consistent level of reliability across similar feeder categories. Rather, the intent is to provide for an effective framework for setting, delivering, and reporting on distribution reliability targets and outcomes. In addition, the recommended framework enables customer preferences to be explicitly considered in the setting of targets.</p> <p>As discussed above, DNSPs will be able to provide further explanation and discussion around their performance as part of the Annual Planning Reports to enable stakeholders to understand their network characteristics.</p>

Stakeholder	Comment	Commission's response
<b>Structure of the standard setting process</b>		
AER	The AER considers that if appropriately applied the standard setting process will be effective in ensuring NSPs deliver services that are most valued by customers. The use of an economic cost benefit analysis in the standard setting process is likely to result in more efficient targets (p. 2). The AER supports the range of roles for the AER under the proposed frameworks, but notes that these roles are likely to be resource intensive (p. 3).	Agreed. The Commission notes that each jurisdiction will decide whether to adopt the recommended framework. The level of adoption will affect the resource intensity of the implementation of the framework.
Alinta Energy	Alinta Energy supports the proposed structure for the standard setting process and supports voluntary changes in institutional arrangements in determining reliability targets and standards (p. 3).	Agreed.
Energex	Energex considers that the three month allowance for customer consultation, and development and selection of reliability scenarios is too short and considers that the process should start 48 months prior to the regulatory control period. Also the lead time between setting standards and the submission of regulatory proposals is too short (p. 5).	<p>The Commission notes that as the customer consultation process commences the standard setting process, DNSPs would be able to commence customer consultation earlier than recommended if considered necessary.</p> <p>As discussed in chapter 9, the Commission has decided to commence the standard setting process three months earlier than proposed in our consultation paper to allow DNSPs nine months rather than six months to prepare their regulatory proposal following the setting of their reliability targets.</p>
EnergyAustralia	EnergyAustralia considers that the national approach for deriving reliability standards economically will increase efficiency and transparency (p. 2).	Agreed.
EUAA	EUAA supports the proposed timeframe for the standard setting process (p. 5).	As discussed above, the Commission has decided to commence the standard setting

Stakeholder	Comment	Commission's response
		process three months earlier than proposed in our consultation paper to allow DNSPs nine months rather than six months to prepare their regulatory proposal following the setting of their reliability targets.
MEU	MEU considers that the complexity of the process and rate of change in energy policy, consumption patterns and technology risks standards/targets being out of date before coming into effect (p. 23).	As discussed in chapter 9, the Commission notes that where there are changes in the costs and benefits of meeting a DNSP's reliability targets, DNSPs will be able to manage their performance to respond to these changes. This is because they will not have regulatory obligations to comply with their reliability targets in every year.
	MEU considers that there may be jurisdictional differences in environmental, health and safety regulation, but reiterates its disappointment with the extent of flexibility provided to jurisdictional ministers because it detracts from national consistency (p. 24).	As discussed in chapter 5, the Commission considers that jurisdictional energy ministers should be able to take additional factors into account in setting reliability targets as they are best placed to make judgements regarding the trade-off between cost and reliability on behalf of the broader community.
SA Power Networks	SA Power Networks considers that a NSP's internal processes require a minimum of 9 months (not 6 months as proposed) to incorporate standards into regulatory proposals (p. 9).	As discussed above, the Commission has decided to commence the standard setting process three months earlier than proposed in our consultation paper to allow DNSPs nine months rather than six months to prepare their regulatory proposal following the setting of their

Stakeholder	Comment	Commission's response
		reliability targets.
Ergon Energy	Ergon Energy notes the challenges of a 35 month start prior to the regulatory control period, such as benefits from a previous regulatory period not being fully materialised or taken into account when setting standards for the next period. Ergon Energy raised concerns that setting standards each period could limit the fruition of STPIS benefits associated with investments made. Ergon Energy therefore supports a more light-handed approach as proposed by the ENA (p. 7).	<p>As discussed above, the Commission considers that reliability targets should be set advance of the decision to invest, because it provides transparency to stakeholders regarding the level of reliability they can expect to receive and also allows DNSPs to be held accountable for the level of reliability they provide in practice.</p> <p>Further discussion on the Commission's reasoning for not adopting a approach which is based solely on the STPIS, as was recommended by the ENA, is set out in chapter 7.</p>
<b>Guidelines for the economic assessment process</b>		
Energex	<p>Energex considers that the guidelines should cover aspects of the economic valuation of project options such as failure probability, time to repair, discount rates etc. It supports a consistent approach across NSPs and suggests the Guidelines for Reliability Assessment Planning produced by ESAA be adopted (p. 6).</p> <p>Energex supports the AER's engagement to prepare the guidelines. (p. 6).</p>	The Commission notes that the guidelines for the standard setting process would be developed through a public consultation process by the AER, which will allow stakeholder views to be considered.
EUAA	EUAA does not think economic assessment guidelines are necessary (p. 4).	The Commission considers that the guidelines for the standard setting process are necessary to provide consistency in how the recommended framework is applied across the NEM. This will ensure that the targets which are set can be

Stakeholder	Comment	Commission's response
		meaningfully compared.
Grid Australia	As well as the AEMC's proposed contents for the guidelines, Grid Australia considers the guidelines should also include the explicit consideration of high impact, low probability events in the economic assessment process. Grid Australia considers the AER is the appropriate body to develop the guidelines (p. 26).	The guidelines will include information on how the economic assessment process should be undertaken. The Commission considers that this could include the assessment of high impact, low probability events.
MEU	<p>MEU considers economic assessment guidelines will be an important tool in ensuring consistency in approach. This should also include how non-measurable factors can be assessed objectively (p. 25).</p> <p>MEUs considers that the AER is the appropriate body to develop guidelines although it should do so in consultation with AEMO, NSPs and other stakeholders (p. 25).</p>	The Commission notes that the guidelines for the standard setting process would be undertaken through a public consultation process by the AER, which will allow stakeholder views to be considered.
Networks NSW	Networks NSW supports the AER being responsible for developing the guidelines. The guidelines should recognise that the VCR is a survey of the economic cost of outages and not the level of acceptable reliability performance valued by customers (p. 9).	The Commission notes that in addition to the VCR, there will be a number of opportunities for customer consultation during the standard setting process. This should allow customer preferences to be revealed.
SA Power Networks	<p>SA Power Networks considers that the economic assessment process should only be deployed where customers or the jurisdictional minister require a step change in current levels of reliability performance. The guidelines should be limited to the stage of the economic assessment process, information requirements and assumptions, the methodology to be applied to determine costs/benefits for each scenario and the range of sensitivities to be used (p. 10).</p> <p>SA Power Networks supports the AER developing the economic assessment guidelines (p. 10).</p>	As discussed above, the Commission's recommended framework includes the use of an economic assessment process prior to the commencement of each regulatory control period to provide transparency regarding the trade-off between cost and reliability. The Commission notes that the standard setter would be able to tailor the level of assessment required to the characteristics of each network.

Stakeholder	Comment	Commission's response
		The guidelines for the standard setting process will include information on how the economic assessment process should be undertaken.
Ergon Energy	Ergon Energy recommends that the economic assessment guidelines include the methodology for the VCR. The VCR does not follow a normal distribution, but a log normal distribution and tends to skew above the mean. High impact, low probability events need to be assessed by something more than the VCR. Also, there needs to be some process for the consideration of worst served customers (p 8).	<p>The Commission has recommended that the AER develop a methodology for estimating the VCR through a separate process to the guidelines. However, the Commission notes that the AER will need to ensure that the VCR methodology and guidelines are co-ordinated, to provide for consistency where appropriate.</p> <p>As discussed above, under the recommended framework standard setters will be able to set reliability measures for worst served customers and to address areas of economic importance, where the jurisdictional energy minister considers that such measures would be set.</p>
<b>Value of customer reliability</b>		
Alinta Energy	Alinta Energy supports the AER developing and updating the VCR by working with AEMO in the current VCR development process (p. 3).	Agreed.
AER	The AER supports the establishment of a formal mechanism for considering customer preferences through VCR studies. The AER however recognises that the VCR is not a measure which can be objectively tested, but notes the proposed arrangements should support a cycle of continuous improvement in VCR estimation (p. 2).	Agreed.
Energex	Energex does not object to AER fulfilling this role and suggests that the AER implement a	The Commission considers that the VCR



Stakeholder	Comment	Commission's response
	screening process to determine if a 'reset' of the VCR is required. Changes to VCR should be gradual given the long planning horizons of networks (p. 6).	<p>should be updated every five years for each jurisdiction. The Commission considers that this is necessary to ensure the VCR continues to reflect the preferences of customers.</p> <p>The Commission has recommended that the AER should initially use the VCR measures which are being developed by AEMO until it is considered that the measures need to be re-estimated.</p>
EnergyAustralia	EnergyAustralia supports the development of a national approach for developing the VCR to be set and updated by the AER (pp. 2-3).	Agreed.
EUAA	EUAA prefers AEMO to develop estimates of the VCR as it has expertise in this area (p. 4).	The Commission has recommended that the AER draw on the work AEMO has undertaken in developing VCRs. This will enable the AER to build on the existing expertise that AEMO has in this area.
MEU	MEU considers that it is less appropriate for the AER to develop VCR; rather it prefers AEMO because it already has experience assessing the VCR and access to data at connection point and feeder level. It also complements its role as the National Transmission Planner (p. 26).	See response above.
Networks NSW	Networks NSW supports AER developing the methodology and updating the VCR (p. 9).	Agreed.
Origin	Origin notes the VCR is complex but suggest a possible blend of technically sound approaches for estimating the VCR (p. 2).	The Commission notes that the AER will be required to undertake public consultation in developing the VCR methodology, which would allow the AER to draw on the views and expertise across the broader market. The Commission has also recommended that the AER use the

Stakeholder	Comment	Commission's response
		VCR methodology developed by AEMO as a starting point.
Ergon Energy	Ergon Energy agrees that the AER's role in developing the VCR would be consistent with its role as the economic regulator and standard setter at a national level (p 8). Ergon Energy agrees that the AER should initially adopt the work of AEMO to avoid duplication (p 8).	Agreed.
SA Power Networks	SA Power Networks supports the AER updating the VCR (p. 10).	Agreed.
ActewAGL	Actew AGL suggests that to avoid costly duplication of resource-intensive surveys, reliability frameworks should allow any research undertaken by NSPs to be used in the regulation of reliability where it is appropriately peer reviewed and supported by independent experts (p. 2).	The Commission supports work being undertaken by NSPs to engage with their customers. However, as discussed in chapter 5, the Commission considers that VCRs should be developed by a single independent body (ie the AER) to avoid having a range of differing estimates of the VCR for the same jurisdiction.
<b>Customer consultation process to select reliability scenarios</b>		
Alinta Energy	Alinta Energy supports collaboration between the standard setter, economic adviser, NSPs and consumers in selecting reliability scenarios (p. 3).	Agreed.
AER	The AER notes increased engagement with consumers early on in the standard setting process may assist NSPs to better understand the needs of their consumers and that it complements the new requirements on NSPs to consult with consumers in developing their regulatory proposals (pp. 2-3).	Agreed,
Energex	Energex notes the difficulties of obtaining a 'representative' sample of customer views and also suggests a screening process be conducted prior to justifying a major review to reset standards (p. 6).	As discussed in chapter 7, the Commission considers that the reliability targets for each DNSP should be re-examined prior to each regulatory control period to assess the appropriate

Stakeholder	Comment	Commission's response
		trade-off between cost and reliability. As discussed above, the Commission notes that the number of scenarios and level of assessment which is undertaken can be adapted to the characteristics of each network.
EnergyAustralia	EnergyAustralia considers that appropriate customer consultation is essential to ensure that standards reflect customer preferences (p. 3).	Agreed.
ENA	ENA considers that customer consultation by DNSPs should be based on high level principles, as reliability issues vary across different networks (p. 8).	Agreed.
EUAA	EUAA suggests that customer consultation occur on multiple points in the process, including at the start of the process, after the economic assessment, and in setting the standards (p. 6).	The Commission notes there are a number of different opportunities for customer consultation under the recommended framework. As discussed in chapter 6, the Commission also supports ongoing consultation between DNSPs and customers during the regulatory control period.
MEU	MEU considers there should be further investigation of customer consultation to ensure it is thorough, objective and representative of the consumer base (p. 27). MEU argues that combining the obligation for NSPs to consult in setting standards with the preparation of regulatory proposals may appear efficient, but notes it could also bias the approach. MEU suggests that the AEMC review the AER's guideline for consumer engagement as a possible model of engagement (p. 28).	The Commission notes that the guideline for the standard setting process will include guidance on how the customer consultation process should be undertaken. The Commission agrees that the guidelines should be consistent with the AER's 'Consumer Engagement Guideline for Network Service Providers'.
Networks NSW	Networks NSW consider that customer consultation should be subsumed in the customer engagement strategy as part of the regulatory determination process (p. 10). It is unclear what weight any submissions to the draft economic assessment report would be given due to the	The Commission has recommended that customer consultation to select reliability scenarios should be aligned with customer

Stakeholder	Comment	Commission's response
	short timeframe between the draft and final report (p. 10).	consultation on a DNSP's regulatory proposal. The Commission notes that the economic adviser would be required to have regard to any submissions received prior to finalising its final report on the economic assessment.
SA Power Networks	SA Power Networks considers that the proposed timeline of 3 months for consultation, development of reliability scenarios and selection of scenarios is underestimated. Based on their experience this would take between 5.5-10.5 months to complete (p. 11).	<p>The Commission notes that as the customer consultation process commences the standard setting process, DNSPs would be able to commence customer consultation earlier than recommended if considered necessary.</p> <p>The Commission also notes that the number of scenarios and level of assessment which is undertaken can be adapted to the characteristics of each network.</p>
<b>Selection of reliability scenarios</b>		
Networks NSW	Networks NSW considers the number of scenarios should be restricted to ensure that reliability scenarios are practicable and economically feasible and that modelling can be done in a timely and pragmatic manner (p. 11).	As noted above, the number of scenarios and level of assessment which is undertaken can be adapted to the characteristics of each network. This should ensure that the costs of applying the framework are proportionate to its expected benefits.
SA Power Networks	SA Power Networks considers that the standard setter should have a cap on the number of scenarios that are subject to economic assessment. It also notes that it is not possible to achieve a step change in reliability performance as performance will gradually change over	See response above. The Commission also notes that the standard setter will be required to consider the physical and financial constraints of achieving different

Stakeholder	Comment	Commission's response
	time (p. 12).	reliability levels in determining which reliability scenarios should be assessed. The standard setter will also be required to consult with the DNSP and economic adviser in developing the scenarios which will be assessed.
	SA Power Networks considers that worst served customers should be subject to economic assessment criteria through a transparent process where customers are consulted on their willingness to pay for reliability improvements for worst served customers (p. 12).	As discussed above, the Commission has recommended that any additional reliability measures which are selected by the standard setter to address worst served customers should be assessed through the economic assessment process to ensure the costs and benefits of these measures are transparent.
Energex	Energex suggests a screening test should be used to determine if a reset of the reliability targets is required based on customers' satisfaction with reliability performance (p. 7).	As noted above, the number of scenarios and level of assessment which is undertaken can be adapted to the characteristics of each network. This should ensure that the costs of applying the framework are proportionate to its expected benefits.
EUAA	EUAA agrees that measures to address worst served customers should be included in the economic assessment process (p. 6).	Agreed.
MEU	<p>MEU agrees that there should be compatibility between the reliability scenarios for TNSPs and DNSPs within a jurisdiction and that scenarios should be reasonably representative (p. 28).</p> <p>MEU considers that measures to address worst served customers does not lie in adding further parameters or complexity to the economic assessment process; an alternative is to strengthen the GSL scheme by using a scaling factor where the GSL payment per a supply</p>	<p>Agreed.</p> <p>As discussed above, the Commission has recommended that the costs and benefits of worst served customer measures should be assessed through the economic assessment process to provide greater</p>

Stakeholder	Comment	Commission's response
	point for an interruption event increases in proportion to the number of interruptions at that supply point (p. 30).	transparency.  The Commission however has not made any specific recommendations relating to the appropriate design of a national GSL scheme as it considers that this is outside the scope of the terms of reference for this review.
Ergon Energy	Ergon Energy does not support additional obligations being established for worst served customers under the national framework but rather supports definitions and criteria of what defines a worst served customer or a worst performing feeder and reporting on what actions or non-actions were undertaken by the DNSP. This should be done while recognising the inherent network reliability performance of networks. The focus on worst served customers should be on innovative, low cost methods that improve performance but do not necessarily reach average performance (p. 9).	The Commission has recommended that the standard setter should have the ability to set reliability measures for worst served customers, where the jurisdictional energy minister considers that such measures should be set. The AER would be required to develop common definitions for reliability measures for worst served customers that could be selected from by the standard setter. Further discussion on the Commission's recommendations for worst served customers is set out in chapter 4.
ENA	The ENA considers it is appropriate that the jurisdictional decision maker should be able to take the positive social and community benefits of additional expenditure and externalities into account in setting the standard (p. 7).	The Commission agrees that where the jurisdictional energy minister retains responsibility for setting reliability targets, they should be able to take additional factors into account.
<b>Economic assessment of reliability scenarios</b>		
IPART	IPART supports creating an economic advisor role to perform a cost-benefit analysis of various reliability scenarios. In undertaking cost-benefit analysis, IPART recommends customer engagement identify differences in how customer groups value reliability of supply;	The Commission notes that DNSPs will have a degree of flexibility in how they undertake customer consultation to allow

Stakeholder	Comment	Commission's response
	the extent they would be willing to pay for higher reliability levels through higher prices; and alternatives for individual electricity users who place a high value of reliability (p. 2).	the process to be tailored to the needs of customers within their network. The AER's guideline for the standard setting process will provide high level guidance on how the process should be undertaken.
Networks NSW	Networks NSW suggest that estimating the VCR is a risk in the economic assessment process because it is a highly subjective judgement and there remain challenges in quantifying the economic and value based VCR measures (e.g. for complex projects) (p. 12).	The Commission considers that as the VCR is undertaken on a more regular and consistent basis, stakeholders should gain greater confidence that the values which are developed reflect the preferences of customers. The Commission also notes that the AER will have the ability to further improve the VCR methodology over time.
SA Power Networks	SA Power Networks considers that the main cost and resource implications will be in consulting with customers and ensuring that costs associated with changes in reliability levels are accurate (p. 13). SA Power Networks considers that it is difficult for NSPs to accurately estimate cost of improvement or declines in performance as in any one year this can be subject to external influences (p. 13).	The Commission notes that the economic assessment process will need to consider the impact of each reliability scenario over an appropriate timeframe to understand the longer term trends that may occur.
Energex	<p>Energex considers that the customer consultation process, assessment of reliability scenarios, and standard setting process will all require additional resources. There will be a need for planning resources to conduct an economic assessment of all projects with identifiable energy at risk over the planning horizon (p. 7).</p> <p>Energex notes that reliability outcomes, particularly in the short term, are stochastic in nature and there is a danger of overstating the relationship between pricing outcomes and reliability expectations (p. 7).</p>	<p>As noted above, the number of scenarios and level of assessment which is undertaken can be adapted to the characteristics of each network. This should ensure that the costs of applying the framework are proportionate to its expected benefits.</p> <p>As discussed above, the economic assessment process will need to consider the impact of each reliability scenario over an appropriate timeframe to understand</p>

Stakeholder	Comment	Commission's response
		the longer term trends that may occur.
EUAA	EUAA does not support the role of the AER in the economic assessment of NSP reliability scenarios as this would fetter AER's discretion to make revenue determinations (p. 5).	The Commission notes that the jurisdictional energy minister will have discretion in determining which body should undertake the economic assessment process. However, the Commission does not agree that undertaking the economic assessment process would affect the AER's discretion to make revenue determinations, as the differing responsibilities under each role would be clear under the NER.
MEU	<p>MEU considers that costs of the economic assessment process are likely to be substantial, at least initially, and borne by consumers particularly if an ex-ante economic assessment is progressed. Every effort should be made to create synergies with other activities of consumer consultation, performance reporting, incentive schemes, and revenue determination. The economic assessment process should cover all of a given jurisdiction (i.e. all DNSPs and TNSPS in a jurisdiction) (p. 30).</p> <p>MEU considers that the main risks with the economic assessment process is that targets/standards are set ex-ante for up to five years, which reduces the flexibility for NSPs to respond efficiently to changes in demand and other circumstances. Sensitivities will provide some insights into alternative outcomes (p. 31).</p>	<p>As noted above, the number of scenarios and level of assessment which is undertaken can be adapted to the characteristics of each network. This should ensure that the costs of applying the framework are proportionate to its expected benefits.</p> <p>As noted below, where the costs and benefits of meeting a DNSP's reliability targets change over the regulatory control period, DNSPs will be able to adjust their performance in response under the recommended framework. This is because DNSPs will not have a regulatory obligation to comply with their targets in every year.</p>
Alinta Energy	Alinta Energy supports a cost benefit analysis of each reliability scenario against a baseline of maintaining existing reliability scenarios and considers these measures increase transparency	The Commission has recommended that reliability scenarios should be assessed



Stakeholder	Comment	Commission's response
	(p. 4)	against an efficient level of reliability scenario, to assist in revealing the extent to which other scenarios deviate from the efficient level. Further discussion on this recommendation is set out in chapter 7.
ENA	There is a significant challenge and high costs involved in undertaking a cost-benefit analysis for every feeder, and in validating and independently verifying the estimates of expenditure costs provided by distribution businesses (p. 11).	As noted above, the number of scenarios and level of assessment which is undertaken can be adapted to the characteristics of each network. This should ensure that the costs of applying the framework are proportionate to its expected benefits.
	The time required for estimation of the VCR by the AER should be incorporated in the timeframe for setting the relevant reliability standards or targets as part of the revenue determination process (p. 20).	The Commission notes that VCRs will be estimated by the AER for each jurisdiction prior to the standard setting process. The AER will be required to develop a timetable to identify when VCRs should be calculated for each jurisdiction. As a result, the Commission has not incorporated the estimation of VCRs in the timeframe for setting reliability targets.
	The administrative costs of the negotiating process between distribution businesses and the standard setter are likely to be higher than the ENA's proposed approach. In addition, businesses may be able to find less expensive ways of improving reliability than the 'tried and tested' means of influencing reliability which would necessarily be used in the proposed economic assessment process (p. 23).	As noted above, the number of scenarios and level of assessment which is undertaken can be adapted to the characteristics of each network. This should ensure that the costs of applying the framework are proportionate to its expected benefits.  The Commission also notes that the current incentives based regime for the

Stakeholder	Comment	Commission's response
		regulation of network revenues encourages NSPs to find more efficient means to meet their regulatory obligations. The Commission's recommended framework would not affect these incentives.
Ergon Energy	Ergon Energy considers the key risks of the economic assessment process are the high cost and high resource demands for a lengthy process. The number of assumptions creates risks of uncertainty of outcomes. (p. 10).	See response above.
<b>Setting reliability standards and targets</b>		
Networks NSW	Networks NSW notes that the jurisdictional minister may have to regard to local considerations relating to worst served customers or other social issues using information outside of the framework to address community expectations (p. 13).	As discussed in chapter 4, the standard setter will be able to select additional measures to address worst served customers under the standard setting process, where the jurisdictional energy minister considers that such measures should be set. These measures will be assessed under the economic assessment process to ensure the costs and benefits of these measures are transparent.
SA Power Networks	SA Power Networks considers that AEMC's proposal should provide jurisdictional minister with sufficient information to make an informed decision (p. 13).	Agreed.
Energex	Energex agrees that subject to details of implementation, the proposed framework should provide a jurisdictional minister with sufficient information to make an informed decision of levels of reliability that meet community expectations (p. 8).	Agreed.
EUAA	EUAA considers that the jurisdictional minister has sufficient information to make an informed decision on the levels of reliability appropriate to the community (p. 6).	Agreed.

Stakeholder	Comment	Commission's response
MEU	MEU considers that the jurisdictional minister should have sufficient information to make an informed decision in setting targets (p. 31). MEU notes the importance of setting realistic scenarios for the minister to consider (p. 32).	Agreed.
<b>Links between standard setting process and revenue determination process</b>		
SA Power Networks	<p>SA Power Networks considers that the standard setting process should be incorporated into the NSP's customer consultation process (p. 14).</p> <p>SA Power Networks considers that the high level costing to establish appropriate reliability performance should only inform the AER as to indicative costs of meeting a step change in reliability performance (p. 14).</p>	<p>The Commission agrees that the customer consultation process for the standard setting process should be combined with a NSP's consultation process on its regulatory proposal.</p> <p>As discussed in chapter 9, the Commission has recommended that DNSPs be required to explain any differences between the cost forecasts they provided to the standard setter and those included in their regulatory proposal to ensure that the forecasts provided during the standard setting process have a degree of rigour.</p>
Energex	<p>Energex considers that the consultation processes for the standard setting process and an NSP's regulatory proposal should be aligned while noting that reliability consultation is very specialised in nature which limits the capacity to combine consultation processes (p. 8).</p> <p>Energex notes that changes in demand forecasts affects changes in cost forecasts. Costs change as time progresses and further design work and scope refinement is completed (p. 8).</p>	<p>The Commission notes that DNSPs will have a degree of flexibility in how they undertake customer consultation to allow the process to be tailored to the needs of customers within their network.</p> <p>The Commission agrees that differences in the timing between when cost forecasts are provided under the standard setting process and the revenue determination process could contribute to differences in</p>

Stakeholder	Comment	Commission's response
		the forecasts provided. The Commission notes that DNSPs would have an opportunity to explain the reasons for any differences in their regulatory proposal.
MEU	<p>MEU welcomes consumer consultation but raises the issue of the heavy demands on consumers and consumer organisations to contribute effectively and the risk of engagement waning over a long consultation process (p. 32). MEU suggests that there could be an optional step in the process to confirm consumer perspectives prior to finalising reliability targets (p. 33).</p> <p>MEU strongly supports coordination of regulatory processes as a way of limiting gaming and considers that differences in costs between the reliability assessment and revenue proposals should converge over time as the AER is implementing detailed performance/benchmarking exercises, which contribute to reliability and revenue assessments (p. 33).</p>	<p>The Commission notes that customers will have a further opportunity to provide their views during consultation on the economic adviser's draft report. The Commission also notes that the use of the VCR should ensure that reliability targets are set at a level which reflects customer preferences.</p> <p>The Commission considers that there should not be significant differences between the costs forecasts submitted during the standard setting process and the revenue determination process, but notes that DNSPs will be required to explain any differences which do occur.</p>
Alinta Energy	Alinta Energy supports the connections between the standard setting process and the revenue determination process by reducing duplication in customer consultation and allowing the AER to link NSPs' forecast expenditure with meeting the new reliability target (p. 4).	Agreed.
EUAA	<p>EUAA sees no reason why it is not feasible to align consultation process at the start of the standard setting process and for the regulatory proposal (p.7).</p> <p>EUAA considers that NSPs should be asked to explain differences in data between setting standards and for use in a revenue determination (p. 7).</p>	Agreed.
Grid Australia	Grid Australia considers that the AER should accept that some cost differences are bound to arise as a result of timing differences between the setting of reliability standards and the NSP's submission of its regulatory proposal. Grid Australia questions whether any significant	As discussed in chapter 9, the Commission has recommended that DNSPs be required to explain any

Stakeholder	Comment	Commission's response
	benefit would be achieved from conducting detailed examination of the differences in costs forecasts (p. 29).	<p>differences between the cost forecasts they provided to the standard setter and those included in their regulatory proposal to ensure that the forecasts provided during the standard setting process have a degree of rigour.</p> <p>The Commission agrees that there are likely to be some circumstances where there are differences between the cost forecasts provided, due to differences in timing and the level of detail of the modelling.</p>
AER	<p>As noted in previous submissions, the AER's preference is to integrate standards setting and revenue setting where a jurisdictional minister has delegated standard setting to the AER. The AER notes that the AEMC has not proposed an integrated approach, but has proposed mechanisms to strengthen the links between standard setting and revenue setting.</p> <p>The AER supports these mechanisms, but suggests they could be further improved by requiring NSPs to submit the same cost information in both processes unless there are valid reasons for departing from this. The AER considers that as there is a relatively short time period between when standards are set and when a NSP must submit its regulatory proposal, there should be extremely limited circumstances in which a NSP's costs forecasts should change significantly. The AER considers this would strengthen incentives on NSPs to develop accurate cost forecasts (p. 3).</p>	The Commission considers that a requirement on DNSPs to explain any differences in the cost forecasts provided should provide sufficient incentives on DNSPs to submit robust cost forecasts. Further, as noted above, the Commission considers that in some circumstances there may be a reasonable explanation for differences between the cost forecasts provided.
Ergon Energy	<p>Ergon Energy agrees with aligning consultation processes for the consultation process with the consultation process on its regulatory proposal, but notes the early timing of consultation for setting reliability standards means the consultation may not be relevant for the following regulatory control period (p 10).</p> <p>Ergon Energy notes that due to the shortened period for preparing cost forecasts during the standard setting process, the forecasts submitted as part of a regulatory proposal are likely to</p>	The Commission notes that where the costs and benefits of meeting a DNSP's reliability targets change over the regulatory control period, DNSPs are able to adjust their performance in response under the recommended framework.

Stakeholder	Comment	Commission's response
	be more robust. Ergon suggests that the standard setting and regulatory proposal development proposal process could be co-ordinated. (p. 10).	As discussed above, DNSPs will be required to explain any differences in the cost forecasts provided between the standard setting and revenue determination processes in their regulatory proposal.
<b>Updating reliability targets within a regulatory control period</b>		
EnergyAustralia	EnergyAustralia supports the AEMC's proposal to allow reliability standards to be updated during a regulatory control period under certain circumstances (p. 3).	<p>As discussed in chapter 9, the Commission considers that an update mechanism for the national framework for distribution reliability is not required as DNSPs will not have a regulatory obligation to meet their reliability targets in every year. Therefore, DNSPs will be able to manage their own reliability performance in response to changes in the costs and benefits of meeting their targets over the regulatory control period.</p> <p>Further discussion on the Commission's reasons for not including an update mechanism to amend distribution reliability targets and associated expenditure allowances within a regulatory control period is set out in chapter 9.</p>
Networks NSW	Networks NSW considers that there is little benefit to customers in the short term from changes to capital expenditure programs resulting from revisions to reliability standards (p. 7). They think it is unlikely for there to be any circumstances during the regulatory period where an update to targets would be required, as reliability impacts manifest over a longer period than five years and there is a high materiality threshold for updates (p. 13). Networks NSW	As discussed above, the Commission has decided to not include an update mechanism for the national framework for distribution reliability.

Stakeholder	Comment	Commission's response
	<p>also note that an update mechanism would undermine the STPIS incentive framework (p. 14).</p> <p>Networks NSW also consider that the proposed framework is silent on how it would impact on other incentive schemes such as the Efficiency Benefit Sharing Scheme (p. 14).</p>	<p>In relation to existing incentive schemes, including the Efficiency Benefit Sharing Scheme, the Commission considers that the recommended framework would not affect the incentives under these schemes.</p>
SA Power Networks	<p>SA Power Networks considers that if a jurisdictional minister proposes a step change in reliability performance or establishes a new reliability measure, this should be treated as a service standard pass through event and there should not be a materiality threshold on pass through amount (p.14).</p>	<p>As discussed above, the Commission has decided to not include an update mechanism for the national framework for distribution reliability.</p>
Energex	<p>Energex has no objection to the materiality thresholds proposed. It also considers that provided the proposed mechanism relates to exogenous triggers, it should not interfere with incentives under the ex-ante revenue allowances (p. 8).</p>	
MEU	<p>MEU considers that the requirement to update standards is appropriate for TNSPs and DNSPs (p. 34).</p> <p>MEU considers that the criteria proposed should preserve the integrity of the incentive schemes but should be closely monitored so that regulatory pass-throughs do not significantly increase (p. 35).</p>	
Alinta Energy	<p>Alinta Energy supports the update mechanism based on material differences in assumptions which could emerge (p. 4).</p>	
AER	<p>The AER does not consider that a mechanism to adjust reliability standards and revenues within a regulatory control period is warranted. The AER notes that there are several existing mechanisms for seeking revenue adjustments within period and that the proposed standard setting process and revised framework for economic regulation provides a robust framework for efficient investment. The AER considers that under the proposed mechanism there is a high risk that it will undermine incentives on NSPs to manage expenditure allowances efficiently and inappropriately shift the risk of cost over-runs onto consumers (p. 4).</p>	

Stakeholder	Comment	Commission's response
	<p>The AER also notes that the update mechanism has the potential to lead to a project by project approval process, which moves the regime away from an incentive based approach and could lead to higher costs for customers (p. 4).</p>	
Ergon Energy	<p>Ergon Energy suggests a trigger to update reliability standards is only likely in highly unusual circumstances and does not object to the materiality thresholds proposed. Updating standards could potentially affect the incentives for efficient investment (p. 11).</p> <p>Ergon notes that if the reliability targets determined under the proposed framework are significantly different to existing STPIS targets then this could be contrary to the intent of the STPIS which is based on maintaining the status quo (p. 11).</p>	<p>As discussed above, the Commission has decided to not include an update mechanism for the national framework for distribution reliability.</p> <p>As discussed in chapter 9, the Commission notes that where there has been a step change in reliability targets from one regulatory control period to the next, the AER may need to consider how STPIS targets should transition to the reliability targets which have been set. The Commission has recommended that STPIS targets be based on the reliability targets which have been set to provide clear incentives on DNSPs to meet their targets.</p>
Victorian Department of State Development, Business and Infrastructure	<p>The Victorian Government considers that an update mechanism would increase costs for participants and detracts from transparency and certainty (p. 2).</p>	<p>As discussed above, the Commission has decided to not include an update mechanism for the national framework for distribution reliability.</p>
<b>Compliance obligations</b>		
Networks NSW	<p>Networks NSW considers that there is little benefit in requiring a mandatory annual audit as achieving targets would be incentivised through the STPIS (p. 14).</p>	<p>As discussed in chapter 10, the Commission continues to consider that</p>



Stakeholder	Comment	Commission's response
		independent audits to assess a DNSP's plans to meet its reliability targets are required. This is needed to promote accountability and transparency. The Commission has decided to reduce the frequency of audits from annual audits to five yearly audits to reduce the regulatory burden of this requirement.
SA Power Networks	SA Power Networks considers that DNSPs should not be subject to annual audits of their processes. The AER STPIS regime currently provides sufficient incentives to maintain or improve reliability levels. Where a jurisdictional minister incorporates a reliability target for part of a network that is uneconomic then the incentive to maintain performance levels under the STPIS should be based on costs, not the VCR (p. 15).	As discussed above, the Commission has determined that five yearly independent audits are required to assess a DNSP's plans to meet its reliability targets.  As discussed in chapter 9, the Commission notes that where a jurisdictional energy minister has taken additional factors into account in setting reliability targets, the AER may need to adjust the level of rewards and penalties under the STPIS to maintain the level of incentives on a DNSP. The Commission considers that the AER has sufficient flexibility under the current NER to achieve this.
Energex	Energex does not support the STPIS being used as a compliance measure as it was not designed for this purpose; rather it was developed as an incentive mechanism (p. 9).  Energex does not support independent audits of a NSP's internal processes; rather it suggests that modification and streamlining of existing processes should be undertaken (p. 9).	Noted. As discussed above, the Commission has determined that five yearly independent audits are required to assess a DNSP's plans to meet its reliability targets.
MEU	MEU considers that the reliability targets, the STPIS and the GSL scheme work as a package of 'incentives' to address average reliability standards and 'worst served customers'.	The Commission agrees that reliability targets, the STPIS and GSL schemes

Stakeholder	Comment	Commission's response
	<p>Consideration should be given to how 'strong' the penalties/rewards should be and how these measures be combined to encourage continuous improvements in performance (p. 37).</p> <p>MEU suggests combining audits with annual performance reporting should be considered. MEU notes that the audits should verify that the data provided is in accordance with definitions in the template and that there is internal budget and management reporting identifying reliability investment activities/outcomes (p. 37).</p>	<p>work together to address average reliability standards and worst served customers. The Commission considers that STPIS targets should be based on the reliability targets which have been set by the standard setter to provide clearer incentives for DNSPs to deliver efficient levels of investment.</p> <p>The Commission has not provided any specific recommendations relating to GSL schemes as they are considered outside the scope of the terms of reference for the review.</p> <p>As discussed above, the Commission has determined that five yearly independent audits are required to assess a DNSP's plans to meet its reliability targets. The detail of how audits should be undertaken would be specified in the NER.</p>
ENA	<p>ENA considers that the AEMC is using the STPIS incorrectly. The STPIS is not designed to enforce compliance with predetermined reliability levels. STPIS performance targets do not purport to be the efficient level of reliability. The purpose of the STPIS is to provide an incentive to deviate from those targets if the VCR, reflected in the rewards and penalties, exceeds the cost of reliability improvement (or is exceeded by the cost savings from reliability deterioration) (p. 26).</p>	<p>As discussed above, the Commission considers that STPIS targets should be based on the reliability targets which have been set by the standard setter to provide clear incentives for DNSPs to deliver efficient levels of investment.</p> <p>Under the recommended framework, STPIS reward and penalty payments will be based on the VCR which was used to set the relevant DNSP's reliability targets. This should encourage DNSPs to provide</p>

Stakeholder	Comment	Commission's response
		a level of reliability which is consistent with customer preferences.
AER	<p>The AER supports the use of financial incentives to encourage DNSPs to provide an appropriate level of reliability. However, the AER considers that it should have flexibility in how the STPIS is applied and developed over time to provide for continuous improvement in the STPIS.</p> <p>In particular, the AER notes that where there is a step change in reliability targets, there may be windfall gains or losses for some DNSPs as there will be a time lag between changes in targets and changes in performance. The AER also notes that it should have flexibility to extend the STPIS beyond the reliability targets for unplanned SAIDI and SAIFI that are determined through the standard setting process (p. 5).</p>	Agreed. The Commission considers that the AER has sufficient flexibility under the current NER in how it applies and develops the STPIS over time. However, the Commission notes that under the recommended framework, STPIS targets should be based on the reliability targets which have been set by the standard setter.
Ergon Energy	Ergon Energy does not support the auditing process as the current STPIS mechanism incentivises reliability improvement (p. 11).	As discussed above, the Commission has determined that five yearly independent audits are required to assess a DNSP's plans to meet its reliability targets.
SA Power Networks	SA Power Networks suggests removing the requirement for annual audits unless there is systemic evidence of failure of an NSP to achieve its reliability targets (p. 3).	
<b>Performance reporting requirements</b>		
SA Power Networks	SA Power Networks considers that the performance reporting regime should be designed to inform and educate customers on variations in performance. Reports should cover all the components that contribute to overall reliability performance (e.g. generation related failures, transmission failures, distribution exclusions etc.) (p. 15).	As discussed in chapter 10, DNSPs would be required to report on their performance against their reliability targets, including any reasons for deviating from their targets. Therefore, DNSPs should be able to provide sufficient information to inform and educate customers on variations in performance.
MEU	MEU considers that transparency and consistency should be central to the reporting framework and clearly present performance against standards/targets at aggregate and	Agreed. The Commission notes that DNSPs will be required to report their performance against the output reliability

Stakeholder	Comment	Commission's response
	feeder level (p. 37).	targets and any additional reliability measures which have been set. As the Commission has recommended that reliability targets be set by feeder type, the Commission notes that performance reporting would also be done on this basis.
ENA	<p>ENA supports public reporting through annual planning reports of NSP performance against their reliability standards and targets, to ensure accountability, promote transparency, and facilitate benchmarking (p. 15).</p> <p>ENA proposes that reporting of network reliability should be with and without exclusions with networks reporting on factors beyond their control and reasons for departure from the reliability targets (p. 15).</p> <p>ENA proposes that a distinction is made between public reporting and reporting for the purposes of measuring performance against the STPIS. Public reporting needs to explain the context and the potential pitfalls of performing simple comparisons between networks, ie. density of customers, geography, events and the types of assets employed. Reporting of outages should include associated analysis, including causes for loss of supply (p. 16).</p>	<p>As discussed in chapter 10, performance reporting would be undertaken by DNSPs as part of their Annual Planning Reports. This data would then be used by the AER as part of its annual benchmarking report on the efficiencies of NSPs.</p> <p>The Commission agrees that benchmarking reports will need to be carefully prepared by the AER to ensure differences in network characteristics are clearly explained.</p>
Ergon Energy	Ergon Energy is supportive of a national framework on reliability reporting and supports annual reporting against targets for a given regulatory year. Public reporting should not be used for benchmarking purposes or comparative reporting among DNSPs as the public may not always have a full understanding of the underlying reasons behind different performance levels delivered. Reporting on the size of the gap to compliance to individual DNSP's SAIDI/SAIFI targets could assist in performance reporting (p. 12).	
AER	Clearly expressed and consistently defined standards will facilitate comparisons between NSPs' performance and may assist the AER to more effectively compare DNSPs' cost forecasts and identify discrepancies. Consistency in standard definitions will also aid the ongoing development of performance incentive schemes (p. 2).	Agreed.

Stakeholder	Comment	Commission's response
<b>Implementation considerations</b>		
Energex	Energex considers that to maximum extent possible changes for its 2015-20 revenue determination should be implemented under the current regulatory framework, except to the extent that reliability targets underpinning the revenue determination are set in a different way (p. 9).	<p>The Commission notes that SCER will consider the AEMC's recommended framework and each jurisdiction will decide whether the framework should be adopted.</p> <p>In chapter 11, the AEMC has suggested that if SCER intends to progress the recommended framework, it should request the AEMC to undertake a detailed implementation plan. This plan would include advice on how jurisdictional instruments would need to be amended, including the timing of when these changes should be sequenced.</p>
MEU	MEU considers that changes to the NEM regulatory architecture be done holistically rather than in an ad-hoc manner (p. 38).	Agreed. As set out in chapter 11, the Commission has recommended that if SCER agrees to progress the recommended framework that it should request the AEMC to develop a detailed implementation plan. This should allow changes to the NEM regulatory architecture to be co-ordinated.

## **B Interim implementation stage tasks**

As discussed in chapter 11, we consider that an interim implementation stage should be undertaken by the Standing Council on Energy and Resources (SCER). This interim implementation stage would involve SCER requesting the AER to:

- develop common definitions for expressing distribution reliability targets; and
- be responsible for updating values of customer reliability for each jurisdiction in the National Electricity Market (NEM).

This appendix provides further details of the tasks involved under the interim stage. Once the full implementation of the framework has been completed, the AER's obligations relating to the development of common definitions for distribution reliability targets and responsibility for the value of customer reliability will be specified in the National Electricity Rules (NER).

### **B.1 Draft list of tasks for the AER under the interim implementation stage**

In connection with the performance of the Australian Energy Regulator's (AER's) functions under section 15 of the National Electricity Law (NEL), SCER requests the AER to develop common definitions for expressing distribution reliability targets across the NEM and be responsible for updating values of customer reliability (VCRs) for each NEM jurisdiction.

In its final report to SCER on a national framework for distribution reliability (the framework), the AEMC outlined an interim implementation stage that could be undertaken prior to the full implementation of the arrangements for the framework. The purpose of the interim stage would be to develop some key aspects for the framework that could be applied to improve existing jurisdictional arrangements for setting distribution reliability targets in the short term.

This interim stage would include the development of common definitions for expressing distribution reliability targets to allow distribution reliability targets and the reliability performance of distribution network service providers (DNSPs) to be compared across the NEM. The interim stage would also involve the AER being responsible for regularly updating VCRs, to allow the trade-off between cost and the value placed on reliability to be explicitly considered in setting reliability targets.

SCER has agreed to this interim stage and is therefore requesting the AER to develop a document which would provide for common definitions for expressing distribution reliability targets in the NEM. SCER also requests that the AER be responsible for updating VCRs for each NEM jurisdiction.

SCER notes that these tasks are relevant to the AER's functions under Chapter 6 of the NER to develop schemes to provide incentives for network service providers (NSPs) to

maintain and improve performance and report on the operational performance of DNSPs.

Further details on these tasks are set out below.

### **B.1.1 Development of common definitions for expressing distribution reliability targets**

SCER requests the AER to develop and publish a document to provide for common definitions for expressing distribution reliability targets across the NEM.

This document will be used by standard setters to set distribution reliability targets and other reliability measures. It will also be used by DNSPs to provide consistency in how they report on their performance against their reliability targets and measures across the NEM. This will assist the AER and other stakeholders to compare the reliability performance of DNSPs in the NEM. This will in turn assist the AER in undertaking benchmarking, which can be considered in the development of its revenue determinations for each DNSP.

This document must include:

- (a) the range of distribution output reliability measures which could be used to set distribution reliability targets;
- (b) definitions for the expression of distribution output reliability measures, including the events which will be excluded from the calculation of reliability performance;
- (c) the classification of feeder types which will be used to set distribution reliability targets for each DNSP;
- (d) the form of worst served reliability measures that may be used to set reliability requirements for poor performing areas in distribution networks; and
- (e) any other reliability measures which could be used in setting reliability requirements for DNSPs.

### **Relevant considerations**

The document must be prepared to be consistent with the following principles:

- **Applicability** - Definitions of reliability measures and events to be excluded from the measurement of reliability performance should be developed in consideration of the operating environments of DNSPs in the NEM.
- **Measurability** - Reliability performance measures should be developed so as to be able to be practically and objectively calculated by a third party with knowledge or expertise in the area.

- **Transparency** - DNSPs, market participants, and consumers should be able to interpret the content of the set of definitions and its implications for the level of supply reliability they can reasonably expect to receive.
- **Quality** - Reliability performance measures should be based upon best practice engineering and technical analysis performed by expert practitioners within the field.
- **Accountability** - DNSPs should be able to report on their performance against their reliability targets to enable them to be held accountable for meeting their reliability targets.
- **Economic efficiency** - Reliability performance measures should promote economically efficient decisions and should not be biased towards network solutions when non-network options can provide a comparable level of reliability.

In addition to these principles, in developing the common definitions for expressing distribution reliability targets the AER must have regard to:

- the need to ensure that the reliability measures can be practically applied by DNSPs across the NEM;
- the need to provide consistency in the distribution reliability targets which are set for DNSPs across the NEM as well as consistency in the reporting DNSPs undertake for their performance against their targets;
- the need for consistency with the AER's Service Target Performance Incentive Scheme for distribution;
- the National Electricity Objective;
- the AEMC's final report on the national framework for distribution reliability; and
- the need for consistency with the national framework for transmission reliability, to the extent possible.

### **Timeframe and deliverables**

The document setting out common definitions for expressing distribution reliability targets in the NEM must be published by XX XX 2014.

The AER must work with DNSPs and jurisdictional governments in developing this document. In addition, the AER must also consult broadly with stakeholders, which includes but is not limited to: AEMC, AEMO, jurisdictional reliability setting bodies, transmission network service providers (TNSPs), and community representatives.



### **B.1.2 Responsibility for the value of customer reliability in the NEM**

SCER also requests the AER be responsible for updating measures of the VCR in the NEM. This would involve responsibility for:

- the methodology for calculating VCRs on a consistent basis across the NEM;
- updating the VCRs for each NEM jurisdiction at least every five years and developing a timetable for when these updates should occur; and
- escalating VCR measures for each NEM jurisdiction using an appropriate escalation methodology each year between updates.

In undertaking this responsibility, the AER must take into account the work undertaken by the Australian Energy Market Operator (AEMO) to establish a national approach to estimating the VCR and the VCR measures which AEMO has calculated. The AER must initially use the methodology and VCR values developed by AEMO and consider the appropriate timing for when the methodology and VCR values should be updated. In making this decision, the AER must have regard to:

- the need for VCR measures to take into account an appropriate range of customers and geographic locations within each NEM jurisdiction; and
- the range of uses for VCR measures, including in the: setting of transmission, distribution, and generation reliability standards and targets; network investment planning; and the economic regulation of NSPs.

If the AER amends the methodology for the VCR, it must undertake public consultation prior to finalising the methodology. Following any updates or annual escalations to VCR measures, the AER must publish a report setting out the amended VCR measure and the method that was used to amend the measure.

## C Changes to jurisdictional arrangements to implement the framework

This appendix sets out the changes to jurisdictional arrangements to implement the framework.<sup>121</sup> The changes to jurisdictional arrangements are set out for each NEM jurisdiction.

### C.1 South Australia

Features	Current Arrangements	Changes required to adopt the framework
Expression of standards	SA Power Networks is required to meet average output reliability standards by geographical region. SA Power Networks develops its own input planning criteria to meet output reliability standards. Input planning criteria based on N-x. Output reliability standards set for unplanned SAIDI and SAIFI.	Output reliability targets would be set for unplanned SAIDI and SAIFI. Other reliability measures may be justified through customer consultation. Output reliability targets would be reported to the AER by feeder type. Targets would be consistent with the common definitions for distribution. The use of geographical regions may be retained for supplementary jurisdictional reporting purposes.
Standard setter	Input planning standards are determined by SA Power Networks. Output reliability standards are determined by the Essential Services Commission of South Australia (ESCOSA).	The SA Parliament could delegate standard setting to the AER or another body, such as AEMO, the AEMC Reliability Panel, or ESCOSA.
Standard setting process	Input planning standards are set at the discretion of the DNSP. ESCOSA sets output reliability targets in consultation with the DNSPs.	Output reliability targets would be set on an economically derived basis and to reflect community expectations as set out in this framework.
Impact of standards on NSP investment planning	Input planning standards guide investments. DNSPs focus on economically efficient options for meeting the reliability standards that are set. Willingness to pay (WTP) is one factor used to assess the most economically efficient option for the purposes of investment.	Output reliability targets, set on an economically derived basis in consideration of community expectations, would guide DNSPs when making their network investments.
Compliance obligations	SA Power Networks is required to use “best endeavours” to meet the reliability standards contained in the South Australian Electricity	Compliance would be incentivised through the STPIS. There would be independent audits every 5 years to assess whether NSPs are

<sup>121</sup> This Appendix builds on and provides further detail on the summaries set out in section 11.2 of this report.

Features	Current Arrangements	Changes required to adopt the framework
	Distribution Code.	meeting their plans to achieve their targets.
Reporting requirements	SA Power Networks reports annually to ESCOSA. ESCOSA publishes updated reliability statistics on a quarterly basis.	SA Power Networks would be required to publicly report on their plans to meet their reliability targets in their Annual Planning Reports.

## C.2 Queensland

Features	Current Arrangements	Changes required to adopt the framework
Expression of standards	DNSPs are required to meet average output reliability standards by feeder type. DNSPs are required to develop and comply with input planning standards to meet the output reliability targets. Input planning standards based on N-x. Output reliability standards set for unplanned SAIDI and SAIFI.	Output reliability targets would be set for unplanned SAIDI and SAIFI. Other reliability measures may be justified through customer consultation. Output reliability targets would be reported to the AER by feeder type. Targets would be consistent with the common definitions for distribution. The use of jurisdictional-specific reliability measures with exclusions to fit the characteristics of the network may be retained for supplementary jurisdictional reporting purposes.
Standard setter	Input planning standards are determined by the DNSPs as part of their Network Management Plans. Output reliability targets are determined by the Queensland Competition Authority (QCA).	The Queensland Parliament could delegate standard setting to the AER or another body, such as AEMO, the AEMC Reliability Panel, or the QCA.
Standard setting process	DNSPs have discretion when determining input planning standards. The QCA sets output reliability targets in consultation with the DNSPs.	Output reliability targets would be set on an economically derived basis and to reflect community expectations as set out in this framework.
Impact of standards on NSP investment planning	DNSPs plan their networks to maintain minimum levels of network redundancy in accordance with input planning standards.	Output reliability targets, set on an economically derived basis in consideration of community expectations, would guide DNSPs when making their network investments.
Compliance obligations	DNSPs are required to use “best endeavours” to meet the reliability standards contained in the Queensland Electricity	Compliance would be incentivised through the STPIS. There would be independent audits every 5 years to assess whether NSPs are meeting their plans to achieve their

Features	Current Arrangements	Changes required to adopt the framework
	Industry Code.	targets.
Reporting requirements	DNSPs publish an annual planning report. The QCA also reports publically on reliability performance.	DNSP would be required to report on their plans to meet their reliability targets in their Annual Planning Reports.

### C.3 New South Wales

Features	Current arrangements	Changes required to adopt the framework
Expression of standards	DNSPs have strict obligations to meet input planning standards and average output reliability standards by feeder type. Input planning standards based on N-x. Output reliability standards set for unplanned SAIDI and SAIFI.	Output reliability targets would be set for unplanned SAIDI and SAIFI. Other reliability measures may be justified through customer consultation. Output reliability targets would be reported to the AER by feeder type. Targets would be consistent with the common definitions for distribution.
Standard setter	Input planning standards and output reliability standards are set by the NSW Minister for Energy.	The NSW Parliament could delegate standard setting to the AER or another body, such as AEMO, the AEMC Reliability Panel, or IPART.
Standard setting process	The NSW Minister for Energy consults with DNSPs on proposed changes to the reliability standards but there is otherwise no established standard setting process.	Output reliability targets would be set on an economically derived basis in consideration of community expectations as set out in this framework.
Impact of standards on NSP investment planning	DNSPs plan their networks so as to maintain minimum levels of network redundancy in accordance with input planning standards. The level of reliability standards is not economically justified.	Output reliability targets, set on an economically derived basis in consideration of community expectations, would guide DNSPs when making their network investments.
Compliance obligations	DNSPs have an obligation to maintain minimum levels of network redundancy in accordance with input planning standards and to meet the average reliability performance standards as stipulated in licence conditions.	Input planning standards would be removed. Compliance with output reliability targets would be incentivised through the STPIS. There would be independent audits every 5 years to assess whether NSPs are meeting their plans to achieve their targets.
Reporting requirements	DNSPs are required to submit quarterly and annual reports to the NSW Minister for Energy on	DNSPs would be required to publicly report on their plans to meet their reliability targets in their

Features	Current arrangements	Changes required to adopt the framework
	their performance against average reliability performance standards.	Annual Planning Reports.

#### C.4 Australian Capital Territory

Features	Current arrangements	Changes required to adopt the framework
Expression of standards	No mandatory input planning standards. ActewAGL is required to meet output reliability performance standards. No disaggregation of standards by feeder type.	Output reliability targets would be set for unplanned SAIDI and SAIFI. Other reliability measures may be justified through customer consultation. Output reliability targets would be reported to the AER by feeder type. Targets would be consistent with the common definitions for distribution.
Standard setter	Output reliability targets are determined by ActewAGL. Reliability targets can be no worse than those specified in the Electricity Distribution Code.	The ACT Parliament could delegate standard setting to the AER or another body, such as AEMO, the AEMC Reliability Panel, or the Independent Competition and Regulatory Commission (ICRC).
Standard setting process	ActewAGL has some discretion when setting output reliability standards. Maximum duration and frequency limits apply.	Output reliability targets would be set on an economically derived basis in consideration of community expectations as set out in this framework.
Impact of standards on NSP investment planning	Network planning is largely at the discretion of ActewAGL to meet output reliability standards. The level of reliability standards is based on historical reliability outcomes.	Output reliability targets, set on an economically derived basis in consideration of community expectations, would guide DNSPs when making their network investments.
Compliance obligations	Compliance with reliability standards is a condition of holding a distribution licence. ActewAGL cannot contravene the conditions of the licence without a reasonable excuse.	Compliance would be incentivised through the STPIS. This may mean it is no longer necessary to stipulate compliance with reliability obligations in licence conditions. There would be independent audits every 5 years to assess whether NSPs are meeting their plans to achieve their targets.
Reporting requirements	The jurisdictional regulator publishes an annual compliance and performance report with information on ActewAGL's	ActewAGL would be required to publicly report on their plans to meet their reliability targets in their Annual Planning Reports.

Features	Current arrangements	Changes required to adopt the framework
	reliability performance.	

## C.5 Tasmania

Features	Current arrangements	Changes required to adopt the framework
Expression of standards	No mandatory input planning standards. Aurora Energy is required to meet output reliability performance standards. Output reliability standards are set for unplanned SAIDI and SAIFI and are disaggregated by 'community' categories (eg. critical infrastructure, low-density rural).	Output reliability targets would be set for unplanned SAIDI and SAIFI. Other reliability measures may be justified through customer consultation. Output reliability targets would be reported to the AER by feeder type. Targets would be consistent with the common definitions for distribution. The use of community categories may be retained for supplementary jurisdictional reporting purposes.
Standard setter	Output reliability targets are determined by a joint working group comprised of the jurisdictional regulator - Office of the Tasmanian Economic Regulator (OTTER), Aurora Energy and the Tasmanian government.	The Tasmanian Parliament could delegate standard setting to the AER or another body, such as AEMO, the AEMC Reliability Panel, or OTTER.
Standard setting process	Output reliability targets are determined through consultation between the government and Aurora Energy and are based on historic reliability performance data.	Output reliability targets would be set on an economically derived basis in consideration of community expectations as set out in this framework.
Impact of standards on NSP investment planning	Network planning is largely at the discretion of the DNSP in order that output reliability targets are met. The level of reliability standards is based on the assumption that historical reliability outcomes are economically efficient. Aurora Energy bases reliability performance on economic cost analysis of possible options.	Output reliability targets, set on an economically derived basis in consideration of community expectations, would guide DNSPs when making their network investments.
Compliance obligations	Aurora Energy is required to use "reasonable endeavours" to meet the reliability standards contained in the Tasmanian Electricity Code.	Compliance with output reliability targets would be incentivised through the STPIS. There would be independent audits every 5 years to assess whether NSPs are meeting their plans to achieve

Features	Current arrangements	Changes required to adopt the framework
		their targets.
Reporting requirements	Aurora Energy prepares a planning report. Public reliability performance reporting by OTTER.	Aurora Energy would be required to publicly report on its plans to meet its output reliability targets in their Annual Planning Reports.

## C.6 Victoria

Features	Current arrangements	Changes required to adopt the framework
Expression of standards	No mandatory input planning standards or output reliability performance standards. Output reliability targets are based on unplanned SAIDI and SAIFI, MAIFI, and CAIDI and are disaggregated by feeder type.	Output reliability targets would be set for unplanned SAIDI and SAIFI. Other reliability measures may be justified through customer consultation. Output reliability targets would be reported to the AER by feeder type. Targets would be consistent with the common definitions for distribution.
Standard setter	DNSPs set their own output reliability targets. In practice, the DNSPs adopt the AER's STPIS targets, which are based on past reliability performance.	The Victorian Parliament could delegate standard setting to the AER or another body, such as AEMC Reliability Panel or the Department of State Development, Business and Innovation (DSDBI). The current arrangements with AEMO may also be maintained if the Victorian government decides to do so.
Standard setting process	DNSPs have full discretion when setting reliability targets. DNSPs generally assume that historical reliability performance represents an efficient outcome due to the "s-factor" incentive scheme and typically base reliability targets on the previous 5 years of reliability, consistent with targets under the STPIS.	Output reliability targets would be set on an economically derived basis in consideration of community expectations as set out in this framework. However, in contrast to the current Victorian approach, output reliability targets would be set ex-ante, that is, prior to the commencement of the revenue determination process.
Impact of standards on NSP investment planning	Network planning involves a cost-benefit approach. If the expected cost of unserved energy is greater than the annualised cost of network augmentation, then the project is justified. The cost of network augmentation is based on the most economically efficient	Output reliability targets, set on an economically derived basis in consideration of community expectations, would guide DNSPs when making their network investments.

Features	Current arrangements	Changes required to adopt the framework
	option.	
Compliance obligations	DNSPs are required to use “best endeavours” to meet their published reliability targets. In practice, reliability targets are considered to be a guide to performance and to provide transparency. The “best endeavours” obligation is not enforced. DNSPs must report on options available to improve reliability in poor performing areas.	Compliance would be incentivised through the STPIS and this would be similar to the current practice of using the STPIS in Victoria. However, the STPIS targets would be the targets set by the standard setter rather than the 5 year average historical performance as is currently applied. In addition, there would be independent audits every 5 years to assess whether NSPs are meeting their plans to achieve their targets.
Reporting requirements	DNSPs are required to publish a distribution system planning report detailing five-year plans to meet forecast demand and reliability targets. The AER publishes an annual report on DNSP reliability performance outcomes.	DNSP would be required to publicly report on their plans to meet their reliability targets in their Annual Planning Reports. The national framework for reporting would be consistent with current practice in Victoria.