AEMC

REVIEW

Australian Energy Market Commission

CONSULTATION PAPER

Review of the national frameworks for transmission and distribution reliability

12 July 2013

Submissions due 9 August 2013. Reference: EPR0028 and EPR0033
Consultation paper

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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.

Executive summary

Reliability refers to the extent to which customers have a continuous supply of electricity. Transmission and distribution networks facilitate the supply of electricity to end use customers from a system of generators within each region of the National Electricity Market (NEM) and via interconnections with other regions. The level of reliability that transmission and 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 that networks should provide involves a trade-off between the cost of building and maintaining the networks and the value placed on reliability by customers.

The Standing Council on Energy and Resources (SCER) has requested the Australian Energy Market Commission (AEMC or Commission) develop frameworks for the regulation of transmission and distribution reliability in the NEM to promote greater efficiency and transparency in how reliability levels are set and provided.

Purpose of this paper

This consultation paper has been prepared by the AEMC to seek stakeholder comments on our proposed frameworks for transmission and distribution reliability in the NEM. Many of the issues to be resolved are common to both transmission and distribution. The Commission therefore considers that there is merit in undertaking a process of consultation on both frameworks.

This paper builds on previous work undertaken by the Commission. The proposed frameworks include:

- the setting of required reliability levels based on a transparent economic assessment process, which exposes the way costs vary with different levels of reliability and evaluates the expected costs of investments to meet a given level of reliability against the value that customers place on reliability;
- jurisdictional responsibility 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 jurisdictions to incorporate additional reliability requirements for areas of economic importance or to better reflect community expectations;
- greater opportunities to consult with customers and consider community preferences;
- a mechanism to update reliability requirements within a regulatory control period under defined circumstances; and

- national reporting of network reliability performance.

The intention of the proposed frameworks is not to result in a single harmonised level of reliability that will apply across the NEM. Rather, the focus is on implementing effective frameworks for setting, delivering, and reporting on required reliability levels and outcomes.

Aspects of the frameworks that uniquely apply to either transmission or distribution are discussed in this paper. The differences between the frameworks principally relate to the expression of reliability measures and how network service providers (NSPs) are required to comply with their reliability standards.

The distribution reliability framework has an outputs based approach which is supported by the Service Target Performance Incentive Scheme (STPIS). This will strengthen accountability and encourage distribution network service providers (DNSPs) to perform at least to the level of their output reliability targets.

The transmission reliability framework provides for reliability standards that are expressed on an N-x input basis which transmission network service providers (TNSPs) would be required to comply with each year. The standard would also include requirements for supply restoration following an interruption. Additional requirements could also be placed on TNSPs under the national framework, such as requirements relating to the maximum amount of load that could be interrupted, to complement the N-x expression of standards. The inclusion of these additional requirements would provide greater flexibility in setting standards, which could allow the standards to better reflect customer preferences.

The final reports for the transmission and distribution workstreams will provide further detail on how the frameworks will operate and the next steps towards implementation.

Benefits of the proposed frameworks

The Commission considers that the adoption of the proposed frameworks outlined in this paper is likely to have a number of benefits for customers.

The proposed frameworks will provide for a more economically efficient, transparent, and robust methodology for setting reliability standards and targets. This will allow the trade-off between the cost of investing in networks and the value placed on reliability by customers to be more effectively considered. This could lead to more efficient investments by TNSPs and DNSPs and electricity prices which are more consistent with the value placed on reliability by customers.

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

Setting reliability standards and targets ahead of the need to invest would also provide transparency and certainty to market participants regarding the level of reliability they can expect to receive and ensure that NSPs are accountable for the level of reliability provided.

In addition to these benefits, consistency in the expression of reliability standards and targets across the NEM would allow the AER to better benchmark performance. and improve its ability to determine revenues that are consistent with the efficient delivery of a NSP's required reliability levels. It would also allow stakeholders to compare and identify trends and innovations in the performance of NSPs, which may assist in driving further efficiencies.

Next steps

We welcome the views of interested parties in relation to any of the matters discussed in this paper. To help focus responses, we have set out a number of specific questions in each chapter. Responses to those questions, and any other issues raised by this paper, are due by **5pm, Friday 9 August 2013**.

After considering written submissions and stakeholder discussions on the proposed frameworks set out in this paper, we will publish separate final reports for the distribution and transmission workstreams of the review. In accordance with SCER's terms of reference, a distribution workstream final report will be published by 27 September 2013 and a transmission workstream final report will be published by 1 November 2013.

Contents

1 Features of the AEMC's proposed frameworks

This chapter sets out a summary of the features of the AEMC's proposed frameworks for transmission and distribution reliability. The frameworks have a number of common arrangements, with the main differences relating to how transmission reliability standards and distribution reliability targets are expressed and how the businesses are required to comply with their standards and targets.

We consider that our proposed arrangements will promote the National Electricity Objective (NEO), consistent with the Standing Council on Energy and Resources' (SCER's) terms of reference. In developing these arrangements, we have assessed a range of options against the principles for the review set out in chapter 3. Further detail on each of the features of the frameworks, as well as the Commission's reasoning for its proposed arrangements, are set out in chapters 4 to 10.

1.1 Expression of distribution reliability targets

The framework for distribution reliability would be based on an outputs approach to provide flexibility to distribution network service providers (DNSPs) to achieve reliability outcomes through efficient and innovative means. As a result, the framework would not include any input requirements, 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 Australian Energy Regulator's (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.

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 would develop a national reference standard template for distribution to provide consistency in how distribution reliability targets are expressed across the National Electricity Market (NEM). This would also 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.

Jurisdictional energy ministers would also be able to request that the costs and benefits of additional reliability measures, such as measures for worst served customers, are

included in the economic assessment. Jurisdictional ministers would then determine whether any additional reliability measures should be applied to each DNSP.

1.2 Expression of transmission reliability standards

The framework for transmission reliability would require transmission reliability standards to be expressed on an N-x basis.[1] Standard setters would also be required to specify the requirements for when supply would need to be restored following an interruption. Transmission reliability standards would be set for each connection point in a transmission network service provider's (TNSP's) network.

An N-x expression of transmission reliability standards has been proposed, as it is difficult to develop outputs based standards alone for transmission networks. This is because there are a limited number of supply interruptions on transmission networks as they are designed to provide a higher level of reliability than distribution networks. This is due to the potentially widespread consequences of a failure on a transmission network. This also means that prolonged under-investment in transmission networks may not translate to short term observable reductions in reliability to the same extent that may occur for distribution networks. For these reasons, as discussed below in section 1.8, TNSPs would be required comply with their standards in every year.

Standard setters would also be able to choose from a range of other parameters, such as the maximum amount of load that could be interrupted, to complement the N-x expression of standards. The inclusion of these additional outputs based parameters would provide standard setters with greater flexibility in setting standards. This could allow the standards to better reflect the preferences of customers. The use of additional parameters may also provide TNSPs with greater flexibility to meet their standards in a more efficient manner, as it could allow TNSPs to defer investments in the short term.

The range of parameters that standard setters could choose from would be set out in a national reference standard template for transmission, which would be developed by the Australian Energy Market Operator (AEMO). Similarly, to the template discussed above for distribution, this template would provide consistency in the expression of transmission reliability standards and allow benchmarking to occur across the NEM. There would be high level consistency between the national reference standard templates developed for distribution and transmission.

1 Under an "N-x" expression of transmission reliability standards, the "N" refers to the number of elements in a part of the network and "x" refers to the number of elements that can be out of service while still maintaining supply. As a result, under a N-1 reliability standard, the failure of one network element would not result in an interruption to supply. However, the failure of two network elements could result in an interruption to supply.

1.3 Structure of the standard setting process

The standard setting process[2] under the proposed frameworks for transmission and distribution reliability would involve three main stages:

1. a process for the selection of a range of feasible reliability scenarios;

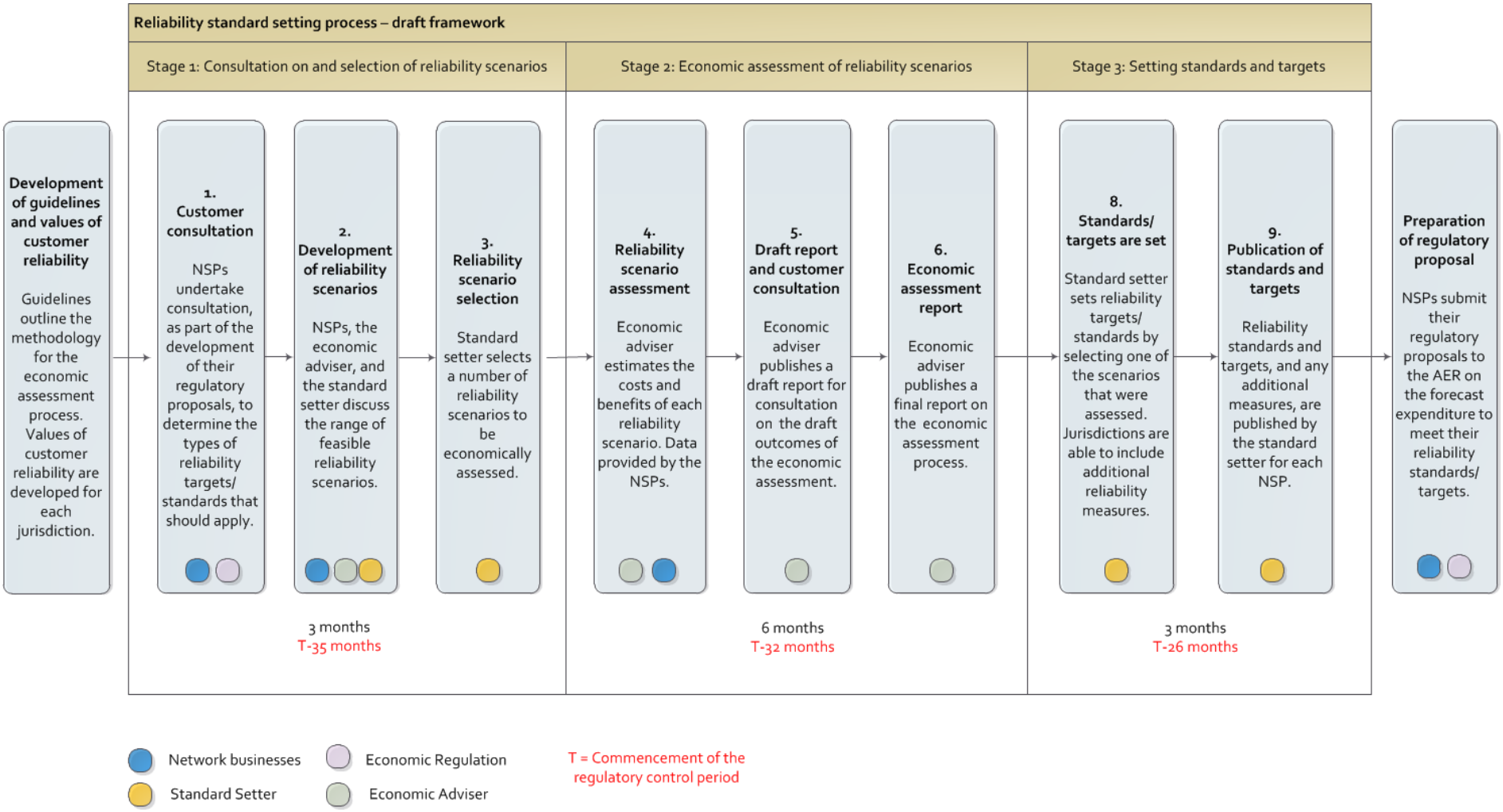
2. an economic assessment process to assess the costs and benefits of each reliability scenario; and

3. a process to select and publish the reliability standards or targets for each network service provider (NSP).

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 for stakeholder consultation.

2 For the remainder of this paper, where we refer to "the standard setting process", this refers to the either the setting of transmission reliability standards or the setting of distribution reliability targets under the national frameworks.

Figure 1.1 Process flow for setting standards and targets

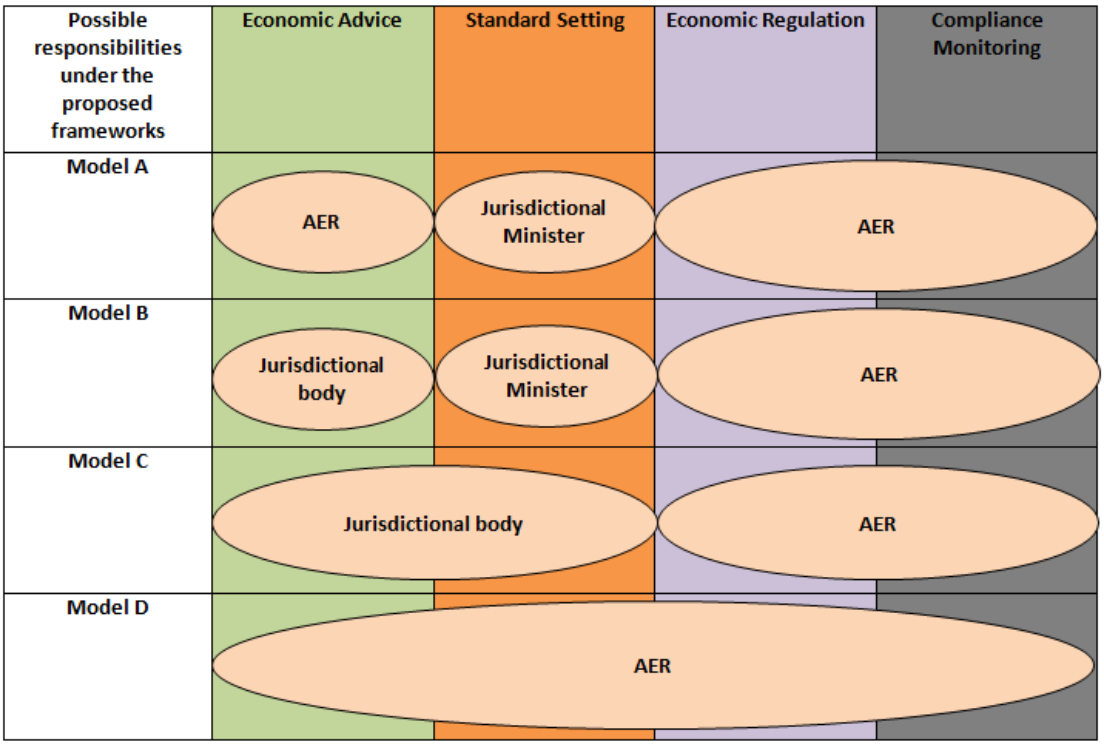


The main responsibilities during the standard setting process would include:

- Selecting the reliability scenarios which should be economically assessed, which would be performed by the standard setter;
- Providing information on the costs and reliability impact of achieving different reliability scenarios, which would be performed by the NSPs;
- Undertaking an economic assessment of the costs and benefits of each reliability scenario, which would be performed by the economic adviser;
- Setting the reliability standards or reliability targets that will apply to each NSP, which would be performed by the standard setter;
- Determining the revenues for NSPs which are consistent with the efficient delivery of their reliability standards or targets over the next regulatory control period, which would be performed by the Australian Energy Regulator (AER) in its capacity as the economic regulator; and
- Monitoring and reporting on the compliance of NSPs against their standards and targets. We have proposed that the AER would undertake this role.

Jurisdictional energy ministers would be responsible for setting transmission reliability standards and distribution reliability targets, but would be able to delegate this responsibility to a jurisdictional body or the AER. Therefore, under the proposed frameworks, 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.

Figure 1.2 Possible responsibilities under the national frameworks



Where a jurisdictional energy minister has delegated responsibility for setting standards or targets to a jurisdictional body or the AER, the economic adviser role would also be performed by the delegated body. As a result, the delegated 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 standards or targets that will apply to each NSP.

The delegated body would be required to set reliability standards or targets on the basis of the reliability scenario with the highest net economic benefits, as identified through the economic assessment process. However, in delegating responsibility for setting standards, jurisdictional ministers would be able to provide jurisdictional bodies or the AER with guidance on how they should make their decision. For instance, this could include a requirement to not lower reliability in certain areas.[3]

Where a jurisdictional energy minister retains responsibility for setting standards or targets, jurisdictional ministers could appoint a separate jurisdictional body to perform the economic adviser role.[4]Jurisdictional energy ministers would be able to take into account non-measurable factors which may not be fully accounted for in the economic

3 Where jurisdictional energy ministers provide guidance to jurisdictional bodies or the AER in terms of how it should exercise its standard setting responsibility, in some situations this could result in them selecting a scenario with the lowest net costs in setting reliability standards or targets.

4 A "jurisdictional body" could include any body appointed by the jurisdictional energy minister. For instance, this could be a jurisdictional government body, jurisdictional regulator, AEMO, or any other body.

assessment process in setting standards. 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 value of customer reliability (VCR).[5]

The Commission considers that it is appropriate for jurisdictional energy ministers to be able to take into account non-measurable factors as elected officials are best placed to make judgements regarding the trade-off between cost and reliability on behalf of the broader community.

The standard setting process would be supported by the development of guidelines by the AER, which would set out the details of the process and key assumptions to be used during the economic assessment process. Separate guidelines would be developed for transmission and distribution. This would provide consistency in how the costs and benefits of reliability scenarios are assessed 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. It is proposed that the AER would be responsible for developing VCRs for each jurisdiction, as this 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.

VCRs would be updated every five years and escalated each year by the consumer price index. The AER would also be responsible for the methodology used to determine VCRs, 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.

1.4 Customer consultation and selection of reliability scenarios

The standard setting process under the proposed frameworks would commence with a customer consultation process by the relevant NSP. This process would be used to determine which areas of reliability are particularly important to customers within each NSP's network. These views would be used in the development of reliability scenarios in consultation between the NSP, 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 standard or targets that should apply to each NSP.

5 As a result of considering non-measurable factors, there is the potential that jurisdictional energy ministers could select a scenario with net costs.

Customer consultation at the commencement of the standard setting process would assist in ensuring that the reliability scenarios which are assessed reflect the preferences of customers and are considered in a transparent manner. Determining reliability scenarios on a consultative basis with the NSP would ensure that the scenarios which are assessed under the standard setting process are both physically and financially feasible. This should assist in promoting efficient and effective investments by NSPs.

1.5 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 of the maintenance of the existing reliability standards or targets. The economic adviser would also assess the costs and benefits of any additional reliability measures which have been selected by a jurisdiction, such as measures for worst served customers.

NSPs 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 NSP 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. Where a jurisdiction maintains responsibility for standard setting, jurisdictional energy ministers could also undertake consultation, at the same time as the consultation process by the economic adviser, on any non-measurable factors which may not be able to be fully considered under the economic assessment process.

The use of an economic assessment process would increase transparency around the costs and benefits of each reliability scenario. It would also allow the value placed on customers to be explicitly considered, which should improve the likelihood that customer preferences will be reflected in the standards and targets which are set.

1.6 Setting reliability standards and targets

After considering the economic adviser's report, the standard setter would determine the reliability standards or targets which should apply to the relevant NSPs. The standard setter would be required to select a scenario from the reliability scenarios assessed during the economic assessment process, to ensure the costs and benefits of achieving this scenario are transparent. In determining the standards or targets which should apply, the standard setter should consider whether it is appropriate for the NSP to transition to the standards or targets it has determined where there is a step change in the required level of reliability.

As discussed above, where a jurisdictional minister has delegated responsibility for standard setting to the AER or a jurisdictional body, the delegated body would be

required to select the scenario with the highest net benefits, while a jurisdictional minister would also be able to take into account other non-measurable factors in making its decision.

1.7 Links to the revenue determination process and updating reliability standards and targets

There would be two 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 NSP's customer consultation process on the development of its regulatory proposal for the next regulatory control period. It is considered that there would be administrative benefits associated with merging these two consultation processes.

The second link is that the reliability standards or targets determined through the standard setting process would be used by NSPs in forecasting the expenditure they require to meet these standards or targets in their regulatory proposal. NSPs 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 NSPs during the standard setting process. This would assist the AER in determining the revenues and prices which are consistent with the efficient delivery of a NSP's reliability standards or targets.

During the regulatory control period, NSPs would be able to seek an update to their reliability standards or targets where certain conditions are met. This could lead to more efficient investment decisions by NSPs, as it could allow NSPs to have their standards or targets updated where it is no longer efficient to meet them. The conditions that would need to be met for an update represent a relatively high materiality threshold to limit the potential number of updates that could occur. This would provide stakeholders with a degree of certainty regarding the level of reliability they can expect to achieve.

The standard setter would have discretion to determine whether an update to a reliability standard or target should occur. Where an update is approved, the NSP would be required to submit a cost pass through application to the AER, in accordance with the current National Electricity Rules (NER) provisions.

1.8 Compliance obligations and performance reporting

Under the proposed framework for transmission reliability, compliance with reliability standards would form a NER obligation. In contrast, under the proposed framework for distribution reliability, DNSPs would not have an obligation to meet their reliability targets in every year as compliance would be incentivised through the STPIS. A difference in approach is proposed as distribution reliability outcomes are more easily observable than transmission reliability outcomes. Therefore, as under-investment in

transmission networks may not flow through to short term changes in outcomes, stricter compliance obligations are required.

TNSPs and DNSPs would also be required to undertake annual audits to show that they have processes in place to meet their standards and targets. The AER would be responsible for monitoring compliance, even where the jurisdictional minister retains responsibility for standard setting.

TNSPs and DNSPs would be required to publicly report on their performance against their reliability standards and targets and the results of their audits each year.[6] The AER would be required to include this information in its annual benchmarking report on the efficiencies of NSPs, which would minimise the administrative burden of this reporting for the AER, NSPs, and other stakeholders.

6 If the proposed framework for transmission reliability is adopted in Victoria, AEMO would be responsible for compliance against Victorian transmission reliability standards.

2 Introduction

2.1 Purpose of the consultation paper

The SCER has requested the Australian Energy Market Commission (AEMC) conduct a review to develop national frameworks for expressing, setting, and reporting on electricity transmission reliability and distribution reliability in the NEM. The AEMC is conducting this review through two parallel workstreams: a transmission workstream and a distribution workstream.

The purpose of this paper is to propose a common set of arrangements for the frameworks for transmission and distribution reliability for stakeholder consultation. Common arrangements would reduce the regulatory burden for stakeholders of implementing and participating in the frameworks. It may also assist in joint planning between TNSPs and DNSPs, which may promote more efficient investment.

We also note that SCER has requested the frameworks provide consistency between transmission and distribution and that the terms of reference for the two workstreams include a number of common requirements.

While we have proposed common arrangements that apply to both transmission and distribution, we have developed separate proposals on some elements of the frameworks, where appropriate, to address the differing characteristics of transmission and distribution networks. These proposals are also discussed within this paper.

After considering written submissions and stakeholder discussions on the proposed frameworks set out in this paper, we will publish separate final reports for the distribution and transmission workstreams. These final reports will set out further detail on how the frameworks will operate and the next steps towards implementation. The final reports will be published within the timeframes outlined in SCER's terms of reference for this review. The distribution workstream final report will be published by 27 September 2013, while the transmission workstream final report will be published by 1 November 2013.

2.2 Terms of reference for the review

On 8 February 2013, the AEMC received the terms of reference from SCER for this review. The terms of reference build on prior projects conducted by the AEMC for both transmission and distribution. In relation to transmission, we are further developing the recommendations from our 2010 review into transmission reliability standards and the 2011 SCER response to that review. In relation to distribution, the present terms of reference builds on the work undertaken to date by the AEMC to develop a national framework for distribution reliability. The specific aspects of the terms of reference are outlined below.

For this review, the terms of reference require the AEMC to:

- develop a national approach for expressing transmission reliability, which builds on the approach agreed to by SCER in its response to the AEMC's Transmission Reliability Standards Review;
- 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 setting transmission reliability levels and distribution reliability targets, 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 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 AEMO, and in consultation with jurisdictions, develop a mechanism for measuring and regularly updating the 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 to reporting on distribution and transmission reliability across the NEM, with any weightings and assumptions applied to different network elements made explicit;
- advise on appropriate changes to the institutional arrangements for setting transmission reliability levels, either by jurisdictions or the AER, and how these arrangements should operate in an integrated national transmission system; and
- ensure that any proposed framework and methodology for transmission reliability and distribution reliability makes explicit the opportunity for jurisdictions to transfer responsibility for applying the framework to the AER.

2.3 Benefits of national frameworks for distribution and transmission reliability

In December 2012, the Council of Australian Governments (CoAG) agreed in principle to adopt a new best practice framework for reliability standards and to transfer responsibility for applying the framework to the AER.[7]

7 CoAG, CoAG communique, 7 December 2012, p. 4

The development of best practice frameworks for transmission and distribution reliability could provide for a more economically efficient, transparent, and robust methodology for setting standards. This will allow the trade-off between the cost of investing in networks and the value placed on reliability by customers to be more effectively considered. This could lead to more efficient investments by transmission and distribution businesses, and in turn, more efficient pricing outcomes for customers.

Greater transparency in relation to how reliability standards are set and the level of reliability that NSPs are required to provide could increase the accountability of standard setters and NSPs to provide a level of reliability that reflects the preferences of customers. Clear reliability standards could also provide stakeholders with a degree of certainty regarding likely reliability levels, which could assist customers and generators in making more efficient investment decisions.

The development and application of consistent national frameworks would also allow for more accurate comparisons of reliability levels and enable the assessment of reliability performance across jurisdictions. Currently, the levels of reliability for transmission and distribution networks are set and regulated in each jurisdiction. This makes it difficult for customers, market participants, regulators, and governments to compare and evaluate reliability levels and performance across the NEM. Consistency in how reliability levels are expressed could allow benchmarking to be undertaken, which could promote more efficient network investments.

2.4 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 distribution workstream of the present 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 the present 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.[8]

8 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.

AEMC update to Transmission Reliability Standards Review

In November 2010, the AEMC published an Updated Final Report on its Transmission Reliability Standards Review.[9] The Updated Final Report built on previous work undertaken by the AEMC and AEMC Reliability Panel over 2007 and 2008 to develop a national framework for transmission reliability. Under the proposed national framework, transmission reliability standards would be economically derived using a customer value of reliability and be capable of being expressed on a N-x basis using a common national template. The AEMC's Updated Final Report provided further detail on how the proposed framework would be applied in practice, including the institutional arrangements that should apply.

AEMO Review of the Value of Customer Reliability

In March 2013, AEMO formally commenced work on its Review of the Value of Customer Reliability with the publication of an issues paper. AEMO was requested to undertake the review by the 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. AEMO published a directions paper on 3 June 2013.[10] A final paper on AEMO's methodology and approach to the estimation of the VCR is expected to be published in August 2013. The methodology outlined in that paper will be used to provide final VCR figures by March 2014.

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 relevant and regularly updated VCRs for each transmission and distribution network in the NEM.

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.[11]

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9 This report is available at www.aemc.gov.au.

10 AEMO, Value of Customer Reliability Directions Paper, 3 June 2013. Available at www.aemo.com.au.

11 Productivity Commission, Final report, Inquiry into electricity network regulation, April 2013. Available at www.pc.gov.au.

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 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.[12] The response noted the Productivity Commission's proposed approach for transmission and distribution reliability and that the AEMC is currently 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.

2.5 Consultation on the consultation paper

In conducting both the transmission and distribution workstreams of the review, SCER has requested the AEMC to consult broadly with stakeholders. The range of stakeholders is to include but not be limited to:

- AEMO;
- the AER;
- jurisdiction specific reliability setting bodies;
- Energy Ministers and their officials;
- network businesses; and
- consumer representatives.

The AEMC intends to work closely with stakeholders in preparing our final reports on the transmission and distribution workstreams of the review, particularly in light of the range of work undertaken on this area over the past few years. The AEMC would welcome the opportunity to hold discussions with stakeholders during the consultation period on this paper.

12 Australian Government, The Australian Government Response to the Productivity Commission Inquiry Report: Electricity Network Regulatory Frameworks, June 2013.

2.5.1 How to make a submission on the consultation paper

The closing date for submissions to this consultation paper is **5pm, Friday 9 August 2013**.

Submissions must be on letterhead (if submitted on behalf of an organisation), signed and dated. Submissions should quote both project numbers "EPR0028" and "EPR0033" and may be lodged online at www.aemc.gov.au or by mail to:

Australian Energy Market Commission

PO Box A2449

Sydney South NSW 1235

2.6 Structure of this consultation paper

The remainder of the consultation paper is structured as follows:

- Chapter 3 sets out the challenges, approach, and principles for the review;
- Chapter 4 discusses the expression of transmission reliability standards and distribution reliability targets under the proposed frameworks;
- Chapter 5 specifies the structure of the standard setting process under the proposed frameworks;
- Chapter 6 sets out the process of customer consultation and selection of reliability scenarios under the standard setting process;
- Chapter 7 outlines the economic assessment process for the reliability scenarios;
- Chapter 8 describes the process for setting transmission reliability standards and distribution reliability targets;
- Chapter 9 explains interactions between the standard setting process and the revenue determination process and the process for updating reliability standards and targets within a regulatory control period;
- Chapter 10 outlines the compliance and performance reporting arrangements under the proposed frameworks; and
- Chapter 11 sets out next steps and implementation considerations for the proposed frameworks.

3 Challenges, approach and principles

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

3.1 Challenges in developing frameworks for distribution and transmission reliability

The regulation of transmission and distribution reliability remains one of the few areas of the electricity market which is still a jurisdictional responsibility. 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 standards 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 and TNSPs in each jurisdiction have developed their internal planning and investment processes to comply with their separate jurisdictional frameworks.

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 standards 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. This economic assessment process compares the expected cost of each project against the value placed on reliability by customers, with the process undertaken by AEMO for transmission and by each Victorian DNSP for distribution.

In contrast, in other NEM jurisdictions reliability standards are determined in advance of the need to invest and are fixed for a given period of time. Reliability standards in these jurisdictions are determined by a body which is independent from the NSP and are generally set by the relevant jurisdictional energy 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 standards.

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 standards and targets ahead of the need to invest. This is because transparent standards and targets provide a degree of certainty to

stakeholders regarding the level of reliability they can expect to receive and also allow NSPs to be held accountable for the level of reliability that they provide in practice.

However, the Commission considers that there could be benefits in providing greater transparency to how reliability standards and targets are set, which could be achieved through a consistent and public assessment of the costs and benefits of the reliability levels which are being considered.

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

3.1.2 Recognition of the potential benefits of national reliability frameworks

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

There is also a recognition that a best practice approach could promote reliability standards and targets being set in a manner which allows the trade-off between the costs of investing in and maintaining networks against 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 standards and targets.

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

However, there are also some key challenges in designing frameworks for regulating network reliability. A principal challenge arises from the uncertainty that exists in relation to determining both sides of the trade-off between cost and reliability.

Determining the cost of meeting reliability standards and targets requires a range of data to be provided by NSPs, 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, 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. This is because there remains no universally accepted methodology to determining 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 myriad of other variables.

Further, even if the value placed on reliability by each customer could be accurately assessed, as each transmission connection point or 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 NSPs for individual customers which are being served by the same network assets.

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.

High impact, low probability events such as city wide supply interruptions are difficult to measure 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.

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.

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 standards and targets. How these judgements should be made under the national frameworks are explored in further detail in chapters 6 to 8 of this paper. Over time with the repeated application of the standard 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 is likely to improve the measurement of the VCR, particularly once the VCR is measured on a regular and consistent basis across the NEM. The explicit consideration of the preferences of customers during the standard 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.

3.1.4 Broader implications for regulatory frameworks

As well as considering how the AEMC's proposed frameworks should be designed, the Commission has also needed to have regard to the implications that the frameworks may have for the broader regulatory frameworks which are currently in place. This is because the way that reliability standards and targets are set have impacts for the way NSPs plan and invest in their networks and the way the AER determines the revenue that NSPs can recover to meet their standards and targets.

The Commission has also considered the appropriate governance arrangements for the frameworks. In particular, the Commission has sought to ensure that these governance arrangements remain workable in circumstances where jurisdictions retain responsibility for applying the proposed frameworks, and in circumstances where this responsibility has been delegated to the AER or a jurisdictional body.

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 ensure there is high level consistency between the frameworks which are developed for distribution and transmission reliability, where appropriate;
- the need to ensure that either jurisdictions or the AER could be responsible for applying the frameworks;
- the NEO and the principles for the development of the national frameworks, which are discussed below;
- the implications of the frameworks for how NSPs 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 frameworks for transmission and distribution reliability which can be consistently applied across all NEM jurisdictions. While the AEMC has been required to ensure that the frameworks could be applied by either jurisdictions or the AER, the Commission has sought to limit the variation possible in the application of these frameworks to preserve their national approach.

3.3 Principles for the development of the frameworks

Both the transmission workstream and the distribution workstream set out a number of principles to guide the development of the Commission's proposed frameworks. These two sets of principles are very similar, with the main difference being the inclusion of an additional principle relating to customer preference under the distribution workstream. The Commission has decided to combine these two sets of principles for the remainder of the transmission and distribution workstreams to provide greater consistency in the national frameworks.

The following principles have been used in the development of the national frameworks:

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

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

2. **Fit for purpose and reflective of customer preferences:** The frameworks should allow standards and 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 standards and targets which are set, the level of the standards and targets, and any other key reliability obligations placed on TNSPs and DNSPs.

3. **Economic efficiency:** Reliability standards and 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 standards and targets.

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

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

5. **Effectiveness:** The frameworks should allow investments to proceed in a timely manner and limit the potential for inefficient investments. The frameworks should allow standards and 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 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.[13]

13 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 targets and transmission standards

This chapter outlines how distribution reliability targets and transmission reliability standards would be expressed under the AEMC's proposed frameworks.

4.1 Expression of distribution reliability targets

This section outlines the proposed approach and merits for the consistent expression of distribution reliability targets under the proposed framework for distribution reliability.

4.1.1 Proposed approach

The framework would remove all distribution input planning standards and would base the measurement of performance on the achievement of output reliability targets. Output reliability targets specify the level of service that a DNSP is required to meet and may include:

- SAIDI, which is a measure of the average aggregate number of minutes that supply is lost to the average customer in a year;
- 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.

A national reference standard template would be developed by the AER to provide consistency on the range of possible reliability measures that could be used and how they should be defined.

Published distribution output reliability targets must include unplanned SAIDI and SAIFI as a minimum. However, jurisdictions would have discretion to include additional measures listed in the template, such as MAIFI or planned SAIDI and SAIFI to meet the preferences of customers in their respective networks.

Some types of interruptions 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 outlier events or events that are beyond the reasonable control of the DNSP. The national reference standard template would also provide consistency in the treatment of excluded events, such as the classification of a major event day.

4.1.2 Reasoning for the proposed approach

Consistent expression of reliability measures

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 input planning standards reduces flexibility and may also inhibit DNSPs from meeting their reliability targets through innovative and potentially more cost effective means.

In contrast, output methods specify the desired reliability outcomes and allow DNSPs to determine the most efficient way to plan and operate their networks in order to meet the desired outcomes.

The Commission considers that the removal of strict input planning standards and the adoption of consistently expressed output reliability targets supports the principle of effectiveness by limiting the potential for inefficient investments. It would also allow DNSPs to meet reliability targets through innovative means, such as the use of non-network solutions. The Commission notes that a number of stakeholders have supported the removal of strict input planning standards and the adoption of a more flexible outputs-based approach.[14]

The NSW DNSPs supported a move to an outputs-based approach, but noted that this may lead to an inability to sufficiently accommodate high impact, low probability events in network design.[15] The NSW DNSPs considered that security of supply investments would need to be justified using the VCR under an outputs-based approach and that the additional broader costs and impacts to society from wide-area outages would not be properly captured in the estimation of the VCR. The NSW DNSPs suggested that, given the potential inability to justify longer term security of supply investments through the VCR, the removal of input security criteria, for some elements of the network, may present difficulties in justifying long term security investments to the AER.

The Commission acknowledges the NSW DNSPs' concerns and the limitations inherent in the estimation of the VCR, including difficulties associated in accommodating high impact low probability events. These issues are further discussed in chapter 7. However, the Commission considers that the proposed national framework will

14 See submissions on the distribution workstream draft report from: Total Environment Centre, p. 2; Major Energy Users, p. 6; Aurora Energy, p. 1; AEMO, p. 1; United Energy, p. 1.

15 NSW DNSPs, Submission on distribution workstream draft report, p. 3.

overcome these limitations by providing jurisdictions with a degree of judgement in the process of setting distribution reliability targets.

The proposed framework would not preclude DNSPs from voluntarily setting their own planning criteria to 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 its 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.

A number of stakeholders, including NSW DNSPs, Energex, and Aurora Energy, have noted the benefits of adopting a consistent set of definitions and exclusion criteria in the development of reliability measures.[16] The Commission considers that a consistent expression of output reliability targets would allow DNSPs and jurisdictional regulators to accurately compare and evaluate levels of performance and would allow trends and variations in performance across different networks to be assessed. The NSW DNSPs noted that consistency in measures and definitions is likely to improve transparency in reporting reliability performance and provide confidence that the required levels of reliability are appropriate.[17]

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 consistent expression of reliability targets and outcomes would allow for more effective benchmarking and comparisons between jurisdictions, and a better understanding of the relative efficiencies of DNSPs. This was supported by the Major Energy Users who noted that consistency in the computation of reliability measures and exclusions will allow for comparative analysis and a better approach to benchmarking between jurisdictions.[18]

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16 See submissions on the NSW distribution workstream draft report from: NSW DNSPs, p. 1; Energex, p. 4; Major Energy Users, p. 10; Aurora, p. 5.

17 NSW DNSPs, Submission on distribution workstream draft report, p. 1.

18 Major Energy Users, Submission on distribution workstream draft report, p. 10.

Energex noted that sufficient detail and clarity in the definitions, and clear methodologies for determining relevant parameters, would be needed to avoid uncertainty in interpreting measures and to ensure that nationally consistent measures are able to be integrated into NSPs' reporting systems.[19] The Commission notes that the national reference standard template would contain the relevant level of detail on the exact definitions of measures and exclusion criteria in order to avoid uncertainty in interpreting measures.

Ergon Energy considered that the adoption of a consistent set of definitions and exclusions is likely to result in a range of additional costs and resources. This would include costs associated with: upgrading IT systems and business processes; training and education of staff involved in collation of outage information and regulatory reporting; and analysis and interpretation of performance trends.[20] The Commission acknowledges that there are likely to be a range of costs incurred by businesses in the development and implementation of the proposed framework. However, the majority of these costs are likely to be incurred initially as businesses transition to the framework and are likely to be outweighed by the longer-term benefits arising from the ability of stakeholders to compare levels of performance between DNSPs in different jurisdictions.

Consistency across jurisdictions

The Commission notes that the need to accommodate the specific locational characteristics of distribution networks may limit the benefits that can be achieved through consistency in the expression of reliability measures across the NEM.

Some stakeholders have expressed concern about the replacement of existing jurisdictional frameworks with a nationally consistent approach to the expression and measurement of reliability measures. 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.

Under the proposed framework, distribution reliability targets would be disaggregated by feeder type. This is inconsistent with the current frameworks that have been developed in Tasmania and South Australia where reliability performance is disaggregated by communities and regions respectively.

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

19 Energex, Submission on distribution workstream draft report, p. 4.

In addition, the Commission considers that the use of SAIDI and SAIFI measures as a minimum in the proposed framework 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 based on customer consultation.

Stakeholder submissions generally supported the use of unplanned SAIDI and SAIFI for comparative purposes to provide information on the average experience of customers and the emergence of any trends over a suitable time period.[21] However, a number of submissions noted that factors such as network configurations, geography, customer density, access restrictions, the ratio of overhead to underground lines, the length of the network, and switching capability for restoration after faults, would all affect levels of SAIDI and SAIFI and would need to be adequately caveated in any benchmarking of DNSP performance.[22]

Energex considered that the proposed national framework provides sufficient flexibility to be applied across jurisdictions by: allowing for disaggregation of reliability targets by feeder type; allowing for targets to be set for the individual jurisdiction; and allowing for additional measures that may be required to accommodate specific locational factors.[23]

Question 1 Expression of distribution reliability targets

(a) Does the proposed removal of input planning standards for distribution networks compromise the ability to deal with high impact low probability events such as city wide supply interruptions?

(b) Does the expression of distribution reliability measures by feeder type accommodate the specific locational characteristics of individual jurisdictions while achieving the benefits of national consistency?

(c) Is it possible to achieve consistency in the definitions of distribution reliability measures across the NEM, including consistency in exclusion criteria?

(d) Is the AER the appropriate body to be responsible for developing the national reference standard template for distribution? If not, which body should be responsible for this task?

20 Ergon Energy, Submission on distribution workstream draft report, p. 8.

21 Energex, Submission on distribution workstream draft report, p. 4.

22 Ergon Energy, Submission on distribution workstream draft report, p. 8; Energex, Submission on distribution workstream draft report, p. 4.

23 Energex, Submission on distribution workstream draft report, p. 4.

4.2 Expression of transmission reliability standards

This section outlines the proposed approach and merits for the consistent expression of transmission reliability standards under the proposed framework for transmission reliability.

4.2.1 Proposed approach

The framework would require transmission reliability standards to be expressed on a 'N-x' basis. Standard setters would also be required to specify the requirements for supply restoration following an interruption. Transmission reliability standards would be set for each connection point in a TNSP's network.

Standard setters would also be able to choose from a range of other parameters to complement the N-x expression of standards. For example, these additional parameters could include measures such as the maximum amount of load that could be interrupted or the maximum hours of customer lost load per year.

The range of parameters that standard setters could choose from would be set out in a national reference standard template for transmission, which would be developed by AEMO. The national reference standard template would also set out a nationally consistent set of definitions to be used in setting transmission reliability standards.

4.2.2 Reasoning for the proposed approach

An N-x expression of transmission reliability standards has been proposed, as it is difficult to develop outputs based standards alone for transmission networks. This is because there are a limited number of supply interruptions on transmission networks as they are designed to provide a higher level of reliability than distribution networks. This is due to the potentially widespread consequences of a failure on a transmission network. This also means that prolonged under-investment in transmission networks may not translate to short term observable reductions in reliability to the same extent that may occur for distribution networks.

However, the Commission considers that the incorporation of additional parameters, which could include outputs based requirements, could be used to complement the N-x expression of standards. In particular, the use of these additional parameters could provide standard setters with greater flexibility to tailor standards to the preferences of customers and the local conditions of each connection point. It could also allow the expected unserved energy for each connection point to be valued using the VCR. Stakeholders, such as EnergyAustralia, supported economically derived and deterministically expressed standards that take into account local conditions and reflect the value customers place on reliability.[24]

24 EnergyAustralia, Submission to the transmission workstream issues paper, p. 1.

The Commission also considers that the use of additional parameters in the expression of standards could promote more efficient investment decisions by TNSPs. This is because the use of additional parameters may provide TNSPs with greater flexibility to achieve their reliability standards through more innovative means, such as the use of back-up generation. It could also allow investments to be deferred in the short term, which could result in lower network charges to customers.

In its submission to the transmission workstream issues paper, the AER supported the expression of N-x standards in a more flexible way.[25] Grid Australia proposed that a "menu" of reliability standards, which included parameters such as maximum load at risk, could be used to provide greater granularity to the standards which are set at each connection point.[26] Grid Australia suggested that this could provide a balance between achieving sufficient granularity to achieve economic efficiency, while also providing a transparent standard to allow compliance reporting to be undertaken.[27]

Under the proposed framework, consistency in the way transmission reliability standards are expressed would be achieved through the national reference standard template. This would provide a comprehensive and consistent NEM-wide set of definitions on the parameters which could be used in setting transmission reliability standards under the framework. This would enable standards to be compared and used as a basis for benchmarking and performance reporting. This would also enable stakeholders to hold TNSPs accountable for meeting their reliability standards, as differences in performance between TNSPs would be transparent. This could assist in promoting greater efficiency in how reliability standards are met by TNSPs.

The Commission has proposed that AEMO should be responsible for developing the national reference standard template, because of its technical expertise in relation to transmission networks and its role as the National Transmission Planner. The NER will specify the principles and conditions which the national reference standard template must meet. Some stakeholders, including the AER and EnergyAustralia, expressed support for AEMO to develop this template.[28] However, other stakeholders suggested that the AEMC Reliability Panel or the AER could undertake this task.[29]

25 AER, Submission to the transmission workstream issues paper, p. 4.

26 Grid Australia, submission to the transmission workstream issues paper, p. 28.

27 Ibid.

28 See submissions to the transmission workstream issues paper from: AER, p. 8; EnergyAustralia, p. 5.

29 See submissions to the transmission workstream issues paper from: GDF SUEZ, p.2; Grid Australia, p. 34.

Question 2 Expression of transmission reliability standards

(a) What would be the effect of expressing transmission reliability standards on an N-x basis and complementing this with the inclusion of additional parameters?

(b) Is AEMO the appropriate body to be responsible for developing the national reference standard template for transmission? If not, which body should be responsible for this task?

5 Structure of the standard setting process

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

5.1 Overview of the standard setting process

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

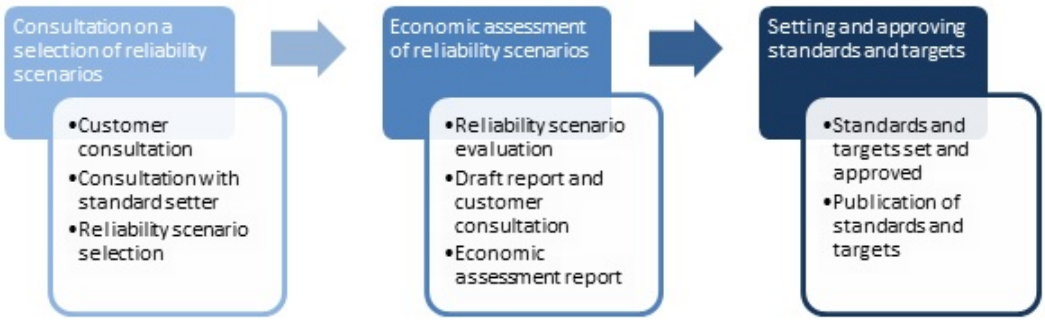
1. a process for the selection of a range of feasible reliability scenarios, which will involve consideration of the outcomes of customer consultation and advice from the NSPs on physical and financial constraints of achieving different levels of reliability;

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 standards and targets for each NSP.

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 standard setting process



5.2 Responsibilities under the standard setting process

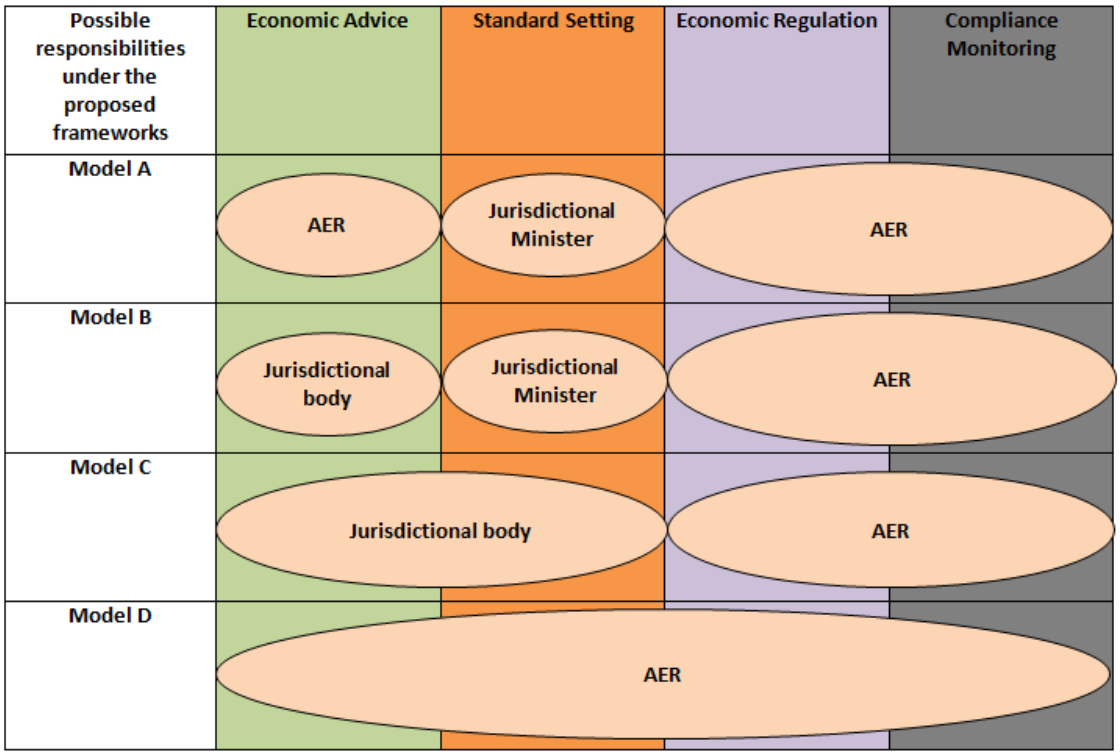
Table 5.1 outlines the responsibilities under the standard setting process. Five separate responsibilities are identified, with a number of these responsibilities able to be performed by the same body.

Table 5.1 Responsibilities under the standard 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	Transmission and 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 energy minister. May be delegated to an appropriate jurisdictional government body, jurisdictional regulator, the AER, AEMO, or any other body. In the case that the AER or a jurisdictional body is responsible for setting standards then the AER or jurisdictional body would also take on the responsibility of providing economic advice.
Selection of reliability scenarios and standard setting	Selecting the reliability scenarios which should be economically assessed and setting reliability standards or targets.	Determined by the jurisdictional energy minister. This responsibility may be delegated to the AER or a jurisdictional body.
Economic regulation	Determining the revenues required by NSPs to efficiently meet the standards or targets that are set. Administering the cost pass through provisions in the NER, where reliability standards or targets have been updated.	AER
Compliance monitoring	Monitoring and reporting on the results of audits to determine whether NSPs have internal processes in place to meet their standards or targets. Monitoring and reporting on NSP performance against reliability standards and targets.	AER

Jurisdictional energy ministers would be responsible for setting transmission reliability standards and distribution reliability targets under the proposed frameworks. However, jurisdictional energy ministers would have the ability to delegate the standard setting responsibility to a jurisdictional body or the AER. The possible models for how these responsibilities could be allocated are set out below in Figure 5.2.

Figure 5.2 Possible responsibilities under the national frameworks



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

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 standards or targets should apply.

Where a jurisdictional energy minister has delegated the responsibility for setting standards or targets to a jurisdictional body or the AER, the economic adviser role would also be performed by the delegated body. As a result, the delegated 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 standards or targets that will apply to each NSP.

Jurisdictional bodies and the AER would be required to set reliability standards or targets on the basis of measurable factors only. Jurisdictional bodies and the AER would be required to select the reliability scenario with the highest net economic benefits, as identified through the economic assessment process. However, in delegating responsibility for setting standards, jurisdictional energy ministers would be able to provide jurisdictional bodies or the AER with guidance on how they should make their decision. For instance, this could include a requirement to not lower reliability in certain areas.[30]

Where a jurisdictional energy minister retains responsibility for setting standards or targets, they could appoint a separate body to perform the economic adviser role. In setting standards or targets, jurisdictional ministers would be able to take into account non-measurable 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.[31]

The Commission considers that it is appropriate for jurisdictional energy ministers to be able to take into account non-measurable factors as elected officials are best placed to make judgements regarding the trade-off between cost and reliability on behalf of the broader community. Jurisdictional ministers would be required outline the reasoning for their decision, which would include the reasons for any departure from the scenario with the highest net economic benefits.

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

5.3 Process flow for setting standards and targets

Figure 5.3 provides further detail on the design of the standard setting process and outlines the process flow and interactions between the relevant responsibilities of participating bodies. A description of each of the steps listed in this figure is provided along with a colour code 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 standard 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 for stakeholder consultation.

30 Where jurisdictional energy ministers provide guidance to jurisdictional bodies or the AER in terms of how it should exercise its standard setting responsibility, in some situations this could result in them selecting a scenario with the lowest net costs in setting reliability standards or targets.

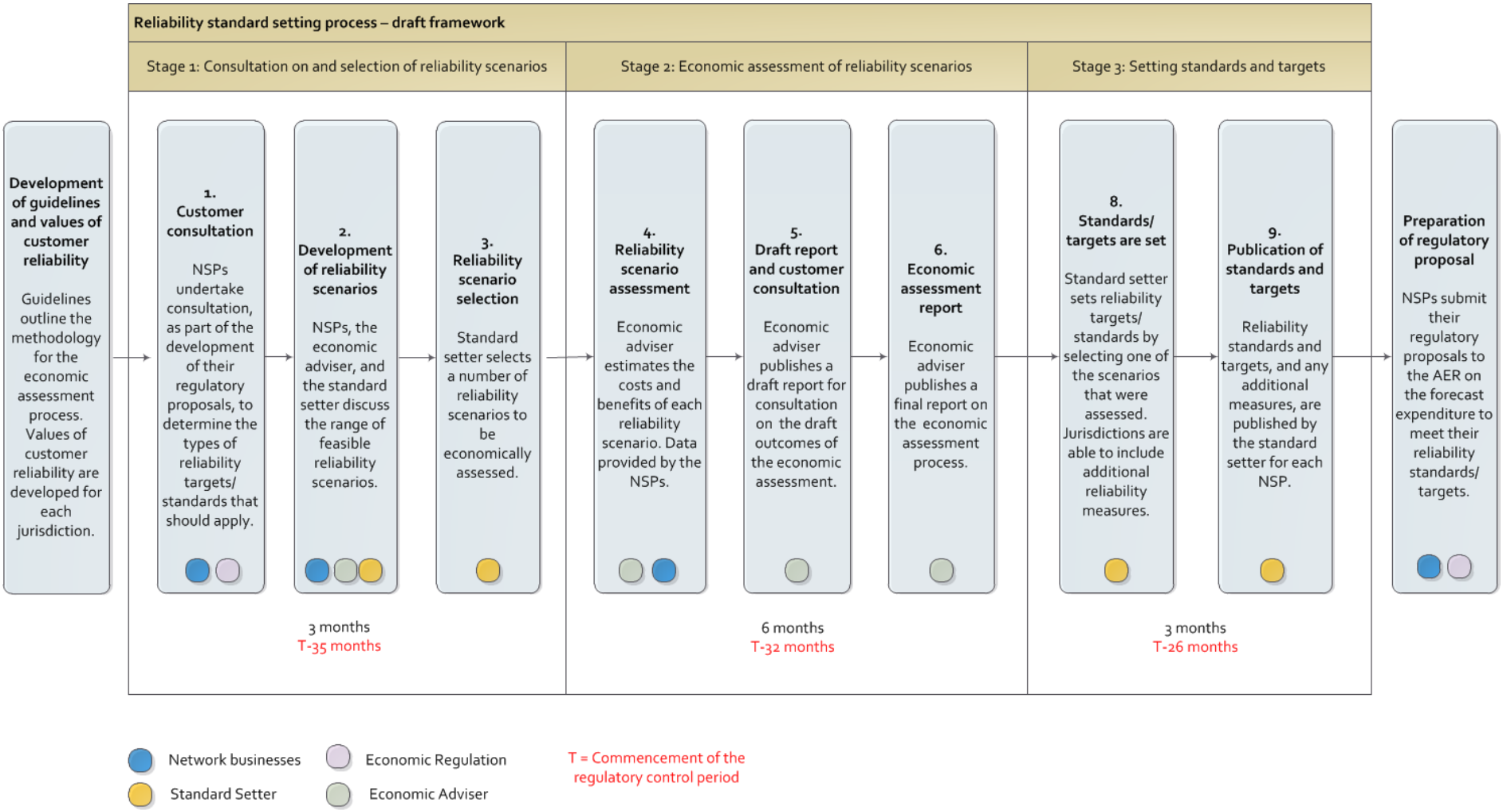
31 As a result of considering non-measurable factors, there is the potential that jurisdictional energy ministers could select a scenario with net costs.

The expected timeframe for completion of each stage of the standard setting process is provided at the bottom of figure 5.2. Overall, the standard 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 standards and targets.

Taking into account a timeframe of 17 months for the AER to undertake the revenue determination process, and allowing six months for the NSPs to prepare their regulatory proposals once standards or targets have been set, the standard setting process will commence 35 months prior to the start of each regulatory control period, denoted by "T" in Figure 5.2.

Figure 5.3 Process flow for setting standards and targets



During the standard setting process there would be a number of opportunities for public consultation. NSPs would undertake public consultation at the beginning of the standard 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 costs and benefits of the reliability scenarios being considered. Where jurisdictional energy ministers retain responsibility for setting standards and targets, jurisdictional ministers may also consult on any factors which cannot be fully captured in the economic assessment process prior to receiving the economic adviser's final report.

Public consultation would also occur prior to the commencement of the standard 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 could be addressed in part by requiring each of the bodies to co-ordinate their consultation process with other bodies in the standard 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 ensure they undertake consultation with a representative set of customers in each NSP's network.

Question 3 Structure of the standard setting process

(a) Is the proposed timeframe for undertaking the standard setting process able to be achieved in practice?

(b) Are there any specific jurisdictional arrangements that would need to be considered in adopting the proposed frameworks, including how the responsibilities could be allocated?

5.4 Development of guidelines for the economic assessment process

The proposed frameworks would include the development of a set of guidelines which would provide the necessary detail for the consistent economic assessment of reliability scenarios across the NEM.

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 Proposed approach

The guidelines would outline the methodologies to be followed 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 economic process would be achieved. There would be separate economic assessment guidelines for transmission and distribution.

The AER is considered to be 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 considered to be independent and without financial interest in any aspect of the framework. The AER would be required to develop the guidelines in consultation with NSPs 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 economic assessment process:

- the stages of the economic assessment process;
- information requirements and assumptions to be used as inputs to the process, including how data from NSPs and estimates of the VCR should be considered;
- the methodology to be applied to determine the costs and benefits of each reliability scenario;
- the range of sensitivities to be applied and the methodologies to be adopted in evaluating the sensitivities; and
- the process of consultation on the draft outcomes of the economic assessment process.

5.4.2 Reasoning for the proposed approach

Under the proposed frameworks, 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 appropriate 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 in the application of the economic assessment process between jurisdictions and ensuring that the reliability standards and targets developed for different networks can be meaningfully compared.

Our proposal for the AER to be responsible for the development of the economic assessment guidelines is consistent with views contained in submissions from Energex, the Major Energy Users, and Grid Australia. These stakeholders proposed that the responsibility should be allocated to an independent entity.[32] As the AER would be responsible for developing the guidelines, it would also be responsible for further

32 Energex, Submission on distribution workstream draft report, p. 2; Major Energy Users, Submission on distribution workstream draft report, p. 14; Grid Australia, Submission on transmission workstream issues paper, p. 34.

updating and refining the guidelines based on the repeated application of the economic assessment process in the development of reliability standards and targets.

5.5 Development of the value of customer reliability

The VCR will form a key component of the national frameworks as it will be used to assess the potential customer impact of reliability scenarios during the standard 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 proposed frameworks and the process that should be used in updating it.

5.5.1 Proposed approach

The AER would be responsible for updating the VCR for each jurisdiction. These updates would be undertaken at least every five years for each jurisdiction to align with the standard setting process, where possible.

The AER would be required to initially use AEMO's national VCR methodology as a starting point in developing VCRs.[33]

As discussed in chapter 2, AEMO has been requested to develop a national VCR methodology 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.[34] However, the AEMC will continue to work with AEMO as it develops its recommendations to ensure the methodology which is developed is appropriate for standard setting under the proposed 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. In between five yearly updates, the VCR would be escalated by the consumer price index (CPI) each year by the AER.

5.5.2 Reasoning for the proposed 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 standard

33 Further information on AEMO's Value of customer reliability review can be found at www.aemo.gov.au.

34 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.

setting process, which in turn has significant implications for the revenue allowance which is set for an NSP.

As the AER would be responsible for updating the VCR, it is also appropriate for the AER to have the ability to further develop and refine the national VCR methodology that will be outlined in AEMO's current VCR review. While AEMO has been requested by SCER to develop a national VCR methodology, in the longer term the responsible body for updating the VCR into the future should also have responsibility for the VCR methodology.

Providing the AER with this responsibility would allow the AER to improve the VCR methodology using the experience gained through repeated application. This should allow customer preferences to be more accurately revealed over time. As noted in chapter 3 and in a number of submissions to the distribution and transmission workstreams, there is currently some concern about the reliability and accuracy of existing VCR measures.[35] The Commission considers that regular updates to the VCRs in each jurisdiction should assist in addressing these issues.

Where possible, the timing of VCR updates for each jurisdiction would be aligned to the standard setting 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 standard 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 standard setting process for NSPs in each jurisdiction.

In terms of escalating the VCR between five yearly updates, the CPI, rather than an alternative and less common measure is proposed to limit instability in annual VCR changes and improve the predictability of annual updates.

Question 4 Development of guidelines and the VCR

(a) Which aspects of the proposed frameworks should be covered in the economic assessment process guidelines?

(b) Is the AER the appropriate body to develop the guidelines, in light of its other roles under the proposed frameworks? If not, which body should be responsible for this task?

(c) Is the AER the appropriate body to be responsible for updates to the VCR? If not, which body should be responsible for this task? Should the CPI be used to escalate VCRs each year?

35 See submissions on the distribution workstream draft report from: ActewAGL, p. 2; NSW DNSPs, pp. 3-5; Major Energy Users, p. 11; Alternative Technology Association, p. 5. See submissions on the transmission workstream issues paper from: AER, p. 10; Major Energy Users, p. 4; Alinta Energy, p. 2; Grid Australia, pp. 31-32.

6 Customer consultation and selection of reliability scenarios

This chapter explores the design of the initial stage of the standard setting process under the proposed frameworks. The initial stage relates to consultation on and selection of reliability scenarios for the purposes of establishing transmission reliability standards and distribution reliability targets.

6.1 Customer consultation

This section outlines the initial step of the standard setting process under the proposed frameworks which involves customer consultation by NSPs.

6.1.1 Proposed approach

The standard setting process would commence with a customer consultation process. This process would be undertaken by each NSP to determine which aspects of reliability are particularly important for customers in their transmission or distribution networks. Prior to this consultation, the NSP will discuss the content and form of the consultation with the economic adviser and standard setter, to ensure that the consultation is appropriate. As discussed in chapter 5, where the standard setting responsibility has been delegated to a jurisdictional body or the AER, the jurisdictional body or AER would also undertake the role of the economic adviser.

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. NSPs could use the process of customer consultation to determine matters such as:

- The types of standards or targets that should apply. For distribution, unplanned SAIDI and SAIFI targets at a minimum would be set by the standard setter. For transmission, standards would be expressed on an N-x basis. 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 national reference standard templates for distribution or transmission. For example, this could include MAIFI for distribution, or maximum hours of customer lost load per year for transmission.

- Social objectives or areas of economic importance that require specific 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.

Jurisdictional energy ministers may also use the process of customer consultation to determine whether specific social or community objectives may not be captured by the

economic assessment process, including the use of the VCR, and hence could benefit from further consideration and judgement during the standard 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.[36] Under the proposed frameworks, this requirement would be combined with the process of customer consultation for setting reliability standards and targets. Further detail on aligning these two consultation process is provided in chapter 9.

6.1.2 Reasoning for the proposed approach

A process of customer consultation supports the principle of basing the reliability standards or targets that are assessed on customer preferences. Consultation will allow customer preferences to be taken into account when determining the types of standards and targets which are set, the level of the standards and 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.

In the process of setting transmission reliability standards, customer consultation may assist in determining which parameters (eg maximum hours of customer lost load) should be considered for each connection point in developing the reliability scenarios to be assessed. In practice, it may be difficult for TNSPs to seek responses from their customers on the aspects of reliability that are particularly important for them as supply interruptions on transmission networks are rare.

As discussed in chapter 5, this process of consultation by NSPs to assist in the development of reliability scenarios would form the first of a number of opportunities for public consultation during the standard setting process. Co-ordination with other bodies undertaking consultation processes during the standard 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

36 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 ensure they consult with a representative set of customers in each NSP's network.

A number of submissions on the distribution workstream have noted the potential benefits of considering measures to improve communications systems to notify customers of planned interruptions.[37] Ergon Energy and Energex suggested that it is not appropriate to mandate improved customer communication and any improvements should be adopted voluntarily by NSPs where customers have demonstrated a preference and there is clear evidence of a net benefit.[38]

The decision on whether customer communications systems should be implemented would not form part of the standard setting process. However, jurisdictional energy ministers could decide if separate regulatory obligations should be placed on DNSPs in relation to customer communications. DNSPs would also be able to independently seek expenditure from the AER to implement communications systems. The Commission notes that the customer consultation process may provide jurisdictional ministers and DNSPs with information on whether customers value improved communications.

6.2 Selection of reliability scenarios

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

6.2.1 Proposed approach

Under the proposed frameworks, the process of public customer consultation would be followed by a requirement for the NSP, 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 a higher or lower level of reliability than was currently provided. The NSP and economic adviser would provide advice to the standard setter on the physical and financial constraints of achieving different levels of reliability performance.

The process of customer consultation and selection of reliability scenarios would take a total of three months.

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

37 See submission on distribution workstream draft report from: Alternative Technology Association, p8; Major Energy Users, p. 14; Ergon Energy, p. 6; Energex, p. 2.

38 Ergon Energy, Submission on distribution workstream draft report, p. 6; Energex, Submission on distribution workstream draft report, p. 2.

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[39]

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[40]
Unplanned SAIDI and SAIFIs for each feeder type for each NSW DNSP.	DNSPs are obligated to meet their unplanned SAIDI and SAIFI targets each year. Current SAIDIs range from interruptions of 45 minutes a year in the Sydney CBD to 700 minutes a year for long rural feeders. Current SAIFIs range from 0.3 interruptions a year in the Sydney CBD to 4.5 interruptions a year for long rural feeders.	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).	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).	DNSP to be 50% confident that current standards will not be exceeded each year.	DNSP to be 99% confident that current standards will not be exceeded each year.

39 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.

40 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.

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 TNSP which, if applied, would mean that the DNSPs in that jurisdiction would not be able to feasibly achieve their distribution reliability targets. As discussed in Box 6.1, for distribution networks, additional measures to address worst served customers could also be selected for evaluation.

Should the jurisdictional minister decide to transfer responsibility for setting reliability standards and targets to the AER or a jurisdictional body, the AER or jurisdictional body would consult with the NSPs and would be responsible for selecting the reliability scenarios to be evaluated under the economic assessment process.

Box 6.1: Requirements for worst served customers in distribution networks

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 customers in more remote areas of a distribution network. However, there are other non-measurable factors, such as social and equity considerations, which jurisdictional energy ministers may wish to take into account in the provision of reliability to poor performing areas.

Where a jurisdiction retains responsibility for setting targets, jurisdictional energy ministers would be able to request the economic adviser to evaluate measures to accommodate poor performing areas of the network. These measures may include separate SAIDI and SAIFI targets for a set number of feeders with the lowest levels of reliability.

In the case that a jurisdictional minister transfers responsibility for setting targets to the AER or a jurisdictional body, the jurisdictional minister would still be able to request that additional measures for worst served customers be economically evaluated. The jurisdictional minister may also decide to provide some constraints around the exercise of their delegation to the AER or a jurisdictional

body, such as "standards not reduced for the 10 worst performing feeders". Requirements for worst served customers would be determined by the jurisdictional minister in addition to the targets that are set by the AER or jurisdictional body.

6.2.2 Reasoning for the proposed approach

The development of feasible reliability scenarios would be undertaken collaboratively between the standard setter, the economic adviser, and the relevant NSP. While the standard setter would have ultimate discretion over the standards and targets that are set, the NSPs 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.

The Total Environment Centre considered that allowing the jurisdiction to set standards and targets would provide too much flexibility to the jurisdiction to set excessive reliability levels and suggested that the national framework should include a binding range of permitted reliability standards or targets to ensure that no jurisdiction sets reliability levels that are outside a reasonable range.[41] While the Commission agrees that the proposed frameworks provide flexibility for jurisdictional energy ministers to determine the appropriate level of reliability standards and targets, the process of customer consultation should assist in requiring jurisdictional energy ministers to develop reliability scenarios which reflect the levels of reliability expected by the community.

A number of stakeholders supported the ability of the jurisdiction to set requirements for worst served customers for DNSPs.[42] Submissions noted that jurisdictions are best placed to determine local community expectations and that the treatment of worst served customers should remain at the discretion of the jurisdiction. Under the proposed arrangements for the frameworks, the jurisdictional energy ministers will have the option to retain this ability.

41 Total Environment Centre, Submission on distribution workstream draft report, p. 3.

42 See submissions on the distribution workstream draft report from: NSW DNSPs, p. 8; Energex, p. 3; SP AusNet, p. 5; Major Energy Users, p. 12; Total Environment Centre, p. 2.

Question 5 Customer consultation and selection of reliability scenarios

(a) How should the customer consultation process be conducted to provide sufficient information to the standard setter to make an informed decision on the selection of a range of reliability scenarios?

(b) Should limits or constraints be placed on the discretion that the standard setter has regarding the selection of reliability scenarios?

(c) Should the evaluation of measures to address worst served customers for DNSPs be included in the economic assessment process?

7 Economic assessment of reliability scenarios

As discussed in chapter 6, the standard setting process would commence with a customer consultation process by NSPs. 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 Proposed 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 standards or targets that would apply to each NSP over the next regulatory control period.

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

The detail of the economic assessment process, including the key assumptions to be used, would be set out in guidelines. In chapter 5, the Commission proposed that the AER would be responsible for developing separate transmission and distribution guidelines for each of the frameworks in accordance with requirements that would be set out in the NER. Each economic adviser would be required to undertake economic assessments under the proposed frameworks in a manner consistent with these guidelines.

The costs and benefits of each reliability scenario selected by the standard setter would be assessed against a baseline of the maintenance of the existing reliability standards or targets. Reliability scenarios would be determined for each connection point for transmission networks and for each feeder type for distribution networks in a manner that is consistent with the relevant national reference standard templates. For distribution networks, the economic assessment process could also include an evaluation of any additional reliability measures, such as measures for worst served customers, which have been selected by the jurisdictional minister.

The economic assessment would involve:

- evaluating the baseline network costs of maintaining the existing reliability standards or targets and any additional reliability measures;
- evaluating the baseline expected unserved energy of maintaining the existing reliability standards or targets and any additional measures;

- evaluating the expected change in network costs for each reliability scenario and any additional measures compared to the baseline;
- evaluating the expected change in expected unserved energy for each reliability scenario and any additional measures and multiplying this by the relevant VCR; and
- comparing the expected change in network costs against the value of the expected change in unserved energy for each reliability scenario and any additional measures.

The economic assessment process would involve some practical differences for TNSPs and DNSPs because of the differing characteristics of transmission and distribution networks. These differences are discussed further in Box 7.1.

Box 7.1: Practical differences in the economic assessment process for transmission and distribution networks

Transmission networks and distribution networks have a range of fundamental differences. One of these differences is that transmission networks are significantly shorter in size compared to distribution networks, as transmission networks transport electricity between major demand centres while distribution networks transport electricity to each end use customer. In the NEM, the total length of transmission lines is around 18 times shorter than the total length of distribution lines.[43] As a result, TNSPs generally undertake a small number of large investments when augmenting their networks, while DNSPs generally undertake a large number of small investments.

These differences mean that while at a high level the economic assessment process under the proposed frameworks will be consistent, there will be practical differences in how the process is applied for transmission and distribution networks.

As discussed above, under the proposed frameworks reliability standards for transmission networks will be set for each connection point, while reliability targets for distribution networks will be set for each feeder type. In general, each transmission network in the NEM has less than 100 connection points, while some distribution networks have over two thousand feeders. Therefore, while TNSPs are able to develop investment plans for each transmission connection point, DNSPs generally make a number of simplifying assumptions when planning investments which are then extrapolated out across a number of feeders. This is because it is not feasible for DNSPs to undertake detailed planning for each feeder in their network.

The large number of feeders within each distribution network means that during the standard setting process, a number of reliability scenarios which are both

43 AER, State of the energy market 2012, December 2012, p. 60.

higher and lower than the existing reliability standards may need to be tested for each feeder type because it is difficult to determine the efficient level of reliability for distribution networks without detailed analysis.

The economic assessment process for distribution networks under the national framework would be similar to the AEMC's 2012 review of the distribution reliability levels in NSW. Under this review, four scenarios were tested for each feeder type for each NSW DNSP.[44] This included three scenarios with lower reliability levels and one scenario with a higher reliability level, compared to the existing reliability standards.[45]

In contrast, as TNSPs are able to estimate the expected costs and expected unserved energy for each connection point in their network, a high level assessment for each connection point could be used to determine whether higher or lower reliability scenarios should be tested for each connection point.

For example, where the high level assessment indicates that if the existing reliability standards were maintained that a high level of expected unserved energy is likely to emerge because of demand growth, a scenario with a higher level of reliability would be tested. This is because it is likely that the benefits of providing a higher level of reliability would outweigh the investment costs of doing so. It would not be prudent to assess a scenario with a lower level of reliability in these circumstances, as it would lead to even higher levels of expected unserved energy compared to the maintenance of current reliability levels. This approach is similar to the current economic assessment process used by the Essential Services Commission of South Australia during periodic reviews of the South Australian transmission reliability standards.

During the economic assessment process, the relevant NSP 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 NSP 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 NSP's forecasts, if the economic adviser does not consider that they represent a reasonable forecast of the expected changes under each scenario.

However, the economic adviser's assessment would not be a substitute for the requirement on NSPs 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.

As part of the economic assessment process, the economic adviser would also undertake a range of sensitivities to test the key assumptions and inputs for each

44 AEMC, Review of reliability standards and outcomes, Final report- NSW workstream, August 2012.

45 Ibid.

scenario. The range of sensitivities to be undertaken by the economic adviser would be set out in the economic assessment process guidelines. However, it is anticipated that at a minimum sensitivities would be undertaken around the expected costs of each scenario 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.

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.

Where a jurisdiction maintains responsibility for standard setting, jurisdictional energy ministers could undertake consultation on any non-measurable factors which may not be able to be fully considered under the economic assessment process. For instance, this would allow stakeholders to comment on any other factors which cannot be fully measured under the VCR. Some of these factors are discussed in Box 7.2 below. This consultation process could be undertaken by jurisdictional energy ministers at the same time as the consultation process by the economic adviser on the draft report on the economic assessment process. This would inform the jurisdictional energy minister's consideration of non-measurable factors in determining the reliability standards or targets which should apply.

However, as discussed in chapter 5, where standard setting has been delegated to the AER or a jurisdictional body, there would be no consultation on non-measurable factors. This is because the AER or jurisdictional body would be required to only take into account measurable factors in setting standards and targets and would be required to set standards and targets based on those with the highest net economic benefits.

Box 7.2: Issues associated with measuring the VCR

As discussed in chapter 3, VCRs have only been developed in Australia a handful of times and the results each time a VCR survey has been undertaken have varied considerably. Unlike other more established measures such as the CPI, the VCR cannot yet be fully depended on to provide consistent, reliable, and accurate results.

As the VCR is ultimately a subjective measure rather than a measure which can be externally observed, it will always be difficult to determine whether changes in the VCR reflect actual changes in customer preferences or other factors such as the surveying methodology used. For instance, customer responses are likely to be sensitive to factors such as the how recent the customer's last supply interruption was. Further, as the VCR will always represent an average across a large number of responses, there will always remain a risk that the VCR may not

fully represent the range of customer views within a particular customer type or geographic location.

More detailed and granular surveying could assist in addressing this risk to some degree. However, increases in sample sizes require significant increases in the cost and time needed to complete a VCR survey. At a minimum, the VCR will need to be sufficiently granular to ensure it is appropriate for standard setting for both transmission and distribution networks.

Undertaking surveys on a more regular basis could assist in understanding the broader trends in customer preferences and reduce instability in the VCR over time. This could occur particularly where the same methodology is used by a single body across multiple jurisdictions, which has been proposed by the AEMC.

Undertaking more regular surveys could also lead to more rapid improvements in the methodology over time. This could improve the ability of factors which are difficult to account for in the VCR to be considered, such as the risk aversion of customers and the risk of city wide supply interruptions, amongst other factors. As noted by Grid Australia, it is currently difficult for economic assessments to take into account the broader economic and social consequences of a major prolonged interruption in a capital city.[46]

As a result, until the VCR has been undertaken on a more consistent and regular basis, there is likely to be a need for a degree of judgement in considering the reliability impact on customers of different reliability scenarios.

7.2 Reasoning for the proposed approach

The use of an economic assessment process would increase transparency around the costs and benefits of achieving different levels of reliability in the standard 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 for distribution networks. Public consultation during the economic assessment process may also promote a more accurate measurement of the costs and benefits of each scenario and improve the process for future assessments.

The information from the economic assessment process should aid the standard setter to make an informed decision on which standards or 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 standard setting process, should improve the likelihood that customer preferences will be reflected in the standards and targets which are set.

46 Grid Australia, Supplementary submission to the transmission workstream issues paper, p. 2.

The Commission notes that the use of an economic assessment process is also consistent with SCER's terms of reference, which requires reliability standards and targets to be set with reference to the trade-off between the value placed on reliability by customers and the costs of undertaking investments.

Submissions on the distribution and transmission workstreams generally supported the use of an economic assessment process in the setting of standards.[47] However, submissions from the NSW DNSPs, SP AusNet, and Ergon Energy raised concerns about the potential costs, time, and resource requirements associated with the standard setting process.[48]

Submissions from AEMO and United Energy raised concerns about setting standards and targets ahead of the decision to invest as they considered that a number of assumptions would need to be made.[49] AEMO suggested that this could lead to NSPs receiving windfall gains through the revenue determination process, while United Energy considered that the impacts of different reliability scenarios could not be forecast with sufficient precision during the standard setting process.[50] A number of submissions also raised concerns around the reliability and accuracy of the VCR and the use of the VCR in the standard setting process.[51]

The economic assessment process is likely to impose additional time, cost and resource requirements on NSPs, economic advisers, and stakeholders compared to the current processes for setting reliability standards and targets in most jurisdictions. However, the regulatory burden is likely to reduce following the initial standard setting process as parties become accustomed to the process and the information requirements of participating in the process.

Further, there is also the potential that over time less reliability scenarios may need to be tested, as reliability standards and targets are set in a manner which more closely reflects the preferences of customers. As a result, unless the preferences of customers change substantially, the need for significant changes to reliability standards and targets may reduce once the standard setting process has been run a handful of times for each NSP.

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47 See submissions on the distribution workstream draft report from: Alternative Technology Association, p. 9; Total Environment Centre, p. 2; Major Energy Users, p. 6; AEMO, p. 1. See submissions on the transmission workstream issues paper from: Origin Energy, p. 1; Alinta Energy, p. 1; Grid Australia, p. 1.

48 See submissions on the distribution workstream draft report from: NSW DNSPs, p.7; SP AusNet, p. 3; Ergon Energy, p. 6.

49 AEMO, Submission on the transmission workstream issues paper, pp. 6-7; United Energy, Submission on the distribution workstream draft report, p. 2.

50 Ibid.

51 See submissions on the distribution workstream draft report from: ActewAGL, p. 2; NSW DNSPs, pp. 3-5; Major Energy Users, p. 11; Alternative Technology Association, p. 5. See submissions on the transmission workstream issues paper from: AER, p. 10; Major Energy Users, p. 4; Alinta Energy, p. 2; Grid Australia, pp. 31-32.

The Commission notes that setting standards and targets ahead of the decision to invest will require a number of assumptions to be made during the standard setting process. However, as discussed in chapter 3, the Commission considers that the benefits of transparency and accountability that come from setting standards and targets on an ex ante basis are likely to outweigh the potential costs of doing so.

The use of sensitivities during the standard setter 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. We also note that the use of sensitivities is consistent with the current approach to setting transmission reliability standards in South Australia and the Regulatory Investment Tests for Transmission and Distribution. Stakeholder submissions on the transmission and distribution workstreams also supported the use of sensitivities, particularly in relation to the VCR.[52]

Question 6 Economic assessment of reliability scenarios

a) What are the likely to be the main costs and resource implications for NSPs, economic advisers, and other stakeholders from the economic assessment process?

b) What are the main risks associated with the economic assessment process? Is the use of sensitivities during the economic assessment process likely to address risks around the uncertainty of key assumptions?

52 See submissions on the distribution workstream draft report from: NSW DNSPs, p. 6; Major Energy Users, p. 11; Alternative Technology Association, p. 5. See submissions on the transmission workstream issues paper from: Energy Australia, p. 4; Grid Australia, p. 32; South Australian Council of Social Services, p. 4.

8 Setting reliability standards and targets

This chapter sets out how reliability standards and targets will be set under the proposed frameworks.

8.1 Proposed approach

Jurisdictional energy ministers would be responsible for setting transmission reliability standards and distribution reliability targets under the proposed frameworks, but would be able to delegate this role to a jurisdictional body or the AER. Jurisdictional energy ministers would also be able to delegate standard setting for one type of network to a jurisdictional body or AER (eg transmission), but retain responsibility for standard setting for the other network type.

All standard setters whether they are a jurisdictional energy minister, jurisdictional body or the AER, would be informed on the costs and benefits of each reliability scenario being considered. The economic assessment of the scenarios will be the same irrespective of which body performs the role of standard setter. Standard setters would be required to select a scenario from the reliability scenarios assessed during the economic assessment process, to ensure the costs and benefits of achieving this scenario are transparent. Standard setters would be able to select a scenario which maintains current reliability levels or provides a higher or lower level of reliability.

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

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

Where the AER or a jurisdictional body is responsible for setting standards or targets, the AER or jurisdictional body would be required to make their decision on the reliability standards or targets which should apply on the basis of only measurable factors. As a result, 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. However, jurisdictional ministers in delegating the standard setting role to the AER or a jurisdictional body, would have the ability to provide guidance on how it should make its decision. For instance, this could include a requirement to not lower reliability in certain areas or for certain types of customers.[53]

53 Where jurisdictional energy ministers provide guidance to jurisdictional bodies or the AER in terms of how it should exercise its standard setting responsibility, in some situations this could result in them selecting a scenario with the lowest net costs in setting reliability standards or targets.

Where a jurisdictional energy minister retains responsibility for setting standards or targets, ministers would be able to take into account non-measurable 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.

As discussed in chapter 7, jurisdictional ministers would be able to undertake consultation prior to receiving the economic adviser's final report on these non-measurable factors. This would allow them to consider community views and exercise a degree of judgement to set reliability levels that they consider would appropriately meet the needs of customers within the networks in their jurisdiction.

If a jurisdictional energy minister does not select the reliability scenario with the highest net economic benefits, it would be required to publicly disclose the reasons for this selection, such as the accommodation of community preferences or the pursuit of projects deemed necessary to meet the needs of specific areas of the network.[54] The jurisdictional energy minister would also be required to disclose the amount of any expected cost differences between the chosen option and the option of highest economic net benefit.

Where additional reliability measures, such as worst served customer measures for DNSPs had been economically evaluated, jurisdictional energy ministers would also decide on whether these measures should be adopted.

All standard setters would also be required to take into account current levels of reliability and the extent to which NSPs could realistically achieve reliability standards and targets in the selection of a reliability scenario. 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.

Reliability standards and targets would be set and published by the standard setter for each NSP. The timing for setting and publishing standards and targets in each jurisdiction would be consistent with the AER's regulatory control period to allow reliability standards and targets to be set six months prior to the submission of regulatory proposals for the AER.

8.2 Reasoning for the proposed approach

The proposed frameworks would provide transparency on the costs and benefits of the reliability standards or targets which are selected, as all standards setters would be required to select a scenario which had been economically evaluated. An ability to set lower reliability standards or targets, as well as either maintaining or increasing

54 As a result of considering non-measurable factors, there is the potential that jurisdictional energy ministers could select a scenario with net costs.

reliability levels, would allow the standard setter flexibility in determining the most appropriate reliability level for each network.

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

The Commission considers that the exercise of judgement and the consideration of non-measurable 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.

In its submission to the distribution workstream, the Alternative Technology Association questioned whether energy ministers are the most suitable body for setting reliability levels given they may have a political motivation towards a particular outcome in a particular area.[55] The Alternative Technology Association suggested that an independent resourced body such as the AER would be a more suitable body for setting reliability levels.[56] The Major Energy Users also supported the transfer of responsibility for standard setting to the AER.[57]

Submissions from the NSW DNSPs and United Energy considered it appropriate that the determination of the level of reliability remain a jurisdictional responsibility.[58] Energex noted that the determination of reliability standards and targets through economic means alone would rely heavily on determining a reasonable estimate of the VCR and that this may not be sufficiently robust and accurate to meet all community expectations.[59]

Submissions on the transmission workstream from GDF SUEZ, EnergyAustralia, and Grid Australia supported the AER undertaking the standard setting role where this responsibility had been delegated by a jurisdiction.[60] However, Origin Energy considered that the AEMC Reliability Panel should be responsible rather than the AER.[61]

SCER's terms of reference required the Commission to ensure that any proposed framework and methodology makes explicit the opportunity for jurisdictions to transfer responsibility for applying the framework to the AER.

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55 Alternative Technology Association, Submission on distribution workstream draft report, p.10.

56 Ibid.

57 Major Energy Users, Submission on transmission workstream issues paper, p. 5.

58 NSW DNSPs, Submission on distribution workstream draft report, p. 2; United Energy, Submission on distribution workstream draft report, p. 3.

59 Energex, Submission on distribution workstream draft report, p. 3.

60 See submissions on transmission workstream issues paper from: GDF SUEZ, p. 5; EnergyAustralia, p. 4; Grid Australia, p. 34.

61 Origin Energy, submission on transmission workstream issues paper, p. 3.

The Commission considers that its proposed approach for the setting of reliability standards and targets provides common arrangements for the setting of standards and targets either by jurisdictional energy ministers or the AER or jurisdictional bodies. However, the Commission's approach also recognises the inherent differences in these bodies. As a result, the proposed approach provides a balance between ensuring standards and targets are set in a transparent and accountable manner, while also providing flexibility to ensure matters which cannot be fully accounted for in the economic assessment process can be considered.

Question 7 Setting reliability standards and targets

Does the Commission's proposed approach provide sufficient information to the jurisdictional minister to allow the minister to make an informed decision on the levels of reliability that appropriately meets community expectations?

9 Implications for the revenue determination process and updating reliability standards and targets

This chapter sets out how transmission reliability standards and distribution reliability targets set under the proposed frameworks will interact with the AER's revenue determination process. It also outlines a process for standards and targets to be updated during the regulatory control period, where the basis on which the standards or targets were set has changed materially.

9.1 Links between the standard setting process and the revenue determination process

9.1.1 Proposed approach

Under the proposed frameworks there are two main linkages between the standard setting process and the AER's revenue determination process, which relate to:

- aligning the NSP's customer consultation process during the standard setting process with its consultation process to develop its regulatory proposal; and
- the use of reliability standards/targets determined under the standard setting process in setting an NSP's revenue allowance.

As discussed in Box 9.1, under the proposed framework for distribution reliability, the targets which are set during the standard setting process will also have implications for the STPIS targets which are used for DNSPs in their revenue determinations.

Alignment of consultation processes

As discussed in chapter 6, NSPs would be required to consult with customers at the beginning of the standard 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 18 months prior to the submission of an NSP's regulatory proposal for the next regulatory control period. As a result, this consultation process could be undertaken as part of a NSP's customer consultation on the development of its regulatory proposal for the revenue determination process.[62]

62 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.

Use of standards and targets in setting revenue allowances

The second interaction between the standard setting process and the revenue determination process relates to the use of reliability standards or targets in the AER's revenue determination process. Under the NEL and NER, the AER is required to set the maximum allowed revenue that NSPs can recover from their customers over each regulatory control period, which generally span five years. This revenue must be set at a level by the AER which enables NSPs to comply with all applicable regulatory obligations or requirements.[63]

The reliability standards and targets set under the proposed frameworks will be considered regulatory obligations and requirements under the NER for the purposes of the revenue determination process.[64] As a result, NSPs would be required to include the forecast capital and operating expenditure associated with complying with their reliability standards and targets in their regulatory proposals for the next regulatory control period. The AER would then be required to provide NSPs with a level of revenue which reflects an efficient, prudent and realistic expectation of the costs of complying with their reliability standards or targets in making its determinations.[65]

As discussed in chapter 5, the timeframes for setting transmission reliability standards and distribution reliability targets would be aligned to the timeframes for each NSP's regulatory control period. Reliability standards and targets would be set every five years by the relevant standard setter six months prior to the due date for the submission of an NSP's regulatory proposal to the AER. This would allow NSPs six months to incorporate the impact of their reliability standards or targets on their forecast capital and operating expenditure.

NSPs would have already undertaken high level modelling of the costs of meeting the reliability standards or targets selected by the standard setter during the standard setting process.

A more detailed forecast of the costs of meeting their reliability standards or targets would be included in NSPs' regulatory proposals. However, any differences between a NSP's forecast costs of meeting the reliability standards or targets submitted to the

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63 See clauses 6.5.6(a)(2), 6.5.7(a)(2), 6. 6A.6.6(a)(2) and 6A.6.7(a)(2) of the NER. The AER is also currently required to provide NSPs with sufficient capital and operating expenditure to allow NSPs to maintain the reliability of their respective standard control or prescribed services and the reliability of their distribution or transmission systems. The AEMC is currently considering a rule change proposal from SCER, the 'Network Service Provider Expenditure Objectives' rule change proposal, to amend this requirement so that NSPs are only able to seek sufficient expenditure to meet their reliability standards/targets, rather than maintain reliability levels. The AEMC published a draft determination on this rule change proposal on 27 June 2013, which made a draft rule to limit the expenditure that NSPs can seek in their regulatory proposals to meeting their reliability standards/targets, rather than maintaining reliability levels.

64 "Regulatory obligation or requirement" is defined in the NER as the meaning assigned in the NEL. Under section 2D(a)(ii) of the NEL, "regulatory obligation or requirement" includes a distribution reliability standard or transmission reliability standard. However, as discussed in chapter 10, DNSPs would not be required to comply with their reliability targets in every year.

65 See clauses 6.5.6(c), 6.5.7(c), 6. 6A.6.6(c) and 6A.6.7(c) of the NER.

standard setter and the costs submitted to the AER in its regulatory proposal would need to be fully explained by the NSP 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 standard setting process to assist it in developing its revenue determinations.

Box 9.1: Linkages between distribution reliability targets and STPIS targets

The AER is currently in the process of applying the STPIS to each of the DNSPs in the NEM.[66] The STPIS operates to provide financial incentives to maintain and improve service performance by assigning rewards or penalties to a DNSP, as a per cent of revenue, where performance is better or worse than the target performance level. The target performance level is currently based on the average performance achieved by the DNSP over the previous five year period.

The proposed framework for distribution reliability would continue the implementation of the STPIS for DNSPs in each NEM jurisdiction. However, under the proposed framework, the AER would base the STPIS targets for each DNSP on the reliability targets set by the standard setter, rather than the DNSP's historic five year performance.

Currently, distribution reliability targets set under the STPIS are in addition to the standards or targets set out under electricity distribution codes or licence conditions in most NEM jurisdictions.[67] The proposed national framework could create consistency in the targets that are set by the standard setter and those that are adopted for the purposes of the STPIS.

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 jurisdiction.

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. Aligning STPIS targets to those set in the standard setting process and STPIS incentive payments to the VCR would ensure that the STPIS creates the necessary incentives to deliver an efficient level of reliability as valued by customers.

The use of output reliability targets developed by the standard setter as the target levels for the STPIS was supported in submissions from Ergon Energy, Energex, and AEMO which noted that the current practice of a national incentive scheme

66 DNSPs in Queensland, South Australia, Tasmania, and Victoria are currently subject to the STPIS. DNSPs in the Australian Capital Territory and NSW will be subject to the STPIS from the start of the next regulatory control period.

67 The exception is Victoria where DNSPs adopt the STPIS targets as their output reliability targets.

and jurisdictional reliability standards creates conflicting incentives and inconsistencies in the way performance is measured and reported.[68] In addition, the proposed framework will avoid any unnecessary costs associated with collecting and reporting two sets of data, which can occur under current jurisdictional frameworks.

These issues do not apply to the same degree for TNSPs, as the STPIS for transmission is primarily focussed on maximising the capability of transmission networks at times when this would be highly valued by network users. As a result, unlike the STPIS for distribution, the transmission STPIS acts as a complementary service incentive to a TNSP's reliability standards, rather than having a direct link. However, it may be prudent for the AER to consider whether STPIS targets for TNSPs should be amended where there is a step change in transmission reliability standards from one regulatory control period to the next.[69]

9.1.2 Reasoning for the proposed approach

Alignment of consultation processes

Aligning a NSP's customer consultation process during the standard setting process with its consultation process during the development of its regulatory proposal is likely to improve the quality and transparency of the consultation process. This is because customers will gain a clearer understanding of the broader factors affecting a NSP'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 NSPs and customers and improve the efficiency of the consultation process.

Submissions to the distribution workstream from the NSW DNSPs and the AER noted that the consultation processes used during the standard setting process and in the development of regulatory proposals were likely to be complementary.[70]

Use of standards and targets in setting revenue allowances

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

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68 See submissions on the distribution workstream draft report from: Ergon Energy, p. 9; Energex, p. 5; AEMO, p1.

69 Under clause 6A.7.4(b)(4) of the NER, the AER is required to develop a STPIS for transmission that takes into account the regulatory obligations and requirements that TNSPs are required to comply with. This would include any transmission reliability standards which a TNSP is required to comply with.

70 See submissions to the distribution workstream draft report from: NSW DNSPs, p. 5; AER, p. iv.

Requiring NSPs to explain any differences between the costs forecasts submitted during the standard setting process and those submitted during the revenue determination process will assist the AER in determining the efficient, prudent and realistic level of expenditure needed to meet the standards and targets. This in turn could provide incentives for NSPs to undertake more efficient investment decisions and operate more efficiently in meeting their standards and targets.

A requirement for NSPs to explain any differences between their cost forecasts will also assist in ensuring that the forecasts submitted by NSPs during the standard setting process 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 standards and targets. As highlighted by the AER, co-ordination between the standard setting process and the revenue determination process could also assist in limiting incentives for NSPs to exploit gaps between multiple processes.[71]

However, it should be noted that there are likely to be some differences in the costs forecasts submitted during the standard setting process and the revenue determination process. This is because the costs forecasts prepared during the standard setting process will be modelled at a relatively high level because NSPs will have been required to model a number of reliability scenarios over a relatively short timeframe. In contrast, the costs forecasts submitted during the revenue determination process will be far more detailed as NSPs will have had longer to prepare them and may also have updated information.

Further, the roles of the economic adviser during the standard setting process and the AER during the revenue determination process will be different in nature. While the economic adviser will be required to assess whether the cost forecasts provided during the standard setting process represent a reasonable forecast of the likely costs of meeting each reliability scenario, the AER will be required to determine the efficient level of revenue needed to meet the reliability standards or targets during the revenue determination process. The differences in these roles could lead to differences in the cost forecasts used during the standard setting process and those determined by the AER in the revenue determination process.

71 See submissions from the AER on the distribution workstream draft report, p. iii; and transmission workstream issues paper, pp. 7 and 9.

Question 8 Links between the standard setting process and the revenue determination process

(a) Should NSPs be required to align the consultation process at the commencement of the standard setting process with their consultation process on their regulatory proposal? Is this feasible and what costs or benefits may arise under this approach?

(b) What factors should the AER consider in taking into account any differences in the cost forecasts submitted during the standard setting process and in a NSP's regulatory proposal?

9.2 Updating reliability standards and targets within the regulatory control period

9.2.1 Proposed approach

Where the assumptions used during the standard setting process, such as the expected costs, have changed significantly over the regulatory control period, the basis of the standard setter's decision may be affected. Where this occurs, NSPs would be able to apply to the relevant standard setter for an update to their standards or targets during the regulatory control period. This mechanism would apply to both the proposed framework for transmission reliability and the proposed framework for distribution reliability.

Under the proposed frameworks, reliability standards and targets could be updated during the regulatory control period where all of the following circumstances have been met:

- there has been a material change in the input assumptions used during the standard setting process beyond the range of sensitivities undertaken during this process;
- the investment needed to meet the reliability standards or targets meets the threshold for the Regulatory Investment Test for Transmission (RIT-T) or the Regulatory Investment Test for Distribution (RIT-D). A RIT-T or RIT-D must be performed by an NSP under the NER where the most expensive and credible option to address an identified need is expected to cost $5m or more;
- the TNSP or DNSP has undertaken a review of the costs and benefits of meeting the existing reliability standards or targets;
- the revenue impact of the proposed change in the reliability standards or targets would result in a change in costs which exceeds the cost pass through threshold in the NER. The current cost pass through threshold for TNSPs and DNSPs is one

per cent of the maximum allowed revenue or annual revenue requirement for the relevant year that the cost pass through event occurs in[72]; and

- the standard setter has approved a change in standards or targets, after considering the costs and benefits associated with the change. This consideration could include requesting the economic adviser to undertake an economic assessment of the costs and benefits of the change in standards or targets.

The standard setter would be required to publish a draft report for public consultation outlining information on the costs and benefits of the proposed update to the standards or targets, as well as the reasoning for its decision on whether an update should occur. Jurisdictional energy ministers would be able to consider non-measurable factors in determining whether an update should occur, while where the AER or a jurisdictional body is the standard setter, they would only be able to consider measurable factors. The update to the reliability standards or targets could apply to either a tightening or a relaxation in the standards or targets.

The standard setter would then be required to publish its final decision after considering the views raised in submissions.

NSPs would be required to undertake a review of their reliability standards or targets if they become aware of a material change in the input assumptions used during the standard setting process which may change the basis on which the standards or targets were set.

The standard setter would also be able to initiate a change in the standards or targets and request a TNSP or DNSP to undertake a review of the standards or targets, where the standard setter considers that the criteria for updating the standards or targets has been met.

Following a change in reliability standards or targets, the TNSP or DNSP would be required to apply to the AER to seek a change in revenue through the existing cost pass through provisions in the NER. This would allow the change in standards or targets to be taken into account in the NSP's revenue allowance for the remainder of the regulatory control period.

9.2.2 Reasoning for the proposed approach

Where possible, reliability standards and targets would remain in place for the duration of a regulatory control period to provide transparency to stakeholders around the level of reliability they can expect to receive and to ensure that NSPs can be held accountable for meeting their standards and targets.

Submissions on the transmission workstream from Alinta Energy, EnergyAustralia, GDF SUEZ, and Grid Australia supported the use of fixed transmission reliability

72 The cost pass through threshold is set out in the definition of "materially" in chapter 11 of the NER.

standards over the regulatory control period.[73] However, AEMO considered that an economic assessment should be undertaken for each project rather than fixing economically derived standards over a regulatory control period, as it considered that this could lead to inefficient investment decisions and result in TNSPs being incapable of responding to changes in the market.[74]

While the Commission supports the use of fixed standards and targets over the regulatory control period, the Commission recognises that the standard setting process would involve making a number of assumptions around the expected costs and benefits of different reliability scenarios. As a result, if the basis on which the standards or targets were set changes significantly over the regulatory control period, standard setters should have an ability to update their decision.

A mechanism to update reliability standards or targets within regulatory control periods could lead to more efficient investment decisions by NSPs, as it could allow NSPs to have their standards or targets updated where it is no longer efficient to meet them. This could result in more efficient network charges to customers over the longer term. For instance, this could occur where a NSP's costs of meeting its standards or targets increases significantly from the forecasts considered during the standard setting process as a result of the need to underground lines. As a result, the costs of meeting its standards or targets could now outweigh the expected benefits to customers of a reduction in expected unserved energy.

Submissions to the transmission workstream from Grid Australia, the South Australian Council of Social Services (SACOSS), GDF SUEZ, and EnergyAustralia supported the use of a mechanism to allow transmission reliability standards to be updated during the regulatory control period.[75] However, GDF SUEZ considered that the materiality threshold to update standards should be relatively high, while SACOSS suggested that changes in the standards should have corresponding revenue implications.[76] The AER supported the use of greater flexibility in how standards are applied, but considered that this could be achieved through automatic revenue adjustments within the revenue determination process.[77]

Grid Australia put forward a number of criteria which could be used to determine when a TNSP could seek an update to the standards from the standard setter. These criteria included: a material change in the initial assumptions used to set the reliability standards beyond the sensitivities undertaken during the standard setting process; the

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73 See submissions on the transmission workstream issues paper from: Alinta Energy, p. 2; EnergyAustralia, p. 2; GDF SUEZ, p. 1; Grid Australia, p. 22.

74 AEMO, Submission to the transmisson workstream issues paper, p. 6.

75 See submissions on the transmission workstream issues paper from: Grid Australia, p. 24; SACOSS, p. 2; GDF SUEZ, p.2; EnergyAustralia, p. 3.

76 See submissions on the transmission workstream issues paper from: GDF SUEZ, p.2; SACOSS, p. 2.

77 AER, Submission to the transmission workstream issues paper, p. 6.

investment needed to meet the standards meets the RIT-T threshold; and the TNSP has undertaken a review of the costs and benefits of meeting the standards.[78]

The Commission has developed a number of criteria to set out the circumstances of when a TNSP or DNSP could seek an update to their reliability standards or targets within a regulatory control period. The Commission considers that these criteria will assist in ensuring that updates can only be requested where there has been a change in the input assumptions beyond those considered during the standard setting process and that meeting the standard or target is likely to have a material impact on a NSP's investment program.

In particular, the Commission has included a criterion which would require that updates to the standards or targets could only be considered where the update would lead to a change in revenue which would meet the cost pass through threshold in the NER.

This criterion would assist in removing any incentives that a NSP may have to seek a relaxation in the standard or target, where the resulting changes in revenue do not meet the cost pass through threshold. Under this scenario, a NSP could have its reliability standards or targets relaxed, while also retaining the revenue (which was set in the revenue determination) that would have been required to meet its original standard or target.

Aligning the criteria for updating reliability standards and targets with the cost pass through threshold would also ensure that standards and targets are only updated where there are likely to be more significant changes in revenue as a result of the update.

The Commission is interested in stakeholder views on whether its proposed criteria for seeking an update to reliability standards and targets are appropriate for both TNSPs and DNSPs.

Both standard setters and NSPs would be able to seek an update to standards and targets, which would also assist in ensuring that both a tightening and relaxation in standards and targets are considered where the relevant criteria are met.

This mechanism has been designed to ensure standards and targets are only updated where a relatively high materiality threshold has been met. The Commission considers that a high materiality threshold is required to limit the number of updates during a regulatory control period to preserve the role of standards and targets in providing stakeholders with a degree of certainty regarding the level of reliability they can expect to achieve.

Regular updates to the standards and targets could also result in the standard setter being required to effectively undertake project by project approvals, which could reduce the incentives for efficient investment that exist under incentives based ex ante revenue allowances. A high materiality threshold also limits the administrative costs

78 Grid Australia, Submission to the transmission workstream issues paper, p. 24.

for NSPs, standard setters, and stakeholders associated with participating in the update process.

It should also be noted that the decision making process for the standard setter in determining whether an update should occur reflects the same process that applies during the initial standard setting process. As a result, jurisdictional energy ministers would be able to take into account non-measurable factors, while the AER or jurisdictional bodies would only be able to consider measurable factors.

Question 9 Updating reliability standards and targets within the regulatory control period

(a) Are the Commission's proposed criteria for when an update can be sought appropriate for TNSPs and DNSPs, noting the differing characteristics of these networks?

(b) Do the Commission's proposed criteria represent a sufficiently high materiality threshold for updates?

(c) Would the proposed mechanism affect the incentives for efficient investment that exist under incentives based ex ante revenue allowances?

10 Compliance obligations and performance reporting

In this chapter, we set out the compliance obligations and reporting requirements associated with meeting transmission reliability standards and distribution reliability targets under the proposed frameworks.

10.1 Compliance obligations

This section sets out the proposed compliance obligations for TNSPs and DNSPs under the proposed frameworks.

10.1.1 Proposed approach

For the proposed framework for transmission reliability, we propose that TNSPs would be required to comply with their reliability standards every year and that this requirement would be enforced through obligations in the NER. In Victoria, AEMO currently undertakes planning and procurement for augmentations to the transmission network. Therefore, if the proposed framework for transmission reliability is adopted in Victoria, the Commission considers that AEMO would be responsible for complying with the Victorian transmission reliability standards.

For the proposed framework for distribution reliability, compliance with reliability targets would not be a NER obligation as DNSPs would be incentivised to meet their targets through the STPIS. As discussed in chapter 9, the AER would be required to set STPIS targets for each DNSP so that they aligned with the reliability targets that had been set by the standard setter under the framework. Due to the incentives available under the STPIS, DNSPs would not be required to meet their reliability targets in every year. This is discussed further in Box 10.1 below.

In addition, both TNSPs and DNSPs would be required to undertake annual audits, conducted by an independent auditor, to demonstrate that they have sufficient internal processes and have undertaken adequate planning to meet their standards and targets. The details of how these audits would need to be undertaken would be specified in the NER.

Under the proposed frameworks, the AER would be responsible for monitoring compliance with transmission reliability standards and distribution reliability targets, even where jurisdictional energy ministers have retained responsibility for setting standards or targets. Under its compliance function, the AER would be tasked with monitoring compliance with NER obligations for TNSPs and administering the STPIS for distribution. The AER would also monitor compliance with the requirement that a NSP has conducted its annual audit in accordance with its NER obligations.

Box 10.1: Compliance obligations under the national framework for distribution reliability

In distribution, compliance with reliability targets would not be required in every year. Rather, the STPIS would provide incentives for DNSPs to meet their targets on average over the longer term by applying a system of rewards and penalties for over and under performance against a DNSP's targets. DNSPs would be able to depart from the targets in any given year, but would be required to pay the financial penalties for doing so.

Process controls or performance safeguards would be established by each DNSP to provide a degree of confidence that it is seeking to meet the reliability targets.

Process controls would focus on ensuring that DNSPs have the necessary internal processes in place to establish a degree of confidence in meeting the targets. An example would be confidence interval monitoring where a range of hypothetical scenarios are assessed to determine the probability that the output reliability targets will be met. DNSPs would be required to plan their network so as to expect, to a 50 or 75 per cent confidence level, that they will not exceed their average unplanned SAIDI and SAIFI targets in any given year.

Performance safeguards would place limits on the extent to which DNSPs may deviate from their reliability targets over a given timeframe. Performance safeguards would aim to prevent repeated under performance against reliability targets by requiring the DNSPs to generally perform al least to the level of the targets rather than enforcing a strict obligation to meet the targets in any given year. While not making any specific recommendations, the Commission considers that examples of performance safeguards may include a requirement for the DNSPs to meet a rolling average level of performance over four years or a requirement to meet the targets in three out of every four years.

To review whether DNSPs have effectively established and implemented the required process controls or performance safeguards, an independent audit would be required at the end of each year. The audit would also ensure that DNSPs have accurately measured performance in accordance with the definitions of measures contained in the national reference standard template for distribution.

10.1.2 Reasoning for the proposed approach

Our proposed approach to compliance under the frameworks promote 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 NSPs for not meeting their targets and standards, and by requiring NSPs to undertake independent audits to clearly demonstrate they have processes in place to meet their standards and targets.

The differing compliance obligations under the proposed frameworks reflect the different physical characteristics of transmission and distribution networks. For transmission, TNSPs would be obligated under the NER to comply with their standards in every year, as it is difficult to observe transmission reliability performance. As a result, stricter obligations are required to ensure TNSPs comply with their standards as non-compliance in the short term would be unlikely to translate to measurable changes in performance.

In contrast, for distribution, as reliability performance can be more readily observed, financial incentives through the STPIS will promote compliance against reliability targets.

To encourage compliance with standards and targets, we have also proposed that both TNSPs and DNSPs be required to undertake an annual audit which is conducted by an independent auditor. The use of annual audits may be more appropriate for TNSPs as reliability performance is more difficult to measure. However, we consider that audits should also be conducted to assess a DNSP's compliance with its reliability targets to be consistent with good industry practice.

In its submission to the transmission workstream issues paper, Grid Australia suggested that annual audits should only be imposed on TNSPs in the event that the AER's initial monitoring detects non-compliance.[79]

In submissions to the distribution workstream, some DNSPs did not support proposals for annual audits of their internal processes.[80] However, other DNSPs recognised that audits were reasonable as long as the costs borne by the DNSP, and ultimately by consumers, are proportionate to the nature of the audit.[81]

With regard to DNSPs complying with their own internal processes for distribution, Energex and Ergon Energy both noted that variations in weather conditions can be significant and can have a longer cycle time than the five year regulatory period, thereby making it difficult to establish a level of confidence in reliability performance in any given year.[82] The Commission acknowledges these concerns and considers that internal process controls such as confidence interval monitoring would need to take into account the impacts of longer term weather and climate patterns and other variables. Consideration would also need to be given to whether using exclusions or statistical ranges of performance would be sufficient to accommodate the impacts of variations in longer-term weather patterns. These considerations would be incorporated in the development by the AER of the national reference standard template.

79 Grid Australia, Submission to the transmission workstream issues paper, p. 37.

80 Energex, Submission to distribution workstream, p. 6; Ergon Energy, Submission to the distribution workstream draft report, p. 10.

81 NSW DNSPs, Submission to the distribution workstream draft report, p. 9.

82 Ergon Energy, Submission to the distribution workstream draft report, p. 9; Energex, Submission to the distribution workstream draft report, p. 5.

We maintain the view that audits are an important part of promoting accountability and transparency to ensure that standards and targets are met.

The AER would be tasked with monitoring compliance, even where jurisdictions retain responsibility for standards setting. This means that the compliance function could be separated from the standard setter function under the proposed frameworks. 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.

10.2 Performance reporting requirements

This section sets out the performance reporting requirements for TNSPs and DNSPs under the proposed frameworks.

10.2.1 Proposed approach

We propose that NSPs would be obliged to publically report on:

- their performance to meet their reliability standards and targets each year; and
- the outcomes of annual audits on whether they have processes in place to meet their standards and targets.

NSPs would report on their performance and on the outcomes of their independent audits in their Annual Planning Reports. NSPs would be required to explain any deviations in their performance against their standards and targets as well as any issues arising from audits of their internal processes.

The AER would summarise the performance and audit outcomes in each of the NSPs' Annual Planning Reports. 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.[83]

NSPs and the AER would be required to report on their performance against their standards and targets in a manner that is consistent with the definition and expression of standards and targets in the relevant national reference standard templates.

10.2.2 Reasoning for the proposed approach

Public reporting by NSPs on their performance against their reliability standards and targets will be a key means of ensuring accountability and promoting transparency. Submissions on the transmission and distribution workstreams generally agreed that

83 See AEMC, Economic Regulation of Network Service Providers, and Price and Revenue Regulation of Gas Services, final determination, 29 November 2012.

annual reporting was desirable to promote accountability, while qualifying that this requirement should not be unduly onerous on NSPs.[84]

Public reporting adopted in a consistent and comprehensive manner would enable sensible comparisons and benchmarks to be made across the NEM. For instance, in transmission, this information could be used as an input into processes such as the National Transmission Network Development Plan.

We consider that the use of the definitions set out in the relevant national reference standard templates when reporting is undertaken will assist in facilitating consistent reporting throughout the NEM. This should improve the ability of standards and targets to be compared within and across jurisdictions. Reporting in this manner would be likely to benefit governments, regulatory bodies, market participants, and ultimately consumers.

However, we note views from Ergon Energy and Energex who cautioned against the use of public reports for benchmarking purposes because locational factors and network characteristics may affect a DNSP's reliability outcomes and lead to misleading comparisons.[85] The Commission agrees that benchmarking reports will need to be carefully prepared by stakeholders to ensure that the implications of differences in network characteristics are clearly explained.

We also note that as transmission reliability outcomes are difficult to observe, the benefits of performance reporting for transmission could be less significant than those for distribution.

Question 10 Compliance and performance reporting

(a) If the proposed framework for transmission reliability is adopted in Victoria, should AEMO be responsible for complying with Victorian transmission reliability standards?

(b) Does there need to be any changes to the current STPIS in order to enable it to be used to promote compliance with reliability targets for DNSPs?

(c) How should independent audits of NSPs' internal processes be conducted to demonstrate that NSPs have processes in place to meet their standards and targets?

84 Alinta Energy, Submission to the transmission workstream issues paper, p. 4; GDF SUEZ, Submission to the transmission workstream issues paper, p. 2; EnergyAustralia, Submission to the transmission workstream issues paper, p. 5.; Alternative Technology Association, Submission to the distribution workstream draft report, p. 10; Ergon Energy, Submission to the distribution workstream draft report, p. 10; Energex, Submission to the distribution workstream draft report, p. 6.

85 Energex, Submission to the distribution workstream draft report, p. 6; Ergon Energy, Submission to the distribution workstream draft report, p. 10.

(d) What issues should be considered in specifying how performance reporting should be undertaken by TNSPs and DNSPs?

11 Next steps and implementation

In this chapter, we set out the next steps for the review and discuss, at a high level, how we propose to implement the proposed frameworks for transmission and distribution reliability.

11.1 Next steps

Submissions are requested on this consultation paper by **5pm, Friday 9 August 2013**. The process for submitting a written submission to this paper is set out in chapter 2.

After considering submissions and discussions with stakeholders, we will publish separate final reports on the transmission and distribution workstreams of the review. This approach will enable us to meet our timeframes in accordance with our terms of reference. We expect to publish final reports for each workstream under the following timetable:

- Publish distribution workstream final report by 27 September 2013; and
- Publish transmission workstream final report by 1 November 2013.

These final reports will be submitted to SCER two weeks prior to publication, as required under our terms of reference. These reports will provide further detail on how the proposed frameworks will operate in practice and the next steps for implementation.

11.2 Implementation of the proposed frameworks

Following its December 2012 meeting, CoAG set out an implementation plan for its agreed energy market reforms. In this plan, CoAG noted that SCER will consider the AEMC's final reports on the transmission and distribution workstreams of the review at SCER's meeting in late 2013. At this meeting, CoAG's plan noted that each jurisdiction would decide whether to:

- adopt the proposed national frameworks; and
- delegate responsibility to the AER for applying the national frameworks.[86]

CoAG noted that the implementation of the national frameworks would require the AEMC to undertake further work to develop a plan to specify how implementation should occur.[87] If requested by SCER, this implementation plan would be prepared by the AEMC over 2014.[88]

86 CoAG, CoAG Energy Market Reform- Implementation Plan, December 2012, p. 9.

87 Ibid.

88 Ibid.

As a result, the AEMC will not be preparing detailed implementation advice for SCER as part of this review.

The implementation of the proposed frameworks is likely to be an extensive process and would be likely to require changes to: :

- Australian Energy Market Agreement (AEMA);
- NEL;
- Jurisdictional Application Acts for the NEL; and
- NER.

SCER would be responsible for changes to the AEMA and the NEL and would need to submit rule changes to the AEMC. The AEMC would need to process any rule changes. Jurisdictions would be responsible for changes to any of their Jurisdictional Application Acts.

Jurisdictions which adopt the proposed frameworks would also be required to roll back any existing jurisdictional instruments relating to transmission and distribution reliability, which would conflict or overlap with the frameworks. This could include changes to the existing licence requirements for transmission and distribution networks.

The implementation of the proposed frameworks would also require a number of supporting documents to be developed by the relevant national energy market bodies. It is anticipated that these documents would be developed through public consultation processes and would include:

- national reference standard templates to express transmission reliability standards and distribution reliability targets in a nationally consistent manner;
- transmission and distribution guidelines for the economic assessment process to provide consistency in how the costs and benefits of reliability scenarios are assessed under the frameworks;
- VCRs which can be used to quantify the reliability impacts of reliability scenarios during the standard setting process for each NSP; and
- changes to NSPs' Annual Planning Reports on how they report their performance on reliability outcomes and the results of annual audits.

Where possible, the Commission considers that the implementation of the proposed frameworks for transmission and distribution reliability should be aligned to minimise the regulatory burden for stakeholders.

Question 11 Next steps and implementation

Do you have any views on the changes to the NEM regulatory architecture which may need to be made in light of our proposed frameworks?

Abbreviations

AEMA	Australian Energy Market Agreement
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AER's	Australian Energy Regulator's
CAIDI	Customer Average Interruption Duration Index
CoAG	Council of Australian Governments
CPI	consumer price index
DNSPs	distribution network service providers
MAIFI	Momentary Average Interruption Frequency Index
NEL	National Electricity Law
NEM	National Electricity Market
NEO	National Electricity Objective
NER	National Electricity Rules
NSP	network service provider
RIT-D	Regulatory Investment Test for Distribution
RIT-T	Regulatory Investment Test for Transmission
SACOSS	South Australian Council of Social Services
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SCER	Standing Council on Energy and Resources
TNSP	transmission network service providers
VCR	value of customer reliability