

Our Ref: 49091
Your Ref: EPR0031
Contact Officer: Chris Pattas
Contact Phone: 08 9290 1470

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John Pierce
Chairman
Australian Energy Market Commission
PO Box A2449
SYDNEY SOUTH NSW 1235

Dear Mr Pierce

Distribution reliability outcomes and standards – national workstream – EPR0031

Please find attached the Australian Energy Regulator's (AER) submission regarding the Australian Energy Market Commission's (Commission's) draft report. We apologise for the lateness of this submission. In this paper, we:

- set out our support for the Commission's draft report,
- suggest further enhancements to the Commission's model, which would strengthen the linkages between the reliability target setting process and the revenue determinations,
- discuss how a fully integrated model might work in the event that a state government elects to delegate responsibility for setting reliability standards to the AER, and
- comment on how the AER might determine forecast costs under an outputs-based reliability framework.

AER comments on Commission's draft report

We welcome the reliability framework proposed in the Commission's draft report. There are significant benefits to be achieved as a result of moving towards a consistent national framework for distribution reliability standards. These benefits arise from:

- having a consistent reporting framework, and
- developing reliability standards that are economically based and appropriately reflect the communities' willingness to pay.

Consistent reporting framework

Differences in the expression of standards make it difficult to compare the performance of DNSPs in different jurisdictions. Clearly expressed, consistently defined standards will facilitate comparisons of DNSPs' performance.

If DNSPs are working towards reliability targets that are assessed on a consistent basis for consideration of costs and benefits, the AER is better able to make comparisons between cost

forecasts and identify discrepancies. Benchmarking inevitably needs to account for the differing characteristics of each network, however, reporting of comparative costs and services would improve the AER's ability to make comparisons of performance between DNSPs. Comparative information is also valuable for consumer groups wishing to assess the performance of their local DNSP. By using a consistent reliability framework, such comparisons will be enhanced.

Outputs-based reliability standards

The AER supports reforms that move the Australian regulatory environment towards a more outputs-based regime. In many states, the current regulatory framework remunerates NSPs on the basis of inputs. Ultimately, a regulatory regime that rewards NSPs for delivering services valued by consumers is clearly preferable to a regime that rewards NSPs for building assets.

The effect of input planning criteria can be to force the AER to accept an investment proposal, even if the economic merit of doing so is not readily demonstrated. Input planning criteria have the effect that DNSPs must augment their network at an earlier date or to a higher capacity than would be required under an outputs based approach. This has direct consequences for the level of augmentation and reliability driven capex approved by the AER during the regulatory determination process.

An outputs based regime gives DNSPs the ability to make decisions that deliver the required reliability outputs in the most efficient manner, without needing to conform to prescriptive (and potentially inefficient) rules about how those targets should be met. DNSPs have the opportunity to innovate and to recognise the trade-off between the costs of investment to improve reliability and the costs to customers associated with interruptions to supply. As set out in our response to the issues paper¹, we believe that output targets are likely to result in materially lower costs to customers than if the same level of reliability is delivered via input planning criteria.

We strongly support the use of financial incentives to encourage DNSPs to provide an appropriate level of reliability. Under the Service Target Performance Incentive Scheme (STPIS), financial rewards and penalties are determined by reference to the value of customer reliability (VCR), with different incentive rates for different parts of the network. The STPIS creates incentives for DNSPs to improve reliability where it is efficient to do so — i.e. where the costs of investment are less than the VCR.

We also agree that there is a need for the reliability framework to consider the needs of worst served customers. General reliability measures such as SAIDI and SAIFI² are based on the average performance of the network. As a result, DNSPs may have an incentive to focus expenditures on the more populous parts of the network and neglect the more sparsely populated areas. Minimum performance standards require DNSPs to consider all customers connected to their network.

Similarly, we support further consideration of measures which are intended to provide confidence that DNSPs' targets will be met in the future, such as limitations on the extent to which DNSPs may deviate from output targets over a given timeframe. Due to the long lifespan of many network assets, a network might experience years of under-investment before its ability to meet output targets is compromised. As a result, a regime which attaches DNSPs' reliability obligations to output performance could create incentives for DNSPs to pursue short term profit at the expense of long term performance. Any measures designed to prevent this outcome should seek to protect customers from underinvestment whilst minimising the loss of flexibility associated with regulatory intervention. It

¹ See page 5 of the AER's submission to the issues paper: <http://www.aemc.gov.au/Media/docs/Australian-Energy-Regulator-7f7986c0-ae66-4a7a-9758-e927e0b861f0-0.pdf>

² System Average Interruption Duration Index and System Average Interruption Frequency Index.

would also be necessary to consider the compliance and enforcement framework associated with these measures to ensure that they are effective without being unduly costly.

The jurisdictional target setter model, as outlined in the draft report, represents a major improvement on the status quo. The model adds an important new dimension to the decision making process by establishing a mechanism by which customer preferences can be taken into account. The proposed economic assessment process is likely to result in more efficient targets, informed by a more comprehensive understanding of customer preferences, than the arrangements that currently apply in some jurisdictions.

However, we consider that further benefits could be achieved by improving co-ordination between the target-setting process and the AER’s revenue determination process.

Co-ordination between reliability target setting process and revenue determination

A co-ordinated process would allow for more efficient trade-offs of the costs and benefits associated with a proposed investment program than if the decisions are made in isolation from each other. Table 1 describes the benefits of a co-ordinated process.

Table 1 Benefits of co-ordinated process for setting standards relative to stand-alone process

| Criteria | Considerations |
|------------------------------|--|
| Consistency | The potential for inconsistency between the revenue determination and the reliability targets would be reduced. Both reliability targets and forecast expenditure could potentially be derived using the VCR. A co-ordinated process would improve consistency in the capture, analysis and reporting of reliability information. |
| Integrity | DNSPs would submit a set of options of forecast reliability targets and associated costs to be used as part of the reliability setting standards process and the revenue determination process. This would reduce any opportunity for businesses to exploit gaps between multiple processes. |
| Better quality information | DNSPs have an incentive to underestimate costs for the purposes of the reliability target setting process and overestimate costs for the purposes of the revenue determination. If DNSPs prepare a single set of forecasts for both processes, these two incentives will offset each other (to an extent). DNSP forecasts would also undergo rigorous independent scrutiny during the revenue determination process. |
| Improved customer engagement | There would be a single DNSP customer consultation process instead of separate processes for the purposes of setting reliability targets and the revenue determination. The Rules require the AER to consider the quality of DNSPs’ consultation, which gives DNSPs an incentive to conduct a high quality process. |
| Efficiency | A co-ordinated process promotes efficiency in both reliability targets and forecast expenditure, for instance, due to better quality information. Under a fully integrated process it would be possible to undertake a holistic assessment of all relevant parameters, and make adjustments where appropriate, in order to find the most efficient outcome. |

The Commission's interim report should consider mechanisms that help to strengthen the links between the reliability target-setting framework process and the revenue determination process. For instance:

- There should be a single, ongoing DNSP customer consultation process which covers all matters relevant to customers. The AEMC's decision on the economic regulation of electricity networks introduces an obligation on network businesses to consult with customers prior to submitting their regulatory proposal. In practice, this consultation process is likely to canvass similar issues to those envisaged in the distribution reliability standards draft report. There would be administrative benefits from rolling the two processes into one. It would also limit opportunities for DNSPs to use different cost estimates for the reliability review and the revenue determination.
- There should be consistency between the information used to set output targets and allowed revenues. DNSPs should be required to reconcile the cost forecasts in their regulatory proposals to the cost forecasts submitted for the purposes of the reliability target setting process. Since the AEMC's process envisages a narrowing down of a range of options, not all information submitted for the target setting process would be relevant for the revenue determination (see Attachment 1). Instead, DNSPs would need to reconcile the cost estimates associated with cost output package selected by the jurisdictional target setter. If the DNSP wishes to update their forecasts to reflect new information at the time of the revenue determination, any differences should be fully explained and justified in the DNSPs' revenue proposal.
- The target-setter could engage with the AER as part of the commencement of the reliability target setting process and have the option of seeking advice from the AER on the DNSPs' cost forecasts. The target-setter could also consider the AER's annual benchmarking reports when considering whether the reliability outputs submitted by the DNSP are efficient.
- The target-setter could have the option to revise their decision on output targets once the associated costs are known with more certainty. For instance, the AER could share its preliminary findings with the target-setter prior to the release of the AER's draft determination, and the target-setter could revise the output targets if it appears that the original targets were based on inaccurate information.

Attachment 1 shows how such refinements could fit within the framework proposed by the AEMC.

If the Commission decides to adopt these types of mechanisms, it would result in a more iterative process for setting reliability targets and the revenue determination. While this approach would be more complex, there are significant potential benefits – see Table 1. The extent to which these benefits are achieved would depend on the level of co-ordination.

Fully integrated process

The Commission's draft report includes an option for state governments to transfer responsibility for setting reliability targets to the AER. In this case, it would be possible to adopt a single fully integrated process which captures all the potential benefits described in Table 1. The AER could determine reliability targets in conjunction with the decision on forecast expenditure, as part of the regulatory determination process. This process could potentially take the following form:

1. DNSPs would submit forecasts that attempt to balance the costs of an efficient DNSP building, operating and maintaining the network with the reliability benefits to customers (as measured by the value of customer reliability or VCR). The DNSP's regulatory proposals would include

information on the forecast reliability outputs associated with the proposed package of expenditure.

2. The AER would undertake an economic assessment of the risks, costs and benefits associated with the DNSP's regulatory proposals. We would determine output targets based on a combination of:
 - average past performance (which reflects the capability of the existing network) and
 - where appropriate, adjustments to reflect the forecast impacts of opex or capex programs that have the effect of changing reliability performance.

Under a fully integrated model there would still be scope for state governments to influence reliability outcomes. For instance, state governments could retain responsibility for determining minimum performance standards.

Assessing forecast costs under an outputs-based approach

SAIDI and SAIFI are expressed in terms of minutes off supply. They are not directly linked to a financial value. This makes it difficult to quantify the change in efficient expenditure associated with a change in output targets.

If outputs-based reliability targets are adopted, we would like to assess forecast reliability expenditure using the raw data on consumer preferences — i.e. the results of the VCR studies. The VCR provides a quantifiable link between reliability and expenditure. By looking at the VCR, it is possible to assess whether there are net customer benefits associated with a proposed investment.

One technique that can be used to carry out this type of assessment is to estimate expected unserved energy³ and multiply it by the VCR. Other things being equal, if the cost of an investment to ensure energy is served is less than the value to customers of that energy, then the proposed investment should proceed.⁴ Victorian DNSPs use this type of economic assessment in preparing their augmentation capex forecasts.⁵

The use of VCR data has the potential to make the revenue determination process simpler and less subject to manipulation. In the absence of VCR data, an outputs-based approach to reliability creates an additional layer of information asymmetry for the AER to unravel during the reset process.

If we were to use VCR to assess DNSPs' forecast reliability expenditure under the jurisdictional target setter model, we may need to adjust our forecast of efficient costs in order to ensure that DNSPs receive allowed revenues consistent with the expenditure required to meet their output targets. Such adjustments would not be required under a fully integrated model since the decisions on costs and outputs would be made as part of a single process. In this case, we would set forecast expenditure at a level that is consistent with the value that customers place on a reliable electricity supply.

We acknowledge that VCR studies are necessarily imperfect due to the complexity of the information they seek to capture. We expect the methodology to evolve and improve over time as it incorporates

³ EUSE is derived taking into account the capacity of the supply assets, load growth and the probability of failure of the assets under study.

⁴ There are other factors that must be considered including safety, operating and maintenance expenditures, etc. This technique has most application at higher levels in the distribution chain such as the feeder and substation levels. In practice, asset failure rates are not always well documented and it may be necessary to apply more mechanistic asset management practices at the lower levels of the network (for instance, below the zone substation level).

experience from previous studies. There is a risk that the results of VCR studies may be erratic during the learning period. We support further consideration of measures to ensure that unreliable results are not applied in a mechanistic way.

We would also find it useful if DNSPs were to submit at least against two scenarios as part of their regulatory proposal:

- a base case level of expenditure that maintained reliability at existing levels, with changes in reliability outcomes compensated or penalised through the STPIS; and
- a reliability change case with increases or decreases in expenditures to meet the DNSPs' output targets (or to meet changes in the VCR under a fully integrated model) and complementary incentives to achieve the targets through an (adjusted) STPIS.

The reliability change case would be the key scenario for the purposes of setting allowed revenues. The base case would be used as a counterfactual to assist the AER in its review of the DNSPs' proposals. The base case scenario is relevant because it can be tied to actual historical expenditures and reliability outcomes.

The requirement on DNSPs to forecast the costs of maintaining reliability as well as transitioning to a proposed new level of reliability in their regulatory proposal would improve transparency and enhance the AER's ability to determine efficient levels of cost and reliability.

The AER would be pleased to provide further assistance to the Commission on this important area of work. If you would like to discuss any aspect of this submission please contact Chris Pattas, GM Network Operations and Development on 03 9290 1470.

Yours sincerely



Andrew Reeves
Chairman

⁵ AER, *Final decision, Victorian electricity distribution network service providers, Distribution determination 2011–2015, October 2010* (see <http://www.aer.gov.au/node/7208>).

Attachment 1 – Improving co-ordination between the reliability target setting process and the revenue determination

This chart is a reproduction of Figure 3.2 from the Commission's draft decision (page 15), with our suggestions and comments in red.



