AEMC Rule Change Request submission

Rule change request to account for resilience in the National Electricity Rules capital and operating expenditure factors.

Rule change request

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Name of rule change proponent

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We acknowledge and respect Victorian Traditional Owners as the original custodians of Victoria's land and waters, their unique ability to care for Country and deep spiritual connection to it.

We honour Elders past and present whose knowledge and wisdom has ensured the continuation of culture and traditional practices.

DEECA is committed to genuinely partnering with Victorian Traditional Owners and Victoria's Aboriginal communit

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Introduction

On 9 June 2021 and again on 29 October 2021 severe windstorms caused widespread power outages in Victoria. These storms followed the severe bushfires of the 2019-2020 summer, which also led to extensive power outages in the state's far east. Such incidents have been uncommon, but climate change will increase the frequency and severity of extreme weather events.

In response to the widespread and prolonged outages in 2021, the Minister for Energy and Resources established the Electricity Distribution Network Resilience Review Expert Panel (Panel) on 20 January 2022. The Panel released its Electricity Distribution Network Resilience Review Report in May 2022. The report aimed to identify ways to improve the ability of electricity distribution network service providers (DNSPs) to withstand and respond to prolonged power outages caused by storms and other extreme weather events. The Panel found that DNSPs can reduce both the likelihood and impact of prolonged power outages by making investments in network and community resilience.

The Victorian Government Response to the Panel's report supports the recommendation to propose to embed 'resilience' in the National Electricity Rules (NER). The government Response was released on 9 November 2023.

Public consultation on the Panel's report and the Government's response was extensive and included a community survey of 800 customers, consultation papers, stakeholder round tables, one-on-one consultation with individual stakeholders, and community round tables in the affected areas. Stakeholders included DNSPs, communities that were affected, energy regulators, councils, and government departments and bodies. The draft rule change was provided to stakeholders, including DNSPs, the Australian Energy Regulator (AER) and the Australian Energy Market Commission (AEMC). This rule change request has incorporated these stakeholder views.

Following a summary of the issue and proposed rule change, the remainder of this document sets out the information required for a rule change request. Specifically,

- A description of the issue that the rule change is aiming to address;
- A description of the proposed rule change;
- How the proposed rule change addresses the issue;
- How the rule change promotes the National Electricity Objective (NEO); and
- The expected costs and benefits and impacts on affected parties.

Summary of the issue and proposed rule change

The rule change request aims to address the following key issues:

1. **Narrow focus of current service performance objectives:** The AER's revenue determinations focus on a set of defined service performance objectives. These performance objectives exclude measures of power outages beyond 12 hours and lead electricity DNSPs and the AER to prioritise investments that address outages shorter than 12 hours. The rule change seeks to address this gap by ensuring regulatory proposals include investments to minimise customer exposure to prolonged power outages.
2. **Increased frequency of prolonged power outages due to climate change:** The electricity network is increasingly vulnerable to severe weather events due to climate change and the rising threat of cyber and terrorist attacks on critical infrastructure. Historical outage data used by DNSPs and the AER underestimates the future frequency and severity of these events, resulting in insufficient proactive expenditure on resilience. The rule change emphasises the need for efficient ex-ante investment in network and community resilience to mitigate the increasing risks of extreme weather events.
3. **Insufficient attention to customer costs:** There is an overreliance on cost pass-through mechanisms to manage the costs of severe and catastrophic events, rather than investing proactively in resilience. While cost pass-throughs allow DNSPs to recover expenses post-event, they do not compensate customers for the economic losses incurred during prolonged power outages.
4. **Overreliance on cost-pass throughs**: There is an insufficient focus on proactive, ex-ante investments by DNSPs to enhance network resilience, which could significantly reduce the frequency, duration and impact of prolonged power outages. Further, current regulatory frameworks emphasise

recovery of costs post-event, which overlooks the economic losses incurred by affected customers. Analysis by AusNet found that individual customers experienced an average of $3,355 in direct financial impact from the 2021 storms, with the impact for customers in Olinda averaging significantly higher at $6,799. Customers will benefit economically, as the focus shifts to choosing the more efficient funding solution between ex-ante and ex-post for catastrophic events and severe weather events.

5. **Lack of formal framework for resilience**: There is inconsistency in the treatment of resilience-related funding under the NER. In April 2022, the AER published a guidance note on how resilience funding should be treated, defining network resilience, and outlining the required evidence for such funding. However, this approach is inconsistent with the intended regulatory framework, which stipulates that matters with industry-wide application should be addressed within the National Electricity Rules (NER) rather than through informal guidelines. The guidance note's broad principles, rather than detailed instructions, hinder DNSPs ability to make robust cases for resilience investment, demonstrating the need for a more formalised approach. Consequently, the rule change includes a requirement for the AER to prepare and publish a formal guideline relating to resilience expenditure.

The rule change proposes to include a new capital and operating expenditure factor that requires the AER to consider:

> *The extent to which the capital and operating expenditure relates to the distribution network service provider's ability to prepare efficiently to resist, manage during, or recover from catastrophic events and severe weather events, which may lead to prolonged power outages, considering:*
>
> - *the benefits and costs of providing the expenditure as part of forecast capital expenditure or as a cost pass-through, and*
> - *the likelihood and impact of the potential catastrophic events and severe weather events.*

Issue to be addressed

1. Narrow focus for the interpretation of service performance objectives

The AER is responsible for making revenue determinations that set the maximum allowable revenue an electricity DNSP can recover from their customers during the five-year regulatory period. The AER bases revenue determinations on regulatory proposals submitted by DNSPs that contain their proposed capital and operational expenditure. When making a revenue determination, the AER must use the expenditure objectives and factors to evaluate the proposals to ensure that the expenditure is necessary to achieve the service performance objectives. Specifically, clauses 6.5.6(a) and 6.5.7(a) of the NER identify the following service performance objectives with respect to forecast capital and operating expenditure:

> *(1) meet or manage the expected demand for standard control services over that period;*
>
> *(2) comply with all applicable regulatory obligations or requirements associated with the provision of standard control services;*
>
> *(3) to the extent that there is no applicable regulatory obligation or requirement in relation to:*
>
> *(i) the quality, reliability or security of supply of standard control services; or*
>
> *(ii) the reliability or security of the distribution system through the supply of standard control services,*
>
> *to the relevant extent:*
>
> *(iii) maintain the quality, reliability and security of supply of standard control services; and*
>
> *(iv) maintain the reliability and security of the distribution system through the supply of standard control services;*
>
> *(4) maintain the safety of the distribution system through the supply of standard control services; and*
>
> *(5) contribute to achieving emissions reduction targets through the supply of standard control services.*

While all the service performance objectives are relevant, with specific reference to reliability, Rule 6.28 of the NER requires the AER to publish a Distribution Reliability Measures Guideline. This guideline provides a set of common definitions of reliability measures to assess and compare the reliability performance of DNSPs. Additionally, the AER defines reliability targets in the context of the Service Target Performance Incentive Scheme (STPIS).[1]

The definitions of reliability in both the AER's guideline and the STPIS narrow the scope of what is assessed, compared, or used to drive service performance measures. For example, Major Event Days, when the daily System Average Interruption Duration Index exceeds a statistical threshold value, are excluded from the measures of reliability. These exclusions are made for good reason. That is, it is beneficial to prevent the material variances in the data that would arise from long-duration power outages, as this would compromise the ability to compare service performance across DNSPs. Additionally, it could potentially expose DNSPs and customers to significant windfall gains or losses under the STPIS due to the challenges in setting a benchmark target for performance related to severe weather and catastrophic events.

While exclusions from the definitions of reliability measures do not preclude the AER from considering expenditure proposals that aim to minimise customers' exposure to Major Event Days, and DNSPs report on the number of Major Event Days in their annual planning reports, DNSPs are likely to focus more on reliability investments that align with the measures defined by the AER. This focus is driven by the fact that the AER's definition of reliability impacts DNSPs' financial rewards and penalties under the STPIS, and directly influences how DNSPs justify their capital and operating expenditure forecasts and how these forecasts are assessed by the AER.

The narrower focus for reliability when determining expenditure forecasts is evident wherever the Value of Customer Reliability (VCR) is used to justify expenditure. The AER states that the: "*VCR play an important role in ensuring customers pay no more than necessary for reliable energy, helping energy businesses identify the right level of investment to deliver reliable energy services to customers*."[2] However, the AER's definition of the VCR does not extend to power outages that last more than 12-hours.[3] Therefore, the costs and impacts that customers incur due to long-duration outages are not considered when investment decisions are made using this assessment tool.[4]

2. Increasing threat of Major Event Days

Climate change is increasing the frequency and severity of extreme weather events. The electricity system is vulnerable to direct impacts from hazards like heatwaves, bushfires, floods, tropical cyclones, geomagnetic storms, and earthquakes, as well as cyber-attacks or terrorist events targeting electricity network assets. These severe weather and catastrophic events can leave customers without power for extended periods, from days to weeks.

Projected warming and drying in southern and eastern Australia will result in drier, more combustible fuels, increasing the frequency of severe fire danger days. In addition to average temperature increases and a decline in average precipitation, extreme temperatures and rainfall are forecast to rise significantly, particularly under high emission scenarios. Extreme daily maximum temperatures could rise at twice the rate of average maximum temperatures, with substantial increases in high winter daytime and nighttime temperatures. Extreme rain events will intensify while average rainfall decreases, increasing the risk of flash flooding.[5]

As the climate changes, historical data will underestimate the frequency and severity of severe weather events that are expected to occur in the future. Therefore, if DNSPs and the AER rely heavily on historical outage data, it is likely to result in insufficient prioritisation of proactive expenditure to enhance resilience. Looking

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[1] AER, 'Electricity distribution network service providers Service target performance incentive scheme', Version 2.0 November 2018.

[2] https://www.aer.gov.au/industry/registers/resources/reviews/values-customer-reliability-2024

[3] AER, 'Values of Customer Reliability Final report on VCR values' December 2019, p.3.

[4] In September 2020 the AER decided to discontinue analysis to calculate a value of customer reliability for widespread and long duration outages. See: https://www.aer.gov.au/documents/aer-values-customer-reliability-widespread-and-long-duration-outages-final-conclusions-september-2020. It is currently in the process of investigating this matter again to determine an appropriate value.

[5] Clarke JM, Grose M, Thatcher M, Hernaman V, Heady C, Round V, Rafter T, Trenham C & Wilson L. 'Victorian Climate Projections 2019 Technical Report' CSIRO, 2019.

back would not reveal the potential costs to which customers and DNSPs might be exposed. Instead, DNSPs and the AER need to be more proactive in addressing future threats that may impose significant but avoidable costs and impacts on customers.

The absence of a positive obligation on DNSPs and the AER to consider the risks and costs of severe and catastrophic events on an ex-ante basis means customers will increasingly bear the costs of lost load when widespread and long-duration outages become more prevalent. Therefore, an increased focus on efficient ex-ante investment in greater network and community resilience could mitigate much of this cost.

3. Focus on network cost rather than customer costs

Recent DNSP determinations have focused on enhancing the resilience of distribution networks to severe weather events.[6] This is a positive step. However, to date, the dominant approach for managing the costs of severe and catastrophic events has been through cost pass-through applications after an event occurs. While this ensures that DNSPs can recover their costs, it overlooks the costs incurred by customers during long-duration outages. Therefore, an over-reliance on ex-post measures, such as cost pass-throughs, can result in higher overall costs for customers compared to the costs associated with preventing or minimising significant outages through proactive investments in resilience.

Since 2015, 11 pass-throughs for natural hazard events have been approved by the AER, totalling over $250 million. While this amount of pass-through funding may appear to demonstrate an efficient treatment for network cost recovery, it is compensation for the costs incurred by DNSPs and so does not compensate customers for the full cost they incur from prolonged outages.[7]

Up until 2024, the 2021 storms in Victoria were responsible for the most severe electricity outages in AusNet's history, with impacts averaging more than five times greater than other recorded storm events. The widespread and extreme damage from the 2021 storms resulted in substantial costs for emergency restoration works, replacement of assets, labour, vegetation management and penalties paid out to customers.

The extreme weather, marked by wind gusts surpassing 100km/h, led to flooding, fallen trees and poles, and notable destruction of overhead power lines. In total, fourteen 66kV feeders (power lines) were deactivated, fifty-eight 22kV feeders encountered issues, and ten zone substations experienced power loss. This translated to 230,000 customers (about 30 percent of AusNet's customers) without power. For the June 2021 storm event, the affected residential urban customers experienced an average outage of 49 hours while 5% experienced an outage of 6.7 days or greater. The affected residential rural short feeder customers experienced an average outage of 53 hours while 5% experienced an outage of 10.1 days or greater. The maximum outage for residential urban customers impacted by this event was 29 days and the maximum outage for residential rural customers was 84 days. The average impact on customers from this event by customer type is shown in the table below.

Table 1: Average outage duration by customer type

	Residential Urban	Residential Rural Short	Residential Rural Long	Business Urban	Business Rural
Average Duration (hours)	49	53	41	35	51

[6] These are discussed in more detail below.

[7] It is worth noting that DNSPs are required to make payments to customers who receive a level of service worse than a specified threshold or level. They are intended to give recognition to the inconvenience customers experience when their DNSP does not meet the specified threshold. However, these payments are well below the costs that customers actually incur from a long-duration outage and so are not compensation for costs incurred. For instance, in Victoria, the payments range from $40 to $380 depending on a range of factors. See: https://www.esc.vic.gov.au/electricity-and-gas/information-for-electricity-and-gas-consumers/guaranteed-service-level-payments-energy-outages for further information. The size of these payments, and the extent they compensate for all the costs incurred by customers, is a matter for individual jurisdictions and so is outside the scope of this rule change proposal.

P95 Duration (hours)	160	243	184	101	214
P95 Duration (days)	6.7	10.1	7.7	4.2	8.9
Maximum Duration (hours)	687	2,018	1,102	593	1,197
Maximum Duration (days)	29	84	46	25	50

Note: The P95 duration refers to the outage duration experienced by the 95th percentile of each customer type segment, i.e. 5% of customers experienced outages equal to or longer than the P95 duration.

On 22 November 2021, AusNet submitted a cost pass-through application to the AER, seeking to recover costs in relation to the June storm in Victoria. The AER approved the full amount sought by AusNet delivering a positive pass-through amount of $39,098,155 to be recovered over the following four regulatory years. Of this amount, 61% was for Guaranteed Service Level Payments (GSL) to compensate customers in accordance with a Ministerial Order that ensured the payment was not treated as an exclusion under the State based scheme.[8,9] On 22 June 2022, the AER released its determination on AusNet's October 2021 storm cost pass-through application. The AER approved a positive pass-through amount of $6,166,728 primarily for emergency replacement and corrective works.[10] The AER estimated that both cost pass-through applications will add approximately $9 per year to residential customer bills, and $38 per year to small business customer bills, over the remaining four years of AusNet's 2021–26 regulatory control period.

Prolonged outages resulting from Major Event Days lead to significant economic losses for customers, including lost business revenues, spoiled goods, and additional living costs. These losses are estimated to be higher than the direct costs imposed on DNSPs that are compensated through the cost-pass through mechanism. The implication being that customers are likely to be willing to pay more in the form of ex-ante investment in resilience projects to avoid incurring the costs associated with prolonged outages. For example:

- The estimated value attached by AusNet's customers to the outage caused by the June 2021 storm is $62.2 million. This estimate is derived by applying the values of customer reliability and resilience estimated by Lewers in the 2023 report for AusNet to the actual outage durations experienced by AusNet customers, as summarised in Table 1 above.[11] Lewers' estimates of the values of customer reliability/resilience are based on surveys of customers' willingness to pay/avoid outages using a methodology that closely follows the AER's methodology for estimating VCRs, and may not fully represent the true societal costs of outages.
- A 2016 report by Deloitte on building resilient infrastructure identifies that a single loss of electricity supply incident caused by bushfires in 2007 in Victoria cost approximately $234 million.[12]
- Analysis by AusNet also found that individual customers experienced an average of $3,355 in direct financial impact from the 2021 storms, with the impact for customers in Olinda averaging $6,799. This financial impact was driven by factors such as generator purchase or hire, accommodation, financial losses or food spoilage.

The current pass-through mechanism ensures DNSPs can recover their costs but does not provide any protection to customers from these substantial costs they incur following significant outages, and any

[8] See: AER, 'Determination June 2021 storms cost pass through AusNet Services', March 2022.

[9] The Victorian Government made an additional contribution of $3.1 million. See: Cost pass through application – June 2021 storms (PUBLIC VERSION) 22 November 2021, p.26.

[10] AER, 'Determination October 2021 storm cost pass through AusNet Services', June 2022.

[11] We derive the values per unmet kWh by assuming that the outage is widespread for the first 96 hours (4 days) after which the value applied is at the local outage rate. We note that after 96 hours there were still over 25,000 customers suffering outages. We apply the estimates of Lewers for resilience assuming that community hubs are not available.

[12] Deloitte Access Economics, 'Building resilient infrastructure, Australian Business Roundtable for Disaster Resilience & Safer Communities', 2016, pp.42-52.

compensation is only limited to what jurisdictions provide under the prevailing GSL framework.[13,14] This gap highlights the need for approaches that focus more on minimising the economic impact on customers during such events.

4. Proactive investment to reduce the overall costs to customers

In the Victorian Government's view, there are widespread and long-duration outages that could be avoided or mitigated if DNSPs invested more, ex-ante, to enhance network resilience. If such outages are avoided or mitigated through ex-ante investment, then the large costs suffered by customers affected by those outages would be reduced.[15] There will still be some outages that cannot be avoided efficiently because the ex-ante network investments required to avoid those outages are too costly to make or unnecessary. This might be because there is insufficient evidence of the likelihood and impact of events, or because the costs for solutions that would address the risk are higher than the benefits. Nevertheless, ex-ante investment by DNSPs to strengthen resilience can mitigate the costs and impacts on customers.

Ex-ante investments in resilience can include infrastructure capable of withstanding extreme conditions, such as strengthening poles to withstand severe winds, relocating assets that are in high-flood risk zones, and upgrading transformers to handle higher loads during extreme weather. Implementing advanced technologies, like grid-forming inverters and stand-alone power systems (SAPS), can enhance the network's ability to respond to and recover from major events.

Community level support can be delivered during a prolonged outage to ensure customers have some access to minimum electricity requirements and to direct and inform customers about the options available to them in such cases. These types of proactive investments can significantly reduce the frequency and duration of outages, minimising the overall impact on customers and the economy.[16]

There are many studies that have identified that there are material benefits available from improving the resilience of critical infrastructure to severe weather events, including for electricity networks. For example, a recent study by CutlerMerz assessed the benefits of deploying resilience-based SAPS across the NEM.[17] The study concluded that there are large net economic benefits of between $382 million and $1.5 billion in transitioning small towns in bushfire prone regions to SAPS, reducing network costs and customer bills. In addition, the study found that this approach would improve reliability for fringe of grid customers.

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[13] As stated above, GSL payments are set by jurisdictions and so are outside of the scope of this rule change proposal.

[14] In the case of severe weather events on Tuesday 13 February and 22 February 2024 for AusNet's network, the Victorian and Australian Government funded an additional payment referred to as the Prolonged Power Outage Payment. See: https://www.ausnetservices.com.au/outages/claims/prolonged-power-outage-payment

[15] Estimates of the costs imposed onto customers is set out further below.

[16] For example, the Victorian Government has invested in 26 powered community hubs to provide support and safety during power outages caused by extreme weather. These hubs will provide space for residents to cook meals, charge devices and access information. See: https://www.energy.vic.gov.au/about-energy/news/news-stories/strengthening-energy-resilience-during-extreme-weather .

[17] Network Resilience – Potential benefits of a requirement to provide for resilience. Total Environment Centre and CutlerMerz. Accessed 30 August 2023. https://d3n8a8pro7vhmx.cloudfront.net/boomerangalliance/pages/295/attachments/original/1611270095/CMPJ0391_-_TEC_Network_Resilience_v4.1.pdf?1611270095

5. AER approach to resilience projects

In April 2022 the AER published a guidance note to assist electricity networks, consumer groups and advocates understand how resilience-related funding would be treated under the NER.[18] In doing so, the AER sought to provide a definition of network resilience and its view on what evidence would be needed for resilience funding. While the AER is to be commended for being proactive on this matter, it is an approach that is inconsistent with the intended operation of the regulatory framework.

As noted by the Expert Panel on Energy Access Pricing, when it was describing the approach taken to the economic regulation of gas and electricity networks, there is a hierarchy of instruments each of which has its own role. Specifically it identified:

- The National Electricity Law is for the delegation and conferral of powers, as well as to set out any high-level principles to constrain the scope of regulatory discretion;
- The NER is for matters that have an industry-wide application or for matters that will change infrequently over time;
- Regulatory guidelines are for detailed technical matters that rely more on operational information; and
- Regulatory decisions are for matters that depend on the individual participant circumstances.[19]

Regarding resilience expenditure, the AER has had to step into the role of rule maker. That is, it has sought to both determine the definition of resilience projects as well as direct itself as to the guidance it should provide to DNSPs through its informal guidance note. The framework for resilience expenditure and what guidance the regulator should be required to provide on the topic are matters that should be set out in rules rather than left to the AER given they have industry-wide application and are matters that should change infrequently over time. Additionally, the rules should guide the regulator on creating guidelines to provide appropriate direction to DNSPs and other stakeholders. The formal process for establishing and modifying guidelines also ensures that appropriate consultation is undertaken.

The AER's guidance note also sets out the evidence it will require to support ex-ante resilience-related funding. However, this is presented more in the form of broad principles rather than detailed requirements and instructions for DNSPs. The informality of the guidance note also means that it would open for the AER to change the evidence it requires when assessing resilience projects (or the definition it applies for resilience), without needing to undertake a formal consultation process or to justify its change in approach. This adds further uncertainty and makes it more difficult for DNSPs to plan investments and develop their expenditure forecasts and proposals.

The AER recently made several regulatory determinations based on its guidance on key issues for network resilience. None of the New South Wales (NSW) DNSPs or TasNetworks met the AER's guidelines for proposing resilience expenditure. In these recent decisions, most approved resilience expenditure resulted from the AER's satisfaction with the total capital and operating expenditure forecasts from the DNSPs. If the AER had not been satisfied with these total expenditure forecasts, it is likely that less funding would have been allocated for resilience projects. For instance, with respect to resilience projects:

- Ausgrid proposed $119.6 million in its revised proposal, while the AER approved $41 million in its final decision.[20]
- Essential Energy proposed $204 million, while the AER's alternative estimate was for $121 million.[21]
- Endeavour Energy proposed $28 million, and while the AER did not provide an alternative estimate, it stated that it found aspects of its proposal to be inconsistent with prudent and efficient decision-making.[22]

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[18] AER, Note on Network Resilience, April 13, 2022. https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/aer-note-on-network-resilience.

[19] In addition to these instruments identified by the Expert Panel on Energy Access Pricing, individual jurisdictions place obligations and administrative requirements on licenced energy businesses, including DNSPs.

[20] AER, 'Draft Decision Ausgrid Electricity Distribution Determination 2024 to 2029 (1 July 2024 to 30 June 2029), Attachment 5 Capital Expenditure, September 2023, p.17.

[21] AER, 'Draft Decision Essential Energy Electricity Distribution Determination 2024 to 2029 (1 July 2024 to 30 June 2029), Attachment 5 Capital Expenditure, September 2023, p. 14.

[22] AER, Draft Decision Endeavour Energy Electricity Distribution Determination 2024 to 2029 (1 July 2024 to 30 June 2029), Attachment 5 Capital Expenditure, September 2023, 15.

- TasNetworks proposed $17.4 million for climate resilience, and again the AER did not provide an alternative estimate but concluded that TasNetworks has not provided sufficient information to support its climate resilience forecast.[23]

The DNSPs' failure to make a strong case for resilience expenditure may stem from uncertainty about what qualifies as resilience expenditure and the evidence the AER requires for approval. This uncertainty could be because it was the first time the AER assessed proposals for resilience expenditure under its guidance note, leaving DNSPs with little historical precedent or experience to draw on. Additionally, it might be due to the informal nature of the AER's current guidance approach and a lack of detail on the specific evidence it seeks.

A specific challenge for the DNSPs was demonstrating the necessity of the investment. The AER's guidance note states that DNSPs should identify a causal relationship between the proposed capital expenditure and the expected increase in extreme weather events. This includes evidence that extreme weather events are expected to affect the network, the likelihood and impact of the event, and which parts of the network are most likely to be impacted. On this matter none of the NSW DNSPs or TasNetworks were able to satisfy the AER's threshold for evidence. The AER's concerns included:

- The investment was justified based on customers' lived experiences from recent weather events rather than predictive modelling.
- DNSPs did not adequately link the identified need to an expected increase in extreme weather events. For example, data from the US on pole performance in strong winds was deemed unsuitable for the DNSPs operating environment.
- There was an overstatement of the benefits of specific locational investments.

However, the AER did not provide detailed guidance on the evidence or assessment tools DNSPs should use for their assessments. Instead, it addressed the requirement in more general terms, leaving unclear what threshold of evidence the AER considers suitable. Receiving the AER's views on appropriate evidence at the draft decision stage is arguably too late for DNSPs to develop alternative analyses to support their expenditure forecasts. The fact that none of the DNSPs convincingly demonstrated the need for their proposed investments suggests they have not effectively integrated network and community resilience into their asset management and investment planning. This is likely due to the existing regulatory framework's failure to incentivise proper resilience planning.

Description of the proposed Rule change

The proposed rule change includes two key elements that aim to address the limitations of the existing regulatory framework described above:

- a new expenditure factor for capital and operating expenditure; and
- the requirement for a new guideline to be published by the AER.

Each of these proposals is explained in detail below.

New expenditure factors

It is proposed that Chapter 6 of the NER include a new Capital Expenditure Factor and Operating Expenditure Factor. The purpose of these new expenditure factors is to ensure that the AER considers the extent to which an expenditure forecast enhances a DNSPs ability to prepare efficiently to resist, manage during, or recover from, catastrophic events or severe weather hazards, which may lead to prolonged power outages. The expenditure factors should also require that the AER considers the benefits and costs of providing the expenditure as part of the ex-ante allowance or as a cost pass-through, as well as the likelihood and impact of forecasted hazard events.

The proposed drafting for the new Capital Expenditure Factor to be included into clause 6.5.7(e), which should be replicated for operating expenditure in clause 6.5.6(e) with appropriate references to operating expenditure, is as follows:

[23] AER, Draft Decision TasNetworks Electricity Distribution Determination 2024 to 2029 (1 July 2024 to 30 June 2029), Attachment 5 Capital Expenditure, September 2023, p.12.

The extent to which the capital expenditure relates to the distribution network service provider's ability to prepare efficiently to resist, manage during, or recover from catastrophic events and severe weather events, which may lead to prolonged power outages, considering:

- *the benefits and costs of providing the expenditure as part of forecast capital expenditure or as a cost pass-through, and*
- *the likelihood and impact of the potential catastrophic events and severe weather events.*

The key features of these proposed rule changes include:

- **No specific definition of resilience**. The proposed approach does not include a specific definition of the word 'resilience', acknowledging that this is an area where there is expected to be ongoing disagreement among various parties. Instead, the focus is on the outcomes that resilience expenditure is expected to achieve.
- **Integration with existing expenditure criteria.** The capital and operating expenditure factors link directly to the capital and operating expenditure criteria. The AER must have regard to the factors when deciding if it is satisfied the forecast of expenditure reasonably reflects the expenditure criteria. For example, the expenditure criteria require a consideration of the efficient costs of achieving the Capital Expenditure Objectives. The new factor will ensure that when making this consideration the AER has proper regard to the cost efficiency benefits that can be achieved through ex-ante investment in resilience projects.
- **Positive obligation to consider resilience**. The requirement for the AER to consider the new expenditure factor also imposes a corresponding responsibility for DNSPs to take this factor into account when developing the expenditure proposals submitted to the AER. This is because the inclusion of this new factor would provide that the AER must have regard to it when assessing the DNSPs proposed forecast.
- **Applicability to both capital and operating expenditure.** Resilience projects can include either capital or operating expenditure, therefore, it is appropriate that the factors are included in both. While capital expenditure will be in the form of assets that support a resilient network, operating expenditure could include specialist staff trained to assist customers during severe or catastrophic events that cause power outages.

There are also specific features of the proposed drafting that are worth focusing on.

- **'Resist'** refers to projects that help the network and community withstand the impact of severe events, such as investing in stronger, bushfire-resistant composite power poles, or relocating assets away from flood-prone locations.
- '**Manage during'** involves the actions DNSPs can take to support customers, potentially at a community level, following an outage caused by a severe or catastrophic event until power is restored. Examples include community hubs providing power for basic functions like charging phones and computers as well as cooking meals, access to portable generators and mobile emergency response vehicles to support power at supermarkets or petrol stations, or specially trained staff to liaise with customers and inform them of their options during the outage.
- **'Recover from'** reflects the preparations that DNSPs and communities can take to increase their capacity to recover more quickly from severe events, thereby reducing the time customers are without power. This could involve the availability of spare parts, specialist staff, or strategically located depots.

For the avoidance of doubt, as this proposed new factor would only be introduced to Chapter 6 of the NER, the proposed rule changes would not affect the expenditure factors that apply to forecasts submitted by electricity transmission network service providers (TNSPs).

New AER guideline

The AER would be required to prepare and publish a formal guideline relating to resilience expenditure. The NER would require the AER in its guideline to:

- Set out a non-exhaustive list of the types of events or circumstances that could be included as a catastrophic event and severe weather event;
- Identify, the evidence the AER expects to support capital and operating expenditure proposals, including:
    - the expected level of customer involvement and consultation;
    - suitable methods, models, and data that DNSPs can use to justify the need for the forecast expenditure;

    - suitable methods, models, and data that DNSPs can use to justify their preferred projects and programs to address the identified risk; and
    - Any other evidentiary matters deemed significant by the AER for assessing the expenditure forecast.
- Explain how the expenditure is expected to interact with incentive schemes;
- Identify examples of the types of projects, programs and/or expenditure the AER considers are relevant for the expenditure factor;
- Describe any reporting requirements that the AER considers are necessary; and
- Include any other matters the AER considers relevant.

There are three specific requirements of the guideline that are worth drawing attention to.

- **Requirement for the AER to specify methods, models and data:** This is a requirement for the AER to identify the types of methods, models and data, for example climate risk modelling, that it considers would be appropriate for DNSPs to rely upon when making their proposal for resilience expenditure. It is not intended that the AER prescribe a single approach. Instead, it would identify several options that DNSPs could adopt depending on their individual circumstances. Similar to the Expenditure Forecast Assessment Guideline, this would be a non-binding list of possible techniques and data sources that could be used to support a DNSPs expenditure proposal.
- **Interaction with incentive schemes:** The AER must clarify how the forecast expenditure will interact with incentive schemes. For example, resilience project expenditure that improves service performance should not enable the business to earn additional rewards through the STPIS, as this scheme is intended to motivate service improvements beyond those already funded through the expenditure allowance. Without adjustments to operating expenditure, DNSPs might be strongly disincentivised from incurring additional resilience expenditure if it results in a penalty under the Efficiency Benefits Sharing Scheme (EBSS). Therefore, the AER should consider treating this expenditure as a step change.
- **Reporting requirements:** The guideline should establish necessary reporting requirements, in addition to any existing obligations, to ensure transparency and accountability in DNSP expenditure on resilience projects. These reporting requirements can highlight whether DNSPs are properly allocating expenditure and resources towards funded projects. This accountability is particularly important because DNSPs have financial incentives to minimise expenditure, and delaying or avoiding resilience spending may not cause an immediate deterioration in most service performance metrics, making it difficult to detect.[24]

How the proposed rule change addresses the issue

The proposed rule change will address the identified issues by:

- **Proactive obligation on the AER and DNSPs**: Requiring the AER and DNSPs to consider the costs and benefits of investments that enhance capability to efficiently prepare for, withstand, manage, and recover from catastrophic events or severe weather hazards. This new obligation ensures that DNSPs fully integrate efficient management of severe weather and catastrophic events into their planning processes, improving overall cost management, especially regarding customer costs.
- **Strengthening the regulatory framework for resilience expenditure**: Establishing a more robust framework for resilience expenditure, encouraging DNSPs to submit stronger proposals for such spending.
- **Maintaining current service performance assessment**: Avoiding major changes to how service performance objectives, like reliability, are assessed and monitored, which could have unintended consequences. Service performance incentives for widespread and long-duration outages are impractical due to the difficulty in setting benchmarks, potentially resulting in significant windfall gains or losses for DNSPs or customers. Instead, specific reference in the expenditure factors ensures adequate recognition of this form of service performance by both DNSPs and the AER.
- **Integrating resilience expenditure into NER**: Ensuring that the framework for considering resilience expenditure is appropriately included in the NER, rather than relying on the AER to address gaps in the Rules.

[24] This is because the impact on service performance may only be realised following a severe weather or catastrophic event.

How the Rule change contributes to the National Electricity Objective

The rule making test requires that the AEMC assess whether the proposed rule will or is likely to contribute to the National Electricity Objective (NEO). Section 7 of the National Electricity Law (NEL) states the NEO is as follows:

> *"to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of customers of electricity with respect to:*
>
> - *price, quality, safety, reliability and security of supply of electricity; and*
> - *the reliability, safety and security of the national electricity system; and*
> - *the achievement of targets set by a participating jurisdiction—*
>   - *for reducing Australia's greenhouse gas emissions; or*
>   - *that are likely to contribute to reducing Australia's greenhouse gas emissions."*

The rule change, which introduces a positive obligation to consider resilience expenditure, will promote the NEO by encouraging efficient investment and operation of electricity services, ultimately benefiting the long-term interests of customers. There is no explicit regulatory incentive for DNSPs to focus on the impact of catastrophic events and severe weather events on customers. This is because DNSPs have an opportunity to recover their own costs (where material) on an ex-post basis should an event occur. However, customers do not have the same ability to recoup the losses they incur during widespread and long-duration outages.

The proactive obligation on DNSPs introduced by this proposed rule change, therefore, increases the likelihood of efficient, upfront investment occurring in assets that promote improved reliability, safety and security of supply of electricity and also for the national electricity system with respect to such events, in the long-term interest of customers. This is particularly the case given that in circumstances where resilience expenditure is approved and a severe weather or catastrophic event occurs the AER considers what steps could have been taken to reduce the pass-through amount. That is, failure to use funds approved on an ex-ante basis for resilience could reduce the prospects of pass-through proposals being approved after an event.

As was also noted above, the assessment of service performance objectives is focused mostly on outages shorter than 12 hours. The rule change ensures that appropriate recognition is given to service performance objectives beyond that time horizon in the context of severe weather or catastrophic event through the positive obligation for this to be considered. In doing so, it also avoids needing to fundamentally change how the AER defines reliability and service performance measures it uses for approving expenditure proposals.[25]

The rule change drafting, as well as the proposed guideline, will provide a robust framework for the ex-ante assessment of resilience projects. This framework will increase the likelihood that DNSPs develop and deploy innovative solutions to more efficiently address the costs and risks associated with catastrophic events and severe weather events. The result of more innovative solutions will be to promote efficient prices for network services.

The proposed rule and the requirement of a new AER guideline will increase certainty and predictability with respect to resilience expenditure proposals. This increased certainty and predictability will assist in providing confidence to DNSPs to make efficient investments in resilience projects. In addition to improved reliability, safety and security of supply (where this is valued by customers), certainty and predictability in a regulatory regime ultimately leads to more efficient prices for network services.

Through the specific requirements of the proposed AER guideline there will be an increase in transparency and data recording in relation to resilience projects and expenditure. This will foster an environment of continuous improvement that will further promote better outcomes in service performance and with respect to price.

The impact of the rule change on the achievement of greenhouse gas emission targets will be supported primarily through encouraging customers to switch from gas to electricity. Customers who are concerned about extended periods without electricity, or who are located in regional areas and so experience low levels of

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[25] It is worth noting that the AER is currently considering if it is able to derive a value for widespread long duration outages. It recently released an issues paper on the topic, which can be found here: A value of network resilience will support the rule change proposal by providing a more tangible valuation of the costs imposed onto customers, or the amount they are willing to pay, to avoid such outages.

reliability, are likely to be hesitant to transition from gas to electric. Resilience investments can provide these customers with the confidence to transition away from gas supply.

Expected costs and benefits and impacts on affected parties

The costs associated with the proposed changes are not likely to be material.

- The AER will need to undertake a process to develop a formal guideline. However, the work undertaken by the AER and industry on this topic already should mean that this can be done efficiently such that the cost of producing the guideline is not significant.
- The AER and DNSPs will need to account for the proposed new factor in the regulatory determination process. However, the proposed rule should not impose a material burden given it forms part of an existing determination process and the information and assessment required is expected to be consistent with the current process.
- DNSPs will need to ensure the new factor is incorporated into their planning and price reset processes. There are costs associated with climate change modelling to identify the likelihood and severity of severe weather events and identify where these might impact on the network.
- Implementing the proposed rule could see an increase in network charges as DNSPs increase expenditure in resilience projects. However, the expectation is that this increase in network charges would only occur where the expected benefits to customers exceed the costs.

In addition to the benefits identified above with respect to the general promotion of the NEO, additional benefits include:

- Customers are expected to benefit from reduced frequency, duration, and associated costs of power outages caused by severe or catastrophic events due to expenditure on resilience projects.
- Customers will also benefit economically, as the focus shifts to choosing the more efficient funding solution between ex-ante and ex-post for catastrophic events and severe weather events.
- DNSPs will benefit from more efficient determination processes driven by improved certainty and predictability in the framework for proposing expenditure to support resilience. Clear guidance on justifying this expenditure should reduce the costs associated with developing regulatory proposals and the overall regulatory reset process, ultimately benefiting customers.
- Increased proactive investment in resilience should mitigate DNSP emergency remediation costs following extreme events, which would otherwise be passed on to customers. For example, AusNet's estimated costs from the 2021 storm events exceeded $50 million, including approximately $20 million in Guaranteed Service Level payments to customers.[26]
- The positive obligation to consider resilience projects will encourage a more robust valuation of the costs to customers from long-duration and widespread outages.

[26] AusNet Quantifying Customer Values. AusNet.