ENERGY CONSUMERS AUSTRALIA

Including distribution network resilience in the NER

Submission to the Australian Energy Market Commission's Draft Determination

DATE: 27/03/2025

Summary

Energy Consumers Australia (ECA) welcomes the opportunity to provide feedback on the Australian Energy Market Commission's Draft Determination (AEMC Draft Determination) on the rule change request submitted by the Honourable Lily D'Ambrosio, Victorian Minister for Energy and Resources, to improve how electricity distribution network resilience is accounted for in the economic regulatory framework.

In our response to the AEMC's Consultation Paper,[1] we expressed our concern that the proposed framework would further increase costs for consumers without necessarily guaranteeing them better outcomes.[2] While ECA certainly commends efforts to address the likelihood and impact of prolonged power outages and build a resilient electricity network, a consumer-centred approach will deliver more desirable outcomes for both consumers and networks.

Drawing on insights from Dr. Jill Cainey's report[3] (which ECA funded), our previous submission advocated that the AEMC:

1. Considers that any approach to electricity resilience must focus on consumer outcomes and be equitable.
2. Considers that of the four aspects of resilience assessed, consumers are clear that responsiveness and readiness are required from distribution network services providers (DNSPs).
3. Considers that electricity resilience is best delivered through collaborative approaches and is not the sole responsibility of the electricity network business.
4. Considers that electricity network businesses have a preference for capital investments in network equipment, and that consumer electricity resilience may be better supported by operational expenditure or solutions that are not delivered by electricity network businesses.
5. Requires that electricity network businesses undertake risk assessments, including to natural hazards, as owners and operators of Systems of National Significance.

We reiterate those recommendations,[4] and strongly advise the AEMC to bring more clarity over the proposed guidelines and to examine consumer-focused alternatives to network investment in order to address resilience on the longer-term. In this submission, we recommend that:

1. The AEMC considers that community resilience and preparedness is a shared responsibility and requires the AER guidelines to account for the role of consumer energy resources in enhancing energy resilience.
2. The AEMC provides greater clarity regarding the scope of events to be covered in the future AER guidelines.
3. The AEMC requires the AER to consider alternative approaches for a cost-benefit analysis for resilience investments.
4. The AEMC's final rule requires the guidelines to adopt a "Use-It Or Lose-It' (UOILI) framework to ensure any unspent resilience expenditure be returned to consumers.

[1] AEMC, 2024 – Consultation Paper
[2] ECA, 2024 – Including distribution network resilience in the NER
[3] Erne Energy, 2024 – Approaches to electricity network resilience & consumer electricity resilience
[4] The full version of our recommendations can be found in our previous submission. See: ECA, 2024 – Including distribution network resilience in the NER

5. The AEMC requires DNSPs to disclose whether impacted infrastructure was ever subject to an *ex ante* investment review in their resilience reporting requirements.

Introduction

ECA welcomes the opportunity to provide comment on the AEMC's Draft Determination to include distribution network resilience in the National Electricity Rules (NER). As the national voice for residential and small business energy users, ECA advocates for a future Australian energy system that works for, and benefits, the households and small businesses that rely on it.

We appreciate the Victorian Government's initiative to submit a rule change request on this matter, drawing attention to the likelihood and consequences of prolonged blackouts and the need to build a resilient network.

Climate change is one of the greatest challenges of our time, with global temperature increase having a strong impact on existing weather patterns. In Australia, this means that severe weather events are becoming more frequent and more intense.[5]

These phenomena have devastating effects on infrastructure and communities, often resulting in "significant damages to electricity networks".[6] A recent example of this is ex-Cyclone Alfred, which caused power outages affecting 330 000 people in Queensland.[7] Beyond the immediate devastation and often dramatic impacts of such abnormal weather events, the power outages they cause also have far-reaching consequences across all areas of life, including but not limited to the economy[8] and health.[9] There is an urgent need to support electricity resilience, which is not covered in the current regulatory framework.

As highlighted in our previous submission, ECA advocates for electricity resilience to be approached from a *consumer* perspective, rather than a *network*-only approach. We believe that guaranteeing a "*resilient supply of electricity*"[10] to consumers does not necessarily equate to "*resilient electricity network equipment*".[11] There are many approaches to supporting consumer electricity resilience, which extend beyond the sole reliance on resilient electricity network equipment.[12]

Recommendations

1. **The AEMC should consider that community resilience and preparedness is a shared responsibility and require the AER guidelines to account for the role of consumer energy resources in enhancing energy resilience.**

Energy resilience is a major concern for many households and small businesses, especially as climate change is altering the nature, location, and frequency of severe weather events. As highlighted in our

[5] Australian Academy of Science – How are extreme events changing?
[6] Erne Energy, 2024 – Approaches to electricity network resilience & consumer electricity resilience p. 3
[7] ABC, 2025 – Ex-Cyclone Alfred power outages map: Get the latest updates on affected suburbs
[8] ABC, 2025 – Fears Tropical Cyclone Zelia will cost economy billions as Port Hedland resumes trade
[9] Tasmanian Government, Department of Health, 2024 – Health and safety during power outages and severe weather
[10] ECA, 2024 – Including distribution network resilience in the NER p. 4
[11] Ibid.
[12] Ibid.

previous submission,[13] our June 2024 Energy Consumer Sentiment Survey[14] revealed that 62% of households and 60% of small businesses were concerned about the increased frequency of electricity outages in the next three years due to such events. Similarly, we showed that consumers that have experienced severe weather events placed more value on readiness[15] and response[16] when addressing electricity resilience.

A parallel can be drawn here between resilience expenditure/consumer preparedness and response, and mitigation and adaptation strategies. Mitigation and adaptation are complementary approaches when addressing climate change and disasters. While mitigation focuses on reducing or preventing severe events, adaptation intends to reduce vulnerability to events and hazards. Although both are crucial, mitigation alone is not enough. A similar conclusion can be drawn regarding resilience expenditure. As Dr Cainey stated, "it would be prohibitively expensive to build networks that are 100% reliable"[17] – if it is even possible.

Additionally, climate modelling cannot always fully predict when and where severe weather will arrive,[18] meaning that location-specific network resilience investments may not necessarily focus on an area that will be impacted by a severe weather-related power outage, thus offering little value for money to consumers. Further, research shows that climate change is making prediction even more difficult now as it also impact meteorological patterns. As an example, ex-cyclone Alfred had an unusual path, moving further south than other cyclones.[19] This means that regions which historically did not need to prepare for such risks may be required to do so now.

Therefore, while location-specific investment could be effective, they must be complemented with other strategies to support community resilience and preparedness. Every community at risk of climate impact should have an energy resilience plan in place[20], including having alternative energy sources.

We strongly recommend that a greater focus be placed on the role played by Consumer Energy Resources (CER) in enhancing resilience. Consumer energy offers a wide range of benefits, with bill savings typically being the most featured. However, those advantages extend beyond economic perks, [21] and a greater emphasis should be placed on their "resilience-building capacity".[22] Devices such as solar PV and batteries can be used to generate and store electricity, as well as power essential services in communities affected by power outages,[23] thus reducing their reliance on long-distance transmission infrastructure[24] which may be impacted by extreme weather events.

In this regard, research conducted by the UNSW Collaboration on Energy and Environmental Markets (CEEM) in the aftermath of the Black Summer bushfires showed that communities in New South Wales

[13] ECA, 2024 - Including distribution network resilience in the NER p. 2
[14] ECA, 2024 - Energy Consumer Sentiment & Behaviour Surveys
[15] Readiness means "taking steps to minimise the impact of a loss of electricity" – ECA, 2024 - Including distribution network resilience in the NER p. 4
[16] Response refers to the provision of" support after an event to reduce the impact of a loss of electricity and making network equipment safe" – ECA, 2024 - Including distribution network resilience in the NER p. 4
[17] Cainey, 2019 - Resilience and reliability for electricity networks p. 48
[18] ECA, 2024 - Including distribution network resilience in the NER p. 5
[19] ABC, 2025 – What's unusual about Cyclone Alfred, and is climate change affecting how it moves towards the coast?
[20] Our Energy Toolkit provides communities "the capacity and resources to adopt and utilise local appropriate energy". See: Institute for Sustainable Futures, 2023 – Understanding the concept of community energy resilience and its applications p. 29
[21] Energy Sustainability through Knowledge and Information Exchange and Sharing (ESKIES), 2023 – Research Insights
[22] UNSW, 2023 – Renewable backup power key to energy resilience in disasters: report
[23] Ibid.
[24] IEEE – Small-scale power generators critical for a resilient energy grid

had relied on Distributed Energy Resources (DER) to cope with power outages.[25] However, the report emphasises that the choice of CER/DER should not be left to chance and calls for improved communication to better understand community needs and guide households in adopting appropriate devices that are correctly configured.[26] This will ensure that communities, especially those in disaster-prone areas, are better prepared and can utilise local energy sources such as rooftop solar, batteries, and even EVs to momentarily generate electricity.[27] These technologies can be adopted and used together, to enhance resilience by diversifying energy sources.[28] Whether local energy sources are individual, collective – in the form of microgrids, for instance – or a combination of both, their implementation must consider local contexts, and ensure that no additional vulnerabilities are created.[29]

As battery storage coupled with solar PV devices now ranks among the most competitive sources of electricity,[30] we believe that there is a unique opportunity for the Australian Energy Regulator (AER) to consider the role of non-network investments in enhancing consumer resilience, and suggest that provisions be included in the AER guidelines to this effect. This is something that we had touched upon in a previous submission, in which we suggested that the AER strongly encourage DNSPs to better integrate DER and leverage investments in these energy resources.[31]

Additionally, we believe that all parties would benefit from greater clarity regarding their roles in consumer preparedness and response. There is a need for more prescriptive guidance to ensure that preparedness and resilience are not the sole responsibility of consumers.[32] Instead, "delivering resilience needs to be a collaborative process",[33] in which consumers do not necessarily have the capacity to invest. While DNSPs may certainly play a role in identifying vulnerable areas,[34] governments may step in through investment program to support the adoption of behind-the-meter technologies. Lessons should be learned from the energy back-up systems funded by the Victorian Government to power households during blackouts, providing energy resilience solutions to 24 towns across 15 Local Government Areas (LGAs).[35]

2. **The AEMC should provide greater clarity regarding the scope of events to be covered in the future AER guidelines.**

While we appreciate the efforts being made to tackle distribution network resilience, the final rules should provide greater clarity over the nature of the future AER guidelines than the draft rules have. The current Draft Determination offers little insight into the actual scope and nature of those guidelines. We understand the challenge that the AEMC may face in balancing flexibility and clarity; however, the AEMC should provide a clearer definition of the scope of weather events to be covered in the AER guidelines.

[25] ESKIES, 2023 – Energy Resilience in Bushfires and Extreme Weather Events, Final Report p. 7
[26] The researchers show that most residential solar systems are non-islandable which means that they are configured to shut down during a grid disruption. This means that these systems cannot generate electricity during an outage, offering no resilience. See: ESKIES, 2023 – Energy Resilience in Bushfires and Extreme Weather Events, Final Report p. 44
[27] ESKIES, 2023 – Energy Resilience in Bushfires and Extreme Weather Events, Report Summary p. 10
[28] ESKIES, 2023 – Energy Resilience in Bushfires and Extreme Weather Events, Report Summary p. 11
[29] Ibid.
[30] International Energy Agency (IEA), 2024 – Outlook for battery demand and supply
[31] ECA, 2021 – Assessing Distributed Energy Resources Integration Expenditure
[32] ESKIES, 2023 – Energy Resilience in Bushfires and Extreme Weather Events, Final Report p. 71
[33] Erne Energy, 2024 (prepared for ECA) – Consumer Electricity Resilience p. 1
[34] Erne Energy, 2024 (prepared for ECA) – Consumer Electricity Resilience p. 2
[35] Victorian Department of Energy, Environment, and Climate Action, 2025 – Community hubs with energy back-up systems

The Draft Determination states that "the scope would be limited to power outages (of any length) caused by severe weather events".[36] While we take note that this scope has already been restricted, and now excludes cyber-security faults and terrorism,[37] we consider that the proposed coverage is still too broad.

A wide range of weather events, many of which are intensified by climate change, can impact distribution networks in various ways. For example, the Bureau of Meterology lists several severe weather hazards that may cause "significant damage and destruction".[38] Not included on that list, but highlighted by Origin Energy, are bushfires.[39] This points to the multiplicity of abnormal, climate-intensified events that can impact distribution networks. However, these disruptions can vary — from fallen branches caused by intense winds[40] to overheating at substations due to bushfires[41] — calling for a clear definition of those "severe weather events". Such a definition would help distinguish between power outages caused by major events, intensified by climate change, and more routine contingencies that networks have always managed and invested in.

Therefore, we point to Dr Jill Cainey's report, as well as previous research,[42] and suggest using the minutes lost to a Major Event Day (MED) as a threshold to distinguish "when a loss of electricity falls outside the reliability framework" and "when approaches to resilience are needed".[43] MEDs are "excludable when reporting normalised reliability results", [44] as they are considered to be outside of the network providers' control. This means that a network may have good reliability scores, but a poor track record when it comes to recovering from a severe weather event: reliability and resilience are not synonymous.[45] MEDs appear as a relevant measure for network resilience, providing greater granularity by exposing vulnerabilities at the feeder-level.[46]

3. **The AEMC should require the AER to consider alternative approaches for a cost-benefit analysis for resilience investments.**

ECA appreciates that the draft rule would make use of "existing expenditure assessment processes, including cost benefit analysis, to assess the efficiency of proposed resilience expenditure".[47] While we appreciate the willingness to "determine the lowest cost option", [48] we would like to reiterate our previous claim, and stress that "there is no evidence that investing in electricity network equipment before an event is a prudent and efficient approach that will result in lower costs to consumers and improve consumer electricity resilience".[49]

Nonetheless, this means that the AER will rely on existing methodologies for cost-benefit analysis of DNSPs' proposed expenditure. We believe that resilience should be assessed using its own cost-benefit analysis to account for its uniqueness, as cost-benefit analyses do not necessarily capture all of the important social, economic, and environmental factors with infrastructure investments, particularly in

[36] AEMC, 2024 – Consultation Paper p. 15
[37] AEMC, 2025 – Draft Determination p. 7
[38] Bureau of Meterology - Severe weather knowledge centre
[39] Origin Energy, 2019 – What causes power outages
[40] ABC, 2025 – Tens of thousands of homes without power as wild weather eases across Victoria
[41] Energy Networks Australia, 2020 – Busfhire Factsheet
[42] Cainey, 2019 – Resilience and Reliability for Electricity Networks
[43] Erne Energy, 2024 – Approaches to electricity network resilience & consumer electricity resilience p.19
[44] Endeavor Energy – Network Performance
[45] Cainey, 2019 – Resilience and Reliability for Electricity Networks pp. 44-49
[46] Erne Energy, 2024 – Approaches to electricity network resilience & consumer electricity resilience p.11
[47] AEMC, 2025 – Draft Determination p. 19
[48] Ibid.
[49] ECA, 2024 – Including distribution network resilience in the NER p. 3

relation to climate change. [50] Investing in resilient infrastructure requires decision-makers to "focus on assets in context, rather than on the assets themselves",[51] shifting from asset-only considerations to also strengthening the areas in which they operate.[52] This allows multiple, often competing issues to be considered simultaneously, while also accounting for local characteristics and broader contexts,[53] which may not be reflected in the existing provisions on cost-benefit assessments.

4. **The AEMC's final rule should require the guidelines to adopt a "Use-It Or Lose-It' (UOILI) framework to ensure any unspent resilience expenditure be returned to consumers.**

Most of network resilience expenditure approved in recent revenue determinations was capital expenditure.[54] As we explained in our previous submission,[55] and reiterated in Section 1 of this one, this type of investment may not necessarily deliver tangible outcomes for consumers, partly due to the lack of precision in climate modelling, which limits the benefits associated with location-specific investments. Since these investments may be passed on to consumers through their electricity bills, there is a risk that they could face increased costs for potentially limited improvements.

In this regard, lessons may be learned from the UK, where Ofgem instated a 'Use-It or Lose-It' (UIOLI) allowance for Net Zero projects,[56] ensuring that funds are used for a specific purpose. Closer to us, SA Power Network's Innovation fund suggests that "unspent allowances [be] returned to customers through a revenue adjustment during the subsequent regulatory control period".[57]

We recommend that a similar principle be applied to a regulated resilience expenditure.The AEMC's final rule should include provisions for the AER to ensure that any unspent allowance be returned to electricity consumers. This could take the form of a compensation payment or bill adjustement during the next regulatory period.

5. **The AEMC should require DNSPs to disclose whether impacted infrastructure was ever subject to an *ex ante* investment review in their resilience reporting requirements.**

The Draft Determination states that DNSPs will meet new annual planning and reporting requirements for resilience.[58] While we commend this effort and believe that tracking events and expenditures will be beneficial, we believe that providing greater clarity in the Final Determination, rather than solely relying on the AER's guidelines, would better support DNSPs' adoption of these new processes.

For example, the Draft Determination states that the AER would be required to specify resilience reporting requirements to be included in the DAPRs, and that DNSPs would have to report on "resilience expenditure which occurred in the preceding year (if any)".[59] The final rule should require DNSPs to provide details on whether the impacted infrastructure was ever subject to an *ex ante* investment review when reporting on resilience expenditure. Assessing the performance of such investment could provide better insights into the costs associated with repairs and inform future cost-benefit analyses.

[50] Wise et al. 2022 – Pragmatic cost-benefit analysis for infrastructure resilience
[51] Ibid.
[52] Infrastructure Australia, 2021 – A Pathway to Infrastructure Resilience p. ii
[53] Infrastructure Australia, 2021 – A Pathway to Infrastructure Resilience pp. ii-iii
[54] Australian Energy Market Commission, 2024 – Consultation Paper p. 30
[55] ECA, 2024 – Including distribution network resilience in the NER p. 5
[56] Ofgem, 2021 – Net Zero and Re-opener Development UIOLI allowance Governance Document
[57] SA Power Networks, 2024 – Business case: Innovation fund p. 16
[58] AEMC, 2025 - Draft Determination p. iv
[59] AEMC, 2025 - Draft Determination p. 9

Conclusion

We recommend that the AEMC considers the recommendations of the report “Approaches to electricity network resilience & consumer electricity resilience”, which outlines the role of DNSPs in supporting consumer electricity resilience.

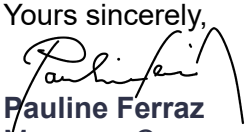
We reiterate our previous recommendations, and strongly advocate that:

1. The AEMC considers that community resilience and preparedness is a shared responsibility and requires the AER guidelines to account for the role of consumer energy resources in enhancing energy resilience.
2. The AEMC provides greater clarity regarding the scope of events to be covered in the future AER guidelines.
3. The AEMC requires the AER to consider alternative approaches for a cost-benefit analysis for resilience investments.
4. The AEMC’s final rule requires the guidelines to adopt a “Use-It Or Lose-It’ (UOILI) framework to ensure any unspent resilience expenditure be returned to consumers.
5. The AEMC requires DNSPs to disclose whether impacted infrastructure was ever subject to an *ex ante* investment review in their resilience reporting requirements.

We thank the AEMC team for the opportunity to provide feedback and make ourselves available for further discussion and collaboration throughout the consultation process.

For any questions or comments about our submission, please contact Pauline Ferraz at Pauline.ferraz@energyconsumersaustralia.com.au.

Yours sincerely,



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