

# **Value of Network Resilience 2024 Issues Paper**

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Public Interest Advocacy Centre  
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## About the Public Interest Advocacy Centre

The Public Interest Advocacy Centre (PIAC) is leading social justice law and policy centre. Established in 1982, we are an independent, non-profit organisation that works with people and communities who are marginalised and facing disadvantage.

PIAC builds a fairer, stronger society by helping to change laws, policies and practices that cause injustice and inequality. Our work combines:

- legal advice and representation, specialising in test cases and strategic casework;
- research, analysis and policy development; and
- advocacy for systems change and public interest outcomes.

## Energy and Water Consumers' Advocacy Program

The Energy and Water Consumers' Advocacy Program works for better regulatory and policy outcomes so people's needs are met by clean, resilient and efficient energy and water systems. We ensure consumer protections and assistance limit disadvantage, and people can make meaningful choices in effective markets without experiencing detriment if they cannot participate. PIAC receives input from a community-based reference group whose members include:

- Affiliated Residential Park Residents Association NSW;
- Anglicare;
- Combined Pensioners and Superannuants Association of NSW;
- Energy and Water Ombudsman NSW;
- Ethnic Communities Council NSW;
- Financial Counsellors Association of NSW;
- NSW Council of Social Service;
- Physical Disability Council of NSW;
- St Vincent de Paul Society of NSW;
- Salvation Army;
- Tenants Union NSW; and
- The Sydney Alliance.

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The Public Interest Advocacy Centre office is located on the land of the Gadigal of the Eora Nation

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# 1. Introduction

PIAC welcomes the opportunity to respond to the Australian Energy Regulator's (AER) Value of Network Resilience 2024 Issues Paper (the Paper).

PIAC acknowledges the need to evolve the collective understanding of resilience, the role of energy networks in supporting resilience in the wider community, and for more consistent guidance to assist network service providers (NSP) develop appropriate responses to the impacts associated with increasingly frequent and severe weather events due to climate change.

However, we do not consider a set value of network resilience (VNR) necessary to achieve this end and we are not convinced it is the most effective and appropriate response to the question of network resilience.

Accordingly, PIAC does not support the creation of an enduring VNR. If a VNR is to be created, the methodology used to produce it should be unique to it and not derived from the VCR. It should also be robust theoretically and empirically.

Given it is impossible to produce an adequately robust methodology for the VNR in time for the Victorian distribution network service providers' (DNSP) revenue determinations, any VNR that is employed in those processes should be unique to those revenue determinations processes. It should be explicitly prevented from serving as a precedent or used as the foundation for an enduring VNR.

PIACs experience with DNSP engagements on resilience demonstrate the difficulty of establishing a meaningful difference between network resilience and the established concept of reliability. The decision to produce two intimately related but distinct values, rather than leaving the problem to the AEMC Reliability Panel, who are tasked with developing an updated VCR that is fit-for-purpose in the evolving context of the National Energy Market (NEM), creates a number of risks.

- That the VNR in effect simply increases the VCR, leading to the AER approving network businesses expenditure on augmentation to improve reliability beyond what consumers are willing to pay.
- That the focus on 'network resilience', which incorporates the traditional concept of network reliability and the non-network measures aimed at boosting community resilience, will lead to an inefficient over-spend on network solutions in the place of non-network community resilience responses.
- That an inadequately robust methodology for deriving the VNR will lead to a material over- or under-estimation of consumers' preferences regarding willingness to pay to avoid outages in excess of twelve hours duration. The VCR methodology is widely acknowledged to be problematic, and the VNR is arguably a more complex metric in terms of preference trade-offs for consumers and communities. Any attempt to leverage the VCR in order to derive a VNR risks exacerbating the imprecisions of the former.

In the remainder of this submission we outline issues relating to the conflation of reliability and resilience, respond to the potential approaches canvassed in the paper, and outline what we consider a fit-for-purpose methodology.

## **2. Reliability, network resilience, and community resilience**

The conflation of reliability, network resilience, and community resilience is a crucial issue to resolve as it creates risks of consumers paying twice for the same benefits or paying for benefits that could have been delivered through more efficient means.

PIAC understands the VNR to be an extension of the VCR to cover outages of 12 hours duration or more in duration. This idea that the VNR is an extension of the VCR is founded in the original instruction to the AER from the Energy & Climate Change Ministerial Council (ECMC), which was “to extend our current review of Value of Customer Reliability (VCR) to establish a value of customer resilience associated with long duration outages.”<sup>1</sup>

The approach of the Paper demonstrates the issues of conflation, where methodology options for the VNR include simply extrapolating out from the VCR to derive consumers’ preferences regarding avoidance of outages longer than twelve hours.

The Paper cites the recent revenue determination process which included \$322 million of resilience driven investments for the NSW and Tasmania DNSPs. However, it does this without disaggregating network investments in that amount from non-network investments – such as minor upgrades of existing community hubs, small mobile generators, and opex for resilience communications, coordination and planning and performance reporting. This confuses matters, as the term ‘network resilience’ should, on its face, clearly delineate network investments which contribute to reliability, from these non-network measures which are more squarely aimed supporting community resilience.

The risk of failing to meaningfully demarcate reliability from network resilience is leaving no meaningful way for NSPs to distinguish investment for the purpose of improving reliability from investment for the purpose improving network resilience outcomes. As any investment in the latter is likely to improve outcomes in the former, an arbitrary judgement will need to be made as to what proportion of a given spend falls under what category, and then whether the benefits likely to fall on either side of the reliability-resilience divide are adequate to deem the investment as a whole prudent and efficient.

This could lead to over-investment in reliability - previously referred to as gold-plating – with the risk of ‘reliability cubed’.

Reliability and network resilience both center on the network. There is a need to meaningfully distinguish these from ‘community resilience’ which refers to outcomes for the community, to which the network may be a contributor. Failure to build such distinctions into the framework generates an inadequate basis on which to compare network and non-network investment

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<sup>1</sup> AER, 4 June 2024, ‘Value of Network Resilience (VNR)’ slides presented to VNR Reference Group, slide 5.

options. This may result in investments being approved when more efficient alternatives are available.

There is also an issue with the ambiguity regarding what harms are within scope. When considering reliability investments, the harms are exclusively related to outages from energy. When considering community resilience, however, it is standard to consider harms born of interruptions to a series of services, including communications, health, and so on. These harms may compound, as in the case where energy outage is exacerbated by not having access to information about how longer the outage is expected to last. However, they may also subside, where the marginal 'impact' in harm from added hours of outage are not escalating. The costs and harms are static.

Correctly estimating consumers' willingness to avoid an extra hour of outage is complicated substantially by including these other considerations and the fact that sources of harm may compound and the harms themselves either compound or subside over time.

### **3. Potential approaches to VNR**

Regardless of the approach adopted, we strongly recommend the AER treat the value that emerges from this review as a 'stopgap' measure rather than a foundation for an enduring VNR. The AER should explicitly limit the application of this value to the current Victorian revenue determinations, much like the use of a weighted VCR at a per feeder level was used as a proxy in the 2024-29 New South Wales revenue determinations process.

We strongly encourage the AER to invest in an ongoing VNR process much like it does with VCR and commit to commence a consultation process (unencumbered by time limitations) as soon as practicable.

While we support leveraging existing workstreams to inform the current review on VNR, the AER's commitment to methodological consistency should not come at the expense of validity or rigour. As such, we support using the ongoing HILP workstream to establish a more methodologically sound approach while adopting a 'second-best alternative' for the purposes of the Victorian revenue determinations.

We consider using rational alternatives as an upper bound to any value of resilience (option 1) reasonable. However, it should not be assumed that consumers will procure services related to prolonged outages directly and exclusively from the market. This should include a recognition of the role other agencies and actors have in disaster relief and reconstruction efforts such as the provision of crisis accommodation or backup generation. As such, any calculation of an upper bound should reflect that these costs are often already socialised.

We do not support using a multiple of the VCR for standard outages (option 2) as a proxy for outages in excess of twelve hours. This approach rests on the flawed assumption that burdens increase in step with the duration of the outage.

We acknowledge prolonged outages can impose additional costs such as food spoilage or the inability to operate sewage or septic tank systems. However, beyond certain tipping points costs

tend to decrease as an outage continues. In this sense, approximating a VNR using a factor of the VCR is equally, if not more appropriate to using a multiple.

We share similar concerns with extrapolating from the VCR (option 3) and accordingly do not support this approach. As we note above, we are concerned with the assumption that costs for outages in excess of twelve hours increase in a manner comparable to those for shorter duration outages.

Moreover, we do not consider the use of survey data from very large business customers an appropriate analogue for the prices residential customers are willing to pay to avoid prolonged outages. Households and businesses have different considerations and priorities informing their preferences and responses to prolonged outages. These should not be conflated.

Conducting follow-up surveys to actual prolonged outages (option 4) may provide valuable insights and we support the AER investigating this approach further. Should the AER adopt this method we recommend it be combined with a complementary approach to overcome the limitations associated with a respondent's subjective assessment of costs incurred as a result of the electricity outage and the natural disaster more broadly.

The viability of a survey-based approach may also be undermined by the infrequent nature of prolonged outages given the experience of such events is likely to differ materially over time and space. Experience (such as those of Essential Energy in response to the Lismore floods) demonstrate that a community's experience of an outage and tolerance of its duration can vary according to 'intangible' factors such as their perception of community connection and support during the restoration period. As such, reliance on survey data from actual outages may not reflect local circumstances or the evolving relationship between consumers and the energy system.

Put simply, it should not be assumed that the burdens associated with prolonged outages and local capacity to address these challenges are static and replicable. This fact is a key part of our concern with attempts to generate a single, replicable value for resilience.

Modelling should underpin any enduring VNR (option 5). While we acknowledge that no one model will be perfectly suited to valuing resilience, modelling is likely to provide a more accurate and generalisable approximation of the economic costs associated with outages. We acknowledge the challenges associated with selecting a suitable model and undertaking calibration within the timeframes for this review.

We accept that this approach is better suited to the longer-term work program to develop a more refined approach to valuing network resilience.

Modelling on its own is insufficient to derive a robust VNR. While we support exploring other cost data (option 6) in principle, narrowly focusing on the economic costs of natural disasters is problematic. Relying solely on economic metrics risks creating a value overly coloured by socioeconomic discrepancies across property values and insurance levels.

As such, we recommend that any modelling be complemented with qualitative analysis of the experience of such events.

## 4. Requirements for a robust methodology

Designing a robust, fit-for-purpose methodology for a VNR is a substantial undertaking.

We urge the AER to devote ongoing resources to the workstream, as it now has for the VCR, and to establish a working group to provide ongoing expert advice and stakeholder input to the workstream, as the AER did for the 2019 review of the VCR.

The AER has in recent comments indicated a preference for consistency. We urge the AER to value consistency below accuracy in the development of the VNR.

The concept of the VNR must be meaningfully distinguished from the VCR, such that there is no way investments in network resilience can be considered a top-up to investments in reliability or for investments in resilience to provide some return in terms of added reliability.

The scope of harms considered within the network resilience framework should be clearly delineated.

The methodology of the VNR should not be derived from the VCR. The relationship between the two is too ambiguous to allow for any assumption that:

- there is linearity of preferences concerning the value of avoiding outages beyond the 12-hour mark; and
- if there were such linearity, the slope of the graph is unambiguously positive or negative.

The methodology must be founded on deliberative engagement with a diverse and representative range of consumers, adequately informed of the trade-offs involved to provide clear and unambiguous data concerning their preferences. This does not rule out the use of modelling or the use of non-deliberative engagement methods, such as surveys, to validate and augment data. Ultimately, the foundation of the methodology should be data produced through substantively deliberative engagement.

We reiterate that PIAC does not support the creation of the VNR. Consumers would be best served by continuing to engage with consumers' willingness to pay for outages using the VCR and allowing the AEMC Reliability Panel to produce well-founded options for updating the framework to become fit-for-purpose in the new context of the NEM.

## 5. Further engagement

We would welcome the opportunity to discuss these matters further with the AER and other stakeholders. If you have any queries about this submission please contact Jan Kucic-Riker, Policy Officer, Energy and Water at [REDACTED].