

7 June 2024

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

Dear Dr. Funston,

SA Power Networks welcomes the opportunity to comment to the Australian Energy Regulator (AER) on the *'Issues Paper: Value of Network Resilience 2024'* (the Issues Paper).

We welcome the AER's new work in establishing a Value of Network Resilience (VNR) for long duration outages, which will assist us in addressing customers' network resilience concerns amidst the likelihood of high impact events, such as more frequent and extreme weather events, growing cyber risk exposure, and other significant events.

A considered and robust methodology is crucial for efficiently planning network investments to maintain necessary levels of customer service during high impact events. We intend to employ this framework in conjunction with the Value of Customer Reliability (VCR) and view consistency in application and approach as a sensible option.

Our key views in response to the questions raised in the Issues Paper are as follows:

- given the importance and longevity of the VNR, the methodology should be sufficiently robust to reflect the willingness of customers to pay for network service outcomes and capture their full lost utility arising from long outages – to this end, a survey-based approach, similar to the VCR should ultimately be pursued as the first best option;
- noting the desire to have a VNR developed in time for upcoming regulatory proposals, a quicker methodology could be pursued as an interim measure – of the options considered, the 'VCR multiplier' appears to be the simplest approach;
- the VNR should be applicable to a range of events that might lead to an extended outage, be they High Impact Low Probability events associated with extreme weather or system security, as well as other significant events such as cyber attacks;
- the methodology should capture outage lengths of between 12-48 hours, reflecting outages likely to be of most inconvenience and have a reasonable probability of occurrence in coming years; and
- the methodology should derive values to a reasonable level of granularity, which we consider could be sufficiently limited to customer type and climate zones, rather than feeders as this is consistent with VCR modelling and resilience-based outages typically impact multiple feeders.

## Assessment criteria

We largely support the proposed assessment criteria, with a few suggested amendments:

- while noting the intent to establish a VNR in time for upcoming regulatory proposals, this should be balanced with consideration to the importance of accuracy of the values and the length of period in which they will be in application. The stringent timeframe may limit the quality of data that can be collected and will likely preclude obtaining any new WTP data from customers. We encourage the AER, if it identifies a suitable methodology that best meets all criteria except the timeframe, to produce an interim methodology that can apply to upcoming proposals and then be replaced by a more complete methodology during 2025. This would be consistent with the approach for the Values of Emission Reduction (VER); and
- we have concerns with the assessment criteria of *“Impact on network expenditure proposals”* as introducing potential bias in results. That is, the identification of a VNR should serve as the starting point to then undertaking analysis on the efficiency of any investments to respond to a resilience-based identified need and consumer engagement on such investment options and trade-offs. The key thing is to ensure that the VNR methodology derives a value which reflects the values and preferences of customers, in the same way that the VCR is approached.

### Best option with / without time constraints.

A survey-based approach, similar to the VCR, is the most suitable approach to understand customers' WTP with respect to network service outcomes. Option 4 in the issues paper, suggesting follow up surveys after resilience-based outages, would be consistent with the VCR and most effectively capture the true costs / impacts for customers, including the inconvenience premium that may exist in these groups. We do recognise that the process of generating, conducting and interpreting a WTP survey is time consuming and might not be practicable within the timeframe needed for upcoming proposals. However, this would be the best option in terms of customer preferences, and longevity.

If necessary to meet the September deadline, we would encourage using the approach currently in place for the VER, with an interim methodology / value generated this year and a long-term approach coming into effect in 2025. We regard option 2, a multiplier of the VCR, as a suitable approach to meet the deadline while capturing the inconvenience premium of a resilience-based outage, provided a reasonable approach is agreed upon. Customer consultation and using data from previous VCR surveys may help in generating a rational multiplier to reflect customer preferences and ensure the difference between the interim approach and a long-term approach is minimal.

### Outage classification, duration and granularity

Outages lengths between 12 and 48 hours are the most important to value in a VNR. SA Health suggests major food spoilage for freezer goods occurs at around 24 hours into an outage<sup>1</sup>. This window is where a material disruption in cyclical uses of household electric appliances occurs. An outage inconvenience increases for longer durations; however, the likelihood of outages beyond 48 hours is much lower and the step change in customer costs from food spoilage is not repeated for longer durations.

In terms of granularity and valuation matching, the approach for the VCR is fit for purpose in reflecting customer preferences and is compatible with our current modelling techniques. We view \$/kWh and granularity to climate zones and customer type as suitable. Some further consideration should be given to CER customers. In an outage event these customers will experience not only a loss of power but also

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<sup>1</sup> SA Health, Food safety in an emergency, 2024, <https://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/conditions/food+safety/keeping+your+food+safe/food+safety+in+an+emergency>



export capability, and therefore a broader concept than just examining unserved energy will likely be required.

We do not view granularity down to individual feeders as necessary, as from our experience with long term resilience-based outages. From our experience, long-term resilience-based outages can often occur due to a failure of major plant (e.g. Zone substation or radial sub-transmission or transmission line), where there is limited backup supply. These outages in general affect multiple feeders.

We also would highlight that the VNR should not be limited in scope to just weather related events and should apply to a range of circumstances that could lead to an extended outage and for which customers would have a willingness to pay to avoid, including:

- High Impact Low Probability events, such as extreme weather events, or system security events;
- significant cyber attacks;
- events that might result from a combination of extreme heat coinciding with an asset failure – and typically, our high impact events have been of this nature.

### **Using rational alternatives as a limit**

We note the AER may elect to limit VNR values to the costs of rational alternatives. We acknowledge the rationale and recognise the criteria of practicality and minimal intervention and disruption is consistent with customer expectations. However in our view:

- alternate generation, and the approach for the VCR put forward in the 2019 draft decision<sup>2</sup>, assuming the capacity of the generators/battery is sufficient to meet the outage time, is best suited to value alternatives; and
- conversely, the option of using alternative accommodation is unlikely to be suitable as it may undervalue consumer preferences and the extent of their willingness to pay to avoid outages as it will likely not capture the full extent of customers' utility arising from uninterrupted energy supply. This on the basis that that alternative accommodation:
  - does not mitigate the inconvenience caused by resilience-based outages and is not a realistic reflection of customer preferences;
  - does not replace all the services / utility associated with electricity supply at a customer's home or business;
  - is unlikely to prevent food spoilage without significant intervention and effort from the customer, resulting in customer inconvenience; and
  - may not be within a reasonable distance and not be a rational / reasonable option for many regional customers, where resilience-based outages are more likely to occur.

We welcome the opportunity to work with the AER to ensure that the VNR best serves the needs of customers. Should you have any queries on the matters raised in this letter, please contact Bruno Coelho, Manager Regulatory Strategy on [REDACTED] or [REDACTED]

Yours sincerely

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Mark Vincent  
Chief Operating Officer

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<sup>2</sup> AER, *Values of Customer Reliability – Draft Decision*, September 2019, AER, Appendix 4.

