grid australia
BACKBONE OF THE NEM

7 November 2014

Australian Energy Market Operator
GPO Box 2008
Melbourne VIC 3001

By email: vcr@aemo.com.au

Re: Value of Customer Reliability Review – Application Guide

Grid Australia is pleased to make this submission in response to AEMO's draft Value of Customer Reliability (VCR) Review – Application Guide (the Application Guide).

Given the increasing focus on striking the right price/ service balance in relation to network reliability, and the role VCR will play in this process, Grid Australia appreciates the effort AEMO has invested in the VCR review and also in developing the draft Application Guide. This submission explains areas in which Grid Australia fully supports AEMO's draft Application Guide, and also those areas in which we consider the approach could be further improved. Grid Australia is keen to discuss with AEMO potential improvements to the Application Guide.

The submission first provides a brief summary of Grid Australia's position on key issues before subsequently elaborating on these issues under separate headings. Additional comments are then provided on a number of related aspects to the VCR review.

Our position is summarised as follows:

- A step-change in VCR values can significantly alter the economics, as well as, optimal timing of a network or non-network investment. Such a step change is especially relevant for investment proposals going through the approvals process. The Application Guide could be enhanced by elaborating on the frequency (or trigger) for future VCR reviews and also the transition from indexed VCR values to newly established VCR values. For practical reasons, Grid Australia proposes that the VCR values are fixed for the purpose of an investment decision process from the publication of the Project Assessment Draft Report.

- Grid Australia generally supports the approach to deriving locational VCR values, specifically the potential re-weighting of outage probabilities for customer class VCRs to better reflect locational VCR values.

- VCR estimates are subject to significant uncertainty, illustrated by the +/-30% confidence interval that has been stated[1], which may cast doubt on any specific VCR analysis outcome. Grid Australia recommends the Application Guide is expanded to provide guidance on the use of a VCR range during planning analyses and how such a range (+/- 30% or otherwise) be used in these analyses.

- In relation to the use of VCR values to guide network planning standards, Grid Australia is of the view that the determined VCR values are inappropriate to use by themselves for determining the potential consequences of a prolonged widespread transmission outage[2]. We maintain the view that these outages should be dealt with via independent engineering and economic studies rather than relying solely on VCR values determined from customer surveys. Care should therefore be exercised when using VCR values to guide the setting of network planning standards.

- Grid Australia has some concerns that VCR values may understate the value customers place on network reliability in CBD areas as well as for specific direct connect customers.

Frequency (or trigger) for future VCR reviews and also the transition from indexed VCR values to newly established VCR values

The VCR values for two customer classes (agricultural and commercial) have changed significantly from the Victorian review undertaken in 2008 by Charles River Associates. A step-change in VCR values can significantly alter the economics, as well as, optimal timing of an investment decision. Such a step change is especially relevant for projects going through the approvals process.

The Application Guide could be enhanced by elaborating on the proposed frequency[3] for future VCR reviews. In addition, it would be useful to list potential trigger events that may advance a VCR review.

Major transmission projects have lengthy approval processes, both regulatory (RIT-T) and commercial, which can be significantly derailed should VCR values suddenly change during the approval process. Also, some projects may have progressed to the early delivery stages (design and major plant procurement) when a change in VCR occurs. Grid Australia recommends the Application Guide is expanded to provide clear guidance and further cover the transition from indexed VCR values to newly established VCR values; e.g. fix VCR values after publication of a Project Assessment Draft Report.

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1 AEMO, Value of Customer Reliability Review, Final Report, September 2014, p31

2 Grid Australia submissions on the VCR Issues and Directions Papers, 19 April 2013 and 28 June 2013

3 AEMO has suggested 5 year intervals to the COAG Energy Council. Refer AEMO presentation at VCR workshop on 23 October 2014

Potential re-weighting outage probabilities for customer class VCRs to better reflect locational VCR values

Grid Australia generally supports the approach to deriving locational VCR values, specifically the potential re-weighting of outage probabilities for customer class VCRs to better reflect locational VCR values. This approach preserves the flexibility to refine locational VCRs to cater for specific locational issues, e.g. a peak demand capacity shortfall. These locational VCRs could reflect specific classes of customer or consumer load, take into account different outage durations for the different critical contingency events (e.g. transformers vs transmission lines) and consider seasonal impacts if relevant.

Use of a VCR range during planning analyses

VCR estimates are subject to significant uncertainty, illustrated by the +/-30% confidence interval of the choice modelling survey. This may cast doubt on any specific VCR analysis outcome. In fact, as AEMO notes, a number of the inputs to the VCR estimates are uncertain, and in fact the confidence interval for the VCR estimates could be greater than +/-30%.

Grid Australia recommends that the Application Guide be expanded to provide guidance on the use of a VCR range during planning analyses and how such a range (+/-30% or otherwise) be used in these analyses.

Using VCR values to guide network planning standards

Grid Australia is of the view that the VCR values determined are inappropriate to use for determining potential consequences of a prolonged widespread transmission outage. Care should be exercised when using VCR values to guide the setting of network planning standards. Grid Australia has made previous submissions[4] to this effect during the VCR review process. In the interest of completeness the earlier submission is summarised below.

Grid Australia considers that it would be most unlikely that a customer survey approach is suitable to consider and accurately analyse the costs of a 1 week outage for example which results in an extended loss of supply to a major city or other large load centre. Such an event includes the risk that infrastructure such as water and sewerage, fuel pumps, traffic control, trains, and refrigerated food and medicine storage cannot function properly across a large area and population for the duration of that outage. These effects and their costs are distinct from those accompanying a shorter term and, or, localised outage.

In its Electricity Network Regulatory Frameworks Inquiry report (released publicly on 26 June 2013), the Productivity Commission recognises that transmission is distinct from distribution in significant ways, and makes the following observations[5] (pp 542-43):

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4 Grid Australia submissions on the VCR Issues and Directions Papers, 19 April 2013 and 28 June 2013

5 Productivity Commission 2013, Electricity Network Regulatory Frameworks, Report No. 62, Canberra, pp.542-532

> 'Interruptions in transmission networks can include widespread cascading interruptions that take a long time to resolve. The costs of these faults could be larger than the costs found in a distribution-focussed survey. For example, the options for customers facing an outage might be more limited and costly if the whole region is without power...
>
> Transmission businesses have to consider high-cost, low-probability events, and how these might be valued by customers who may have never experienced such extensive outages before. Costs might include trucking in fuel for generators and fresh water from long distances, and the costs to society of being without everyday services such as street lighting and some public transport...
>
> Transmission networks in one part of the NEM are connected to transmission networks in other parts. Failures in one part of the network can have network-wide impacts. Any such costs would also need to be included.'

The Productivity Commission therefore recommended[6]:

> 'The Australian Energy Market Operator (AEMO) should commission and pay the Australian Bureau of Statistics to undertake regular, detailed, disaggregated surveys based on best practice methodologies to reveal the value of reliability for different categories of customers, with the methodologies and results made public.
>
> AEMO should commission suitably qualified experts to consider and measure the costs of interruptions not likely to be captured in the Australian Bureau of Statistics surveys. This should include the costs associated with citywide disruptions, including to telecommunications, water services and public transport, and the resulting loss of international reputation from lower reliability. AEMO should use these measures to supplement the results of the surveys.'

Grid Australia suggests that the qualified experts referred to should assess the types of costs identified by the Commission by conducting a broadly scoped engineering and economic study of a major outage of a large load centre. Grid Australia suggests this approach to assessing the value of reliability in the context of avoiding a prolonged widespread transmission outage will provide more meaningful information for decision-makers than a customer survey question about a one week outage of this kind.

Grid Australia notes that AEMO suggests that VCR values can be used to inform the cost assessment of a high impact-low probability (HILP) event[7]. This may be considered an appropriate methodological approach, but of itself, does not fully address the potential consequences of a prolonged widespread transmission outage.

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6 Ibid, p57

7 AEMO, Value of Customer Reliability Review – Application Guide, Draft Report for consultation, October 2014, section 6.5, p25

Grid Australia maintains that an engineering and economic study will be essential to inform Governments and the public about the potential consequences of a prolonged widespread outage. Planning for such an event cannot be done mechanistically. It requires senior decision makers to expressly exercise judgment, informed transparently by strong engineering and economic advice, about the balance to be struck between the costs of network investment and the cost and social impact of such an event.

Grid Australia is of the view that it would not be acceptable after such an event to argue that the outcome was acceptable because, on the basis of a mechanistic probabilistic assessment, the event was not worth avoiding. This would be particularly so where the actual cost of an event was orders of magnitude greater than the cost to avoid it.

Magnitude of VCR values

Although the Application Guide does not specifically deal with the magnitude of VCR values per customer class, Grid Australia would like to take this opportunity to share some concerns regarding VCR values for CBD areas and direct connect customers.

It is understood that during the VCR review it was assumed that the impact on commercial customers is the same irrespective of the location of this customer; i.e. a business in the CBD, metropolitan suburb or a rural location would experience the same commercial loss for an outage. Given the criticality of services in a CBD area, the resulting VCR value for the CBD may be too low, and not reflective of NSP experiences and assessment of such estimates.

Grid Australia members have expressed concern that VCR values may understate the value specific direct connect customers place on network reliability. Several TNSPs plan to individually liaise with their direct connect customers to obtain their views on the outcome of the direct connect VCR values. Grid Australia considers that NSPs will need to engage specifically with direct connect customers where this would have an impact on the analysis. Grid Australia recommends that AEMO include specific guidelines on the treatment of direct connect customers in the Application Guide.

Please do not hesitate to contact Hugo Klingenberg in the first instance about any matters raised in this submission on (08) 8404 7991 or klingenberg.hugo@electranet.com.au.

Yours sincerely

Rainer Korte

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