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23 June 2016

Review of Electricity Transmission Reliability Standards
Independent Pricing and Regulatory Tribunal
PO Box K35
Haymarket Post Shop NSW 1240

Dear Sir/Madam

Submission on Electricity Transmission Reliability Standards – Draft Report

Essential Energy welcomes the opportunity to provide comment on IPART's Draft Report – Electricity Transmission Reliability Standards, May 2016 (Draft Report).

Essential Energy notes the Terms of Reference provided to IPART requiring it to investigate and report on the matter of Transmission Reliability Standards and agrees that the recommended standards included in the Draft Report provide an outcome which is generally consistent with these.

In particular, Essential Energy acknowledges that the "allowance for expected unserved energy" expressed as a derived value for "average minutes per year at average demand" as listed in the table in Clause 7 of Appendix B, indicate that the approach described in the Draft Report can be used to include the concept of "customer value" in supply reliability standards.

In this regard, Essential Energy also notes that the modelling involved in the approach involves the use of a large number of inputs which are subject to derivation, estimation and/or averaging. This in turn leads to an inherent level of uncertainty in the calculated results, with this characteristic needing to be acknowledged in the interpretation and use of the models results. As an example, the model uncertainty implies that there is a limit to the lowest meaningful value calculated for the Expected Unserved Energy, the related average minutes per year off supply and the comparative values between supply points.

Given the above issues, Essential Energy submits that it is necessary for the inputs, values and calculations to be provided for the individual supply values listed in Clause 7 – Table of values of Appendix B to allow the methodology to be fully understood and the results verified by all relevant parties. This becomes more significant if it is accepted that the approach proposed is likely to be extended to Distribution Network Service Providers (DNSP's) evaluation of network reliability related issues and investment proposals.

It would seem that a number of points included in the previous Essential Energy submission still require consideration, particularly in relation to the determination of reliability requirements which affect multiple supply points and the pass through effects of reliability standards for cross jurisdictional supplies which exist for Essential Energy.

Essential Energy also provides its specific comments on the Draft Report as an Attachment to this letter.

Should you have any queries or wish to discuss any part of this submission further please contact Natalie Lindsay, Manager Network Regulation, on 02 6589 8419, or alternatively I can be contacted on 02 6589 8479.

Yours sincerely

Peter Bereicua
Acting GM Asset Management

Attachment: Specific response to the IPART Draft Report

- The Wagga North 66kV and Yass 66kV supply points are incorrectly listed in Clause 7 - Table of values of Appendix B as having Category 2 levels of redundancy. Both have single 132/66kV transformers and hence should be listed as Category 1 redundancy level.

- The meaning of the term "average demand" is not clearly defined and consideration should be given to including it in the glossary definitions.

- Essential Energy highlights the lack of detail around how IPART views complementary approaches working, specifically the use of a distribution network as redundancy; as this forms recommendation 3 of section 1.5. Without significant detail in place at the planning standard level, a number of issues arise in terms of DNSP's being placed to take responsibility and raise revenue in order to fund the construction and maintenance of the assets required to meet customer outcomes.

- By not including a minimum restoration time, allowing compliance to be maintained at the planning level, coupled with 'long term' not being clearly defined and used to describe the compliance period over which TransGrid must meet the unserved minutes per year. It may be difficult for customers to follow the resulting performance realised across NSW i.e. expected customer experienced reliability for specific Bulk Supply Point's (BSP).

- There is interest in IPART's view of how the value customers place on the initial interruption event itself is considered rather than simply the duration of the event. Essential Energy notes that the Australian Energy Regulator (AER), as part of its Service Target Performance Incentive Scheme (STPIS) has used work undertaken by KMPG Australia, 2003, *Consumer preferences for electricity service standards,* to reflect how customers value these different aspects of reliability. This weighting becomes critical when considering non-network options to network reliability as it typically becomes expensive to design and operate non-network options to avoid some form of initial customer interruption.

- Essential Energy takes the view that although the standard is best placed as a planning standard, compliance reporting that is based on unserved minutes per year by BSP should be considered to assess the long term capability of the initial modelling process undertaken.

- It is considered that large customer connections, i.e. direct sub transmission connections, at both the Transmission Network Service Provider (TNSP) and DNSP level should be determined using direct VCR surveys. This direct assessment of a willingness to pay specific to individual direct connect customers was highlighted by the Australian Energy Market Operator (AEMO) as part of determining the current set of VCR figures.

Model

- The assumption that standby capacity is divisible, appears to be an interesting simplification that may not well represent the BSP's modelled within regional NSW.

- It appears that as the costs associated with Transmission lines are applied on a per km basis, it follows that any uncertainty in these will have a significant impact on the efficient level of reliability calculated for rural customers, due to the specification of costs on a per km basis.

- There is need for clarification of the following variables and their use, documented as part of the Reliability standards model;
    - 'Classification of the load type' under worksheet 'CP table'
    - 'Capacity efficiency factor' under Hard-coded inputs
    - 'Adjustment factor' - for shared costs – under Hard-coded inputs

  - The parameters used as part of the 'power law' to determine the capital costs of transformers and lines
  - Clarification on the line and transformer fault rates used as part of the model, are they unchanged from the initial values provided by TransGrid (those included as an attachment to the issues paper).

- Essential Energy notes what appears to be high average equipment ages. These appear reasonable as a target equipment life, but, when the complete asset population is considered with only operating costs applied it does not seem reasonable to assume the average lives could be reached. Rather, to reach these lives, mid-life capital intervention (refurbishment) is often required.

Value of Customer Reliability (VCR)

- In Table 2.3 of the WSP/Parsons Brinckerhoff report[1], there would seem to be an inconsistency for the customer type mapping results with the subtransmission tariffs being allocated as Agricultural when in fact they generally apply to mining load connections. This leads to inconsistent and erroneous results for the Detailed VCR Breakdown values listed in Table A.1[2] for supply points such as Beryl 66kV, Orange 66kV, Parkes 132 kV and Wagga North 132kV. Questionable results are also listed for Broken Hill and Wellington supply points.

- It may be possible to, at a high level (network or state wide) apportion VCR values based on broad assumptions, however these assumptions do not hold true when creating a VCR value at the granular level. Essential Energy recommends using the accepted NSW AEMO National Planning VCR value that is in line with the BSP specific values calculated by WSP/Parsons Brinckerhoff [2] until a more accurate data source for assigning and developing granular VCR's can be determined. As it is clear from the current method of weighting BSP VCR values, no value is added to the process, while simply further distorting customer ability to understand the drivers for their observed reliability.

- Essential Energy accepts that where accurate Australian Bureau of Statistics type customer splits are available this data should be used to improve the VCR apportioned to specific BSP's.

Compliance

- Section 5 of the Draft Report details the compliance process required to provide assurance to the electricity consumers of NSW that the level of transmission network reliability planned for is at an efficient level that meets their expectations and to some extent their willingness to pay. It is not clear from the level of detail provided in the Draft Report how this assurance is provided. At some stage the determined minutes of unserved energy are likely to be converted into an energy at risk value to allow for planning to be undertaken against the installed firm capacity. It appears that a simpler method of setting and assessing transmission reliability standards would be to determine an energy at risk value, in a similar way based on network costs, asset failure probabilities and VCR. The result would be a planning standard that was directly translatable and comparable to the probabilistic processes that are already in widespread use across the electricity distribution/transmission sector.

- Definition of the phrase 'long term' appears to be warranted due to the use in defining the compliance period over which the planning standard must be met.

[1] WSP Parsons Brinkerhoff, *NSW Transmission Reliability Standards Review – Value of Customer Reliability*, May 2016, p5
[2] WSP Parsons Brinkerhoff, *NSW Transmission Reliability Standards Review – Value of Customer Reliability*, May 2016, pA-2