16 October 2018

Australian Energy Regulator
GPO Box 520
Melbourne Vic 3001

Australian Energy Regulator

**RE: Draft Industry Practice Application Note – Asset Replacement Planning**

Thank you for the opportunity to provide a submission on the Industry practice application note for Asset replacement planning. Essential Energy welcomes any activity that broadens industry collaboration and involvement around risk informed asset planning decisions. We also note that this industry practice application note is an appropriate accompaniment to the expanded Regulatory Investment Test Application Guide.

We see that the application note is likely to not only increase the level of common understanding among those that undertake asset replacement planning, but also broader industry stakeholders. The application note should assist in creating a greater understanding of asset planning decision making, and develop something much closer to a common understanding and common set of terminology within the industry.

Notwithstanding our general support for the publication of an Industry practice application note, we wish to make the following points that we believe will contribute to improving the overall document;

- Overall the approach and examples provided appear primarily focussed towards transmission systems. We note that although these examples do have some alignment with moderate to large distribution system investments, they are not typical of the majority of distribution system asset replacement planning decisions.

  Typically, within the distribution system the majority of investment is undertaken within populations of low value assets, where analysis on an asset by assets basis is not practical. Analysis of this type of investment is typically best undertaken at a population level, using asset health and consequence differentiators to undertake population level options analysis and enable the appropriate interventions for specific asset populations to be determined.

  We suggest that further consideration of how the application note addresses this high-level asset replacement planning approach is undertaken. This would assist in ensuring that some consistency in understanding and application of this note can be translated to distribution asset population analysis. We also note Essential Energy would welcome engaging with the AER on this and expect a number of DNSP's would also be willing to contribute to further developing a common industry understanding and approach.

- In terms of typical consequence areas within the broad category of financial consequence we believe that it is important to recognise loss of 'reputation' or stakeholder confidence as being a potential consequence arising from the failure of an asset. We consider that as a regulated business reputation is less about the intangible asset of 'brand', that typically is commercially

used to expand the margin on sales, but rather about the level of confidence stakeholders, including the public, have in the decisions and asset management practices of a business. This becomes critical when network businesses need to make decisions that are in the long terms interest of the national electricity market, but not in direct alignment with the immediate perceived interests of our stakeholders. An example of this is the move towards cost reflective tariffs. Without a reasonable level of 'community trust' or stakeholder confidence it become very difficult for network business to articulate the case for the move, resulting in delays in transitioning to an approach that is in the long terms interest of the national electricity market. Other recent examples include the case of a West Australian NSP, where the loss of reputation and confidence by the jurisdictional safety regulator resulted in a costly intervention that was arguably not in the long-term interests of the electricity market.

Essential Energy notes that balance is required when this category of consequence is applied, we consider that it is only a possible outcome and is best thought of as not being material for typical events that occur within perceived reasonable bounds of stakeholders. Contrasting examples of this could include (i) the loss of significant areas of network during an external event such as a severe storm, where this event is not likely to impact the stakeholder confidence, as against (ii) a series of unassisted urban town centre pole failures within a short period, which is likely to result in a loss of some stakeholder confidence.

While specific asset investment decisions may not be sensitive to 'reputation', this type of consequence is likely to become material when assessing asset fleet decisions (that comprise a large number of individual assets/decisions).

- The application note outlines that compliance obligations flow through to the 'identification of the need' via the service level obligation of a particular asset. We believe further clarification of how this approach operates in practice is required to enable consideration of compliance obligations in this way. We suggest that a series of examples would be useful here, to make a clear link to how these costs of consequence flow through the analysis of both a specific asset and an asset population. We note that neither of the examples within the current draft application note include a consideration of compliance risk.
- The definition of the base case should be clarified, as there appears to have been some confusion created between how the 'base case' is defined as part of the application note and how the 'base case' was presented at the workshop in Melbourne on the 25 September 2018. We suggest that the definition under section 4.4.1 Business-as-Usual (base-case) is an appropriate definition for the 'base case': *"it is essentially defined as continuing to operate the asset(s) applying standard operating and maintenance practices over the assessment period".*

Further feedback on particular issues within the application note are included within Attachment A. Once again Essential Energy hopes that this application note, and subsequent feedback can initiate closer dialogue and development work on the points raised. To that effect, should you have any questions or require further information about this submission, please don't hesitate to contact Adam Causley – Network Strategy & Risk - 02 6588 6154 – adam.causley@essentialenergy.com.au

Yours sincerely

David Salisbury
**Executive Manager Engineering**

## Attachment A

**Table 1: Specific Items for consideration & clarification**

| Item | | Description | Reference |
|---|---|---|---|
| 1 | Definition of asset risk-cost | Does the definition of 'asset risk-cost' extend to include market wide risk? | Page 4 |
| 2 | *"probability of failure of the cable is increasing (failure is more likely or the service life is reduced)"* | In general terms for a particular asset an increasing probability of failure does not equal a decrease in service life. Clarification of the wording would assist, as the probability of failure is expected to increase normally as an asset approaches the end of its service life. | Page 11 |
| 3 | *"maximum long run net benefit across the NEM"* | Clarification is needed around the consideration of *'benefit across the NEM'* similar to item 1 above. In relation to application of the RIT, comprehensive NEM wide benefits are required, however when it comes to asset retirement decisions or more generally the *capital expenditure objectives* it is not clear that the benefits included within the analysis are required to be extend across the complete NEM. | Page 11 |
| 4 | *"options such as risk avoidance, risk reduction and risk sharing are particularly attractive shorter-term mitigation strategies"* | We would welcome examples of how you can practically apply these techniques, and transition to an end-of-life asset decision. For example, under reliability incentive scheme does the AER see flexibility for risk sharing with customers? | Page 12 |
| 5 | *"The net benefits associated with the selected remedial actions"* | Consider that the net benefits associated with an action are affected by the uncertainties in the effectiveness of the action. | Page 19 |
| 6 | *"4.4.2 Alternative credible options"* | This section appears appropriate when considered in the context of the RIT's, however we suggest that a lower bound of reasonableness represent the number of options considered when undertaking analysis below this threshold. This is in order to maintain alignment between the effort in analysis and the options being considered. | Page 27 |
| 7 | General Comment<br>- reference to *"4.4.3 Option Value…..value realised from maintaining investment flexibility"* | Suggest a pragmatic approach should be taken on the assessment of 'band-aid' or single asset risk increase options, where there are broader impacts on aggregated system-level risk across fleets of assets.<br>Noting that full fleet reliability analysis is the ideal approach to assessing the impacts of this type of option, it is not always feasible for this analysis to be completed for lower value asset decisions. Typically, the data required can include; number of spares, location, asset type compatibility, resource availability, travel times, truck roll costs, spares conditions. | Page 30 |
| 8 | *"4.5.1 Economic cost benefit components and estimates"* | We note that resilience should form part of the economic cost benefit components, where risk cost is limited to the immediate costs of failure rather than recovery back to BAU | Page 31 |
| 9 | *"$PoF_n$"* | Probability is defined as a number between 0 and 1; % is generally a chance of failure. | Page 37 |

| Item | | Description | Reference |
|---|---|---|---|
| 10 | *"Safety & Health"* | Suggest that the value of statistical life year, along with the impact of trauma should be considered when valuing injury. | Page 38 |
| 11 | *"Environment"* | Suggest including livestock or domestic pets as costs that are typically considered as part of 'property loss' (listed under environmental risk). | Page 38 |
| 12 | *"5.2.1 Approach"* | The approach outlined for the derivation of probability of failure represents a robust and appropriate approach where end of life asset failure data is available. However, it should be recognised that unfortunately this is not always the case, and as such flexibility should be maintained in how probability of failure values are obtained specifically for low volume asset populations. | Page 43 |
| 13 | *"asset failure"* | Suggest that in the interests of maintaining a common set of language across the industry, it may be worth clarifying how this definition relates to the definition of *asset failure* used within the annual Regulatory Information Notice, so as to avoid confusion among broader stakeholders. | Page 5 |
| 14 | *"firm delivery capacity"* | Similarly to item 13, it may be worth clarifying how this definition relates to the definition of *asset failure* used within the annual Regulatory Information Notice, so as to avoid confusion among broader stakeholders. | Page 5 |
| 15 | *"2 Principles"* | We believe that 'deliverability' is worth consideration for inclusion alongside the 8 principles outlined for replacement expenditure planning.<br>An example of the importance of this consideration is when assessing the 'deliverability' of a long-term replacement forecasts, the impact that supplier availability can have. Such a hypothetical case might be for wooden poles for example, where the sustainable management of state forest timbers limits annual availability of timber poles, such that an option that might include large scale deferment of poles replacements in exchange for a 4 fold increase in replacement in 10 years' time would need to consider the resource availability and hence 'deliverability' of the option. Evidence of the materiality of this impact would be required. | Page 8 |
| 16 | *"Box 10 – Example service cost considerations – switchgear"* | Suggest that bushfire risk is just as appropriate for switchgear as it is for asset types such as conductors. Noting that dependencies exist between asset types; such as where the switchgear providing the protection capability for a section of conductor were to fail, the bushfire risk for the downstream conductor is greatly increased. As such the increased cost of consequence for subsequent downstream assets is an important consideration for switchgear. | Page 26 |

| Item | | Description | Reference |
|---|---|---|---|
| 17 | *"Box 11 – Example asset treatment options – circuit breakers….replace…with new technology that may….lower (the) life cycle costs"* | Note that for decisions on technology, within distribution networks typically life cycle costing decisions are not made specific to a particular asset retirement decision and are instead made as a period procurement decision for an asset class that is procured in bulk, over a period. Therefore, typically asset level decisions are made based on the prior lifecycle costing decisions (and analysis), this also enables non-network options to be compared against these lowest lifecycle costs. | Page 29 |
| 18 | Appendix C | Essential Energy supports the use of disproportion factors to represent societal concern when undertaking risk cost analysis. However, we suggest that improvements could be made to the examples provided, to better inform the use of disproportion factors as a representation of societal concern. Noting that the footnote 75 on page 69 does not contain a reference to the application of disproportion factors or their stemming from the UK Health Safety Executive.<br>Typically, with reference to the use of disproportion factors, we would expect the application of factors to follow the societal concern surrounding a particular event. In terms of the current examples used, the factors applied to the types of events appear not to follow this relationship. | Appendix C |
| 19 | "Example 1. Failure of 132kV transmission line" | Disproportion factors have been applied to differentiate simply between the persons involved. Whereas we would expect disproportion factors to be applied to represent the differing societal concern surrounding loss of life or injury as a result of bushfire as compared to loss of life or injury as a consequence of a 'conductor drop'. | Page 71-74 |
| 20 | "Table 10: Critical input value assumptions" | Table 10 references a disproportion factor of 6 for members of the public, but the example doesn't include any safety impacts for members of the public, rather it just considers workers. | Page 76 |