

Independent Pricing and Regulatory Tribunal NSW
By upload

28 October 2016

Dear Sir/Madam,

Review of Electricity Transmission Reliability Standards

Thank you for the opportunity to contribute to this important review. GreenSync is one of Australia's leading energy technology companies with a proven track record of winning RIT projects in the NEM. It is from this position that GreenSync can provide a consumer focussed, innovation driven perspective reflective of the changes occurring in our industry.

GreenSync also welcomes the belated release of the model and its assumptions, pursuant to our letter of 26 August requesting same, and is encouraged that this material seems to have been better publicised than previously.

GreenSync firmly believes that any changes to reliability standards must serve the goal of ensuring that NSW consumers are provided a low cost (including long term cost, i.e. carbon), secure electricity supply. The way the review is framed does not recognise this, in fact it dismisses the impact of transmission charges as being not significant at 10% of the typical bill. GreenSync reiterates that this is an extraordinary statement by an organisation tasked with protecting consumers. It is GreenSync's view that the proposed reliability standards do not:

1. protect consumers of regulated services from unreasonable price hikes and price gouging – the proposed changes are not costed, and there is no clarity as to why the standards should change;
2. encourage regulated service providers to improve their economic efficiency – if it is true that the average utilisation of NSW transmission networks is just over 50%, then this is clearly not an efficient service now, let alone under an expanded asset base;
3. encourage competition where possible – changing reliability standards does not address competition; and
4. have regard to the impact on customers – the reliability/cost tradeoff is not explicit and power to make this choice is not put in the hands of customers, in fact the opposite is promoted.

There are fundamental shifts in technology, economics and consumer preferences occurring in the sector. As an industry we need to focus on the requirements to transition and move forward. We must avoid the temptation to apply yesterday's Band-Aid to our very future facing problems.

GreenSync general concerns with the proposed methodology include:

1. Why is this methodology superior to that promulgated by AEMO?
2. Is the proposal for a reliability standard, or a replacement for the RIT process? There seems to be a mixture of reliability measures with forecast solution costings.
3. The review states that the recommended redundancy is to remain the same – so what is the new recommendation regarding reliability?

4. Why is the amount of time taken to restore an asset part of a reliability standard, when it should be $VCR \times \text{probability of outage}$?
5. The model appears to assume that the only way to improve reliability is to duplicate transformers and lines.

GreenSync has specific concerns with the structure and mathematics of the model, including:

1. The original dataset is not available in the spreadsheet displaying sensitivity analysis results.
2. The restoration strategy is a basic index from 0-5, this is not granular enough for an important model that involves hundreds of millions of dollars of expenditure. A better, more sophisticated measure should be used.
3. Repair times are represented as a number from 1-4, again not nuanced or sophisticated enough to be a satisfactory representation of the system. Minutes of outage is an industry standard.
4. Why is the upper bound for transformer repair 15,351 hours? What drives this? At 640 days, is it reasonable? Should it be based on working days or 8 hour days?
5. The assumption that each transformer at each BSP is of equivalent capacity is wrong, and a gross simplification that should be addressed.
6. Assumption that each line at each BSP is the same length is also facile. Recent historic outage data for each line would be a more accurate measure.
7. It is stated that the model artificially “dynamically increases or shrinks the number of transformers and lines to meet a required n state”. This seems extraordinary – how can this be reconciled with real-world situations?
8. Table 1.4 has coarse and unrealistic estimates of line length.
9. In 1.3 cost of supply arrangements – why are there estimates of costs when this is purporting to be a reliability calculation
10. In 1.3, it is assumed that there is space at existing BSPs to add transformers. This assumption is compounded by the dynamic nature of the model, which ‘shrinks’ and ‘expands’ the number of transformers according to n requirements
11. Model has created a function for the cost of transformers. This is based on a best fit curve of historic transformer purchase. Why would this be used rather than a RIT-T process?
12. ‘b’ in the cost equation is assumed to be the same between transformers and lines. Why?
13. Underground is assumed to be 15x more expensive than overhead – why? What data is used to derive this?
14. Table 1.5 – arbitrary multipliers, and if aggregated historic data is used, why is it again multiplied? Input is a weighted average already.
15. Average asset lives are applied to new and end of life assets, rather than taking asset age into account.
16. Model also models distribution costs under the backup capacity calculations. Have the relevant DBs provided data and input into the model? If not, on what basis were these costs calculated?
17. What is the consultant advice used in the repair strategy costs?
18. 2% of annual capital cost is far too high as a calculation of annual operating costs.
19. 1.10 assumption 17% of transformers have a non-catastrophic failure each year! What is a ‘non-catastrophic failure’? and is it really 1 in 6 transformers each year?
20. Line failures seem way too high – please provide the historic data, how far does it go back? Recent gold plating should have resolved this.

21. Arbitrary load duration for calculating load at risk at time of failure. This should be calculated on a per asset basis with actual load curves
22. Check maths in 1.5 – dividing by 60 may not be correct.

In summary, GreenSync is concerned that the proposed model diverges from industry practise, looks to forecast future equipment costs when a reliability standard is being developed, and the modelling inputs are simply not granular or sophisticated enough to provide useful outputs.

For your consideration,

E. David Anstee

Commercial Director