

22/06/2020

Director, Climate Change and Energy Savings Policy
NSW Department of Planning, Industry and Environment
energysecurity@environment.nsw.gov.au

Dear sir/madam

Energy Security Target and Safeguard 2020 submission

TransGrid welcomes the opportunity to contribute to the NSW Government's consultation on the Energy Security Target and Safeguard.

TransGrid is the operator and manager of the high voltage transmission network connecting electricity generators, distributors and major end users in NSW and the Australian Capital Territory. TransGrid's network is also interconnected to Queensland and Victoria, and is central to an electricity system that allows for interstate energy trading.

We support the Energy Security Target and Energy Security Safeguard as mechanisms to ensure the resilience of the NSW electricity system. To achieve this outcome, it's important the Energy Security Target takes into account all factors that contribute to a secure system.

In addition to the measures outlined in the consultation paper, TransGrid recommends the inclusion of inertia to the Energy Security Target. The power system requires a minimum level of inertia to operate securely, and there are risks to this if two generators are removed from service simultaneously or in quick succession, as occurred at Bayswater in 2009.

Inclusion of an inertia requirement will provide an added level of robustness to the Energy Security Target. We propose this requirement be defined as maintaining sufficient inertia to cover at least the minimum inertia level for NSW plus the inertia of the two generating units with the largest inertia.

The balance of our submission addresses topics TransGrid has involvement in or direct knowledge of. Our responses to these questions are set out below.

Is the approach to assessing firm capacities from generators, interconnectors and demand response used to meet the Energy Security Target reasonable and appropriate? Is there an alternative approach?

We support the approaches outlined by the Department of Planning, Industry & Environment for assessing firm capacities from generators, in particular, the approach taken to de-rating thermal generating units that pose reliability risks and the contributions of variable renewable generators during peak periods. Furthermore, we consider that in the calculation of firm capacities it will be necessary to exclude generation routinely constrained due to transmission constraints.

In regards to the interconnector firm capacities presented in Table 1, we agree with the figures outlined for the Terranorra and Queensland to NSW interconnector (**QNI**). In terms of the firm capacity for the Victoria to NSW interconnector (**VNI**), we note that significant transmission constraints currently exist between the Snowy Mountains and Sydney and will continue to do so until the delivery of HumeLink, which is currently progressing through the regulatory process. For this reason, the firm capacity of VNI should be regarded as 0 MW prior to the delivery of HumeLink, as the Victoria to NSW transfer will compete with firm generation in southern NSW and is not additional to it. After the delivery of HumeLink we believe this firm capacity can be increased to approximately 500 MW. These changes to the firm capacity for the VNI interconnector will affect the forecast capacity over the next five years presented in Figure 2.

Overall, aside from the issues raised above, the approaches are reasonable and appropriate.

Is the approach to applying the capacity factors for wind and solar generators reasonable and appropriate?

As noted above, we agree with the approach taken on the contributions of variable renewable generators during peak periods, hence we support the approach taken to apply capacity factors for wind and solar generators.

Are AEMO's maximum demand forecasts appropriate for use in determining the Energy Security Target? Should alternatives be considered (e.g. TransGrid's forecasts)?

TransGrid publishes maximum demand forecasts in the NSW Transmission Annual Planning Report each year, which are appropriate for use in determining the Energy Security Target. The forecasting models are assessed for accuracy against temperature-corrected historical demand annually, and have exhibited a low mean absolute percentage error and low bias. Further information on TransGrid's forecast and accuracy is set out in Chapter 4 and Appendix 1 of each NSW Transmission Annual Planning Report.

We note that AEMO's forecasting models have under-forecast energy consumption in NSW by between -1.3% and -5.8% in forecasts published from 2014 to 2018. We recommend that to be appropriate for use in determining the Energy Security Target, the apparent bias towards under-forecasting would need to be addressed.

How often should Energy Security Target updates be published?

We believe the Energy Security Target updates will provide valuable information and data to interested parties. TransGrid proposes these updates be published annually, and that the NSW Transmission Annual Planning Report, published by TransGrid, is an appropriate publication in which to include the updates. In addition, we consider there is value in the publication of interim updates whenever a generator, transmission project or demand response becomes committed, and after each summer period when changes may become evident in the market availability of generators.

Are the entities required to provide information to the Energy Security Target register that are listed above suitable and adequate?

We agree with the list of entities required to provide information to the Energy Security Target register and believe they are suitable and adequate.

Is there other information that should be provided for the register beyond that listed above?

We regard the information that will be provided as reasonable.

Are the types of projects that may contribute to meeting the Energy Security Target described above suitable and adequate? How could prospective projects, beyond those identified as committed, be considered within the Energy Security Target forecast for firm capacity?

We support the described types of projects that may contribute to meeting the Energy Security Target and note they are suitable and adequate. We do not believe there is a need to consider projects beyond those that are committed.

If you would like to discuss any aspects of this submission, please contact Andrew Kingsmill, Head of Network Planning, at Andrew.kingsmill@transgrid.com.au.

Yours faithfully,



Sean McGoldrick
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