

31 May 2023

Andrew Turley
Group Manager, Forecasting
Australian Energy Market Operator (AEMO)

Submitted via email: ISP@aemo.com.au

Dear Mr Turley,

Consultation on the Draft 2023 Transmission Expansion Options Report

Origin Energy Limited (Origin) welcomes the opportunity to provide feedback on AEMO's Draft 2023 Transmission Expansion Options Report (TEOR).

We broadly support AEMO establishing the Transmission Expansion Options Report which builds on the transmission cost database from the last Integrated System Plan (ISP). We suggest that non-network options should be included in the report, propose staging projects and co-optimising renewable energy zone (REZ) options with broader grid updates, and seek clarification on how the ISP model will incorporate transmission project delays, social licence costs and jurisdictional augmentation plans.

Flow paths and REZ options

Identifying all potential shared network augmentation, including detailed design options for REZs and the flow paths that underpin them is a critical step in planning for an efficient system and to support the transition.

In preparing the final TEOR and modelling the optimal development path for transmission for the draft 2024 ISP, AEMO should consider the following:

- The identified network options are comprehensive although the draft TEOR does not include non-network solutions. We understand the draft ISP will call for non-network options. However, it would be more appropriate for the final TEOR to first identify potential non-network solutions (such as batteries) for comprehensiveness. These should then be included in the draft ISP modelling alongside network options.
- The model should aim to co-optimize REZ build with broader shared network flow path upgrades that are critical to implementing the zones. This would promote optimal outcomes for consumers. Without co-optimisation, it is not clear that REZs can be implemented efficiently since they may face downstream congestion, which would erode the value they are intended to provide.
- The potential REZ implementation options identified in the report are typically large augmentation projects that come with high costs. AEMO should consider staging some of the options to reduce the cost of augmentation, while still supporting timely transmission build. Staging may mean that a REZ could be optimally developed earlier while reducing transmission costs.
- The final TEOR should clearly set out how AEMO's options overlap with jurisdictional planning documents, such as the NSW Network Infrastructure Strategy.

Methodology – transmission project lead time

As noted in our submission to the ISP Methodology update, we support incorporating uncertainty in transmission project lead time in the modelling. The draft TEOR notes that transmission project lead

times have been re-defined, and given current supply chain and other issues, it is unlikely that a new upgrade could occur less than three years after the release of an ISP.

However, it is not clear how the model will treat delays more broadly. Say an option has a project lead time of 5 years and is shown to be optimal in the modelling in 2030. Assuming a 2-year delay is now expected, would AEMO recommend actioning the project earlier in the 2024 ISP to ensure the 2030 date is met? Or would the 2-year delay be added to the optimal date so that the planned upgrade occurs by 2032 instead? More information on how the modelling will treat lead time delays would be welcome.

Furthermore, if upgrades are delayed beyond what is optimal in the plan, the modelling should capture the implications of this, such as what it would mean for existing generation retirement and future build. This would ensure generation and transmission investment are appropriately coordinated.

Methodology – social licence

We generally support the approach set out in the report with respect to consideration of social licence matters, such as incorporating time for community engagement in project lead times and use of land use and resource limits in the modelling. We make the following suggestions for AEMO's consideration:

- It is not clear how social licence costs are incorporated in transmission cost estimates, if at all. The draft ISP should set out any implicit or explicit social licence costs for its transmission augmentation options for transparency purposes.
- Flow paths should incorporate the cumulative effects of all facets of social licence such as traffic and workforce accommodation requirements, similar to what proponents would be expected to show through Environmental Impact Statements. This would better capture practical social licence requirements in planning timeframes.

Should you have any questions or wish to discuss this submission further, please contact me at Sarah-Jane.Derby@originenergy.com.au or on (02) 8345 5101.

Yours sincerely,



Sarah-Jane Derby
Energy Regulation Manager