



EnergyAustralia

LIGHT THE WAY

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To Mr Reiter,

Reinforcing the New South Wales southern shared network to increase transfer capacity to the states demand centres

We welcome the opportunity to comment on TransGrid's Project Specification Consultation Report (PSCR) on reinforcing the NSW southern shared transmission network, the first step in the Regulatory Investment Test for Transmission (RIT-T). We would also like to thank TransGrid for providing additional information in their Inputs and Methodology Consultation paper (the methodology paper) and draft of their assumptions¹, as well as including a specific deep dive on this with industry during the Transmission Annual Planning Report (TAPR) forum last Tuesday. This is a positive step in ensuring that an open and transparent consultation is run, which is of particular importance due to the major upgrades of the network proposed in this PSCR.

EnergyAustralia is one of Australia's largest energy companies with around 2.6 million electricity and gas accounts in NSW, Victoria, Queensland, South Australia, and the Australian Capital Territory. We also own, operate and contract an energy generation portfolio across Australia, including coal, gas, battery storage, demand response, solar and wind assets with control of over 4,500MW of generation capacity in the National Electricity Market (NEM).

We recognise that the NEM generation mix is rapidly changing. Older traditional generation is being retired and replaced more commonly by variable renewable generation. AEMO's 2018 Integration System Plan (ISP) identified that upgrades to connect Snowy 2.0 (identified in the ISP as a group 2 project) would be required if the final decision to go ahead with the project was made². As is highlighted in the PSCR a final investment decision has now been made on Snowy 2.0 by the Snowy Hydro board and the Federal government, at a reported capital cost of \$5.1b³. This cost does not include any associated transmission developments to realise the full potential of the new capacity, which customers have been left to fund. The credible options proposed by TransGrid in this RIT-T range in cost from \$0.8b – \$2b and represent a significant investment on the customer's behalf.

¹ https://www.transgrid.com.au/what-we-do/projects/current-projects/Reinforcing%20the%20NSW%20Southern%20Shared%20Network/Documents/TransGrid_Reinforcing%20NSW%20Southern%20Shared%20Network_Modelling%20Report.pdf

² AEMO 2018 ISP, page 8, https://www.aemo.com.au/-/media/Files/Electricity/NEM/Planning_and_Forecasting/ISP/2018/Integrated-System-Plan-2018_final.pdf

³ <https://www.abc.net.au/news/2019-04-09/snowy-hydro-2.0-cost-and-timeline-blows-out/10983998>

It is EnergyAustralia's view that there remains significant uncertainty around the timing of the Snowy 2.0 project completion date and to some extent whether the project will progress even though it is in 'a far better risk position'. A project of this size creates additional challenges around crowding out other generation investment at a time when there is increasing focus to replace retiring generation capacity.

Customers pay for any network investment and bear the risk therefore it is important that any long-term network investment and its projected benefits is sufficiently scrutinised to ensure it is in the best interest of customers. EnergyAustralia expects that transparent and clear modelling, results, sensitivities and scenarios will be presented in the Project Assessment Draft Report (PADR) to allow stakeholders to be satisfied that the preferred option is in the best interest of customers.

Assumptions

Overall comments on assumptions

EnergyAustralia encourages TransGrid to utilise the ISP 2019 assumptions workbook where possible as these have been widely consulted and agreed upon (in principle) by industry already. A clear explanation should be provided if TransGrid deviates from these assumptions, allowing participants to more easily navigate the assumptions and modelling results. Currently the sources of the assumptions TransGrid proposes to use varies greatly, including the 2018 and 2019 ISP as well as the 2018 ESOO assumptions. Utilising a consistent set of assumptions will provide more confidence to participants in the modelling results.

As discussed at the TAPR forum, TransGrid has suggested a weighting of 25% to apply to the following four scenarios: Fast Change; Neutral; Slow Change; and Step Change. The 25% weighting across these four scenarios seems very aggressive as it locks in the fast change and step change outlooks with their implicit high demand forecasts and Electric Vehicle (EV) projections, plus 2-year and 5-year early coal retirements with a relatively high overall likelihood (i.e 2 x 25%). It is also unclear how TransGrid will use and weight 10%, 50% or 90% Probability of exceedance (PoE) peak demand forecasts.

Scenarios should be expanded

We are concerned that the range of scenarios to be tested is too narrow and that this will result in the modelling not capturing all risks of such a large investment.

Snowy 2.0 is assumed constructed in 2025 across all scenarios. It is EnergyAustralia's view that both the actual construction of Snowy 2.0 and the timing of its completion should both be tested. There remains significant uncertainty over the completion of a project of such size and the modelling should at least consider if the proposed credible options are the best use of customer funds if the project doesn't proceed, is staged, or is significantly delayed. A government funded investment in generation of this size and the associated transmission creates significant uncertainty in the market. We would encourage TransGrid to run a base case (for comparison) that includes neither Snowy 2.0 or the associated transmission included, allowing the modelling to provide a different counterfactual capacity expansion path, as well as show the impact of delayed and staged development of Snowy 2.0.

It is proposed in the PSCR that most of the significant network expansions currently under consideration in the ISP are built⁴ and the timing only will be tested as a sensitivity. For example, it is assumed that the preferred option of VIC-NSW interconnector is built, and additional larger investment proposed between VIC and NSW in 2034 also proceeds. Given the likely impacts that major network upgrades could have on the reported market benefits we would encourage TransGrid to not only test the timing of any new network investment but also the size and if it is in fact constructed.

The ISP's primary purpose should be to guide competitive and efficient investments, not to lock in a specific development path at a point in time. It remains uncertain if any, or all of these projects will proceed. For example:

- The AER is still yet to make a final decision on the SA-NSW interconnector or Western Victorian Renewables Integration RIT-T projects;
- Both upgrades the minor QLD-NSW, VIC-NSW and Marinus Link interconnectors are still progressing through their prospective RIT-T processes; and
- Larger connections between VIC-NSW and NSW-QLD have yet to even start any RIT-T process.

Consistent modelling outcomes are critical

Given the number of RIT-T projects that are currently in progress it is imperative that a consistent set of assumptions is utilised, with corresponding consistent results around capacity expansion and retirement to ensure that industry and key stakeholders can build confidence in the results that are being produced. For example, ElectraNet modelling for EnergyConnect⁵ built an additional 700MW of grid scale pumped storage in South Australia to satisfy the capacity requirements on completion of new interconnection, whereas more recent AEMO modelling for the Victorian Reactive Power PADR built none⁶. It is critical that modelling results are consistent across projects as the RIT-T modelling is 'the customers business case' to invest.

Power Station Closure

We note that TransGrid intend to test the retirement of coal power stations by assuming varying fixed closure dates across the various scenarios. For example, it is proposed that half of coal power stations capacity is retired 5 and 2 years earlier respectively in the fast and neutral scenario than end-of-technical-lives. It is EnergyAustralia view that the modelling should consider the economic viability of all existing power stations and should not simply fix closure dates as an assumption and/or run varying scenarios with alternative fixed closure dates. We encourage TransGrid to consider this in their PADR modelling and note that AEMO is also currently considering how this can be achieved in their 2019/20 ISP modelling.

Modelling outputs included PADR

⁴ MarinusLink is the only major transmission project that is not considered committed.

⁵ <https://www.electranet.com.au/projects/south-australian-energy-transformation/>

⁶ https://www.aemo.com.au/-/media/Files/Electricity/NEM/Planning_and_Forecasting/Victorian_Transmission/2019/Victorian-Reactive-Power-Support-PADR.pdf

We would encourage TransGrid to provide as much information as possible to support the PADR. For example, it is important that the Plexos model outputs (or similar) are available to participants such as capacity expansions plans and load factors. This ensures that stakeholders can complete a critical review of the modelling outcomes and understand how the benefits are realised. The PADR also need to be explicit about whether the results are driven by outcomes from modelling itself or whether any outcomes were fixed input assumptions. For example, in generator expansion modelling does the model choose what replacement technology/plant is built or is the model guided to build to a certain end state by input assumptions. It is important for stakeholders to be able to understand the drivers behind the model results.

Modelling results must also be realistic and be sense checked against historical outcomes. For example, if a plant has a historic capacity factor of 60-70% but modelling assumes it can run unrestricted, say above 95% then this should raise concerns. We note that AEMO's 2019/20 ISP modelling is considering how to deal with minimum and maximum capacity factors on both gas and coal units and TransGrid should include similar constraints in their modelling⁷.

We also strongly encourage TransGrid to publish the regional price outcomes of its market and benefits modelling for all scenarios and sensitivities. We recognise the model is not ideally representative of market outcomes given it is based on Short Run Marginal Cost (SRMC) assumptions, however it is being used to support a regulated investment and the relative changes in modelled price outcomes will provide clear insights into the impacts of the transmission investment and build confidence with industry and consumers on the determined benefits. We would also appreciate insights into how this project and all the others anticipated in each scenario are likely to affect TransGrid's Regulated Asset Base (RAB) over the next ten years.

Specific insights and sensitivities into how Snowy, Snowy 2.0 and other pumped hydro and storage are modelled and how they are dispatched in the model will also be important to build confidence in the market model.

Sensitivities

It is EnergyAustralia's view that simply varying key assumptions one at a time to test the sensitivity of the market benefits for each credible option does sufficiently test the robustness of the forecast market benefits. The PADR should seek to test a wider range of sensitivities, for example varying multiple input assumptions in parallel, to reflect the uncertain nature in the forecast of benefits from each credible option. This should present a more realistic summary of the expected benefits and the robustness of these for any preferred option.

Capital Cost

There is likely to be significant uncertainty around the capital cost of a project of this size. While TransGrid has provided initial estimates of the expected capital costs we would expect wide sensitivities to be conducted on this.

⁷ It is noted that in the methodology report TransGrid indicates they will consider minimum and maximum capacity factors for CCGT's.

Option value market benefits

We consider that there could be significant option value and we appreciate that TransGrid is considering this. For example, a significant delay in the completion of Snowy 2.0 could lend to a staged development in which the Wagga to Bannaby/Sydney lines are constructed if the NSW-SA interconnector proceeds while the Maragle Wagga and Maragle Bannaby/Sydney lines are not constructed or delayed. Any benefits of this should be clearly presented.

Furthermore, each option shows two circuits being built – we would question if it is necessary to build two circuits on separate easements at the same time, can these, or should this be staged - one circuit followed by another. TransGrid needs to clearly outline why and when any second circuit is required?

It is also noted only one option builds out Bannaby to Sydney West (Option 4) – TransGrid could leave this out and separate it as another specific project so all other options can be compared on a like for like basis.

In Snowy Hydro Final Investment Decision (FID) report it was suggested that one of the circuits from Maragle to Bannaby could be advanced to support NSW load from south when Liddell closes but before Snowy 2.0 is completed – we seek further clarification on the need and feasibility of this option.

Conclusion

EnergyAustralia looks forward to reviewing the modelling and results to be presented by TransGrid in the next stage of the RIT-T process.

We encourage TransGrid to clearly present their assumptions in the PADR and identify why varying assumptions have been used. This will ensure transparency and consistency across not just this but other concurrent RIT-T's. It is our view that the range of scenarios currently proposed by TransGrid are too narrow and risk preventing a realistic and robust view of market benefits being presented.

It is imperative that modelling results are transparently presented in the PADR and supporting documents to ensure that stakeholders can complete a critical review of the modelling outcomes and understand how benefits are realised. Customers pay for and bear the risk that long-term network assets do not deliver the promised benefits and the PADR needs to satisfy stakeholders that the preferred option is in the best interest of customers.

If you would like to discuss this submission, please contact **Andrew Godfrey on 03 8628 1630** or **Andrew.Godfrey@energyaustralia.com.au**.

Regards

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