28 January 2022

Ms Anna Collyer, Chair
Energy Security Board
Level 15, 60 Castlereagh St
Sydney NSW 2000

Lodged electronically: info@esb.org.au

EnergyAustralia Pty Ltd
ABN 99 086 014 968

Level 19
Two Melbourne Quarter
697 Collins Street
Docklands Victoria 3008

Phone +61 3 8628 1000
Facsimile +61 3 8628 1050

enq@energyaustralia.com.au
energyaustralia.com.au

Dear Ms Collyer

Energy Security Board — Transmission Access Reform Project Initiation Paper — November 2021

EnergyAustralia is one of Australia's largest energy companies with around 2.4 million electricity and gas accounts across eastern Australia. We also own, operate and contract a diversified energy generation portfolio across Australia, including coal, gas, battery storage, demand response, wind and solar assets, with control of over 4,500MW of generation capacity.

We appreciate the Energy Security Board (ESB) setting out its proposed assessment approach for 2022 on transmission access reform, following National Cabinet's instruction to explore the Congestion Management Model with REZ adaptations (CMM) in more detail.

Further insights on the case for coordinated reform

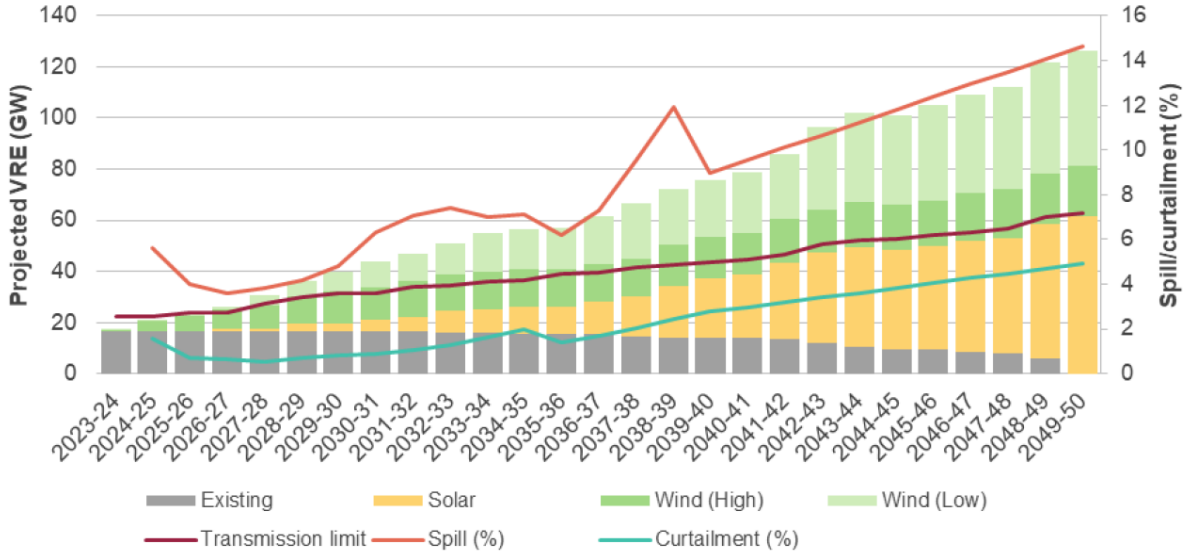
We are concerned at the prospects of customers paying for suboptimal transmission investment. The integrity of system-wide cost benefit assessments such as the Integrated System Plan (ISP) and associated Regulatory Investment Tests remains paramount. The AEMC is now reviewing the transmission planning and investment framework which should uphold customer outcomes alongside calls to accelerate the delivery of large transmission projects. We note some of these projects may be subject to timing and scoping decisions that reflect local community and broader economic development objectives, rather than least cost outcomes for customers across the NEM.

We see an important role for the ESB in advising energy ministers on the benefits of a robust and consistent NEM-wide approach to coordinating generation, storage and transmission investment. Where Ministers have requested the ESB to ensure its proposed rules around transmission access accommodate jurisdictional differences, the ESB should be able to advise Ministers on how jurisdictional regimes may need to be altered where this ultimately delivers better long-term outcomes for consumers across all jurisdictions.

The recent draft 2022 ISP illustrates the potential scale of issues at hand in terms of expected levels of renewables curtailment. AEMO's scenarios show material and growing amounts of curtailment even in an idealised situation where investment is optimised in terms of the mix, location and operation of assets on a NEM-wide basis.[1]

[1] https://aemo.com.au/-/media/files/major-publications/isp/2022/appendix-3-renewable-energy-zones.pdf?la=en

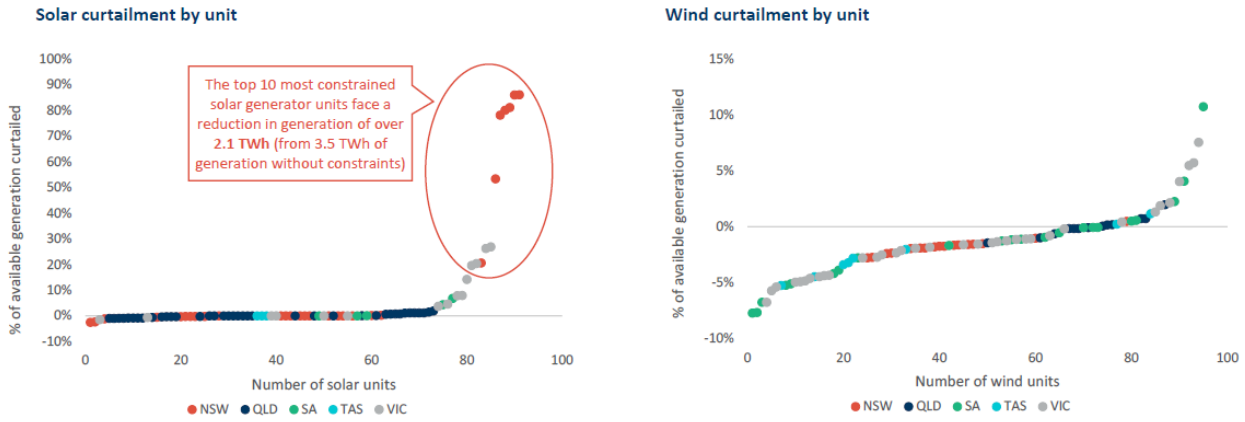
Figure 6 Projected utility-scale VRE in REZ for the NEM, the transmission network capacity to facilitate this development together with the economic spill and transmission curtailment



Source: AEMO.

This raises important questions in terms of which generators will be curtailed and in which locations. The draft 2022 ISP suggests economic curtailment would mostly affect solar generators. FTI's earlier analysis for the ESB, based on the 2020 ISP, also suggests constraints in a future NEM may disproportionately affect solar generators and could otherwise be heavily skewed in terms of distributional impacts, including different wholesale price outcomes across regions.[2] FTI's and AEMO's projections need to be further scrutinised in terms of commercially feasibility e.g. whether projects would have been commissioned with curtailment levels of around 10 percent and above.

Percentage of curtailment for each renewable generator unit



Source: FTI Consulting.

[2] https://esb-post2025-market-design.aemc.gov.au/32572/1629773972-fti-esb-forecast-congestion-in-the-nem-final-5-august-2021.pdf

AEMO has also identified that marginal loss factors are likely to be affected by REZ design and so will explore this further in the final 2022 ISP, alongside metrics on congestion and resource quality.

The ESB should interrogate this analysis in its work with stakeholders on understanding the case for any reform. In doing so we consider it would be useful to update FTI's approach using the 2022 ISP's datasets. The ESB could also use this in exploring interactions with evolving jurisdictional REZ frameworks, for example how curtailment targets like the 0.3 per cent proposed for Central West Orana[3] would affect the pattern and severity of constraints arising across the wider network, and hence the implications for the design of the CMM.

Which CMM design features we consider are important

Based on information provided in consultation to date, and in the context of other ongoing reforms, we are yet to be convinced that the CMM would deliver net benefits to customers. We therefore support the ESB exploring design aspects in more detail, and table A1 in its paper appears to be comprehensive. We underline the following design issues:

- Generally how the CMM would integrate with, and add value to, state-based REZ access regimes based on deterministic, non-firm physical access rights. This would be reflected in the ESB's assessment criteria, particularly in how a CMM can be designed to provide jurisdictions flexibility, or as per our earlier suggestion, whether jurisdictional designs need to be flexible to accommodate a nationally consistent approach.

- How the 'right' network locations for granting rebate rights would be determined, and by whom. As part of integrating with REZs, there needs to be some consideration around jurisdictional planning or ministerial decisions, for example NSW will be considering 'outstanding merit' in awarding generation LTESAs outside REZ boundaries or possibly 'do no harm' assessments for non-REZ generation. We consider there is likely to be more downside risk to consumers in having locational decisions being centrally determined in design of any access scheme.

- How the total amount of congestion rebate rights would be calculated and allocated across existing generators and storage. As we have raised previously there could be perverse incentives where allocation is based on participant bidding/ availability, including where generators or storage know they will not be dispatched. Possibilities raised by the ESB in terms of having new generators bid for or purchase allocation rights, and the trade-off between total pool of rebates and average payouts, resurrect concepts already explored most recently during COGATI. The prospects of using surpluses from the selling of rights to offset transmission costs deserves some further exploration, again noting that some jurisdictional REZ access schemes may involve this as well.

- Grandfathering arrangements. We note that the AEMC took a position during the latter stages of COGATI that developers should have expected some sort of access reform to be introduced, with implications on proposed design features.

[3] https://www.energy.nsw.gov.au/renewables/renewable-energy-zones/central-west-orana-rez-access-scheme-consultation

The ESB should assess reform proposals against a robust counterfactual

We recommend the ESB's analytical approach include establishing a robust counterfactual, in the same way it is proposing in its assessment of resource adequacy mechanisms. Noting the complexities in doing so, these assessments should be based on quantification of costs and benefits where possible. A likely counterfactual scenario for transmission access involves some jurisdictions centrally determining the least cost mix and scale of investments inside REZs, with access rights of non-REZ investments being similarly affected by planning criteria. This would highlight locational incentives on participants in the presence of REZ-based planning frameworks and hence the need for additional rewards or penalties through the CMM (or alternatives).

The ESB's consideration of counterfactual and 'with reform' scenarios should also reflect on how additional locational signals affect investment decisions in the face of significant uncertainty regarding the pace of new investment, including the timing and scale of new transmission build (particularly given community needs and social licence issues). Some prior modelling exercises that explore reform costs and benefits, including because they are based on perfect foresight or assume perfect access to information, tend to overstate the ability of participants to mitigate congestion risk through locational decisions alone, or to accurately value this risk when purchasing financial access rights. By the same token we doubt the ability of central planners to effectively determine where projects should and should not locate without causing sub-optimal investment.

Alternatives to the Congestion Management Model

The ESB's call for alternative models is prudent given uncertainty around the design features and ultimately net benefits of the CMM. In addition to the Edify model which the ESB has already identified, the below interventions could be considered in a counterfactual or as adjuncts to larger reforms:

- Locational connection fee — the ESB noted it was not going to entertain models it had canvassed previously, however given it may not resolve imperfections in the CMM (or alternatives), it may wish to reconsider whether it is sufficient to provide a relatively static, but certain, locational incentive in the form of a connection or access fee. Shell's submission of 9 June 2021[4] proposed a concept based on developers directly funding network capacity or agreeing to curtailment in order to 'do no harm' to existing generators. It is not clear to us that the ESB considered this concept previously. As per the CMM, this would most likely be workable with respect to REZ boundaries where the rights of existing generators could be feasibly determined.

- re-examining tie-breaker rules — our view is that concerns about disorderly bidding are of declining importance with the eventual exit of thermal plant and now under 5-minute settlement where payoffs of such bidding are significantly reduced. Rather than pursue these concerns through access regime design, or in addition to access issues, a more direct solution to disorderly bidding would be in simply changing what happens when generators are behind a constraint. One alternative could be to differentiate generators with tied bids in relation to their costs, that is lower cost generators would get preferential dispatch. If bid-tied generators have

[4] https://web.archive.org.au/awa/20211005065856mp_/https://energyministers.gov.au/sites/prod.energycouncil/files/publications/documents/80.%20Shell%20Energy%20Response%20to%20P2025%20Market%20Design%20Consultation%20Paper_0.pdf

the same cost, those with an earlier commissioning date (e.g. REZ foundation developers) could get preferential dispatch.

- Less static or shaped MLFs — deterioration of loss factors is an important consideration for connecting participants and warrants further attention. Noting dynamic MLFs have been considered before, they could change on a semi-frequent basis, e.g. monthly, or losses could be 'shaped' such that they are still static but are different across times of the day. This would apply to generation as well as load, providing improved locational and operational incentives for storage, and obviously capture losses more accurately.

- Treatment of interconnects in constraint equations — as outlined in our June 2021 submission, the current formulation of constraints treats interconnectors in the same way as generators where they are included on the LHS as a dispatchable term anytime their co-efficient exceeds the AEMO defined 0.07 threshold. In practice, this means interconnectors with low coefficients are materially leveraged in dispatch outcomes, such that their targets can be varied from one interval to another across a wide range. This range far exceeds a generator that has a defined maximum capacity with ramp rates overlaid. Such extreme ramping directly across interconnectors, and then indirectly into regional supply stacks, will increasingly put pressure on power system performance and compliance. Correction of how interconnects are treated e.g. applying slower ramp rates and/or a higher materiality threshold in relation to their constraint coefficients (for example increased to 0.20) will be important to manage power system variability. It would also provide better locational signals for generators intending to locate in proximity to interconnectors as they can disproportionally constrain interconnectors due to the leveraging impact of constraint equation coefficients.

If you would like to discuss this submission, please contact me on 03 9060 0612 or Lawrence.irlam@energyaustralia.com.au.

Regards

Lawrence Irlam
Regulatory Affairs Lead