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Lodged via email: AERPolicy@aer.gov.au

Ms Stephanie Jolly
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Dear Stephanie

Draft guidance on the efficient management of the system strength framework

Transgrid welcomes the opportunity to respond to the Australian Energy Regulator's (**AER**) draft guidance on the efficient management of the system strength framework. The purpose of the draft guidance is to aid system strength service providers (**SSSP**) to proactively plan for, and procure, system strength.

Transgrid is responsible for ensuring the power system in NSW remains secure and safe, by maintaining specified levels of key system security services including system strength, inertia, and voltage control. For system strength, we are seeking a portfolio of solutions to best meet power system requirements and deliver the greatest benefits to consumers.

Transgrid supports the intention of the AER's guidance which is to assist and guide SSSPs navigate the new framework. Protecting consumers should be at the forefront of any regulatory guidance. As such, we encourage the AER to further clarify in the final guidance how SSSPs would meet their obligations under the National Electricity Rules (**NER, Rules**) whilst protecting consumers from negative outcomes related to potentially high-cost contracts from existing generators, which may in turn delay the energy transition.

As a member of Energy Networks Australia (**ENA**) we support their submission to this consultation. The rest of our submission further highlights key issues for Transgrid.

Reasonable endeavours

The AER's draft guidance notes that "*the qualification of 'reasonable endeavours' means that the system strength standard does not need to be met at any cost and in all circumstances*" and that SSSPs should take a holistic approach in assessing whether a package of steps is reasonable. The AER gives the example that in forming a view on the reasonableness of costs to meet the standard, it may be relevant for SSSPs to consider whether the costs would be prudent and efficient expenditure.

Transgrid is supportive of the AER's position as set out in the draft guidance note including:

- That the system strength standard does not need to be met at any cost and in all circumstances¹ and,
- the SSSP should then also consider the further steps it might take if it decided not to incur those unreasonable costs and what the outcome might be if the shortfall was left unplanned.²

Further to these two statements, we encourage AER to include in its guidance note support for the Australian Energy Market Commission’s (**AEMC**) statement that in some instances it may not be prudent and efficient for SSSPs to support stable voltage waveforms at all times and in all circumstances.³ For example, there may be parts of the network where it is very costly (or not possible) to meet stable voltage waveform requirements until a cost effective new entry non-network or network solution is available (which might be one or two years after the identified need).

This additional guidance would be aligned with AEMO’s 2024 ISP which identifies that *“Optimising VRE build is a balance between maximising VRE expansion and developing sufficient transmission and distribution, and storage capacity. It is uneconomic to develop capacity to capture all peak VRE generation potential and some degree of economic spill and transmission curtailment is inevitable.”*⁴

We also encourage the AER to provide further clarity on how SSSPs should consider balancing the costs to consumers of any possible operational timeframe measures from AEMO (such as directions costs) against potential contracting options, in particular where the potential operational timeframe measures are considered an opportunity to minimise costs to consumers compared to some specific contracting options.

Cashflow risk

Transgrid has significant concerns regarding cashflow volatility given the nature of system strength non-network payments. This is outlined in more detail in Transgrid’s response to the AER’s Draft System Security Network Support Payment Guideline paper.

Under reasonable endeavours considerations, Transgrid encourages the AER to clarify and outline that TNSPs should not be required to take on a contract or type of contracts that would likely expose a TNSP to material financial risks and threaten the ongoing viability of the business. This would include contracts that entail unreasonable costs to meet the system strength standard.

Managing uncertainty of inverter-base resources forecasts within a three-year window

The AER has outlined guidance on managing uncertainty within the three-year window. These include:

¹ AER, The efficient management of system strength framework, Draft Guidance, p. 12.

² AER, The efficient management of system strength framework, Draft Guidance, p. 13

³ AEMC draft determination for the Efficient management of system strength in the NEM p.74 - *“For example, we consider it in the long-term interest of consumers that AEMO might constrain off (or down) some inverter-based resources plant if stable voltage waveform is not able to be achieved through the investments made by a SSS Provider at all times and in all circumstances, rather than have potential over-investment by the SSS Provider.”*

⁴ AEMO’s 2024 ISP, Appendix 3 Renewable Energy Zones, p. 13.

- A SSSP's starting point for considering the steps it should take to meet the standard in clause S5.1.14(b) of the NER should be the level and type of inverter-based resources that the Australian Energy Market Operator (**AEMO**) forecasts. However, the SSSP has flexibility to consider the degree of certainty of materialisation.
- SSSPs are able to take a holistic approach and may consider a whole range and type of information.

Transgrid is supportive of the AER's position on having the flexibility to adjust Inverter-Based Resource (**IBR**) forecasts within a three-year window, taking into account best available information and the degree of certainty that the type and level of inverter-based resources in the standard will materialise. TNSPs (as the SSSPs) are well placed to do this as we have the appropriate information and visibility of the likelihood of projects to connect and the intentions of these connecting assets to self-remediate. This includes TNSPs having information on IBR forecasts which require centralised system strength be revised downwards.

Transgrid encourages the AER to consider a situation in which the SSSPs assesses that more renewables are likely to connect within the three-year window than have been identified within AEMO's IBR forecasts. In this situation, SSSPs should have the flexibility to be able to procure additional services (network or non-network) if time permits, or to plan to the lower IBR forecasts from AEMO if there is not sufficient time to put these solutions in place.

Managing uncertainty of system strength requirements beyond the compliance year

The AER has outlined guidance on managing uncertainty beyond the compliance year. These include:

- SSSPs should document what assumptions they have made regarding system strength demand for the relevant compliance year(s) and future years.
- SSSPs may consider option value in developing their credible options to retain flexibility to meet system strength requirements beyond the three-year window.

The AER does note that these options may not be available in all circumstances.

Transgrid's System Strength Regulatory Investment Test – Transmission (**RIT-T**) will identify the optimal combination of options to meet system strength requirements and bring the greatest net benefits to the energy system. These options include short and long lead time network and non-network options.

In Transgrid's System Strength Project Assessment Draft Report (**PADR**), it was identified that a portfolio of solutions is required to meet system strength requirements in NSW, including the need for eight to fourteen synchronous condensers in the next decade, in addition to contracts with up to 4.8GW of grid-forming batteries.

For reference, synchronous condensers have a lead time of approximately three years, following a RIT-T process. Couple this with the time of a RIT-T and a Contingent Project Application (**CPA**), which takes approximately three years to conclude, it will be unachievable to meet NSW's system strength requirement unless we invest in long lead-time options which require investment for needs beyond the three-year compliance period. Planning and procuring only for the immediate outlook (within 3 years) would lead to significant unserved energy and/or curtailed renewables.

As such, we strongly believe that procuring for system strength need only for the immediate three-year binding period outlook does not properly value the cost of not meeting the standards. Therefore, this will unnecessarily expose consumers to these risks.

To meet NSW's system strength requirements into the future, Transgrid intends to make investment decisions for needs beyond the 3-year binding period, as identified through the Project Assessment Conclusions Report (**PACR**). Transgrid's RIT-T is being used to demonstrate when capital investments which have a long lead-time (whether it is network or non-network) are justified to meet system strength needs, and when more flexible options, may provide a greater expected net market benefit.

We encourage the AER to factor this insight into their final guidance note.

Furthermore, to the above point, we encourage the AER to consider the following:

- The AER has allowed SSSPs to adjust the IBRs forecasts, using AEMO's forecast as a starting point *within the binding period*.
 - Recommendation – Transgrid encourages the AER to extend this position to beyond the binding period and amend the wording to consider a holistic approach of connection information and government policies.
- AER guidance notes that sensitivities of synchronous generator retirement should be considered.
 - Recommendation – Transgrid supports the use of appropriate sensitivities however encourages the AER to provide further clarification as sensitivities on synchronous generator retirements will be at odds with AER's guidance on using the ISP Step Change scenario as the core scenario for system strength RIT-Ts.
- To meet the need, Transgrid must plan for the procurement of long lead time network and/or non-network solutions, beyond the three-year binding period.
 - Recommendation – Transgrid encourages the AER to reconsider their position on considerations of the longer-term outlook. Delaying investing in both network and non-network solutions that are more than three years ahead will increase the risks of non-compliance and result in lost load to consumers and/or curtailed renewables.
- In line with the AER's draft guidance on ISP scenarios (section 4.6), Transgrid's planning beyond the three-year binding period is guided by the ISP's most relevant scenario (currently being the Step Change scenario), as well as best available information.
 - Recommendation – Transgrid encourages the AER to consider in its guidance note to assess the optimal option the long-term timeframe with the greatest net benefit to the energy market.
- AER guidance note suggests that due to the evolving nature of system strength services, that SSSPs may consider option value in developing their credible options to retain flexibility to meet system strength requirement beyond the three-year window at efficient cost.
 - Recommendation – Transgrid supports the identification of portfolios of system strength solutions that maximise flexibility to meet changes in future system strength requirements, including the use of option value considerations.

Cross border contributions

The AER has outlined that SSSPs are required to consult with neighbouring TNSPs in preparing information about system strength nodes in their TAPR. This should be reflected in the identified need in a SSSP's system strength RIT-T to the extent reasonably practicable.

Transgrid supports the AER's position to collaborate across borders and with REZ planning bodies to design the most efficient solutions NEM-wide. In addition to our support, we encourage the AER to consider the following:

- In section 3.4.3.1, the AER has stated that *"In the interim, it is reasonable for the SSSP to consider the best available information on relevant investments or activities expected to be undertaken in a REZ and assess the degree of certainty that the investment will materialise."*
 - Recommendation - Transgrid support's this guidance but suggests that the phrase *"in the interim"* be removed. This is because SSSPs will need to base decisions on best available information even when there are appropriate joint planning arrangements with REZ planning entities in place,
- In section 3.4.3.1 the AER states *"For example, where a REZ planning entity has made firm commitments to procure a system strength solution, a SSSP should take that into account in defining the identified need or provide an explanation as to why it has not been accounted for in the RIT-T documentation."*
 - Recommendation - Transgrid recommends that the specification of "firm commitments" be removed, as in some instances, best available information should consider intended or highly likely, but not yet firm, actions by REZ planning entities. This is to reflect the reality of REZ developments, that is the dynamic nature of energy transition where REZ developments may not provide firm commitments in time for the RIT-T assessment. This could also lead to SSSPs over-procuring inefficient solutions for REZ bodies – rather than considering the best available information due to the lack of firm commitments.

Consideration of costs in the RIT-T

The AER outlines that the application of the RIT-T is to consider the underlying economic costs of credible options for meeting system strength requirements and that SSSPs are unable to use the actual prices for assessing net economic benefit. However, the actual price paid for a preferred option may introduce inefficiency if it is not cost reflective. The AER notes that SSSPs should give consideration as to the inclusion of a material change in circumstances (MCC) trigger in the RIT-T for this price.

Transgrid is supportive of using the indicative contract price to assess prudence and efficiency of the contracts however:

- We would encourage the AER to provide further clarification on how to include divergence of contract prices to the economic costs in the RIT-T framework and,
- Greater guidance on how commercial terms would impact the economic costs used in the RIT-T, and in any subsequent MCC triggers.

System strength services / Assumptions about generator operation

The AER's guideline notes that synchronous generators can provide system strength in two ways:

- as a byproduct of generating energy in the normal course of operating in the energy market (essentially providing system strength for free), or
- via a contract with a SSSP to provide additional system strength above the level that would be expected in the normal course of operation.

Transgrid strongly supports the AER's guidance that contracts for system strength are only required "to provide additional system strength above the level that would be expected in the normal course of operation". However, Transgrid recommends the AER provide further clarity on this topic in the final guidance, to remove any potential interpretation ambiguity between the AEMC's final determination and the AER's system strength guidance note.

Treatment of anticipated projects

The AER guidance outlines that SSSPs should include generation or battery projects that are classified in AEMO's generation information page as anticipated in the base case. The guidance notes that if a project is *not* a generation or battery project, the SSSP should use its reasonable judgement to determine if the project should be included in the base case.

Transgrid is supportive of using AEMO's generation information page as a starting point to determine if a project should be included the base case, however we believe that if there is not enough information for SSSPs to determine the project's status, SSSPs should be able to use its reasonable judgement to determine its inclusion. This is in line with the RIT-T application guidelines.

As such, we encourage the AER to provide clarification on whether a SSSP can apply judgement to anticipated project status – irrespective of generation, battery or other.

Planning for inertia requirements

The AER has recognised that there are efficiencies from considering the procurement of system strength and inertia together such as the addition of a flywheel.

Transgrid is supportive of the AER's consideration of flywheels as prudent and efficient.

We look forward to working with the AER to ensure that any guidance is in the best interest of consumers. If you or your staff require any further information or clarification on this submission, please contact Zainab Dirani, Policy and Advocacy Manager at zainab.dirani@transgrid.com.au.

Yours faithfully



Monika Moutos
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