

1 June 2026

Clare Savage  
Chair  
Australian Energy Regulator

Via email: [REDACTED]

Dear Clare,

### **System security and reliability in relation to Project EnergyConnect**

Thank you for your letter of 19 May 2026 in relation to the implications of Project EnergyConnect (PEC) for system security and reliability in New South Wales (NSW) and South Australia (SA). Please find below a response to the four questions in your letter.

#### **(1) What adverse effects on transmission system reliability and security in New South Wales and South Australia are expected if Project EnergyConnect is materially delayed or not completed?**

PEC has two stages. Stage 1 is operating. Stage 2 is expected to be energised in the fourth quarter of 2026, with full capacity released by the fourth quarter of 2027 if relevant market conditions exist. Included in the commissioning of PEC Stage 2 are synchronous condensers which are expected to improve system strength in NSW. Key impacts are noted below:

- **In terms of reliability**, PEC supports reliability by allowing the sharing of resources across regions of the NEM. The influence on system reliability is shown in AEMO's Electricity Statement of Opportunities (ESOO) and ESOO Updates. The 2025 ESOO and ESOO Update show a material improvement in forecast South Australian reliability as capacity is released for PEC Stage 2, and that PEC can mitigate reliability risks arising from retirement of Torrens Island B and Osborne Power Station.
- **The impact on system security** has been discussed in many AEMO reports, including: the General Power System Risk Review, Transition Plan for System Security, Integrated System Plan (ISP), Emergency Under Frequency Response for South Australia, and Report on the Reduction of Minimum Synchronous Generators in South Australia.

A key benefit PEC provides is to reduce the likelihood of SA becoming electrically islanded from the rest of the NEM following non-credible loss of an interconnector. A non-credible loss of the interconnection between SA and the rest of the NEM could trigger the operation of emergency frequency control schemes, under frequency load shedding or over frequency generation shedding – both of which would cause major disruptions to SA customers. While emergency frequency control schemes are expected to prevent system collapse, the dynamics of large-scale system incidents such as interconnection separations under high loads, mean that such consequences always remain a possibility.

PEC Stage 2 reduces the likelihood of islanding via:

1. The additional network connection, and associated protection schemes, so that the loss of either PEC or Heywood does not cause the remaining interconnector to trip.
2. The additional network capacity also means that a non-credible event in SA, such as the loss of multiple generators, is also much less likely to lead to an islanding event.

The 2025 GPSRR noted that PEC provided effective mitigation against the risk of stability issues caused by aggressive battery energy storage system (BESS) response to remote frequency events. AEMO maintains constraints that limit SA rate of change of frequency (RoCoF) to below 2 Hz/s following the non-credible loss of the Heywood interconnector. These limits prevent flow on the Heywood interconnector rising above a limit where a non-credible trip will exceed over-frequency generation shedding (OFGS) or under-frequency load shedding (UFLS) capability. Following completion of PEC Stage 2 these limits will be lifted under most circumstances.

To manage minimum system load (MSL), AEMO has had to direct ElectraNet to take action to maintain demand above minimum demand levels several times since 2021 when SA is islanded or at risk of islanding<sup>1</sup>. Once PEC Stage 2 is commissioned the number of interventions relating to MSL is expected to fall significantly<sup>2</sup>.

Ramping is a system security risk that can occur when distributed solar photovoltaic (DPV) output falls over several hours, for example due to cloud cover. At present, AEMO advises that two large synchronous generators are needed when SA is at risk of islanding so that the power system can manage a possible ramping event.

AEMO's published report on *Reduction of Minimum Synchronous Generators in South Australia*<sup>3</sup> states that a minimum number of synchronous generators is required in SA under various operating conditions until PEC Stage 2 is complete and operating experience has been gained through trials or other evidence. AEMO has also published a *Grid Reference Statement of Need*<sup>4</sup> seeking transitional services from synchronous generators in SA to provide generation at their minimum output when other synchronous generators are not generating ('Grid Reference Transitional Services'). If PEC Stage 2 is delayed or not completed, reductions to synchronous generation limits in SA may also be delayed.

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<sup>1</sup> <https://www.aemo.com.au/initiatives/major-programs/nem-distributed-energy-resources-der-program/managing-distributed-energy-resources-in-operations/managing-minimum-system-load>

<sup>2</sup> [2025-tpss-appendix-a3-msl-regional-assessments.pdf](https://www.aemo.com.au/-/media/tpss-appendix-a3-msl-regional-assessments.pdf)

<sup>3</sup> [https://www.aemo.com.au/-/media/files/electricity/nem/security\\_and\\_reliability/congestion-information/related-resources/reduction-of-minimum-synchronous-generators-in-south-australia.pdf](https://www.aemo.com.au/-/media/files/electricity/nem/security_and_reliability/congestion-information/related-resources/reduction-of-minimum-synchronous-generators-in-south-australia.pdf)

<sup>4</sup> <https://www.aemo.com.au/energy-systems/electricity/national-electricity-market-nem/nem-forecasting-and-planning/transition-planning/transitional-services---type-1-services/south-australian-grid-reference-transitional-service>

**(2) Did Transgrid notify AEMO that the completion of PEC would be delayed and the period of the likely delay? If so, when did Transgrid notify AEMO?**

Transgrid and ElectraNet have been providing ongoing industry updates on the delivery of PEC, including updated timings for the in-service and capacity release dates, noting that capacity release dates are subject to inter-network testing<sup>5</sup>. AEMO relies upon the advice of proponents around the timelines for the development of projects.

AEMO maintains a Transmission Augmentation Information workbook, which contains information for NEM transmission projects that have a material impact on AEMO's ISP, ESOO and Inputs, Assumptions and Scenarios Report (IASR).

AEMO receives updates for PEC through the PEC System Integration Steering Committee. In April 2025, the PEC System Integration Steering Committee informed AEMO of the updated in-service date for PEC Stage 2 of October 2026, with an expected full capacity release of November 2027. AEMO updated the Transmission Augmentation Information workbook on 31 July 2025 to reflect this new information as well as other updated timings that would be used for the 2025 ESOO. Previously, on 17 May 2024, the in-service date for PEC Stage 2 had been updated to May 2026, and the expected full capacity release date updated to July 2027.

**(3) In response to notification(s) from Transgrid, did AEMO advise Transgrid of means other than PEC that could address any system security and reliability risks? If so, when did AEMO advise Transgrid and the market? What were these risks?**

The National Electricity Rules (NER) outline responsibilities for AEMO, network service providers (NSPs) and market participants to collectively ensure system security in the NEM through operation of the energy market and planning frameworks. AEMO has several roles in this context, including to assess and respond to expected changes in network and market conditions and to report on expected conditions and associated risks based on assumptions. These trigger various processes including those outlined below. While changed assumptions will be reflected by AEMO in these processes when they are conducted, AEMO does not have a role providing advice to participants on alternatives.

The 2025 Transition Plan for System Security outlined an updated trajectory for the transition towards zero synchronous units in the South Australian region, including the updated timeline for delivery of PEC Stage 2. Previously, separate System Strength, Inertia and NSCAS Reports alongside the Engineering Roadmap reflected the latest available timings for the delivery of PEC.

The ESOO forecasts electricity supply reliability in the NEM to inform market participants, investors and policymakers on investments needed over the next 10 years to maintain a reliable power system for electricity consumers. NER 3.13.3A(b) requires AEMO to publish updates to the ESOO as soon as practicable

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<sup>5</sup> See clause 5.7.7 of the National Electricity Rules

when new information becomes available that in AEMO's opinion materially changes the supply or demand projections.

AEMO did not publish an update to the 2024 NEM ESOO as the updated information received on 31 July 2025 was collected for inclusion in the 2025 NEM ESOO, which was subsequently published on 21 August 2025.

AEMO did publish an Update to the 2023 ESOO in May 2024, citing a series of material updates, including "Project EnergyConnect, now advised to release full capacity in July 2027, which was previously advised for July 2026" as well as other matters such as advised mothballing and retirement of generators.

**(4) Can AEMO provide a timeline for progress toward alternative ways to manage South Australia's system security requirements without running synchronous generation?**

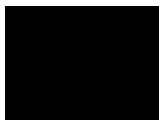
The 2025 Transition Plan for System Security outlines progress towards managing SA's system security requirements.

AEMO, ElectraNet and SA Power Networks are assessing several requirements that could support operation of the South Australian power system without synchronous generation. As outlined in the 2025 Transition Plan for System Security, "following Project EnergyConnect Stage 2 and evidence of secure operation, the minimum synchronous generator units may be reduced to zero". AEMO has no current plan for operation with zero synchronous units without commissioning of PEC Stage 2. Currently:

1. ElectraNet is completing power system damping studies for operation with zero synchronous units.
2. ElectraNet and SA Power Networks will undertake protection adequacy studies for operation with zero synchronous units. AEMO is working with both organisations to finalise the study scope.
3. ElectraNet is currently progressing installation of sufficient reactive power equipment, which is required for operation with zero synchronous units, with installation scheduled for October 2027.

I trust that this information is of assistance, should you have further questions please contact Violette Mouchaileh at [REDACTED] or on [REDACTED]

Yours sincerely,



Daniel Westerman  
Chief Executive Officer

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