AEMC
Via website

Date: 6th February 2025

Subject: Efficient provision of inertia[1]

About Iberdrola Australia

Iberdrola Australia delivers reliable energy to customers through a portfolio of wind and solar capacity across the NEM. Iberdrola Australia also owns and operates a portfolio of firming capacity, including open cycle gas turbines, dual fuel peaking capacity, and battery storage. Our development pipeline has projects at differing stages of development covering wind, solar and energy storage. This broad portfolio of assets has allowed us to retail electricity to over 400 metered sites to some of Australia's most iconic large energy users.

Iberdrola Australia is part of the global Iberdrola group. With more than 120 years of history, Iberdrola is a global energy leader, the world's number-one producer of wind power, an operator of large-scale transmission and distribution assets in three continents making it one of the world's biggest electricity utilities by market capitalisation.

Our submission

Thank you for the opportunity to make a submission on the future procurement of inertia for the NEM. The key points of our submission are:

- Provision of inertia from conventional resources will likely decline faster than anticipated
- Market mechanisms are the most efficient procurement mechanism, including for system services, and we support the development of an ancillary services market
- However, we recognise that during the transition, contracting of "mininimum" levels of inertia may improve certainty.
- However, this will require new NER-based planning obligations to limit an ongoing reliance on existing units which will actually *cause* system security problems (as has been seen historically with the provision of system strength, system restart services, etc.)
- Contestability is essential for any TNSP based procurement

Existing inertia supply may drop more quickly than anticipated

Our submission is framed by the reality that within ten years the majority of inertia currently provided by thermal units will not regularly be available. Given that the pace of the transition has always exceeded projections, we consider HoustonKemp's analysis that roughly 65% of conventional synchronous inertia will still be available in 2035 to be unrealistic (either due to earlier closures, daily or seasonal two-shifting of plant, or short- or long-duration unplanned outages of aging equipment).

[1] https://www.aemc.gov.au/rule-changes/efficient-provision-inertia

Shortfalls of inertia will lead, at best, to additional constraints, higher costs, and higher emissions and, at worst, to an insecure grid and unserved energy. As the AEMC has previously noted[2], the cost of underinvestment in system security services will likely far out weigh the short-term cost of any over-investment. It is critical that we reduce incidences of "surprise" in the NEM – particularly for conditions that we know will eventuate even if the precise date is uncertain. For example, over the past decade a lack of anticipatory investment and planning for system strength, minimum load support capabilities, backstop control capabilities in rooftop solar, frequency control services, and defining "unit combination" constraints has led to expensive market interventions and significant real-time stress.

The focus of the AEMC and AEMO should therefore be on ensuring that new sources of inertia are brought forward into the market rapidly and *ahead* of prospective coal closures.

To help them balance these risks and facilitate anticipatory investment, AEMO will need clear and explicit obligations in the NER to procure inertia from emerging services rather than relying on existing resources. This may include the addition of inertia to synchronous condensors procured for system strength, but there may also be large quantities available from batteries.

Contracting must be coupled with NER-based planning obligations

The Discussion paper considers whether investment in essential system security services can be delivered by markets or whether a central planning approach is required. The evidence to date is that markets are very efficient at providing such services. For example, in response to elevated FCAS prices, investment in batteries increased significantly.

However, we recognise that over this transition period improved forward certainty may be valuable and would reduce operational stress at AEMO. However, relying on a contracting approach for the majority of inertia comes with a material risk that AEMO only contracts with existing thermal plant (that will soon retire) at the expense of investment in replacement resources. For example, we note that AEMO has not progressed service definitions for new generating units eligible to participate in South Australian minimum unit combinations.

Given the lead time for new investments, there is a credible risk that a contracting approach that does not include forward planning will *reduce* system security, leading to increased system fragility and risk that sufficient resources will not be available. We also note that AEMO's existing planning function for system security is generally restricted to "1 in 10 year" events which does not consider the full range of credible outcomes or dispatch intervals over the forward period.

Therefore, if AEMO and/or TNSPs take on a central planning role for procuring a minimum level of inertia, it must be coupled with explicit obligations to procure an increasing share of inertia from new resources. This is consistent with the long-term interest of consumers, with the emissions limb of the NEO. Although this would presumably be the approach AEMO would take regardless, as a prudent system planner and in line with their planning responsibilities under the ISP, providing clear NER guidance would simplify AEMO's decision making and provide certainty for all participants.

A reasonable approach would be for AEMO to be required to increase the share of inertia from non-thermal resources from zero today to 100% in 2035, in a straight line. This is consistent with the fastest ISP scenario. Alternatively, AEMO could be required to contract no more than N-1 coal *stations* in a region, with stations that have announced closure dates within at least the next 3.5 years excluded from that consideration.

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[2] https://www.aemc.gov.au/rule-changes/efficient-management-system-strength-power-system

To be clear, this is not a theoretical consideration. In 2024, AEMO was unable to meet the system restart standard in North Queensland because we had relied, and expected to continue to rely, on provision from existing assets rather than pro-actively identifying and contracting new assets. It has long been clear replacement assets would be needed, with only a question of timing remaining. Similarly, in spring of 2024, AEMO identified that expensive interventions might be required to manage a faster-than-expected growth of rooftop PV leading to low system load conditions that had not be studied in advance.

To that end, our support for ongoing centralised contracting of the minimum level of inertia is conditional on implementing NER-based obligations as outlined above, and a requirement to determine standards and specifications for provision of synthetic inertia from batteries. This would ensure that new batteries, including the 9 GW to be procured under the CIS, are able to optimise their capabilities. It is also critical that contracting is contestable and considers a broad range of potential resources, rather than simply defaulting to either contracting coal (as noted above) or, alternatively, TNSPs building and owning synchronous condensors.

As highlighted in Discussion paper, the interaction between system strength procurement and inertia procurement may be critical. We recommend that the ISP should explicitly model the provision of these services on a self-consistent basis. It would also be appropriate to revisit the definition of "minimum inertia" for the purpose of contracted vs market procurement. For example, it may not be necessary or efficient to contract for the largest contingency event if the grid could still be operated securely and reliably if that contingency were curtailed. The market service could then cooptimise the efficient level of inertia.

Ancillary service market for inertia

We agree that developing an ancillary service market for inertia would be valuable and helpful for providing both investment and operational signals. Future batteries are likely to have a broad operating range with many competing services. The new FFR service has provided significant opportunities to optimise the response from batteries and has provided a clear investment signal and reduced operational costs. Establishing such a market ensures that sufficient signals for inertia will be available even if conditions change quickly.

We appreciate the AEMC's exploration of various market models. The concept of combining the FFR and inertia service definitions is interesting. However, given that future provision of inertia may or may not include an FFR response (and vice versa) it is likely more efficient to simply establish an explicit inertia ancillary service market to operate in parallel with the FFR service. This would provide transparency and efficiency to the operation of the grid.

Conclusion

We look forward to continuing to work with AEMC to deliver an efficient and low emissions grid. If you would like to discuss this submission, please contact me on [redacted] or [redacted]

Yours sincerely

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