

5 August 2025

Ms Anna Collyer

Chair

Australian Energy Market Commission

GPO Box 2603

Sydney NSW 2001

Electronic Lodgement: ERC0339

Dear Anna,

AEMC Draft Determination Efficient Provision of Inertia

Energy Networks Australia (ENA) welcomes the opportunity to make this submission in response to the Australian Energy Market Commission's (AEMC) Draft Determination Efficient Provision of Inertia.

ENA represents Australia's electricity transmission and distribution and gas distribution networks. Our members provide more than 16 million electricity and gas connections to almost every home and business across Australia. This submission is on behalf of transmission members.

ENA supports the AEMC's Draft Determination to not make a rule in response to the Australian Energy Council's (AEC) proposal to introduce a spot market for inertia. ENA agrees that there are unlikely to be material benefits from the operational procurement of inertia in the near term and considers existing system strength and minimum inertia procurement activities should be completed and their operational arrangements bedded down before further substantial reforms are initiated.

As the main benefit of operational procurement of inertia is the substitution possibility for 1 second Frequency Control Ancillary Services (FCAS) service ENA notes the Houston Kemp analysis which indicates there would need to be a material reduction in the market prices for inertia and/or material increase in 1 second FCAS prices for operational procurement to deliver net benefits. We agree the Reliability Panel is well placed to monitor and report on relevant trends to inform the AEMC on these matters.

Notwithstanding this, ENA considers that further technical work should continue that will provide enablers for the later implementation of operational procurement of inertia, should benefits arise in the future. ENA agrees that 'low regrets' developments within the existing frameworks should continue as they can inform future procurement reforms, should they be pursued.

In summary ENA supports,

- The Australian Energy Market Operator (AEMO) continuing to progress technical work on inertia such as real-time inertia measurement, locational visibility of inertia needs, and better integration of inertia requirements into dispatch tools.

- Testing and trialling of innovative sources of inertia on the power system, including the assessment and validation of synthetic inertia capabilities through AEMO's use of Type 2 contracts.
- AEMO reporting on this technical development through its Transition Plan for System Security (TPSS).
- The Reliability Panel to monitor and report annually on key system conditions through the National Electricity Market Reliability and Security Review so the AEMC can reconsider operational procurement if and when it may provide net benefits.
- Transmission Network Service Providers (TNSPs) to work to provide improved transparency around non-network procurement decisions but note that the Regulatory Investment Test – Transmission (RIT-T) consultation process may not be the most appropriate vehicle to achieve this in all circumstances.
- The Australian Energy Regulator (AER) to consider updated guidance on transparency of TNSP procurement decisions within its suite of NSP guidelines. Any additional guidance should be non-binding and non-prescriptive to provide flexibility to TNSPs to manage any interactions of the inertia procurement process with the RIT-T consultation process.

ENA provides further detail on these key points in Attachment A.

ENA looks forward to working with the AEMC as it works to develop the Final Determination. In the meantime, if you would like to discuss this submission, please contact Verity Watson (vwatson@energynetworks.com.au) in the first instance.

Yours sincerely



Dominique van den Berg
Chief Executive

Attachment A

1. Continue AEMO's technical work on inertia

AEMO is already undertaking a range of technical development activities related to inertia under the banner of its Engineering Roadmap. These activities include:

- Publication of the Voluntary Specification for Grid-Forming Inverters in May 2023, which includes the ability to provide a synthetic inertia response as a core capability.
- Publication of the Role and Need for Inertia in a National Electricity Market (NEM)-Like System Report in May 2024, which examined the ability of a NEM-like power system to operate at very low levels of synchronous inertia and the importance of the locational distribution of that synchronous inertia.
- Development of Phasor Measurement Unit (PMU) based techniques for the on-line real-time measurement of inertia of the power system.

AEMO also plans to publish a technical insights report on synthetic inertial response and AEMO's view of the ability of synthetic inertial response to deliver power system needs.

Beyond the Engineering Roadmap AEMO is also progressing with greater operational integration of inertia. The new System Security Service Scheduler will commence from 2 December 2025 and provide visibility of inertia constraints used to dynamically schedule minimum inertia requirements.

ENA agrees with the AEMC observation that these sorts of developments are 'no regrets' or 'low regrets' initiatives that will provide a better technical and operational foundation for any potential future reform of the procurement and dispatch of inertia.

2. Use Type 2 contracts to develop understanding and confidence in new technologies

As part of the Improving Security Frameworks rule changes AEMO is able to enter into so-called 'Type 2' contracts for transitional security services for the purpose of trialling new technologies, or a new application of existing technologies, for the management of power system security.

ENA agrees with the AEMC that the purpose of Type 2 contracts is to test and trial new technologies and applications. Some stakeholders suggested the use of Type 2 contracts should be expanded to drive the adoption of new technologies into operational use. ENA considers the existing technology neutral basis of the National Electricity Rules (NER) should be sufficient to support the adoption of new and emerging technologies where they are able to efficiently meet power system needs.

As part of the Draft Determination the AEMC reviewed the eligibility criteria for Type 2 contracts set out in NER clause 3.11.11(b)(2). ENA agrees with the AEMC conclusion that the eligibility criteria for Type 2 contracts do not present a barrier to using Type 2 contracts for synthetic inertia technologies. It is important that AEMO be able to explore the capability of synthetic inertia to support minimum inertia levels as existing synchronous inertia sources retire. For example, the relative performance of a battery versus a super capacitor as the energy source behind a grid-forming inverter should be understood.

There are also significant advances taking place in control methodologies for grid-forming inverters which need to be tested to validate they can replicate the most beneficial characteristics of synchronous generators. It is possible that different control methodologies will need to be applied in

different circumstances across the NEM and these should be explored, and Type 2 contracts may help facilitate this.

3. Monitoring and reporting

The AEMC is proposing to leverage two aspects of existing frameworks to provide greater visibility of the progress being made to improve technical capability to operate a low inertia power system. These are:

1. The Transition Plan for System Security (TPSS) prepared by AEMO which sets out how AEMO is planning to maintain power system security through the energy transition and the work AEMO is undertaking to improve understanding of what will be required to achieve that.
2. The NEM Reliability and Security Report (RASR) prepared by the Reliability Panel provides observations and commentary on the security, reliability and safety of the power system. It helps identify issues for attention that are relevant to the framework or mechanisms used to deliver reliability, security and safety.

The AEMC has identified the TPSS as a suitable vehicle for AEMO to report to stakeholders on its progress towards improved understanding and development of enabling tools.

The AEMC also proposes to update the Reliability Panel Terms of Reference to specifically monitor system conditions in relation to inertia. This will include infrastructure rollout, emerging inertia shortfalls, trends in the FCAS markets and the progress of AEMO's development of enabling tools such as real-time inertia measurement.

4. Application of the RIT-T framework

The AEMC has identified the existing RIT-T framework as a suitable vehicle to provide greater clarity in how TNSPs evaluate and justify inertia procurement decisions. ENA considers there may be opportunities to improve transparency around non-network procurement decisions generally but note that the RIT-T consultation process may not be the most appropriate vehicle to achieve this in all circumstances. ENA supports the AEMC conclusion that additional prescriptive rules are not required to improve the operation of the existing framework.

The Improving Security Frameworks rule change has introduced new mechanisms for TNSPs to seek an AER determination that proposed system security network support payments will be consistent with the elements of the economic regulatory framework. In the ENA submission to the AER's draft guidance note on the Efficient Management of System Strength Framework, it was noted that being able to leverage the guidance provided in the AER's System Security Network Support Payment Guidelines to maintain competitive pressure on non-network providers could help to drive cost-effective outcomes for consumers.

The ability for TNSPs to provide greater transparency around service procurement decisions in RIT-T documents must be balanced against the need to preserve competitive tension in the procurement process. In practice, the negotiation of commercial arrangements for the procurement of non-network solutions proceeds in parallel with the RIT-T consultation process. If sensitive commercial terms are published through the RIT-T process before contracts are finalised, this could result in a preferred deal falling over and the TNSP being forced to adopt a higher cost solution. Further, TNSPs will typically offer to provide direct feedback to non-network providers on the technical and commercial feasibility of potential solutions. To preserve the commercial interests of TNSPs and non-network service providers, this feedback is provided on a confidential basis.

The AEMC also identified that some stakeholders considered shorter contract terms would better reflect the pace of technology development. This must also be balanced by the need to ensure electricity consumers, who ultimately fund these contracts, receive value for money over the longer

term. Proponents of non-network solutions must be provided the opportunity to recover their costs in providing those solutions. Where those costs include capital costs to invest in providing the solution then artificially limiting contract terms will drive up the annual cost paid for by consumers. This may be justified if there is confidence that a materially lower cost solution will be available at the end of the shorter contract term. However, if newer, cheaper technology solutions are delayed it is electricity consumers who will bear the overall increase in costs. ENA considers TNSPs are most appropriately placed to assess these sorts of decisions through the RIT-T consultation process as it is TNSPs who are subject to AER oversight through the economic regulatory framework.

The AEMC has not proposed new obligations for the AER under the RIT-T framework but has invited the AER to consider whether additional guidance could support consistency in assessing TNSP decision-making. While ENA has no objections to the AER updating its guidance documentation along these lines, it should be non-binding and non-prescriptive to provide flexibility to TNSPs to manage any interactions of the inertia procurement process with the RIT-T consultation process.