



Australian Energy Market Commission
Level 15, 60 Castlereagh Street
Sydney NSW 2000

20 August 2026

Dear Sir / Madam,

Minimum System Load Rule Change Proposals – ERC 0417 and ERC0439

ENGIE Australia & New Zealand (ENGIE) appreciates the opportunity to respond to the AEMC consultation paper outlining the Clean Energy Council (CEC) *Minimum System Load reserve service (ERC0417)* and the AEMC Reliability Panel's *Minimum System Load framework and floor price proposal (ERC0439)* rule change proposals.

The ENGIE Group is a global energy operator in the businesses of electricity, natural gas and energy services. In Australia, ENGIE operates an asset fleet which includes renewables, gas-powered generation, and battery energy storage systems. ENGIE also provides electricity and gas to retail customers across Victoria, South Australia, New South Wales, Queensland, and Western Australia.

ENGIE supports the AEMC and both rule change proponents seeking a stronger governance framework for managing minimum system load (MSL) that would enshrine aspects of the current MSL frameworks into the NER. ENGIE also supports the merits of exploring the benefits of an ancillary service proposed by the CEC, as a market response to low levels of operational demand. However, ENGIE does not support the reliability panel's proposed automatic pricing mechanism set at the market price floor to address adverse MSL conditions. ENGIE urges the Commission to proceed with a restrained approach to changing market design parameters in response to an uncertain outlook for MSL conditions. ENGIE considers that significant negative unintended consequences may arise if these rule changes are adopted wholeheartedly.

ENGIE considers that a solution to potential adverse MSL conditions could be mitigated by building upon existing frameworks through adjusting mechanisms that are already well understood by market participants. This approach is likely to simplify implementation of adopted solutions, minimise costs and the risks that may arise as reforms are applied to market participants.

ENGIE provides the following answers to the questions raised in the consultation paper.

Question 1: The outlook for MSL events in the NEM in the context of the broader reform program

1. What are your views on the expected frequency, severity and location of MSL conditions over the short, medium and long term?
2. Are there specific information gaps in the current MSL outlook that materially affect investment, operational or policy decisions?
3. In the context of the rule change proposals, how should the Commission distinguish between temporary transitional MSL risks and enduring structural MSL risks?

To date, no MSL3 event has occurred, with only modest MSL conditions impacting only South Australia and Victoria. ENGIE considers that the outlook for future MSL events is currently highly uncertain with modest risk of system load reaching MSL2 and MSL3 events limited only to Victoria and South Australia.

ENGIE notes that AEMO has forecast a wide envelope of forecast MSL3 days, ranging between zero and 135 days per NEM region. The level of minimum system load is subject to a number of highly speculative factors that have materially changed since the CEC rule change was lodged. This includes a number of developments which may prove to mitigate or even reduce the risk of breaching minimum system load levels. Notably, the recent commissioning and operation of a higher number of grid-scale batteries across the NEM and uplift in data centre load related to provision of artificial intelligence services.

AEMO's latest Q2 2026 Quarterly Energy Dynamics Report notes there are 17 data centres with a combined maximum connection capacity of 9,000 MW working through the transmission connection process.¹ Between Q2 2025 and Q2 2026, grid-scale battery capacity in the NEM increased by 4,640 MW/12,353 MWh, more than doubling installed capacity to over 9,000 MW by the end of the quarter.² Additionally, AEMO notes that the increase in daytime operational demand attributable to growing industrial and data centre loads offset growth in distributed PV output.³

The factors that will materially bear on the minimum system loads include expected:

- Data centre development, particularly those used for artificial intelligence applications
- Future uptake of home batteries and electric vehicles
- Growth in residential, commercial and industrial solar PV generation
- Visibility and co-ordination of customer energy resources

¹ AEMO, Quarterly Energy Dynamics Q2 2026, July 2026, p. 43.

² AEMO, Quarterly Energy Dynamics Q2 2026, July 2026, p. 16.

³ AEMO, Quarterly Energy Dynamics Q2 2026, July 2026, p. 3.

- Timing of synchronous generator retirements
- System security replacement (synchronous condensers, addition of grid-forming BESS at scale, successful procurement of system strength services)

ENGIE's view is that the existing MSL issues are likely a transitional problem, driven largely by the mismatch between the growth of rooftop PV and the transition of system security services away from synchronous thermal units, but that some residual, structural MSL risks will remain. There will therefore likely be a remaining need for a level of synchronous generation required to supply system security services, operating at minimum stable operating levels in a substantially decarbonised system. Proposed reforms should recognise the essential system security services these synchronous generation units provide and incentivise their continued operation.

ENGIE does not consider that there are information gaps to measure operational risks to inform operational policy decisions. ENGIE considers existing AEMO forecasting processes as part of the Electricity Statement of Opportunities (ESOO), Quarterly Energy Dynamics report and Integrated System Plan (ISP) provide an adequate level of transparency regarding these factors impacting MSL conditions. The current approach to forecasting minimum system loads in the ESOO under the current Victorian and South Australian MSL framework is sufficient.

Question 2: The case for including an MSL governance framework in the NER

1. Do you agree that there is a need for an explicit framework in the NER to more clearly set out the governance arrangements in relation to MSL conditions in the NEM?

ENGIE supports formalising the MSL governance framework in the NER. AEMO has already developed an MSL framework analogous to the lack of reserve (LOR) framework that currently operates outside of the NER. Additions to the NER may include qualitatively defining MSL conditions, embedding declaration and reporting obligations analogous to the LOR framework. ENGIE considers that any further reporting burden on participants as a result of this reform should justifiably demonstrate a benefit in excess of the costs on participants additional reporting obligations. Nevertheless, the benefits of formalising the MSL framework could be to:

- **Strengthen accountability and transparency** around the definitions, thresholds, declaration criteria and reporting obligations that currently vary according to AEMO practice;
- **Provide market participants with a foundation to support investment cases** for flexible resources based upon legislated requirements and predictable operational practices in response to MSL risks;
- **Improve market confidence** by making AEMO's decision-making and reporting subject to consistent rules-based obligations, in the same way as the LOR framework; and

- **Provide a common structure** on which any future market or contracting mechanisms for load reserves can be developed, whether or not the Commission ultimately proceeds with a new market ancillary service.

Question 3: The potential elements of an MSL governance framework in the NER

1. What are your views on the fundamental definitions and naming conventions that would provide the basis for a framework in the NER for MSL conditions?
 - a. Would it be appropriate to define the concept of MSL in the NER?
 - b. Would it be appropriate to define the concept of a lack of load reserve - or similar - in the NER?
 - c. Would it be appropriate to define the concept of unscheduled generation shedding – or similar - in the NER?
2. What are your views on the potential elements of a rules-based MSL governance framework including potential requirements for:
 - a. Forecasting low demand or MSL conditions through ST PASA?
 - b. The declaration of MSL or low demand conditions?
 - c. Reporting on MSL or low demand conditions?

The present defining feature of an MSL3 event is that there is insufficient system demand available to match the expected level of generation and also satisfy the minimum generation requirements of scheduled synchronous generators required to be online for system security. ENGIE supports a formalised MSL framework that defines how AEMO may intervene under the NER to address adverse minimum system load conditions. This may include guidance about how a lack of reserve-style definition that references the probability of unscheduled generation shedding ie. curtailing rooftop PV.

To this end, a formalised MSL framework under the NER could include:

- An obligation for AEMO to declare MSL and low demand conditions
- An obligation on AEMO to report on MSL conditions and management of MSL incidents
- Include a principles-based definition of minimum system load that is tied to the operational trigger for intervention, as defined in an AEMO guideline.

ENGIE consider additional reporting of MSL conditions could include publication of:

- MSL threshold assumptions and sensitivities – considering aggregate minimum stable operating levels of synchronous units, expected PV export capability and reactive plant assumptions. This may enhance market participant’s understanding of how operational thresholds have been estimated and likely to evolve in response to MSL changes.
- A dataset of MSL declaration history to assess the effectiveness of the framework – costs of intervention including through voluntary market response, transitional services enablement, other AEMO directions or emergency backstop activation.

- Explicit alignment and acknowledgement of measures between the MSL framework and the customer energy resources (CER) roadmap workstreams (voluntary schedule resource, market visibility framework, distribution system operator reforms, retail pricing reforms)
- An AEMO assessment of the effectiveness of MSL frameworks that could be published with the transitional plan for system security.

Question 4: Is the NEM set up to provide effective price signals to support efficient operational and investment outcomes with respect to MSL conditions?

1. What are your views on the effectiveness of the current market arrangements sending effective price signals to support efficient investment outcomes and avoiding the need for AEMO intervention during MSL conditions?
2. Do you agree with the Reliability Panel that there is need to revise the NER to enhance the pricing outcomes with respect to MSL conditions? Please provide evidence to support your view.

ENGIE agrees with the CEC's contention that MSL issues are being driven by a combination of the rising penetration of distributed photovoltaics which reduces operational demand during daylight hours and the slower pace of transitioning system security requirements. ENGIE considers that the current lack of wholesale price signals faced by owners of rooftop solar to be a significant contributing factor to this dynamic whereby excessive distributed solar generation is not being discouraged via a pricing mechanism. Imposing a stronger price signal on grid-connected market participants is unlikely to target this underlying cause of adverse MSL conditions and lead to inefficient and potentially unintended adverse outcomes.

ENGIE considers that any further pricing reforms should be introduced after other proposed reforms likely to impact solar PV customer incentives under the CER Roadmap, Distribution Network Service Operator, Integrating Price Responsive Resources, Solar Sharer Offer and retail-pricing reforms are finalised. The outcomes of these reforms more directly impact the incentives of solar PV owners and may alleviate the underlying cause of low operating demand and adverse MSL conditions.

Question 5: The Reliability Panel proposes that the NER requires that the energy price be set at the market floor price during MSL3 conditions

1. Do you support the Panel's proposal to set the price at the market floor price during MSL3 conditions? In particular, do you have views on the degree to which it would improve efficiency and energy pricing outcomes in the NEM by sending a stronger scarcity/oversupply signal?
2. What potential related unintended consequences should the commission be mindful of in relation to the Panel's proposal? How could these be mitigated?

ENGIE does not support the Reliability Panel's proposal to automatically set the regional spot price at the Market Floor Price (MFP) of $-\$1,000/\text{MWh}$ during an MSL3 event. ENGIE considers the $-\$1,000/\text{MWh}$ floor

is an operational construct within NEMDE rather than a genuine economic price signal that reflects the true cost of curtailing rooftop PV or holding thermal units at their minimum stable operating level.

ENGIE contends that an automatic market price floor trigger would do very little to alter the behaviour of the primary driver of MSL — non-price-responsive rooftop PV. ENGIE considers that the proposed pricing mechanism would transfer material losses onto retailers with solar customers and onto thermal generators required to operate at minimum stable levels for system strength. The unintended consequences of an automatic price mechanism would effectively financially penalise synchronous generators required to run to meet system security requirements. This price signal may introduce incentives that raise operational risks that could threaten the safe operation of synchronous generators at minimum stable operating levels that provide the NEM with essential inertia and voltage control support.

ENGIE considers the proposal also introduces perverse bidding incentives, particularly in relation to grid-scale batteries that would be encouraged to bid $-\$1,000/\text{MWh}$ during extreme adverse MSL conditions. That is, dispatchable BESS is directly incentivised to charge at $-\$1,000/\text{MWh}$ when the price floor trigger is activated, but any prior charging reduces their capacity to respond, storage operators face a strong incentive to defer voluntary charging ahead of a forecast MSL3 declaration. This delays the very market response the mechanism that it is intended to induce and could give rise to a self-fulfilling MSL3 outcome. If some form of price mechanism is ultimately considered necessary, ENGIE's clear preference is an administered pricing approach. This should be calibrated to the underlying cost of MSL intervention, applied through the intervention pricing framework and set separately from the market price floor.

Question 6: Alternative and complementary reforms to improve pricing outcomes in relation to MSL conditions

1. What are your views on the potential application of intervention pricing for AEMO interventions to decrease generation or increase demand during MSL conditions?
2. What are your views on the role of central dispatch and NEMDE in supporting effective price formation for MSL conditions?
3. Are there other reforms that the Commission should consider, that could improve price signals in the NEM in relation to MSL conditions?

ENGIE considers that the overall reform program should be periodically reassessed and deliberately sequenced to allow time for the retail-level reforms to be finalised and take effect. In particular, the impact of CER reforms (Voluntary Scheduled Resource, Market Visibility Framework, Distribution System Operator Reforms, Solar Sharer Offer) could be observed first. This would prompt a reassessment of MSL reforms as the volume and price responsiveness of CER, together with utility-scale storage and large-load demand, becomes clearer. Adding a market floor price trigger before those reforms mature would send a strong

price signal to a set of resources that cannot yet respond, while creating negative unintended consequences in the parts of the market that can currently respond.

ENGIE does not support an amendment to the NEMDE at this time while the dispatch engine is undergoing unprecedented change. Notably, this includes the updates required for the integration of project energy connect and associated loop flows constraints, ST PASA replacement and added complexity of dispatch requirements related to the system security scheduler process and the voluntary resource schedule initiative. ENGIE considers any further revisions to NEMDE in relation to MSL reforms may further complicate dispatch processes, or inadvertently conflict with early reforms already on foot.

Question 7: The case for change to the NER to support the provision of load reserves to manage MSL conditions

1. How effective and efficient do you consider the existing NEM regulatory arrangements are at supporting investment in and availability of load reserves?
2. Do you agree with the CEC that there is a need to change the NER to more explicitly support the provision of load reserves to manage MSL conditions?

ENGIE considers that the current contracting for transitional grid reference services to address MSL conditions is appropriate. The current contracting approach provides a measured response to mitigate adverse MSL conditions amid uncertainty about how enduring these conditions will be. The current approach allows a dynamic recalibration of market services with appropriate support as MSL conditions evolve. ENGIE considers a permanent or fixed set of services would only be appropriate once the NEM's technical needs are clearly established, regarding MSL conditions and appropriate support for operational demand.

Question 8: The CEC's proposed new MSL market ancillary service

1. What are your views on the potential benefits of the CEC's proposal to establish a new MSL market ancillary service?
2. What are your views on the CEC's operational vision for a new MSL market ancillary service?
3. What are your views on the implementation and operational costs associated with the CEC's proposal to establish a new MSL market ancillary service?

ENGIE supports exploring the merits of establishing a new MSL market ancillary service and the principle of another market signal to address MSL conditions. However, ENGIE considers more detail is required on the design and terms of any new ancillary service to assess the benefits and costs of such a proposal. Further investigation would ideally assess how energy services and minimum stable operating levels of synchronous generators and co-ordinated customer energy resources would be co-optimised with frequency control

ancillary services. The introduction of this new service should address the specific needs of the system, be practically implemented with existing technologies and clearly demonstrate a positive benefit case.

Question 9: What are your views on alternative or complementary solutions for the pricing and provision of load reserves for MSL conditions?

1. What are your views on potential alternative or complementary solutions for the pricing and provision of load reserves?

ENGIE supports extending existing grid reference transitional services beyond the expiry date of 2029, if by that time MSL risks still remain uncertain.

Concluding remarks

ENGIE welcomes further opportunities to engage with the AEMC on this consultation to address minimum system levels and develops the legislation to support these reforms.

Should you have any queries in relation to this submission please do not hesitate to contact me on, telephone, 0484 815 546.

Yours sincerely,

A handwritten signature in black ink that reads "Max Hooper". The signature is fluid and cursive, with the first letters of "Max" and "Hooper" being capitalized and prominent.

Max Hooper

Senior Compliance Advisor