Your ref: ERC0417, ERC0439

20 August 2026

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

Submitted online at: www.aemc.gov.au

Dear Project Leader,

## Submission: Minimum system load governance and market arrangements

CS Energy welcomes the opportunity to provide a submission in response to the Australian Energy Market Commission's (**AEMC's**) *Consultation Paper – Minimum system load governance and market arrangements* (**Consultation Paper**).

### About CS Energy

CS Energy is a Queensland Government owned corporation that provides power to some of the State's biggest industries and employers. We generate and sell electricity in the wholesale and retail markets, and we employ over 700 people who live and work in the regions where we operate.

CS Energy owns thermal power generation assets, and we are building a more diverse portfolio. We also have a renewable energy offtakes portfolio of almost 300 megawatts, which we supply to our large commercial and industrial customers in Queensland. CS Energy is developing a 400 MW gas-fired peaking generator at Brigalow near Kogan Creek in Queensland.

### Overall views

As the National Electricity Market (**NEM**) transitions to a system with more variable renewable energy, the ability to effectively and efficiently manage grid security against this evolving landscape is critical. One such challenge is a condition known as minimum system load (**MSL**), where there is a risk that grid demand falls below levels required for secure system operation. In this context, fit-for-purpose MSL frameworks are crucial to facilitate efficient operation and maintenance of system security at least cost in the NEM.

In terms of the rule proposals, CS Energy:

- Supports an explicit MSL governance framework in the National Electricity Rule (**NER**) to enhance accountability, transparency and consistency;
- Opposes an automatic mechanism that would set spot prices at the market price floor (**MFP**), currently at –$1,000/MWh, during tier 3 MSL events, as this approach is unlikely to effectively alleviate MSL conditions and may give rise to unintended consequences; and

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- Supports a new market for MSL ancillary services as this represents a more efficient and effective approach in addressing MSL conditions (compared to direction interventions and the proposed MFP approach) with market signals to encourage more innovative/cost effective resources.

**Detailed comments**

MSL events are occurring more frequently, largely driven by the rapid uptake of rooftop solar, which has significantly reduced grid demand during the middle of the day. This presents system security challenges because sufficient demand is needed to allow synchronous generators, particularly coal-fired plants, to operate above their minimum safe operating levels and remain online. These generators are crucial to maintaining grid security as they are key sources of essential system services (**ESS**), including system strength and inertia.

In the absence of an explicit MSL framework in the NER, the Australian Energy Market Operator (**AEMO**) has developed a three-tier MSL classification system[1] to indicate a region's proximity to conditions where demand becomes insufficient to support secure grid operation. CS Energy supports codifying this system within the NER to improve transparency, accountability and consistency in AEMO's management of MSL conditions. This includes introducing clear definitions of MSL conditions and requiring AEMO to forecast and report MSL levels over a 7-day outlook through the short-term Projected Assessment of System Adequacy (**ST PASA**) process.

However, CS Energy does not support the proposal to set spot prices at the MFP during MSL3 events. MSL is fundamentally a system security issue, and using a wholesale market pricing mechanism to address it is akin to fitting a square peg into a round hole. As a result, the proposed MFP approach is unlikely to effectively address the underlying MSL conditions and risk creating unintended adverse consequences. Specifically, the MFP approach is likely to be ineffective as:

- MSL conditions are primarily driven by rooftop solar PV, which remains largely unresponsive to wholesale spot price signals. While these consumer energy resources (**CERs**) may become more exposed to wholesale prices over time through increased participation in virtual power plants (**VPPs**), the MFP approach is less direct/effective relative to a market dedicated to managing MSL (as proposed by the Clean Energy Council). Importantly, despite ongoing reform attempts, VPP adoption has been slow due to significant technical, commercial and consumer acceptance barriers. For example, AEMO proposed a pause and reset of the *Integrating Price Responsive Resources* rule implementation citing greater than anticipated complexity.[2] Consumer confidence also remains a key challenge, with one survey finding more than 50% of consumers either are concerned about losing control over their CERs or do not trust VPP operators.[3] These factors suggest that relying on increased CER participation through VPPs is unlikely to provide a timely or effective response to emerging MSL challenges.

- Despite negative prices, pumped hydro units and battery energy storage systems (**BESS**) may not align their discharging or charging profiles to coincide with MSL events due cross-market dynamics and contractual obligations. This reflects the fact that these assets operate in multiple markets (e.g. spot and ancillary services markets) and are exposed to complex optimisation decisions (involving price, volume and portfolio trade-offs). Further, BESS may also be constrained by toiling agreements (that dictate their operation),

[1] Under this system, three MSL levels are defined. MSL1 and MSL2 represent minimum load conditions that are two and one credible load contingencies, respectively, away from reaching an MSL3 event.
[2] AEMO, Integrating Price Responsive Resources into the NEM (IPRR), July 2026.
[3] Energy Consumers Australia, Consumer Energy Report Card, July 2026.

warranty requirements (that impose cycling limits or minimum state of charge) and network agreements (that require headroom reservation to supply grid support services). In other words, negative prices represent only one of many factors considered by asset operators when optimising their discharge/charge profiles. Consequently, there is no assurance that storage assets will respond to negative price signals in a manner that coincides with, or effectively mitigates, MSL conditions.

The proposed MFP approach also risks creating unintended distortions and perverse market consequences as:

- It financially penalises synchronous units that are relied on to supply ESS crucial to maintain grid security during MSL3 events. This includes synchronous units that remain online during MSL3 events due to technical reasons (e.g. long restart timeframes and minimum safe operating level (**MSOL**) requirements) and plants capable of withdrawing but are likely directed by AEMO to remain synchronised and supply ESS. By exposing these units to severe negative pricing, it creates the perverse incentive for these assets to withdraw when required for system security. This in turn would likely increase reliance on AEMO directions to ensure adequate ESS supply with negative price exposure further increasing the system strength and direction related compensation costs, ultimately borne by consumers.
- It may create incentives for strategic behaviour that exacerbates, rather than alleviates, MSL conditions if MSL3 events are settled at the MFP. For example, there is a risk that BESS and VPP operators may have an incentive to defer charging in anticipation of an MSL3 declaration, allowing minimum load conditions to deteriorate in order to access deeper negative prices once the event is triggered. Such a development would artificially amplify price volatility, distort dispatch signals, and ultimately undermine the efficient operation of the NEM.

In lieu of the proposed MFP approach, CS Energy supports the introduction of a dedicated MSL market modelled on the contingency frequency control ancillary services (**FCAS**) framework. Such a market would directly incentivise responsive load, including both utility-scale and consumer-scale resources, to provide reserve capacity that can be dispatched during MSL conditions. This approach is likely to be more targeted and effective in addressing MSL challenges, while minimising unintended market distortions and reducing AEMO's reliance on ad-hoc measures such as directions and transitional Type 1 contracts.

The proposed option of expanding out-of-market contracting arrangements (such as transitional contracts) to procure MSL services is an inferior substitute for a market-based framework. This is because contracting arrangements:

- Provide weaker investment signals as their bilateral nature and limited disclosure reduce transparency and therefore hinder participants' ability to efficiently assess commercial opportunities and investment viability; and
- Introduce material uncertainty that dampen the commercial appetite of service providers, given the opaque and bespoke nature of price and contract-term negotiations, particularly in a monopsony environment where AEMO is the sole purchaser.

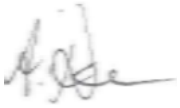
Conversely, an open and transparent market provides clearer and more robust market signals to invest in and develop more innovative or cost-effective solutions to manage MSL. This in turn would facilitate broader participation from a diverse range of technologies and service provides, which fosters more competition that improves cost efficiency and increases supply diversity that enhances power system resilience.

An MSL market is also a relatively low-cost approach[4] with costs likely comparable to or lower than those of the recently introduced fast FCAS market as AEMO would leverage existing systems and market designs when implementing such a market.

While the outlook for MSL remains uncertain, there is a high likelihood that the underlying drivers of MSL conditions (including continued growth in rooftop PV and the ongoing need for synchronous units with MSOL to supply ESS) are likely to persist in the medium-term. In this context, an adaptable market would act as a relatively low-cost form of insurance against potential MSL risks. Similar to the contingency FCAS markets, an MSL market would ensure that sufficient capability is available to manage low-probability, high-consequence MSL conditions when required, while allowing procurement volumes and costs to adjust efficiently as system needs evolve.

If you would like to discuss this submission, please contact Wei Fang Lim, Market Regulatory Manager, on either 0455 363 114 or wlim@csenergy.com.au.

Yours sincerely



**Dr Alison Demaria**
Head of Policy and Regulation

[4] By way of comparison, the wholesale demand response mechanism, while experiencing limited uptake, incurred an implementation cost of approximately $15 million. An MSL market (potentially with broad efficiency benefits), by contrast, would likely require an implementation expenditure of $4 million to $6.5 million, based on the estimated costs of introducing the Fast FCAS markets.