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Australian Energy Market Operator (AEMO)
Market Visibility Framework (MVF) Consultation
Via marketreform@aemo.com.au
12 October 2026

Dear Chair,

Re: Market Visibility Framework (MVF) consultation

The Australian Aluminium Council (the Council) welcomes the opportunity to comment on the Consultation Paper on the Market Visibility Framework (MFV or the Paper).

The Council supports the proposed Phase 1 Capability Development and Validation of the MFV. However, the Council considers that further work is required before mandatory Mode 2 or Mode 3 obligations are applied to large industrial loads and does not support mandatory Mode 4 dispatch-integrated participation for these loads. Any additional visibility obligations should be proportionate to an identified forecasting or operational need, recognise information already available to AEMO and network service providers, avoid unnecessary costs or duplication, preserve appropriate incentives for investment in demand-side flexibility, and protect commercially sensitive industrial information.

At a time when Australia's export competing industries, including mining and manufacturing, are facing serious challenges, energy is one of the few advantages Australia has to offer, and which Government can help to deliver. The Council and its Members were extensively involved in the NEM Wholesale Market Settings Review and welcomes the next phase of its implementation. During the Review, there were three key issues of concern to the Members:

1. ensuring that during the creation of the ESEM to address a tenor gap in the investment market, that there was appropriate treatment for existing or future long duration contracts[i];
2. the exclusion of transmission pricing methodology from the Review, which was a missed opportunity, as it is the delivered cost of firmed electricity which consumers incur; and
3. mandatory visibility or dispatchability of large loads above a threshold.

The third item is the focus of this submission. The Council is concerned that the mandatory visibility obligations could impose additional costs and disclosure requirements on consumers before the nature and materiality of the underlying visibility problem, and the resulting system and consumer benefits, have been sufficiently demonstrated.

The Council considers that AEMO should first identify the specific forecasting or operational visibility gap associated with categories of load, determine what information it already receives through existing arrangements, and then identify the additional information required to address that gap. Any additional obligations should be subject to a transparent assessment demonstrating that their benefits exceed implementation and ongoing costs.

As each operation has unique energy arrangements, the Council has limited its comments on the Framework to a relatively high level. Additionally, the Council supports the submission of the Energy Users Association of Australia (EUAA) where the industry has a large number of mutual members. The Council would also welcome bilateral discussions with large energy users, such as smelters, to further explore the issues raised in this submission.

Australia's integrated aluminium industry

The Australian Aluminium Council represents a resilient, competitive and sustainable bauxite, alumina and aluminium industry that underpins Australia's economic strength, sovereign capability and energy transition. The aluminium industry has been operating in Australia since 1955, and over the decades has been a significant contributor to the nation's economy. The Department of Industry, Science and Resources has recently updated its earnings forecast[ii] reflecting the geopolitical impacts on the sector. This remains at around $19B in export revenue annually. More than $14B of this comes from the alumina and aluminium industries, as value adding mineral processing sectors.

The industry includes six bauxite mines which collectively produce over 100 Mt per annum making Australia one of the world's largest producers of bauxite. Australia is the world's largest exporter of alumina with five alumina refineries producing around 17 Mt per annum of alumina. Australia is the seventh largest producer of aluminium, with four aluminium smelters, and additional downstream processing industries, including more than 20 extrusion presses.

Aluminium is Australia's top manufacturing export. The industry directly employs more than 21,000 people, including 6,600 full-time equivalent contractors. It also indirectly supports a further 55,000 families predominantly in regional Australia. The integrated industry contributes around $18 B to Australia's GDP.
Global aluminium markets are becoming increasingly competitive and contested, and decisions made now on energy and industrial policy will shape Australia's position in these markets for decades to come.

Aluminium Industry and National Electricity Market

Australia's aluminium smelting and alumina refining industry is a strategically vital national asset. It supports grid stability and energy security, sustains significant regional employment and economic activity, contributes to export earnings and underpins the industrial capability needed for transport, infrastructure, manufacturing, defence and emerging technologies.

As Australia's electricity system transitions toward decarbonisation, new and emerging electricity-intensive sectors, including data centres, hydrogen production, and critical minerals processing, are driving increased competition for renewable and firmed electricity supply. How Australia's electricity market allocates that energy, and the value framework governing those decisions, will shape the nation's industrial base for decades to come.

Australia's aluminium smelters are already a large electricity consumer, with the four smelters using around 2,600 MW or ~12% of the electricity consumed in the NEM. Providing electricity is supplied consistently, with sufficient firmed power, and at internationally competitive prices, aluminium smelting can be run on renewable electricity.

As smelters are already largely electrified, no technological conversion is required to take advantage of the rapid decarbonisation of the Australian grid, with this increased penetration of variable renewables.
Aluminium smelters and other large industrial loads[iii] tend to contract for capital intensive terms, as this underpins investment certainty in the industrial assets themselves. For example, recent power purchase agreements PPAs) have had terms of 5-25 years[iv].

The Council recently commissioned Rennie Advisory[v] to undertake a socio-economic analysis of the value of aluminium smelters (and future electrified alumina refineries) as large industrial users of electricity. The study compares the contribution of the aluminium sector with alternative current and future electricity users, assessing how socio-economic value should be considered in energy allocation and planning decisions that extend across all energy-intensive industries. The report confirms that Australia's integrated aluminium sector plays a critical role in regional communities and for Australia's electricity grid, as the grid's largest and most sophisticated demand-side asset delivering the highest socio-economic return per unit of electricity of any large industrial load. This reinforces the need for energy planning and market design to recognise not only the

volume of electricity consumed by large industrial loads, but the broader economic, regional and system value they return.

The report outlines four market and policy failures and reforms which deliver a path to support all energy intensive sectors;

1. Valuing System Level Benefits - Reform market mechanisms to recognise and remunerate the full system value of system level benefits;
2. System Planning - Shift the systems planning paradigm to better value the demand-side and incorporate socio-economic value and place-based delivery into transmission planning;
3. Cost of Capital - Establish a concessional debt facility to bridge strategically significant industry through the energy transition, supporting generators supplying to strategically significant regional industry; and
4. Transmission & Grid Access - Require new large price-insensitive loads to invest in supply and implement tariff structures for strategic, price sensitive loads.

Treatment of Large Loads under MVF

The Council welcomes the consumer focus in the Paper in seeking to establish a proportionate framework that improves forecast accuracy and market visibility *while preserving consumer participation and delivering consumer value*. The Council agrees that visibility is still emerging, resource classes differ materially in how they are coordinated and controlled, and that parallel reforms may affect the nature of any future obligations.

It is likely that thresholds ultimately adopted under the MVF could capture aluminium smelters and potentially other large industrial facilities. It is therefore important that the Framework distinguishes between the size of an industrial load, its technical capability to vary electricity consumption, and actual wholesale-price-responsive behaviour.

Aluminium smelters and other large industrial loads are fundamentally continuous industrial processes with relatively predictable underlying electricity demand. However, some industrial facilities have developed the capability to vary demand to support reliability, system security or commercial energy arrangements, albeit only in respect of a portion of the smelter's overall load.

This may include participation in Reliability and Emergency Reserve Trader (RERT), Frequency Control Ancillary Services (FCAS), contractual interruptability, network or system-security responses, production-related changes and, in some circumstances, responses to wholesale electricity prices.

The Council considers that technical capability to vary load should not, of itself, cause an industrial facility to be classified as a price-responsive resource. Any obligation under the MVF should relate to demonstrated, material wholesale-price-responsive behaviour that creates an identified forecasting or operational visibility gap. Load changes arising from production requirements, maintenance, network or system-security requirements, or participation in separately visible market services should not automatically be treated as wholesale-price-responsive demand.

Existing visibility and Mode 1 - Baseline Visibility

Large industrial loads are highly visible physical loads and substantial historical electricity consumption information is already available through existing metering, settlement, market, network and connection arrangements.

The Council considers that AEMO should first establish what incremental information is required beyond information already available through existing metering, settlement, market, network and connection arrangements. Large industrial loads are highly visible physical loads and substantial historical consumption information is already available within the electricity market.

The Council supports the use of existing information wherever practicable and considers that new reporting obligations should only be imposed where AEMO can demonstrate a material information gap and the

additional information is necessary to address that gap. The framework should avoid duplicative reporting or systems where equivalent information is already available to AEMO or the relevant network service provider.

Mode 2 - Behavioural Visibility

The Council considers that the application of Mode 2 to large industrial loads requires further consideration. Forward-looking information about expected consumption, availability or price-responsive quantities may be considerably more complex for an industrial process than for resources such as batteries. Industrial load flexibility cannot adequately be characterised by price and MW quantity alone.

The amount of demand that an industrial facility can vary may depend materially on the duration of the response, the frequency and recency of previous responses, required recovery periods, the current operating state of the industrial process, and production, process stability and equipment constraints. A facility may, for example, be capable of a relatively large reduction in demand for a short period but substantially less reduction over longer periods. Its ability to provide a subsequent response may also depend on the duration and frequency of previous responses and the time available for recovery.

Short-duration interruptibility or emergency response capability should therefore not be treated as equivalent to sustained wholesale-price-responsive demand when determining responsive capacity, thresholds or applicable obligations under the MVF.

The Council also considers that AEMO should further examine the interaction between price-responsive demand forecasts and the wholesale price signals to which those resources respond. Unlike an unconditional load forecast, an industrial demand response may be contingent on the expected or realised wholesale price. Incorporating an assumed response into pre-dispatch may itself change the forecast price and therefore change or remove the economic incentive for the forecast response to occur. This creates an inherent feedback loop between forecast prices and forecast demand response which should be addressed through Phase 1, before Mode 2 obligations are introduced.

The design of the Framework should also preserve appropriate incentives for consumers to invest in demand-side flexibility. Industrial consumers may incur capital costs, production impacts and operational risks to develop flexible demand capability in order to manage exposure to volatile wholesale prices. A framework which systematically anticipates and incorporates that flexibility into price formation could reduce the value available to the party providing the response and, in turn, weaken incentives for further investment in flexible demand. The Council considers that this potential effect should form part of AEMO's cost-benefit assessment.

The Council requests that AEMO further define and test the information requirements under Mode 2, including the required historical information, forecast horizons, forecast granularity and update frequency, treatment of response duration and recovery constraints, and circumstances in which a forecast must be updated. These requirements should be developed and tested through Phase 1 before mandatory obligations are established.

Mode 3 - Operational Visibility

The Council considers that Mode 3 should not automatically apply to an industrial facility because of its total electricity consumption or technical capability to vary load. Any threshold should relate to material wholesale-price-responsive behaviour and should appropriately recognise the duration and repeatability of that response.

Before imposing Mode 3 obligations, AEMO should demonstrate that an operational visibility gap exists that is not already addressed through existing metering, SCADA, connection arrangements, network visibility or participation in other market services. Existing data channels should be used wherever practicable.

The Council also notes that the cost of Mode 3 cannot presently be adequately assessed because detailed requirements for telemetry, communications, latency, availability, redundancy, cybersecurity, data quality and assurance have not yet been established.

Depending on the final requirements, implementation could range from use of existing data interfaces to material investment in operational technology, communications and ongoing compliance capability. These costs should be quantified and subject to transparent cost-benefit assessment before mandatory Mode 3 obligations are activated.

Commercial confidentiality and publication of information

The Council considers that strong confidentiality protections are essential for any information collected under Modes 2 and 3.

For large industrial facilities, electricity consumption and flexibility data can provide information about the underlying industrial process which is, in many cases, proprietary technology. Resource-specific information regarding actual and forecast consumption, price-responsive quantities, response capability and duration, availability, outages and operating constraints may enable third parties to infer commercially sensitive information regarding production levels, production capacity, operating configuration, asset availability and commercial energy decisions.

The Council considers that a clear distinction should therefore be maintained between information that AEMO requires for forecasting or secure operation of the power system and information that needs to be visible to other market participants.

Resource-specific Mode 2 and Mode 3 information should be accessible only to AEMO and, where operationally necessary, the relevant network service provider. Any broader publication should be sufficiently aggregated or anonymised so that commercially sensitive facility-level information cannot reasonably be reconstructed.

This issue should form an explicit part of the Phase 1 assessment of the Framework.

Obligated party

The Council considers that the framework should recognise the diversity of contractual arrangements applying to large industrial loads.

The party responsible for controlling or coordinating price-responsive behaviour may not be the owner of the industrial facility and may differ between facilities and contractual arrangements. In some circumstances, an industrial customer may alter its consumption directly in response to market conditions; in others, the relevant behaviour may be coordinated through a retailer, Financially Responsible Market Participant or other service provider.

Obligations should therefore sit with the party that has practical control of, and access to information regarding, the relevant price-responsive behaviour.

The Framework should avoid duplicative obligations applying to an industrial customer, retailer or Financially Responsible Market Participant, service provider and network service provider in respect of the same behaviour or information.

Existing contribution of aluminium smelters to the NEM

Aluminium smelters already offer a range of services and functions which support the network over varying weather, network demand and operating conditions, including RERT and FCAS.

Aluminium smelters' large and fast-acting interruptibility can help secure and restore stability to the network before and after contingencies occur, potentially avoiding impacts on, or load shedding to, broader customers and the community.

The industry has increasingly been called upon to support grid stability and reliability as the challenges of managing the grid increase during the phase-out of ageing thermal generators in parallel with growing volumes of variable renewable power supplies.

For example, during May and July 2022 Tomago Aluminium provided 62 hours of modulation across 36 events which were a mixture of RERT and responses to high market prices. Aluminium smelters frequently monitor not only electricity markets but also weather forecasts to anticipate times when their services may be called upon. Additionally, aluminium smelters increasingly provide short-term reductions in demand at times of peak demand through contractual arrangements.

Notwithstanding these services, aluminium smelters remain fundamentally continuous industrial processes with relatively stable and predictable underlying electricity demand.

Where a smelter does exhibit material wholesale-price-responsive behaviour, any additional visibility requirement should therefore be targeted to that behaviour rather than the facility's total load or broader technical flexibility.

Mode 4 - Dispatch Integrated Visibility

The Council does not support mandatory Mode 4 dispatch-integrated participation for large industrial loads.

The Council remains concerned however, that the proposed mandatory visibility of large loads is a gateway to mandatory dispatchability of large loads. Large industrial facilities are production processes, not electricity storage or generation assets, and electricity consumption is determined by production, process stability, equipment limitations, safety and commercial considerations.

Technical capability to reduce electricity consumption does not mean that the load can safely or economically be made available for central dispatch.

For aluminium smelters in particular, continuity of electricity supply is fundamental to the industrial process. After around 75 minutes without electricity, aluminium begins to "freeze" in the pots, which can force plant or line interruption and potentially freeze reduction cells, with restart taking months to complete at significant cost.

It is therefore imperative that the regulatory framework preserves the ability of industrial facilities to manage their production processes and operational risks and supports the development and implementation of technologies capable of restarting the network infrastructure following emergency events.

Conclusion

Securing Australia's position in global aluminium markets will require reliable and internationally competitive energy, long-term investment and policy settings that recognise bauxite, alumina and aluminium as an integrated, strategically vital national asset.

The Council supports further capability development and validation through Phase 1 but considers that mandatory obligations should only be introduced where AEMO has demonstrated a material visibility gap, identified the minimum additional information required to address that gap, and demonstrated that the system and consumer benefits exceed implementation and ongoing costs.

For large industrial loads, the Framework should:

- distinguish technical flexibility from wholesale-price-responsive behaviour;
- ensure thresholds relate to relevant responsive capacity rather than total facility load;
- recognise the duration, frequency, repeatability and recovery characteristics of industrial demand response;
- use information already available through existing market, metering, connection and network arrangements wherever practicable;
- clearly distinguish information required by AEMO from information required to be visible to other market participants;
- protect commercially sensitive industrial information;
- avoid duplicative obligations and appropriately identify the party responsible for coordinating the relevant price-responsive behaviour; and
- establish the detailed requirements and costs of Modes 2 and 3 before mandatory obligations are activated.

The Council does not support mandatory dispatch-integrated participation for large industrial loads and considers that any future Mode 2 or Mode 3 obligations should only be introduced following further consultation on detailed information requirements, thresholds, confidentiality arrangements, implementation costs and the appropriate obligated party.

Given the importance of energy supply across Australia's integrated mine-to-market aluminium supply chain, the Council is happy to provide further information on any of the issues raised in this submission and looks forward to continuing to work with AEMO on the development of the Market Visibility Framework.

Kind regards,

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About Us

The Australian Aluminium Council is the peak industry association representing Australia's integrated bauxite, alumina and aluminium industry. The Council provides a unified voice across the value chain, working with governments, industry and communities to support a resilient, competitive and sustainable sector that underpins Australia's economic strength, industrial capability and energy transition.

References

[i] DCCEEW s consulting on this issue in parallel and the Council intends to make a submission on this matter - https://consult.dcceew.gov.au/national-electricity-market-wholesale-market-settings-regulatory-reforms
[ii] https://www.industry.gov.au/sites/default/files/2026-07/resources-and-energy-quarterly-june-2026.pdf
[iii] The alumina industry also consumes around 220 PJ of energy, currently as gas and coal in the refineries. This energy use may convert to electricity requirements of 3-5GW firm in the NEM and the SWIS depending on the technology applied in digestion and calcination.
[iv] https://www.alcoa.com/australia/en/news/releases?id=2024/09/portland-aluminium-secures-new-energy-contract, https://www.riotinto.com/en/news/releases/2026/rio-tinto-queensland-and-commonwealth-secure-long-term-future-for-boyne-aluminium-smelter-at-gladstone, https://www.tomago.com.au/tomago-aluminium-welcomes-agreement-to-secure-smelters-long-term-future/; https://www.riotinto.com/en/news/releases/2026/rio-tinto-tasmanian-government-and-commonwealth-government-secure-the-future-of-bell-bay-aluminium-until-2031
[v] https://aluminium.org.au/wp-content/uploads/2026/06/2606-Smelting-Point.pdf