



AUSTRALIAN  
ALUMINIUM  
COUNCIL LTD

Level 1,  
18 National Circuit  
Barton ACT 2600  
Ph: 02 6267 1800  
[info@aluminium.org.au](mailto:info@aluminium.org.au)

Reliability Panel  
c/- Australian Energy Market Commission (AEMC)  
GPO Box 2603  
Sydney NSW 2000  
Via [www.aemc.gov.au](http://www.aemc.gov.au)  
Project Reference Code REL0082  
3 March 2022

Dear Commissioners,

***Australian Aluminium Council Response to Reliability Standard and Settings Review Issues Paper***

The Australian Aluminium Council (the Council) represents Australia's bauxite mining, alumina refining, aluminium smelting and downstream processing industries. The Australian aluminium industry has been operating in Australia since 1955, and over the decades has been a significant contributor to the Australian economy. Alongside many decades of economic contribution, the industry is globally comparatively young and well maintained. The industry includes five large (>10 Mt per annum) bauxite mines plus several smaller producers which collectively produce over 100 Mt per annum making Australia the world's largest producer of bauxite. The six alumina refineries produce around 20 Mt per annum of alumina and Australia is the world's largest exporter of alumina. There are four aluminium smelters; in addition to downstream processing including more than 20 extrusion presses and Australia is the sixth largest producer of aluminium. Aluminium is Australia's highest earning manufacturing export. The industry directly employs more than 17,000 people, including 4,000 full time equivalent contractors. The industry also indirectly supports around 60,000 families in regional Australia.

**Aluminium industry and the National Electricity Market**

Within the National Electricity Market (NEM) the Australian aluminium industry has four aluminium smelters and two alumina refineries and uses more than 10% of the electricity consumed in the NEM. Accordingly, the Australian aluminium industry has a strong interest in electricity policy. Electricity typically accounts for around 30-40% of aluminium smelters' cost base, and therefore it is a key determinant of their international competitiveness. Alumina refineries, while not as electricity intensive as smelters, are also significantly exposed to electricity policy. For the aluminium industry, it is the delivered cost (including transmission) of electricity which drives international competitiveness.

The electricity supply requirements of the aluminium industry, can be summarised as follows:

- least cost, and an internationally competitive electricity cost, as a minimum;
- consistent uninterrupted electricity supply;
- an ability to secure electricity supply under long-term contractual arrangements; and
- an ability to be compensated adequately for system services which smelters and refineries provide for the network and its stakeholders.

These outcomes need to be delivered within the framework of Australia's Paris Agreement emission targets.

### **2022 Review of the Reliability Standard and Settings (2022 RSS review)**

The Council welcomes the opportunity to provide feedback to the Reliability Standard and Settings Review Issues Paper (the Paper). Aluminium smelters generally have long-term electricity contracts. As each smelter, refinery and extruder has unique electricity arrangements, the Council will reserve its comments on the Paper to a high level. The Council supports the submission provided by the Energy Users Association of Australia (EUAA).

The Council welcomes the recognition of the work underway by the Energy Security Board (ESB) on the capacity mechanism and the need for the Panel to collaborate with the ESB so the processes can be aligned appropriately.

### **Role of Aluminium Smelters in maintaining Reliability and Stability**

Aluminium smelters already offer a range of services and functions which support the network over varying weather, network demand and operating conditions, including Reliability and Emergency Reserve Trader (RERT) and Frequency Control Ancillary Services (FCAS). Smelters' large and fast-acting interruptibility helps secure and restore stability to the network before and after contingencies occur. The industry has increasingly been called upon to support grid stability and reliability, as the challenges in managing the grid increase. Amongst the roles played by very large and continuous smelter loads are:

- Buffering the erosion of minimum scheduled demand;
- Support for the continued economic commitment and operation of large-scale synchronous generation (noting that de-commitment of synchronous units due to inadequate base demand levels can regularly remove large blocks of inertia and system strength from the system);
- Supply of certain essential system services, such as contingency FCAS;
- Potential participation in "backstop" reliability schemes such as RERT or Interim Reliability Reserve (IRR); and
- Enhancing system resilience through rapid unscheduled interruptibility in the case of extreme high impact events, which, like more extreme weather conditions, are occurring increasingly frequently in the NEM and are increasingly complex to match with dispatch in real time.

Only some of the current services are explicitly remunerated, nor is their overall "real option" value recognised – namely the flexibility that retention of these large loads provides in future choices of physical and economic mechanisms to stabilise the system and market. In the absence of these loads the measures required to maintain secure and resilient operation of the grid are likely to require significant additional investment and cost to all consumers.

### **Reliability in the NEM**

*How do stakeholders consider changes in the generation mix interact with the assessment of the reliability standard and settings, in particular for the period of 2024-2028? What are the implications of the changing generation mix for the reliability standard and settings?*

The Paper notes that the Australian Energy Market Operator (AEMO) forecasts no breaches of the reliability standard (0.002% USE) until 2028/29 and no breach of the interim reliability measure (0.0006% USE), although there will be increases in unserved energy for NSW towards 2030 due to forecast thermal power station retirements. Despite this, and as noted in the Reliability Panel's December 2021 Market Update, in recent years reliability has been challenged by less predictable events, such as bushfires and storms, which led to transmission outages and islanding of regions. There has been a resultant increase in lack of reserve events, combined with an increase in both market price cap and market price floor events. At the same forecast period, the NEM is undergoing substantial changes in both the physical power system as well as overlapping reforms, through existing AEMC processes as well as the Post 2025 Market Design.

## **Changes on the Demand Side**

*How do recent and expected future demand side trends interact with the Panel's assessment of reliability standard and settings? What are the implications of these trends for the reliability standard and settings?*

The Council agrees with AEMO's view expressed in its 2021 ESOO that there will be only moderate maximum demand growth over the next five years, but that over the longer term (6-20 years) they project high maximum demand growth. For example, across Australia's six alumina refineries (two of which are in the NEM), around 150 PJ of energy currently derived from gas or coal, is used in the digestion phase in alumina refineries to generate steam. This has the potential to be replaced by renewable electricity, once they are internationally competitive and subject to commercialisation of refinery side technology development. This has the potential to require more than 4000 MW of electricity to replace the thermal generation, on a like for like basis. This would fundamentally transform both the NEM and South West Interconnected System (SWIS) electricity markets. Alumina refineries already provide some demand response to the grid. Additionally, if there was to be an increased supply of competitively priced zero emissions electricity and subject to technical developments, there is the potential to materially increase the electrification of alumina refineries combined with demand response, which could supplement electricity firming and improve reliability of both the NEM and SWIS. However, the time scale for these projects may fall outside the scope of the 2022 RSS review.

As the paper notes, an issue of concern is declining and less predictable minimum demand. However, this does not recognise that industrial loads from smelters and refineries have *not reduced* their minimum load. This declining minimum demand is one of the key drivers for the new markets which are currently being designed. However, in the case of smelters and refineries where the load has not changed, the counterparty retains their ability to manage capacity and other services on these loads through existing NEM mechanisms. These existing contracts underpin dispatchable generation and system reliability, particularly when demand is low and variable renewable generation is high. However, these contracts are not immune to changes in the market as contracts may contain a range of change-in-law and other pass-through provisions, so there is a real risk that base load consumers could pay twice for additional market services introduced to provide reliable and secure supply for customers with highly variable demand.

The Council is, however, concerned that the Paper references the exits of large industrial loads, such as aluminium smelters; and believes this view is erroneous. All of Australia's aluminium smelters have long term existing contracts. The expiry of these contracts for Australian smelters varies from 2025 to 2029 (with Bell Bay Aluminium in Tasmania the first to finish). The owners of Australia's four smelters have not given any indication of intentions for these loads to exit and have signalled their desire recontract renewable electricity at the end of the current terms<sup>1</sup>. The Council and its members would like this reference to the exit of aluminium smelters removed as it has no basis.

*How may the Post-2025 market design reforms impact on the reliability standard and settings? What are the implications for the reliability standard and settings?*

The Council notes that in its response to the ESB, the Energy National Cabinet Reform Committee (ENCRC) has agreed to a number of principles to guide jurisdictional schemes<sup>2</sup>. While these seek to establish a common approach across the NEM, this obligation is non-binding. Further to this, the principles<sup>3</sup> to guide capacity mechanism development provide for jurisdictions to derogate from the National Electricity Rules if they wish, following the process set out under the National Electricity Law (NEL). While the Council accepts that this optionality of jurisdictional derogation is not new; the increased focus on variation for jurisdictions to develop their own path (clauses 11-14), leads the Council to be concerned that the market will not have

---

<sup>1</sup> <https://www.afr.com/companies/energy/4b-offshore-wind-farm-proposed-to-power-smelter-20211207-p59fe4>,  
<https://www.abc.net.au/news/2021-11-08/aloca-melter-pot-restart-operations-at-portland/100602358>,  
<https://www.afr.com/companies/energy/rio-tinto-patient-as-energy-crisis-buoys-local-smelters-20211012-p58zar>,  
<https://www.riotinto.com/news/releases/2022/Tasmania-and-Rio-Tinto-partner-for-a-strong-and-sustainable-future-at-Bell-Bay>

<sup>2</sup> <https://www.energy.gov.au/sites/default/files/2021-10/Principles%20to%20guide%20jurisdictional%20schemes.pdf>

<sup>3</sup> <https://www.energy.gov.au/sites/default/files/2021-10/Principles%20to%20guide%20Capacity%20Mechanism%20development.pdf>

just one new capacity mechanism, but a variety of mechanisms across the NEM. This will further add to the difficulty for major industrials to be able to find counter parties which are willing to bundle services and provide the long term contracts which are essential to underpin the capital investment industry requires.

*What implications does continued uncertainty in emissions policy have for the reliability standard and settings? What are your views on the impact of State and Federal government energy policies on the reliability settings?*

The Council seeks a national climate and energy policy framework which is transparent, stable and predictable, while maintaining the economic health of the nation including vital import and export competing industries. The Council will continue to play a constructive role in the development of Australia's climate, energy and industry policies, in support of the mineral processing and value adding manufacturing sectors in Australia. The Council supports a technology neutral and least cost approach to the transition and believes the Reliability Panel, as part of the NEM infrastructure, has a role in helping ensure this is delivered.

### **Panel Assessment Approach**

The Council supports the use of a materiality assessment, such that any material changes would need to be progressed via an AEMC rule change process.

### **Market Price Settings**

*Do you consider that the emergence of new technologies warrants a change in the MPC in order to enable technology-neutral investment to meet the reliability standard in the most cost-effective way?*

*Do you consider that the introduction of new markets would mean a change to the MPC is required?*

*Do you consider that the introduction and continuation of government investment schemes means that changes to the MPC should be considered?*

In previous submissions to the ESB on the Capacity Mechanism, the Council has proposed that consideration should also be given to what other changes will be required in the NEM to ensure a least cost outcome to consumers. In particular; introduction of any Capacity Mechanism should value the role which large industrial loads, such as aluminium smelters, provide in terms of reliability and stability in the grid. Additionally, there should be consideration to reducing the market price cap (MPC) and other interactions with the existing market, which may otherwise result in generators double dipping for the same service. The Council believes that the Panel should consider how to best achieve this least cost to consumers in its considerations, for example introduction of a capacity mechanism should be combined with a reduction in the MPC.

### **Conclusion**

The Council is happy to provide further information on any of the issues raised in this submission and look forward to continuing to work further with the Panel and Australian Energy Market Commission on these matters to improve the commercial arrangements supporting a competitive, reliable and secure NEM.

The Council is happy to provide further information on any of the issues raised in this submission.

Kind regards,



Marghanita Johnson  
Chief Executive Officer  
Australian Aluminium Council  
M +61 (0)466 224 636  
[marghanita.johnson@aluminium.org.au](mailto:marghanita.johnson@aluminium.org.au)