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Dear Mr Hutchinson

## AUSTRALIAN CRITICAL MINERALS STRATEGY 2023 – DISCUSSION PAPER

The Chamber of Minerals and Energy of Western Australia ('CME') is the peak representative body for the resources sector in Western Australia. Western Australia's resources sector accounts for two thirds of total Australian mineral and energy production. CME is funded by member companies ranging from mining (mineral and petroleum commodities) to manufacturing (alumina, basic inorganic chemicals and explosives) and supporting services.

The value of royalties, Northwest Shelf grants and lease rentals generated by mining and resources sector operations received from the Western Australian resources sector totalled over AUD\$12.8 billion in 2021-22.<sup>1</sup> Amid heightened commodity demand, royalties and stronger tax collections from the sector are expected to underpin government fiscal capacity in 2022-23.

### Overview

CME welcomes the release of the new Australian Critical Minerals discussion paper and the opportunity to review and provide feedback to inform a national Critical Minerals Strategy. In addition to the comments and recommendations below, CME also supports the submission being made by the Minerals Council of Australia.

Demand for critical minerals is set to double by 2030.<sup>2</sup> Achieving the goals of the Paris Agreement will require an estimated quadrupling of critical minerals inputs to clean energy technologies by 2040, and achieving net zero globally by 2050 will require six times more critical mineral inputs in 2040 compared to 2020.<sup>3</sup>

Meeting this primary demand will require strong growth in investment to bring forward new supply sources over the next decade. The World Bank estimates that USD\$1.7 trillion in global mining investment will be required to facilitate the transition to net zero emissions by 2050.<sup>4</sup>

Today's mineral supply and planned investment demonstrate a mismatch between global climate ambitions and the availability of the critical mineral inputs essential to realising those ambitions.<sup>5</sup> Past strains on the supply-demand balance for minerals have prompted additional investment and measures to moderate or substitute demand, which have been accompanied with time lags and considerable price volatility. Similar circumstances in the future could delay clean energy transitions and result in cost escalation.

Processing has become an increasingly important issue, particularly in the context of Australian sovereign capability. The People's Republic of China ('PRC'), for example, produces approximately 85 percent of refined rare earths and cobalt chemical, and 75 percent of the lithium-ion battery value chain.

Recent supply chain disruptions and geopolitical tensions have led to a re-evaluation of reliance on international trade for critical inputs to economies worldwide, and have resulted in the establishment of a plethora of bilateral and multilateral trade frameworks targeted at diversifying the sources of supply of critical minerals and associated inputs to the advanced manufacturing process.

The PRC will certainly remain a major trade partner for Australia; however, an opportunity exists to establish Australia as a critical minerals trade partner to manufacturing economies such as the United States, Japan, Republic of Korea, Republic of India, European Union, and the United Kingdom.

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<sup>1</sup> Government of Western Australia, Department of Mines, Industry Regulation and Safety, [2021-22 Economic Indicators Resources Data](#)

<sup>2</sup> International Energy Agency (IEA), [The Role of Critical Minerals in Clean Energy Transitions](#), pp.8

<sup>3</sup> International Energy Agency (IEA), [The Role of Critical Minerals in Clean Energy Transitions](#), pp.8

<sup>4</sup> The World Bank (2022), [Mineral-Rich Developing Countries Can Drive a Net-Zero Future](#)

<sup>5</sup> International Energy Agency, [The Role of Critical Minerals in Clean Energy Transitions](#), pp.11

Government policy settings are the key to establishing a stable and attractive environment for capital investment in the mining, processing and value-add of critical minerals.

### Critical Minerals in Western Australia

Western Australia hosts almost all the minerals on Australia's critical minerals list, including alumina, cobalt, lithium, graphite, magnesium, manganese, nickel, palladium, platinum group elements, rare earths, silicon and vanadium. The State hosts minerals such as copper, zinc as well as other commodities that will support the global energy transition. Recent years have seen capital investment in excess of AUD\$9 billion and an iterative movement along the value chain beyond the export of raw materials to refined products.

Western Australia currently hosts three lithium hydroxide facilities, a nickel sulphate refinery, a nickel and cobalt metals refinery, a rare earths processing facility and a rare earths refinery, with other minerals processing facilities planned or under development.

Hosting over 99 percent of Australia's lithium deposits<sup>6</sup>, Western Australia is the world's largest supplier of lithium, accounting for over half of total global raw lithium production in 2021. Production is expected to double by 2029-30, by which time the State will be producing enough spodumene concentrate to manufacture one million tonnes of lithium hydroxide annually.<sup>7</sup> Western Australia's lithium hydroxide production capacity is currently forecast to reach 250,000 tonnes annually by 2025-26.<sup>8</sup>

Western Australia is the largest single source of alumina in the world, producing 45 percent of Australia's alumina and accounting for 11 percent of global supply.<sup>9</sup>

Western Australia is a global top 5 nickel producer, currently producing around 130,000 tonnes of Class 1 nickel, the preferred feedstock for the manufacture of battery grade nickel sulphate. Total nickel production is expected to increase to 150,000 tonnes annually by 2029-30.<sup>10</sup>

A global top 3 producer of rare earths, Western Australia's two operating mines account for 69 percent of national production, and approximately 11 percent of global rare earth concentrate production. Rare earth concentrate production in Western Australia is forecast to increase from around 27,000 tonnes currently to 70,000 tonnes by 2029-30, as well as capacity to produce 30,000 tonnes of rare earth chemical concentrate.<sup>11</sup>

Western Australia produces approximately 5,700 tonnes of highly refined cobalt metal per annum<sup>12</sup>, the third largest producer of cobalt globally, behind the Democratic Republic of Congo ('DRC'), and Russia.

Australia's only silicon metal manufacturing operations are also situated in Western Australia and produce approximately 52,000 tonnes of silicon metal annually.<sup>13</sup>

Western Australia hosts almost all of Australia's estimated platinum group element ('PGE') resources, including the largest PGE discovery globally in two decades, a strategic asset given approximately 78 percent of global supply is concentrated in Russia and South Africa.<sup>14</sup>

The *Australian Critical Minerals Strategy 2023* ('the Strategy') discussion paper is an important step towards developing Australia's critical minerals sector, and as noted above, is particularly relevant to Western Australia.

### Seizing the economic opportunity

CME supports the proposed objective of the Strategy to capture Australia's opportunity *'to cement itself as a global supplier of choice for processed critical minerals'* and specifically welcomes the discussion paper's acknowledgement of *"the imperative to bring Australian projects online quickly to support diversified critical mineral supply chains and markets"*.

**It cannot be overstated that, for Australia to decarbonise and to support international partners in meeting their decarbonisation targets will require the expansion of existing mines, development of new mines, further**

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<sup>6</sup> Geoscience Australia, <https://www.ga.gov.au/scientific-topics/minerals/mineral-resources-and-advice/australian-resource-reviews/lithium>

<sup>7</sup> Derived from proprietary company data in a study commissioned by CME and conducted by Australian Venture Consultants

<sup>8</sup> Australian Aluminium Council, <https://aluminium.org.au/australian-alumina/>

<sup>9</sup> Geoscience Australia, <https://www.ga.gov.au/education/classroom-resources/minerals-energy/australian-mineral-facts/aluminium>

<sup>10</sup> Derived from proprietary company data in a study commissioned by CME and conducted by Australian Venture Consultants

<sup>11</sup> Derived from proprietary company data in a study commissioned by CME and conducted by Australian Venture Consultants

<sup>12</sup> As a co-product of nickel production.

<sup>13</sup> Derived from proprietary company data in a study commissioned by CME and conducted by Australian Venture Consultants

<sup>14</sup> Statista (2023), *Supply of palladium worldwide in 2020 and 2021, with a forecast for 2022, by country, and Global platinum mine production 2021*

downstream processing and continued exploration to support new discoveries and establish the future project pipeline.

The ability to capitalise on these opportunities and optimise the share of economic value captured domestically relies on a continued commitment to sustainable and competitive upstream raw materials production. CME considers that the Strategy should emphasise and support mutually beneficial policy settings to encourage the upstream and refining segments of these value chains as well as advancing aspirations to capture further midstream and downstream segments. Put another way, fiscal and regulatory settings to improve the competitiveness of the upstream and refining segments will equally benefit further value adding activities.

CME also recommends the explicit acknowledgement of the importance of, and value generated by, raw material and refined product exports in the final strategy. The combined export earnings from copper, nickel and lithium are forecast to reach around AUD\$33 billion in 2022–23.<sup>15</sup> Lithium export earnings alone are forecast to increase from AUD\$1.1 billion in 2020–21 to almost AUD\$14 billion in 2022–23.<sup>16</sup>

Western Australia has already progressed along the value chain in the refinement and production of battery grade products, as noted above, and is well positioned to capitalise on the market opportunities, particularly given the quantum of critical minerals reserves and location of existing projects and refining infrastructure.

However, these are complex projects which are highly capital (upwards from AUD\$1 billion), energy and resource intensive and which are, in the Australian context, likely to be captured as Safeguard-liable emitters. Investment choices are made in a global context, with some jurisdictions providing significant incentives and concessions to underpin the establishment of critical and battery minerals processing and downstream value chains domestically, such as in the United States, with the introduction of the *Inflation Reduction Act of 2022*.

Government initiatives to support the development of Australia's critical minerals sector, including downstream capability total between AUD\$3.6 and AUD\$18.0 billion.<sup>17</sup> To place this in an Asia Pacific ('APAC') regional perspective, initiatives that are designed to enhance the United States' critical minerals supply chain capabilities, supply security and downstream industry total USD\$700 billion.<sup>18</sup>

Prior to the introduction of these incentives, the United States was already ranked as one of the most competitive manufacturing jurisdictions globally.<sup>19</sup> In Australia, structural constraints exist which have historically inhibited the establishment of a competitive domestic manufacturing ecosystem, including a small domestic market, geographical isolation from many major end markets, and a high-cost environment.

The exceptional policy interventions seen in the United States and other advanced manufacturing economies are likely to further impede Australia's competitiveness and attractiveness as a potential manufacturing jurisdiction. However, they present a compelling opportunity to diversify Australia's trade partnerships and establish the nation as a major supplier of upstream and midstream critical minerals inputs. **CME considers the Commonwealth Government can play a key role in developing a comprehensive understanding of the policy positions, instruments, and incentives introduced by international jurisdictions and communicating the potential market opportunity to industry.**

Raw materials are a significant element in the cost structure of many technologies required in energy transitions. In the case of lithium-ion batteries, technology learning and economies of scale have seen overall costs decline by 90 percent over the past decade. This means that raw material costs now loom larger in the overall cost structure, accounting for between 50 and 70 percent of total battery costs, up from 40 to 50 percent five years ago.<sup>20</sup> Australia is one of the most economically competitive upstream producers of critical and battery minerals globally, a factor that will continue to increase in importance to Australia's trade partners.

As noted in the discussion paper, a range of challenges exist, including technical, project and market risks, and CME agrees that these warrant specific focus under the new strategy. Addressing these challenges and the application of prudent policy levers to fast-track primary production and sustained production of critical minerals products will be critical to cementing Australia's position as a strategic trade partner.

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<sup>15</sup> Department of Industry Science and Resources, Resources and Energy Quarterly forecasts

<sup>16</sup> Ibid.

<sup>17</sup> Depending on how broadly you define the sector.

<sup>18</sup> Derived from analysis conducted by Australian Venture Consultants in a study commissioned by CME.

<sup>19</sup> Derived World Bank (2022), Data Bank - Manufacturing, value added (% GDP), data series ISIC rev.4; Deloitte (2016), Global Manufacturing Competitiveness Index, April 2016; World Economic Forum (2020), Global Competitiveness Report

<sup>20</sup> International Energy Agency, [The Role of Critical Minerals in Clean Energy Transitions](#), pp. 11

Greater certainty around the costs associated with project development and operation (e.g. energy, employment costs, tax, regulatory, and other fees and charges) are crucial to attracting the quantum of investment required to capitalise on the market opportunity - particularly in an inflationary environment where Australia is competing with international jurisdictions with more favourable cost structures and a lower regulatory burden.

Challenges and recommendations of most relevance to the sector in Western Australia are discussed in the subsequent sections of this submission.

### Sharing the benefits

The resources industries, including our critical minerals sector, play a key role in regional community and economic development. In Western Australia for example, the sector directly supported 66,870 full time jobs, provided AUD\$11.75 billion in salaries and directly supported 14,661 Western Australian businesses through supply chain purchases in 2020-2021 (based on data collected from just 56 CME member companies).<sup>21</sup> Modelled indirect effects suggest this spending supported an additional 279,561 full-time jobs and AUD\$44.32 billion in gross value add to the Western Australian economy, supporting one in four jobs and more than a quarter of gross regional product.<sup>22</sup>

The resources sector's commitment to support communities, social license, and best practice environmental social and governance ('ESG') standards alongside existing frameworks at both state and national level to incentivise local employment and procurement (for example, the Aboriginal Cultural Heritage Act 2021 (WA), Australian Jobs Act 2013) will continue to ensure the benefits of critical minerals developments are shared across regional communities, traditional owners, and local workforces.

If initiatives supporting the development of the critical minerals sector become tied to additional duplicative, administrative, and cumbersome reporting obligations or targets, this is likely to disincentivise the development of individual projects and inhibit the growth of the sector, during what the discussion paper acknowledges is a narrow window of opportunity for Australia. **CME strongly recommends existing frameworks are leveraged to promote and maintain the highest ESG standards and ensure benefits continue to flow into the regions and communities where projects are located.**

### Competitiveness and the regulatory environment

The development and processing of critical minerals assets requires enormous capital investment. Critical minerals assets are frequently developed by junior or mid-tier mining companies with a market capitalisation of less than AUD\$5 billion. Access to external capital is typically required, however, financing can be difficult due to risk, particularly since critical minerals markets are relatively volatile and lack pricing transparency.

Challenges associated with very high up front capital costs, accessing project financing and risk underwriting domestically have historically prompted early-stage explorers and developers of critical minerals to negotiate raw material off-take arrangements with offshore processors in exchange for project funding. In the absence of more competitive fiscal settings here, this trend risks perpetuating a cycle of offshoring segments of this value chain and inhibiting Australia's ability to value-add domestically.

The availability of targeted incentives or other financing options in Australia could provide alternative financing pathways and increase opportunities to capture more of the value chain domestically. **CME recommends consideration of measures such as grants and tax incentives to improve Australia's competitiveness, including for upfront capital outlays.**

Since the forecast price for critical and battery minerals is expected to peak around 2030<sup>23</sup> and energy demand per capita in Asian developing economies will continue to increase through to 2030,<sup>24</sup> it is crucial that the Commonwealth Government work alongside other jurisdictions to ensure project development and productivity are not undermined by inefficient regulation and unnecessarily burdensome administrative compliance.

The multiple layers of Federal and State regulation and approvals processes result in regulatory overlap and duplication for project proponents, a lack of certainty, and excessive time frames and costs. CME members

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<sup>21</sup> The Chamber of Minerals and Energy of Western Australia, Economic Contribution Factsheets, 2020-2021, available at: <https://www.cmewa.com.au/media/economic-contribution-factsheets/>

<sup>22</sup> Ibid.

<sup>23</sup> Driven by steep demand from front-loading of net zero commitments, inducing supply reactions and reducing market tightness after 2030. Boer.L, Pescatori A and Stuermer M, [Energy transition metals](#), International Monetary Fund Working Paper WP/21/243, October 2021, pp. 26.

consistently cite these issues as the most significant barriers to progressing a project to production or brownfield expansion – the latter frequently underpinning decisions to invest in additional refining capacity.

The approvals process can take 10 to 15 years<sup>25</sup> from exploration to mining stage, during which the State and Commonwealth environmental approvals process alone typically consumes 3 to 4 years. In contrast, these approvals in some APAC jurisdictions can generally be achieved in a matter of months.

The level of duplication, together with delays and costs associated with navigating these processes, render it difficult for proponents to capitalise on escalating market demand compared to other APAC competitors.

Regulatory uncertainty, for example with respect to significant proposed reform of the *Environment Protection and Biodiversity Conservation Act 1999* ('EPBC Act'), can also be a significant disincentive to investment appetite. In anticipation of this reform, and throughout the transition, **CME recommends an active and ongoing project facilitation role at a national level (and in coordination with the states) to assist projects in navigating already onerous regulatory processes and provide certainty through periods of reform.**

A key function of project facilitation teams within Government should be to identify areas of regulatory overlap (both within and across State and Commonwealth processes) to support ongoing streamlining and regulatory efficiency.

**Industry also recommends consideration of a framework, guidance, or regulatory pathways to support the fast-tracking of approvals for nationally significant projects such as critical minerals. This should be developed in consultation with state governments and involve the development of guidance and resource allocation.** The use of private sector expert environmental and heritage consultants, for example, should be expanded to augment capacity within the public sector and support efficient processing of applications, enabling greater throughput of approvals, enhanced productivity, and greater investment in projects.<sup>26</sup>

## Land access

Australia is a high-cost environment relative to its competitors in the critical minerals sector and faces orders of magnitude higher costs associated with labour, land, transport, tax rates, high foreign investment fees and cost of regulatory burden. Unlike competitor jurisdictions, it can be difficult to access suitable 'turn-key' ready land with available access to adequate services, chemical inputs, transport logistics and port throughput capacity, further increasing the time and cost burden on project proponents.

**The Australian Government could play a key role in coordination with states such as Western Australia to de-bottleneck industrial land (e.g. through facilitation of primary Commonwealth approvals) and support state government efforts to develop strategic industrial hubs to attract investment.**

## Technical Capability

### Supporting value-added industries

Mineralisation of some critical minerals is complex (particularly for lithium and rare earth elements), extraction and refining methods are highly technical and often proprietary. Recent investments in mining and early-stage processing have achieved an iterative movement along the value chain, from producing minimally processed mineral concentrates to producing chemical products such as lithium hydroxide, nickel sulphate, nickel and cobalt metal, and rare earth chemical concentrate.

However, to date, Australia has not demonstrated economically competitive capability to value-add further along the value chain or engage in component manufacture and assembly. Limited technical capability and skills shortages domestically together with a high-cost environment, present substantive barriers to value-add further along the value chain or end-product manufacture.

**Attracting international investment from strategic partners with technical capability will be critical to acquiring and building capacity if Australia is to competitively move further along the critical minerals value chain. Australia should maintain its open, rules-based market economy philosophy with respect to foreign trade and investment policy.<sup>27</sup>**

## Decarbonisation and the pursuit of net-zero

The resources sector recognises shifting to renewable energy sources and decarbonising heavy industry operations are critically important for global sustainability. Further, the ESG credentials of critical minerals

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<sup>25</sup> International Energy Agency, [The Role of Critical Minerals in Clean Energy Transitions](#), pp 122

<sup>26</sup> Many examples exist across jurisdictions of prequalified experts assisting in the documentary and assessment work.

<sup>27</sup> With the potential exclusion of a few specific Australian national security initiatives

and downstream products required to facilitate the net-zero transition are increasingly under scrutiny, with many governments and advanced manufacturing companies citing commitments to the 'clean' credentials of their components.

The adoption of renewable energy and decarbonisation technologies is welcomed by industry. However, heavy industries such as minerals processing and refining are energy intensive and require a substantial quantum of reliable and cost competitive energy generation capacity, which is currently unable to be met by existing commercial-scale renewable energy generation capacity or decarbonisation technologies.

A critical challenge facing the sector is access to sufficient capacity of economically competitive, low-carbon energy generation capacity and other commercially ready decarbonisation technologies.

The advancement of a future-state clean energy generation and transmission network to deliver the required capacity to support decarbonisation is a critical component of the energy transition and the future of heavy industry in Australia. The ability of Australia to retain existing minerals processing and attract new investment is dependent on our ability to compete against international jurisdictions offering reliable and stable clean energy solutions such as hydro-electricity or nuclear energy generation.

This is a particularly relevant consideration in the context of critical minerals projects, which tend to be geographically isolated, in the absence of a comprehensive interconnected electricity network across Western Australia, and with high capital costs associated with energy infrastructure development.

To further the establishment of the minerals processing and refining sector within Australia, CME recommends the **Government's critical minerals strategy supports the decarbonisation of heavy industry operations with a considered regulatory regime and works with project proponents and the institutional research sector to further the development of technical solutions.**

To reclaim Australia's position as a competitive jurisdiction for energy users, the continued investment by Government in the transformation of the nation's (including Western Australia's) electricity network is vital. CME recommends the **Government's critical minerals strategy align to the national energy transformation strategic planning and shared funding priorities including leveraging of the National Reconstruction, Powering the Regions and Rewiring the Nation funds.** This approach may also include direct Government investment in clean energy hubs in mineral rich regions and incentivising the entry of new renewable energy generation capacity from independent power producers through the regulatory framework, thus minimising the costs of project development and operation, and presenting an attractive investment signal for the future of critical mineral processing operations in Australia.

### **Supply Chain Resilience and Diversification**

The APAC region is comprised of several large end-product markets, and very competitive intra-regional supply chains that service those and other markets around the world. By virtue of a sustained policy direction over the past three decades, the PRC has established itself as the world's most competitive manufacturing economy and the dominant midstream and downstream producer of critical minerals products globally. While many international critical minerals markets are responding to recent geopolitical tensions and supply disruptions by seeking to diversify supply options, supply chains remain heavily embedded in the PRC.

Efforts by APAC economies to grow their critical minerals dependent downstream and manufacturing industries, provide a unique opportunity for Australia as a key supplier of economically competitive inputs. Relationships with business partners in the PRC and other APAC nations will remain important for Australia to realise these opportunities and establish the nation as a major supplier of critical minerals products to these markets.

Government engagement with the resources and critical minerals industry will be important to expand opportunities for trade and investment, including promoting Australian mining's high ESG performance. Continued international engagement will play a key role in Australia being recognised as an attractive destination for investment in critical minerals and facilitating effective engagement between governments, industry, and research organisations.

**Australia has an opportunity to utilise the international bilateral and multilateral trade frameworks to optimise the diversity of offtake markets and sources of capital. This action would bolster Australia's supply chain resilience and support the diversification of global supply chains.**

## Conclusion

In conclusion CME recommends the Commonwealth Government:

- Adopt mutually beneficial policy settings to encourage the upstream and refining segments of critical mineral value chains to secure ongoing security of material supply and promote scale.
- Develop a comprehensive understanding of the policy positions, instruments, and incentives introduced by international jurisdictions and communicate the potential market opportunity to industry.
- Consider measures such as grants and tax incentives to increase Australia's competitiveness, particularly for upfront capital outlays, when compared to making these investments in other jurisdictions.
- Utilise existing frameworks to promote and maintain the highest ESG standards and ensure benefits continue to flow into the regions and communities where projects are located.
- Assume an active project facilitation role at a national level (and in coordination with the states) to assist projects in navigating regulatory processes, and support identification and removal of duplication.
- Consider a framework, guidance, or regulatory pathway to support the fast-tracking of approvals for critical minerals projects in consultation with state governments.
- Utilise private sector expert environmental and heritage consultants to augment capacity within the public sector and support efficient processing of applications.
- Play a key role in coordination with states to de-bottleneck industrial land (for example through facilitation of primary Commonwealth approvals) and support state government efforts to develop strategic industrial hubs to attract investment.
- Maintain an open rules-based market economy philosophy with respect to foreign trade and investment policy. Support international investment from strategic partners with technical capability to further Australia's ambition to move further along the critical minerals value chain.
- Ensure alignment between the critical minerals strategy, the national energy transformation plan and shared funding priorities. Consider direct Government investment in clean energy hubs in mining and heavy industrial areas, and incentivise entry of new renewable energy generation capacity from independent power producers through the regulatory framework.
- Support the decarbonisation of mineral processing operations with a considered regulatory regime and work with project proponents and the research and development sector to further the development of the technical capability required.
- Utilise the international bilateral and multilateral trade frameworks to optimise the diversity of offtake markets and sources of capital. This action would bolster Australia's supply chain resilience and support the diversification of global supply chains.

For further information regarding this letter, please contact Adrienne LaBombard, Acting Director - Policy & Advocacy, on 0400 912 525 or via email at [A.LaBomard@cmewa.com](mailto:A.LaBomard@cmewa.com).

Yours sincerely



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