BHP submission to the Updating Australia's Critical Minerals List issues paper

BHP welcomes the opportunity to provide feedback to the Department of Industry, Science and Resources' *Updating Australia's Critical Minerals List* issue paper. Metals and minerals are essential for the functioning of the global economy and the worlds continued prosperity.

BHP supports the approach taken by the Australian Government in its national *Critical Minerals Strategy 2023-30* (CMS). By focusing on controllable policy settings to enhance project viability, rather than industry subsidies, the government can help create the right conditions for further investment in critical minerals.

To deliver on the objectives set out in the CMS, Australia's Critical Minerals List (CML) must reflect the industries and technologies that are crucial for the global transition to net zero greenhouse gas (GHG) emissions, domestic and regional energy security and the nation's defence and economic security priorities. Without this alignment, Australia risks missing out on significant economic opportunities.

To capture the economic opportunities presented by the growing demand for critical minerals, copper, nickel and uranium should be included in a revised CML.

BHP and future commodity needs

Growing demand for metals and minerals is increasingly linked with the global drive towards low-carbon energy generation and storage technologies and decarbonisation objectives. BHP produces essential resources the world needs to decarbonise and develop more sustainably, including copper for the expanded electricity networks critical to the energy transition, nickel for the batteries needed to store renewable energy and power electric vehicles and higher-quality iron ore and metallurgical coal for the steel needed to build our cities and create new infrastructure, such as fast trains and wind turbines.

In the World Bank's analysis[1] of ten low-carbon energy technologies included in the electricity generation and energy storage GHG emission mitigation scenarios to 2050 it examined, copper is identified as essential to all ten technologies and nickel to nine of them. Globally under a Paris-aligned 1.5-degree trajectory:

- Cumulative primary nickel demand would be nearly four-fold over the next 30 years, relative to the last 30;
- Cumulative demand for mined copper and uranium would double; and
- The world would need almost twice as much steel in the next 30 years as it did in the last 30.

As one of the world's leading mining nations, and with further potential to be unlocked in critical minerals, Australia should be in an advantageous position to benefit from the growth in demand for critical minerals. As the global economy transitions and challenges our current export settings, capitalising on this opportunity would help offset the economic challenges that we face on the horizon.

Acknowledging the global context

Shifting global markets indicate that Australia's CML should be designed to evolve as needed to maintain alignment with emerging global trends. When global commodity demands deviate from Australia's domestic priorities, there should be sufficient flexibility in how metals and minerals are listed to enable domestic producers to supply global demand.

While Government policy may prioritise downstream processing and manufacturing opportunities, supplying global markets through export opportunities delivered by upstream capacity to our strategic partners should also play an important role in the function of the CML.

Uranium supply stability for our western partners who are dependent on nuclear energy for clean and stable energy, is critically important considering recent geopolitical disruptions, such as those evidenced from the Ukraine conflict[2] and the situation in Niger[3]. While the Australian Government's current position does not see

[1] Climate-Smart Mining: Minerals for Climate Action (worldbank.org)
[2] Ukraine to step up efforts to produce a domestic uranium supply - Bellona.org
[3] The coup in Niger puts spotlight on nation's uranium - The Washington Post

nuclear energy forming part of future energy generation in Australia, it does play an important role for strategic partners such as Canada, who list uranium as a critical mineral.[4]

There is the potential for an economic upside for Australia, with around 28% of the world's known uranium resource in Australia.[5] Strategic national partners with Australia drive demand for a product whose supply chain is vulnerable to disruption yet is an essential component for a modern technology able to generate low GHG emission energy.

BHP retains the technology agnostic position that nuclear generation should not be restricted from playing a role in delivering reliable, carbon-free electricity to Australia's electricity network.

The shift towards meeting technology and low- to zero-GHG emission infrastructure requirements indicate there is clear benefit in including commodities such as copper, nickel and uranium in the CML to improve Australia's ability to capture these growing opportunities.

Avoiding measures that distort the development of markets

The growth in demand for critical minerals has seen governments globally introduce measures to secure their own critical mineral supply chains. It is important that these measures do not undermine the outcome the world needs to achieve. A combination of pragmatic international cooperation and competition can jointly accelerate the energy transition.

Government should avoid protectionist or interventionist policies in pursuit of securing critical mineral supply chains. Such steps can lead to a distortion in the development of both emerging supplier and consumer markets. Measures such as subsidies and joint purchasing arrangements could risk increasing inefficiencies, disrupting markets and reducing transparency.

Recapturing our Competitiveness

Underlying both the Government's CMS and any subsequent changes to the CML should be a focus on Australia's competitiveness. There is a broad understanding for the need for critical minerals, as well as a flexible and robust CML to reflect our country's priorities, but without a competitive environment we risk losing investment to other countries.

Today, Australia has a relatively lower global share in several of the largest future facing commodities, despite having a large resource base. At the same time, other countries like the United States, industry and governments are working together to shape commodity markets in their favour.

Within this environment of heightened global competition, Australia has an opportunity to capture an outsized share of investment and enjoy the future economic and social benefits it can deliver. We can only succeed if we are willing and able to compete.

Strategic Projects and Fast-tracked Permitting

A consideration of any proposed changes to critical minerals lists is their access to streamlined approval processes. Globally, many jurisdictions are incorporating fast-tracked permitting for commodities identified on their own national lists to rapidly bring forward supply, while maintaining the high social, environmental, regulatory and due diligence standards required by purchasers and host communities. We note and support the Government's reference to Environment Protection and Biodiversity Conservation Act reform in this area within the CMS.

BHP favours efforts to streamline and standardise permitting and approvals regulations, as well as harmonising federal, state and local regulations where relevant. This is crucial for the development of the minerals and metals required for the energy transition, as well as downstream activities that will help meet national decarbonisation targets. It is important that this streamlining should not jeopardise the important environmental, social, and governance related standards that remain a key factor in maintaining Australia's competitive advantage in the development of these resources.

[4] The Canadian Critical Minerals Strategy - Canada.ca
[5] Uranium Supplies: Supply of Uranium - World Nuclear Association (world-nuclear.org)

Appendix A: Responses to the questions posed in the issues paper

1. Is the current set of criteria still fit for purpose?

We understand Australia's critical minerals list (CML) serves two purposes:

(1) to signal to the market and other key stakeholders the minerals that the Australian Government believes are critical; and

(2) to serve as an eligibility filter for possible policy support to enable and accelerate project development.

In this context, we believe the CML should use one of two tests to determine mineral criticality:

- Whether a mineral presents a supply risk to Australia (which is the traditional understanding of mineral criticality, and underpins the lists maintained by strategic partners like the United States and European Union); or
- Whether a mineral presents a strategic opportunity to Australia (considering both the current or emerging technologies that rely on the mineral as an input and Australia's resource endowment).

Based on this, we propose that the Australian Government slightly adjust its current criteria, so that a mineral is considered critical if:

- its supply is considered essential to the economic, energy or national security of Australia, and it has a supply chain vulnerable to disruption, or
- it is an essential input to priority technologies that support Australia's national interest and of which Australia has potential economic geological resources.

2. For minerals that are currently on the list, or minerals that should be considered for addition to or removal from the list?

Our view on the addition or subtraction of minerals from Australia's current CML is dependent on whether the Australian Government chooses to maintain a single list or introduce subsets that incorporate the level of assistance or prioritization required to support development.

Copper:

As a common component in most electrical wiring, power generation, transmission, distribution, and circuitry, supply of copper is vital for electrification. Under its 1.5˚C accelerated energy transition scenario, Wood Mackenzie estimates that to meet the demand generated from growth in renewables, energy storage and grid infrastructure as well as electric vehicles and charging facilities 9.7 million tonnes of new copper supply is required over the next ten years from projects yet to be sanctioned.[6] Electric vehicles (EV) can require up to four times as much copper as petrol vehicles.[7]

With estimates of up USD$250 billion of mine investment being required in the 2020s to meet the growth in copper demand that would be caused by the energy transition,[8] this is a significant economic opportunity for Australia. The South Australian Government's decision to declare copper a critical mineral for the state[9] reflects this growing importance.

Nickel:

The demand for high-quality nickel will surge as EV demand increases – as nickel is a key component used in their batteries. In a 1.5C scenario, cumulative demand for primary nickel will be nearly four-fold over the next 30 years, relative to the last 30.[10]

Uranium

More uranium would be required in a world where nuclear power plays an important role in delivering decarbonisation and energy security. Australia's national strategic partners are exploring alternative energy sources to combat the energy crisis and provide surety for supply chains.

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[6] Net zero scenario to require 9.7 Mt of new copper supply over next decade (www.woodmac.com)
[7] Visualizing Copper's Role in a Low-Carbon Economy (visualcapitalist.com)
[8] Bank of America Securities 2023 Global Metals, Mining & Steel Conference (www.bhp.com)
[9] Critical mass: SA Government declares copper a critical mineral | Energy & Mining (energymining.sa.gov.au)
[10] Bank of America Securities 2023 Global Metals, Mining & Steel Conference (www.bhp.com)

The United States Congress has passed a number of initiatives[11] to spur the development of nuclear energy for domestic use. Provisions in the bipartisan *Infrastructure Investment and Jobs Act* and the *Inflation Reduction Act*, as well as nuclear energy research and development funding of US$18 billion in FY23[12] indicates a strong desire for this to be part of the global transition to net zero GHG emissions.

Japan has recently announced it will cooperate with the United States in developing the next generation of advanced light water and small modular reactors. Canada's government has taken an additional leap forward, making its first C$970 million commitment to developing a small modular reactor in October 2022. In Europe, Sweden and Finland are exploring nuclear expansion.

3. Should Australia differentiate between criticality or importance of minerals, and the capability to process them, through categories within the list or a separate category that sits alongside the list?

As mentioned, in question 1, Australia's CML broadly serves two purposes. Depending on the policy objectives of the Government, it may be sensible to provide a higher level of granularity to Australia's list going forward.

Not every commodity that could be considered critical may need the same type of support. For example, a processed or refined commodity may have greater market demand than the raw material on global markets. That refined commodity may not need financial support to be developed but may benefit from a streamlined approvals process to bring that resource to market sooner to take advantage of the growing market opportunity.

Following the example of foreign jurisdictions such as Canada and the European Union in differentiating between these situations could help Australia's resources sector take advantage of the opportunities that exist at all stages of the supply chain.

4. What lessons could be learned from other countries' approaches or the ways in which they consider their criteria for listing critical minerals?

Many of Australia's key strategic partners adopt a broader categorisation of what constitutes a critical mineral compared to Australia. Australia's CML should acknowledge how its strategic partners have complied their own lists, how Australia's list will communicate its commitment and the list's ability to support important supply chains.

The use of these lists globally forms part of the eligibility criteria for various forms of government assistance, whether it be tax credits via the United States Government's *Inflation Reduction Act*, or expedited approvals as in Canada and the European Union.

United States

The U.S. Geological Survey (USGS) publishes a list of 50 critical minerals[13] that includes nickel. Uranium was removed from this list in 2018, as the US Energy Act excludes "fuel minerals" from the definition of critical minerals. Bipartisan support[14] also exists to include copper on this list.

The U.S. Department of Energy (DOE) has recently published a list of energy-specific critical and near-critical materials[15] relevant to supply chain security for so called "clean energy technologies". This list includes copper and nickel as critical materials for energy. Their DOE analysis indicates uranium as near critical in the near and medium terms.

Republic of Korea

The Republic of Korea has a list of 33 critical minerals. The overarching objective of their strategy is to cut dependency on imports from 80% to 50% by 2030 and expand and recycle critical minerals from 2% to 20%. The Republic of Korea's broader list is further defined with 10 minerals classified as strategic critical minerals. A strategy has been introduced to secure a stable critical minerals supply chain and reduce dependency on imports from any individual country for these strategic critical minerals.

Domestically, the Republic of Korea has also implemented measures to boost its stockpile of critical minerals, increasing from 25 to 26 distinct types, with a supply duration extending from 54 to 100 days.

[11] Efforts to Transform US Nuclear Industry Entering Full Bloom - AIP.ORG
[12] The State of Play for Nuclear Energy in the United States | Briefing | EESI
[13] 2022 Final List of Critical Minerals Federal Register Notice_2222022-F.pdf (amazonaws.com)
[14] ICYMI: Manchin, Bipartisan Colleagues Urge Administration to Revisit Copper for... (senate.gov)
[15] U.S. Department of Energy Releases 2023 Critical Materials Assessment to Evaluate Supply Chain Security for Clean Energy Technologies | Department of Energy

In recent years, the Republic of Korea has addressed its dependence on China for critical mineral supplies by joining multilateral initiatives such as the Minerals Security Partnership, which focuses on bolstering critical mineral supply chains and catalysing investments from governments and the private sector. It has also formed mineral partnerships with countries like the United States, Kazakhstan, Indonesia, Canada, Ecuador, Mongolia and Australia.

Canada

Priority commodities on Canada's critical minerals list[16] include copper, nickel and uranium. An eligibility requirement[17] for Canada's C$1.5 billion Strategic Innovation Fund is that the project must be related to the development of Canada's 31 critical minerals, with focus given to six key minerals: copper, nickel, lithium, graphite, cobalt, and rare earth elements (REE).

Listing as a critical mineral also provides eligibility to the 30% Critical Mineral Exploration Tax Credit[18], double the current 15% credit available under the Mineral Exploration Tax Credit.

Canada has also focused on building critical mineral trade relationships, having signed a joint action plan with the United States in 2020 to advance secure supply chains for critical minerals. Canada has signed similar critical minerals cooperation agreements with Japan and the European Union and is actively engaging in additional bilateral conversations with the United Kingdom and the Republic of Korea.

Regulatory changes introduced at the provincial level such as Ontario[19] aim to reduce the burden and time applications take in government processing for eligible minerals.

United Kingdom

The United Kingdom's first ever Critical Minerals Strategy[20] is focused on making supply chains more resilient to market shocks, geopolitical events and logistical disruptions to support British industries of the future, deliver on the energy transition and protect national security.

Classification as a 'critical mineral' requires the commodity to be not only vitally important but also experiencing major risks to its security of supply. This criticality will be assessed on an annual basis, led by the British Geological Survey's Critical Minerals Expert Committee, using a methodology agreed with the Department for Business, Energy and Industrial Strategy.

There are three broad subsets that minerals are categorised as:

- Critical minerals – high economic vulnerability and high global supply risk
- Watchlist – potential increasing criticality due to rapidly growing demand or emerging global supply risks; and
- Other important minerals – feedstocks for important technologies but may be more plentiful or less risky supply chains.

The United Kingdom lists 18 minerals of high criticality.[21] Nickel is listed on their expert committee's first watchlist.[22].

European Union

The European Union has proposed a comparatively broad list of critical minerals, which are separated into "strategic raw materials" and "critical raw materials"[23]. We note that the Regulation is currently going through the legislative process and has not yet reached its final form.

Copper and nickel are both included in the two lists of *critical* and *strategic* raw materials proposed by the European Commission.

[16] The Canadian Critical Minerals Strategy - Canada.ca
[17] Ottawa details eligibility for $1.5B in critical minerals project funding (electricautonomy.ca)
[18] CMETC (pdac.ca)
[19] Doug Ford unveils strategy for 'critical minerals,' worth $3.5B to Ontario economy | CBC News
[20] Resilience for the Future: The UK's Critical Minerals Strategy - GOV.UK (www.gov.uk)
[21] Critical Minerals List – Policies - IEA
[22] Resilience for the Future: The United Kingdom's Critical Minerals Strategy (publishing.service.gov.uk)
[23] resource.html (europa.eu)

The list of strategic raw materials includes copper and battery grade nickel.[24] The strategic importance of a raw material is proposed to be determined based on the relevance of a raw material for the green and digital transition as well as space and defence applications, taking into account other factors such as the amount required for specific strategic technologies, the forecasted demand growth, and the difficulty of increasing production.

Raw materials are deemed 'critical' depending on their economic importance, their substitution potential, and their import reliance. As such, some minerals may fall into both categories.

The European Union's *Critical Raw Materials Act* foresees accelerated permitting procedures for projects that are deemed strategic projects.

Although details are forthcoming, we consider that the European Commissions' proposal for a 'joint purchasing mechanism' could lead to market distortion. The mechanism would in any case be voluntary. Governments should facilitate an environment of fair competition through free trade and pragmatic international cooperation and avoid protectionist policies.

5. What should trigger an update to the list? For example, global strategic, technological, economic or policy changes.

The Government's latest CMS outlines a plan to achieve Australia's vision for 2030. Geopolitical changes can place significant and unexpected pressures on global supply chains that would require Government to retain the ability to respond to such changes when they occur to preserve Australia's capacity to achieve this vision.

If the Government is to deliver on this vision, then we believe it is appropriate to decouple the Strategy and the List. This would enable Government to address challenges as well as unexpected opportunities that may emerge as global markets seek to destress supply chains.

[24] Critical raw materials (europa.eu)