



Submission on the draft critical minerals list for New Zealand

To the Ministry of Business, Innovation and Employment

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Submitter details

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The Parliamentary Commissioner for the Environment

The Parliamentary Commissioner for the Environment was established under the Environment Act 1986. As an independent Officer of Parliament, the Commissioner has broad powers to investigate environmental concerns and is wholly independent of the government of the day. The current Parliamentary Commissioner for the Environment is Simon Upton.

Introduction

Thank you for the opportunity to provide feedback on the Government's draft critical minerals list. My comments relate to three matters.

- How the critical minerals list – once finalised – will be used
- If the mineral dependence of New Zealand's international partners is a useful criterion to include
- The need for improved transparency in how a mineral's 'essentiality' has been scored

On the use of the critical minerals list

The first issue relates to how the critical minerals list is intended to be used once finalised. I acknowledge at the outset that this is not the focus of the consultation, nor what the Government is seeking feedback on. That said, I think it is important to address the statement – made on the website accompanying the consultation – that the list “will allow the Government to investigate specific actions for securing better access to the minerals deemed critical”, something which “could include strategic pathways for development of specific minerals”.¹

That final point implies that New Zealand's critical minerals list could ultimately be used to inform the approvals process for domestic mines. I note that section 17(3) of the Fast-track Approvals Bill (as introduced) appears to allow for that possibility by specifying that Ministers

¹ [A draft critical minerals list for New Zealand – Summary | Ministry of Business, Innovation & Employment \(mbie.govt.nz\)](#)

can consider whether a project is identified in a central government plan or strategy when deciding if it has regional or national benefits. But regardless of the exact mechanics, let me be clear that basing approvals processes solely on an assessment of benefits is both inappropriate and short-sighted. New mines come with a range of environmental costs, and these should be just as central to the approvals process as royalties, jobs, and downstream multiplier effects.

With that said, the remainder of my submission relates to two relatively technical matters: the criteria used to define a critical mineral, and the process used to score them.

The second criteria used to define critical minerals has little to do with New Zealand's exposure to supply chain shocks

Three criteria have been used to select the minerals identified in the draft critical mineral list. To be included, a mineral must be:

- essential to New Zealand's economy, national security, and technology needs, including renewable energy technologies and components to support our transition to a low emissions future and/or
- in demand by New Zealand's international partners, and
- susceptible to supply disruptions domestically and internationally.

The first and third criteria are closely aligned with the assessments that have been undertaken in other countries.² Taken together, they reflect the key concern that has driven the proliferation of critical mineral strategies in recent years: that a breakdown in international trade will restrict access to certain minerals and, in doing so, severely hamper domestic economic activity.

The second criterion – in demand by New Zealand's international partners – is novel. As far as I am aware, no other Government sponsored critical minerals strategy has applied anything similar. It is also undemanding and difficult to implement. Undemanding, because New Zealand has many international partners, all of whom use a wide range of minerals and metals in their domestic economies. Difficult to implement because establishing the mineral and material requirements of our domestic economy is hard enough – let alone those of a large set of third-party countries.

While it is difficult to know (see the next section), it seems likely that the second criterion is an important driver of the large number of minerals that are included on the draft list. There are 65 naturally occurring and non-radioactive metals (and metalloids) in the periodic table. The draft list extends to 49 of these.³ The set of excluded metals is small enough to list in full: lithium, sodium, calcium, iron, silver, cadmium, tin, caesium, barium, hafnium, tantalum, rhenium, gold, mercury, thallium, and lead.

In practice, the set of excluded metals may be even smaller. Many of them co-occur in New Zealand mineral ores with metals currently defined as critical.⁴ To the extent that the

² The [UK criticality assessment](#), for example, is based on supply risk and economic vulnerability. Similarly, The EU [methodology](#) involves supply risk and economic importance.

³ Including the full suite of platinum group metals and rare earth elements included in the list.

⁴ Gold, for example, co-occurs with antimony in orogenic vein deposits on the West Coast and in Marlborough ([GNS, 2024 – p10](#)). Iron is found alongside titanium and vanadium in New Zealand's heavy mineral sand deposits. And tin is found with tungsten and molybdenum in greisen deposits on the West Coast ([GNS, 2024 – p127](#)).

critical minerals list will be used to facilitate domestic mining projects (as suggested on the webpage accompanying the consultation), these excluded metals will in effect also be given preferential status.

The obvious question in all of this is why include the second criterion in the first place? The underlying logic may be that New Zealand is heavily reliant on other countries for a number of advanced products (e.g., electronics and vehicles) that, in turn, require a range of critical minerals for their manufacture. How New Zealand defining any such mineral as critical would affect the supply chain risk faced by our international partners is a mystery.

In the absence of any alternative explanation, the second criterion appears to be simply designed to expand the range of minerals that can receive special consideration under various consenting pathways.

The methodology used to assess criteria #1 (essential to New Zealand) and criteria #2 (in demand by our international partners) is completely opaque

An initial inspection of the draft critical minerals list raises a few immediate questions:

- Why is lithium (a key ingredient in lithium-ion batteries) excluded despite having a higher supply risk than phosphate (another key ingredient in lithium-ion batteries)?
- Why is vanadium (a key ingredient in the manufacture of speciality steel) included when other key ingredients (iron and coking coal for example) are excluded?
- Are metals like gallium, indium, and niobium – none of which is used directly in domestic manufacturing applications (at least as far as we are aware) – included because they are judged to be essential to the New Zealand economy, or because they are in demand by our international partners?

My concern is not so much whether these determinations are ‘right’ or not. Rather, it is with the absence of any detail about the methodology that was used to make them.

The consultation document includes a thorough description of the approach used to score criteria #3 – supply risk. One can quibble with the findings – should vanadium really have a higher supply risk than copper or cobalt when New Zealand is a globally significant producer of it⁵ – but it is at least possible to see the assumptions that drive them.

When it comes to criteria #1 and #2, however, this description is absent. The consultation document is clear that the concept of ‘essentiality’ – either for New Zealand or our international partners – is at the heart of both criteria. It is also clear that to be essential, a mineral or metal must be both “critical to maintaining the New Zealand economy today and into the future” and be “not readily substitutable”. How each of these factors were scored is completely opaque, however.

It may be that a scoring system was developed to assess how critical and substitutable individual minerals and metals are (as with the supply risk assessment). Or it may be that these decisions were made on a “yes/no” basis drawing on the expertise of people consulted during the development of the draft list. Whatever the case, the process that has been used (and the

⁵ According to [GNS \(2024\)](#) – p129, vanadium produced in New Zealand currently accounts for 10 per cent of the world market.

results of it) needs to be made transparent if the resulting critical minerals list is to withstand scrutiny – particularly in a regulatory context. The criticality assessment that underpins the United Kingdom’s critical minerals list puts it nicely:⁶

“An overarching requirement for any criticality assessment is that it should be based on a transparent and robust methodology clearly communicated to all users and underpinned by reliable data. If data are absent or of poor quality, if assumptions and generalisations are not made explicit and if the applied methodology is opaque, then the value of the derived results may be seriously undermined.”

Overall, I am not convinced that this complex and opaque analysis adds anything more to our collective understanding than all the market knowledge that is embedded in the price of a particular mineral. As stated above, I assume the critical minerals list will give mining projects automatic status as “nationally or regionally significant”, allowing them to proceed once the Fast Track Bill is enacted.

In light of this, I return to a recommendation I made in my recent submission on the Government’s draft minerals strategy that: **once national bottom lines have been met (i.e., schedule 4 land for the purposes of the Crown Minerals Act is not involved), proposals for new mines should be assessed on their merits or, in other words, using cost benefit analysis.** This would – if done properly – allow the economic gains to be traded off with the environmental costs in a transparent manner.



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Te Kaitiaki Taiao a Te Whare Pāremata

⁶ [British Geological Survey \(2022\)](#).