



Committee Secretary  
Senate Economics Legislation Committee  
Department of the Senate  
PO Box 6100  
Parliament House  
CANBERRA ACT 2600  
AUSTRALIA

28<sup>th</sup> September 2022

## **RE: Inquiry into Atomic Energy Amendment (Mine Rehabilitation and Closure) Bill 2022 [Provisions]**

**Dear Committee Secretary,**

The Critical Minerals Consortium (CMC) is led by Monash University and draws on the expertise of several researchers and practitioners from academia, research and industry including researchers from RMIT University, the University of Melbourne, Deakin University, CSIRO Minerals, University of Queensland, Federation University and Latrobe University. The CMC is involved with the government and mining industry to which to improve our understanding of minerals criticality and to provide advice, ideas and expertise to assist policymakers.

The CMC holds substantial interest in this discipline and would like to offer support to the inquiry. This submission is to address the committee on important issues that surround the Ranger Uranium Mine in the Northern Territory and the amendment of the *Atomic Energy Act 1953* (the Act).

The range of expertise of the CMC allows extensive cross disciplinary capacity to not only focus on critical minerals but also develop strategic mine closure and rehabilitation. A range of complex economic, social and environmental challenges are associated with the closure and rehabilitation of the Ranger Mine. Addressing these challenges requires multi-disciplinary research approaches to ensure that proposed solutions are technically sound, whilst meeting the needs of community, industry and government stakeholders.

### **Ranger Mine as it relates to the Energy Amendment**

There are many challenges that come with the rehabilitation and closure of the Ranger Mine due to its location, mined ore type and public perception. The CMC is proposing recommendations and areas of expertise to the following issues that relate to the rehabilitation and remediation of the Ranger Mine:

- Environmental standards and rehabilitation practices – Due to the location, community involvement and history of the Ranger Mine the site would be required to be rehabilitated to best practice standards and adhere to relevant regulations. Section 41 of the Act does not make details of rehabilitation and environmental standards as well as makes no mention of keywords including ‘remediation’ or ‘vegetation’. The Act should highlight explicit guidance and expectations around the site’s remediation that would adhere with best practice standards and be in line with the *Northern Territory Environment Protection Act 2019* and *Waste Management and Pollution Control Act 1998*. Further, it would be recommended that there is an involvement with universities and research bodies to ensure the site is going above and beyond typical best practice standards. This would allow the site to be regarded as a ‘world class rehabilitation example’ where learnings could be applied to other uranium mines in Australia and the world.
- Closure costs and rehabilitation timelines – Estimating the costs of mine closure decades in the future can be challenging. As the mine’s life continues, environmental and mine rehabilitation/closure standards increase over time. These standards should be continually updated as knowledge and awareness of environmental issues increase, however it can cause estimation errors in final closure costs. Initial mine closure estimates are typically made considering the expected life of the mine and commodity prices. When commodity prices (Uranium in this case) drop or change unexpectedly, and the mine is required to close sooner than anticipated it can have substantial impacts on costs and rehabilitation timeframes. Within Section 41 of the *Atomic Energy Act 1953* there is no mention of timeframes that would allow the Ranger Mine to be rehabilitated to a required standard. Because of the complexity of the site, the Act needs to consider how long rehabilitation will take to ensure that the site will be remediated to an appropriate standard. Assuming these aspects are considered within the Act, the CMC has extensive experience in rehabilitation costs and timeframes to ensure that a rehabilitation standard is able to be achieved.
- Community and stakeholder relationships – There are many key internal stakeholders that have varying levels of involvement with the Ranger Mine. Involved parties can have a range of different expectations including the level of environmental standards, cost, and rehabilitation timeframe. All of these stakeholder should be considered within the amendment of Section 41 of the Act as well as indicating the stakeholders final land use. The CMC has experienced researchers from multiple universities and has the ability to harness resources from their different faculties including



the Faculty of Law, Business, Arts and Economics. Hence the CMC would be able to assist in seeing such relationships through.

Further, the involvement of the CMC or a similar research body would benefit the Ranger Mine to ensure that the site receives external, unbiased recommendations. The research being conducted by the CMC, can provide comprehensive expertise that can be harnessed to identify any potential challenges, opportunities and solutions to the Ranger Uranium Mine closure. Some of our capabilities are shown within the included attachments.

**Submission prepared by:**

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Yours Sincerely,

Alec Miller