

To: The New South Wales Legislative Council's Standing Committee on State Development

Re: Inquiry into the beneficial and productive post - mining land use

25 June 2024

Introduction

The Association of Mining and Exploration Companies (AMEC) welcomes the opportunity to provide a submission to the New South Wales (NSW) Legislative Council's Standing Committee on State Development on productive and productive land use post mining.

Whilst the inquiry has specified post-mining land use, AMEC believes there is merit in also considering the infrastructure, equipment and workforce for repurposing after mine closure. All these considerations should be incorporated into the closure plan and allowance made to significantly reduce the rehabilitation bond accordingly.

About AMEC

AMEC is a prominent national organisation that represents more than 550 members throughout Australia. Our membership includes explorers, emerging miners, producers, and a diverse array of businesses involved in the minerals sector. AMEC advocates for numerous companies engaged in exploration, mining, and investment activities in New South Wales.

This submission outlines some recommendations that we hope improve the productive post – mining land use in New South Wales.

Summary of Recommendations

- **A robust independent regulatory framework to maintain and advance best practice in this area**
- **Successive land uses**
- **Transitional land use potential**
- **Training and skills diversification**
- **Enable innovative post-mining land uses**
- **Community benefits**
- **Improved Community Expectations**
- **Improved Rehabilitation Bond calculations**

Post mining land use

Post-mining land use refers to the designated purpose and condition of land following the completion of mining activities. It encompasses the plans and processes involved in rehabilitating and repurposing mined land to

ensure it is safe, stable, and suitable for future use. The goal is to restore or improve the land's utility and environmental quality, aligning with broader community and environmental objectives.

The NSW Resources Regulator has issued a Practical Guide for Post Mining Land Use¹ in January 2023. The guide sets out the commitment to seek opportunities for post mining land use (PMLU) as representing a significant opportunity for NSW to harness the existing infrastructure, skilled workforce and transport links from mines approaching closure, to continue economic activity on mined land. The guide was issued following the release of the Future of Coal Statement, issued in 2020, in which the NSW Government aimed to explore alternative land uses after the cessation of mining activities, and provide diversification of industry to regional areas.

Current NSW Legislation for mine closure requirements

Section 3A of the *Mining Act 1992* sets out the legal requirements for rehabilitation of mine sites:

3A Objects

The objects of this Act are to encourage and facilitate the discovery and development of mineral resources in New South Wales, having regard to the need to encourage ecologically sustainable development, and in particular—

- (a) to recognise and foster the significant social and economic benefits to New South Wales that result from the efficient development of mineral resources, and
- (b) to provide an integrated framework for the effective regulation of authorisations for prospecting and mining operations, and
- (c) to provide a framework for compensation to landholders for loss or damage resulting from such operations, and
- (d) to ensure an appropriate return to the State from mineral resources, and
- (e) to require the payment of security to provide for the rehabilitation of mine sites, and
- (f) to ensure effective rehabilitation of disturbed land and water, and
- (g) to ensure mineral resources are identified and developed in ways that minimise impacts on the environment.

Existing Regulatory support

The NSW Resources Regulator encourages proponents of mining operations to ensure progressive rehabilitation and post-mining land uses are properly considered early in the design stages and before lodging a development application.²

¹ [practical-guide-post-mining-land-use.pdf \(nsw.gov.au\)](https://www.resourcesregulator.nsw.gov.au/practical-guide-post-mining-land-use.pdf)

² <https://www.resourcesregulator.nsw.gov.au/rehabilitation/mine-rehabilitation/mine-planning-and-rehabilitation-advice>

The NSW Resources Regulator encourages proponents of mining operations to ensure progressive rehabilitation and post-mining land uses are properly considered early in the design stages and before lodging a development application.³

The Regulator encourages Miners to consult with them early in the development application process to avoid poor environmental and community outcomes.

The Regulator refers to the Federal Australian Government's Leading practice sustainable development program for the mining industry's handbook on mine closure.⁴

Proponents are also encouraged to consult with the Regulator throughout the operational and closure stages of a mine in relation to the preparation of rehabilitation management plans (formerly mining operation plans), rehabilitation objectives and completion criteria as well as rehabilitation completion reports.

Recommendations for post-mining land use

Critically the first step is community and stakeholder consultation. If the end purpose is known at the outset, this can be worked towards as the mine is being constructed, operated, and ultimately closed. With many mining projects well underway, the next best time is now. Some of the benefits and processes are as follows:

A robust independent regulatory framework to maintain and advance best practice in this area – A robust independent regulatory framework is crucial for ensuring that post-mining land use practices are responsible, sustainable, and beneficial for the environment and local communities. Reasons for this include:

- A system will be required to provide a legal framework for resolving disputes and enforcing regulations, as there will be parties with competing interests and to ensure compliance with laws and ethical standards regarding land use and environmental protection.
- A regulatory framework ensures that environmental impacts are properly managed and mitigated, protecting ecosystems and biodiversity.
- The need for the establishment of clear, uniform standards for post-mining land use, ensuring all stakeholders adhere to the best practices.
- A regulatory framework will facilitate consistency across different mining projects and jurisdictions.
- A reliable framework assists to build trust between communities, governments, and mining companies by ensuring transparency and fairness in post-mining activities and engages local communities in the decision-making processes, addressing their needs and concerns effectively.

Successive land uses – There are benefits of having multiple successive land uses including the positive benefits for local communities and the economy, businesses, industry, and the broader state. There are

³ <https://www.resourcesregulator.nsw.gov.au/rehabilitation/mine-rehabilitation/mine-planning-and-rehabilitation-advice>

⁴ <https://www.industry.gov.au/sites/default/files/2019-04/lpsdp-mine-rehabilitation-handbook-english.pdf>

economic and social benefits to having successive land and infrastructure uses subsequent uses and investment in skills and training programs will prepare the workforce for new types of jobs. Encouraging the development of alternative industries will reduce reliance on mining and provide new employment opportunities.

Transitional land use potential – the use of existing and previously disturbed land in established or traditional mining areas should be prioritised for future projects. Projects with a focus on the decarbonised economy, renewable technology, renewable electricity generation, water storage facilities, manufacturing, Defence, skills, and training.

Training and skills diversification – Mining companies with the assistance of local training providers can develop training programs focussed on installing and maintaining alternative electricity infrastructure such as solar panels and wind turbines and or sustainable agriculture and aquaculture. Employees can learn new skills relating to repurposing and maintaining mining infrastructure for new uses, such as community centres, commercial spaces or tourism if the mine were being repurposed for ecotourism. Training centres can be set up offering a range of vocational training programs tailored to meet the needs of the community.

Enable innovative post-mining land uses – Encouraging innovative post-mining land uses involves exploring and promoting a variety of opportunities that can benefit local communities, the environment and the economy. Some of the key opportunities include:

Renewable Energy - Solar or wind farms or hydroelectricity. Converting former mining sites into solar power plants, utilising large areas of land to generate renewable energy. This could potentially also be conducted whilst the mine is operating, even whilst the mine is under construction to generate income so there is a smooth transition to post mine employment opportunities, particularly in regional areas. A working example of this is the [Kidston pumped Hydro and solar project](#) in North Queensland.

Development of agricultural and aquaculture projects such as greenhouses or hydroponic systems on rehabilitated land. This could also be conducted whilst the mine is being constructed and mined depending on the project location and size.

Transforming mining sites into water storage facilities, public parks, wildlife reserves, or recreational areas with hiking trails, camping sites, and sports facilities. A working example of a park emerging from a sand mine is [the Cattana Wetlands](#) in Cairns.

Tourism attractions by developing mine sites into museums that showcase the history and impact of mining in the region. A great example of this is Broken Hill being a Heritage Listed city due to its mining history. The established infrastructure also made the area attractive to film industry with movies such as Mad Max and Priscilla Queen of the Desert being filmed there.

Creation of new residential or affordable housing developments especially on stable rehabilitated land.

Development of commercial centres, industrial parks or business hubs that leverage existing infrastructure.

Implementation of reforestation projects to restore native vegetation and enhance biodiversity. Wetlands can also be created to provide wildlife habitat and offer recreational opportunities.

Educational institutions including schools, universities, or vocational training centres can be developed on rehabilitated land, with the potential for some of the buildings to be re-used.

- Community centres or cultural hubs providing space for social and cultural activities, public art projects or cultural installations that celebrate local heritage and creativity.
- Use of existing transportation and logistics infrastructure to create distribution centres of logistics hubs.
- Development of technology parks that support startups and innovation in fields such as clean energy, biotechnology, or information technology.
- Affordable short term or even crisis accommodation.

Community Benefits– Consultation with all stakeholders is key to ensuring optimal benefits for post mine land & infrastructure use. For example, in Western Australia’s Ellendale Diamond Project Mine Closure Plan⁵, The Company commenced appropriate consultation as part of their mine application to ensure facilities and infrastructure that could be productively used after the completion of operations remain. Infrastructure that can be potentially retained includes:

- Potable water supply and treatment plant.
- Communications links.
- Airstrip.
- Accommodation and messing facilities.
- Bore-field and pipeline networks.
- Access roads and tracks.

Improved Community Expectations - The expectations of mining communities in relation to post-mine land use, and how to balance this with innovative reuse of existing infrastructure – Communication will be critical as there are strict environmental requirements, cost considerations and decisions required on who will meet these costs, competing ideas and interests. Involve local communities in the planning process to ensure their needs and expectations are understood and addressed. Establish community advisory panels to provide ongoing input and feedback, and there is a need to establish a Regulatory Framework to oversee, monitor and review the process.

⁵ Western Australia’s Ellendale Diamond Project Mine Closure Plan, p71.

Improved Rehabilitation Bond calculations – Rehabilitation bonds will need to be calculated to remove or reduce as appropriate, the liability for infrastructure that will be reused and land that has approved and agreed re-use.

Examples of post-mining land use from other mining jurisdictions

There are numerous examples of uses for former mining, mineral processing, transport, and support infrastructure as well as land. Some examples are provided below:

Some examples of post mining land and infrastructure use

Kidston Pumped Hydro and Solar, Kidston, Queensland	The Kidston Pumped Storage Hydro Project is the first pumped hydro project in Australia for over 40 years, the first to be developed by the private sector, and the third largest electricity storage device in Australia.
Cattana Wetlands Environmental Park	Before Cattana Wetlands was a sand mine it was a sugar cane farm and has since been rehabilitated to form an enjoyable 80ha nature conservation park with a 420m boardwalk through feather palm forest, freshwater and saltwater lakes and abundant plant and birdlife.
The Works Swimming Pool, Essen, Germany	The pool is located in front of the coke oven battery in the middle of former Zollverein Coking Plant. Where coal was once baked into coke, two shipping containers have been welded together to hold water. There is also a 150m long ice rink which has been established alongside the coking ovens, the mine and its infrastructure has been transformed into a recreation and tourism space. ⁶
Geevor Tin Mine Museum and Heritage Centre, Pendeen, England	The Geevor Tin Mine ceased operation in the 1990s and has been left like a time capsule and is being used as a museum, with workers' possessions, clothes and tools left as if they had just finished work ⁷

⁶ [The Works Swimming Pool | World Heritage Journeys of Europe \(visitworldheritage.com\)](https://www.worldheritage.com/en/visiting-the-works-swimming-pool)

⁷ [Home - Geevor Tin Mine](https://www.geevor.com/)

Desalination plant, Witbank, South Africa	A reverse osmosis water treatment plant used previously to treat polluted water from an underground coal mine now supplies potable water to the local municipality ⁸
Ski resort, Park City, USA	Mining infrastructure has been adapted to form features in the skiing landscape at a Utah ski resort that hosted some of the Winter Olympics in 2002. When the slopes first opened, skiers used a special skier's subway that transported them through an old mine tunnel to access the mountain. ⁹
Penrhyn Quarry Experience, North Wales	Underground & open pit mine has been transformed into a theme park and adventure world. The open pit mine has a zip line that flies over the old quarry lake.

Final Remarks

The way in which land and infrastructure can be utilised post mining varies from site to site and includes a wide range of factors such as the location, type of equipment, regional and local planning context, environmental considerations, regulatory framework, stakeholder requirements and economics. It is therefore not possible to provide one solution. It is critical that there is consultation with all stakeholders at the outset for an optimal outcome.

AMEC welcomes ongoing opportunities to engage with our members and the Department, to ensure the mining and mineral exploration industry can provide constructive feedback to these important consultation periods.

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⁸ [Projects – Nafasi Water](#)

⁹ [Take a Walk into Park City's Past with this Half Day Mining History Walking Tour | Park City, UT \(visitparkcity.com\)](#)