John Watson

Chair

Upper Hunter Mining Dialogue

Since we met in 2024

There have been several important changes in the Upper Hunter since the 2024 Community Forum



Politics and Policies



Mining industry changes



Economy



Infrastructure



Community priorities

Purpose of the Dialogue

The Upper Hunter Mining Dialogue brings together industry, government, business and the community to better understand and manage the cumulative impacts of mining in the region.



Established in 2011 as a collaborative approach to engaging on local issues.



Brings together mining companies, government, business and community representatives to discussed shared challenges.



Provides a forum for information sharing and constructive discussion.



Focuses on the cumulative impacts of mining and the future of the Upper Hunter.



Provides credible, evidenced based information about mining in the Upper Hunter.

Restructuring the Dialogue

There have been several important changes in the Upper Hunter since the 2024 Community Forum

Joint Advisory Steering Committee

- Oversees the development of the Dialogues projects and activities to ensure alignment with the purpose of the Dialogue.
- Shapes the direction of the Dialogue to ensure longer-term strategic issues facing the region are addressed.

Working Groups

Upper Hunter Mining Dialogue Working Group

- Facilitate conversations with Dialogue stakeholders on the issues, opportunities and initiatives relating to environmental stewardship and economic and social development in the Upper Hunter.
- Oversee the preparation and publication of factual reports and projects relevant to the Dialogue, including annual environmental reports.

Youth Advisory Group

- Provide a youth perspective on issues, opportunities and initiatives relevant to the Upper Hunter.
- Contribute ideas and feedback to help shape Dialogue activities, communications and engagement with young people across the region.

Opportunities from today

- ✓ Hear updates on the Dialogue's projects, progress and priorities.
- ✓ Explore the economic outlook of coal in the Upper Hunter.
- ✓ Get a better understanding of Government priorities and their long-term implications for the region.
- ✓ Learn more about what it takes to plan for mine closure and hear a real case study from here in Muswellbrook.
- ✓ Connect with others, exchange perspectives and discuss opportunities for the region.

James Barben

Secretariat

Upper Hunter Mining Dialogue

What we've been working on



Finding new ways to engage

Launched the Webinar Series

Established the Youth Advisory Group

Extending the School Mine Tour Program to include teacher only tours



Transparent environmental reporting

Continued annual environmental reporting

Reviewed the 2012 Upper Hunter Fine Particle Characterisation Study

Developed factsheets on emissions in the Upper Hunter



Exploring post mining land use

Hosted the 2025 Field Day with a focus on mine land reuse opportunities

Actively engage in discussions relating to post mining land use



Strengthening engagement

Continued to build the School Mine Tour Program

Revised the Dialogue structure to strengthen engagement

Mine Land Reuse Field Day

- In October 2025, the Dialogue held a Mine Land Reuse Field Day visiting BHP's Mt Arthur Coal Mine.
- 40+ representatives from government, industry, local business and the community attended.
- Explored concepts of rehabilitation, closure planning and how future land uses are being considered.
- Visiting the operating pit, a site that is being considered for future use as a pumped hydro facility, land that has been rehabilitated and the workshop.
- Key takeaway was the importance of early planning, engagement with the workforce and collaboration.





School Mine Tour Program

- More than 4,800 students have visited an Upper Hunter mine through the program since 2018.
- In 2026, 16 tours were held, brining 390 students from 14 Upper Hunter schools onto mine sites.
- Teacher only tours were introduced in 2025, which has brought 180 educators, school leaders and support staff onto mine sites.
- The tours are designed to provide local students with the opportunity to learn how mines operate and the role mining plays in the region.





Water Accounting Reporting

- Since 2014, the water usage from Upper Hunter mines has been reported on annually.

- This objective of the project is to provide transparent and accessible information about the water usage of mining operations across the Upper Hunter.

In 2025

1,688

billion litres of water entered the Hunter River System in 2025

95%

of the water stayed in the Hunter River System

0.6%

of water from the System was extracted by the mining industry

6%

of the water was extracted and used by farmers, residents and businesses

44%

of mine water was reused on site in 2025

51%

of mine water was sourced from onsite rainfall and runoff

Rehabilitation Reporting

- Since 2012, the cumulative rehabilitation and disturbance from Upper Hunter mines has been reported.

- The aim is to improve the transparency of information around progressive rehabilitation and land management across the Upper Hunter.

In 2025

800

HECTARES
of land was newly rehabilitated in 2025

410

HECTARES
of land was newly disturbed in 2025

16,880

HECTARES
of land was under rehabilitation in 2025

27,221

HECTARES
of land was disturbed and awaiting rehabilitation at the end of 2025

38%

of disturbed land had been rehabilitated by the end of 2025

Air Quality Reporting

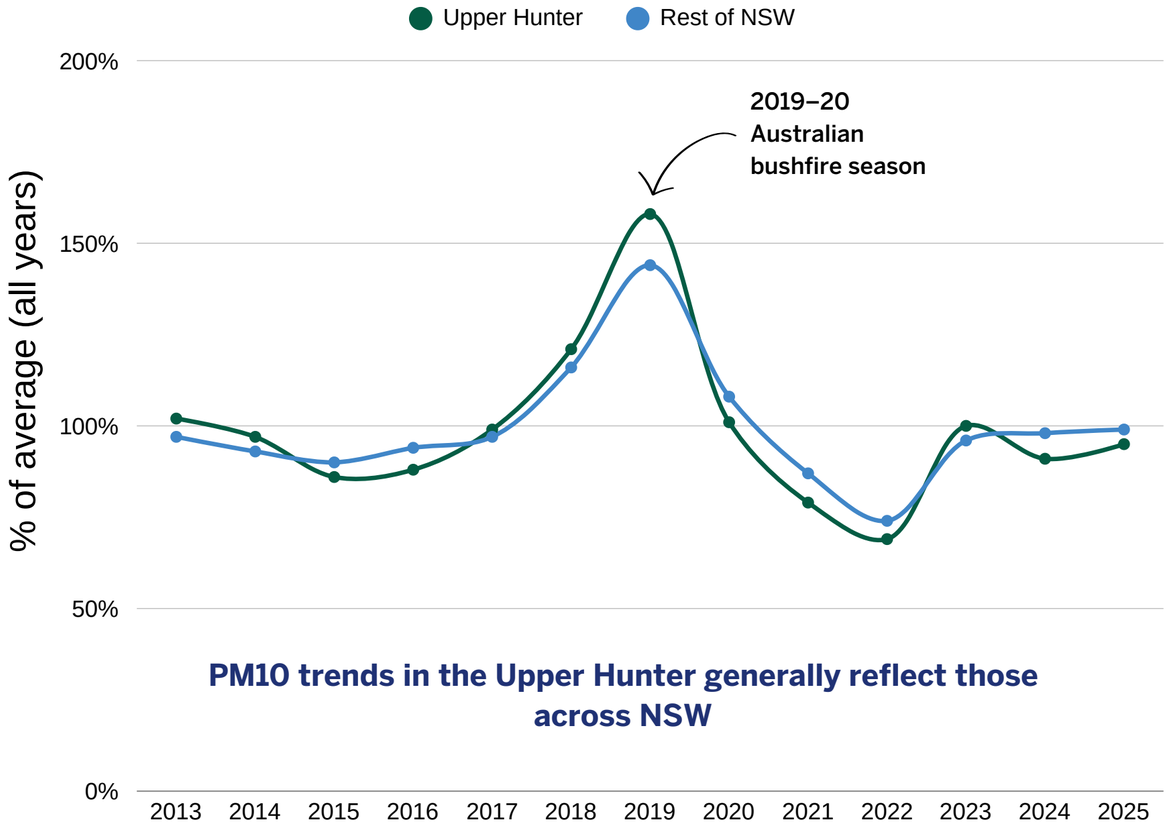
- In 2019, the Dialogue commenced annual reporting on air quality in the Upper Hunter.
- An independent air quality specialist is engaged to undertake the analysis.
- The project is designed to answer two questions:

1. **Has the air quality in the Upper Hunter changed?**
2. **Is the air quality in the Upper Hunter different from other locations in NSW?**

- Based on feedback at the 2024 Community Forum, number of exceedances were included in the reporting.

PM10 variability between Upper Hunter and NSW

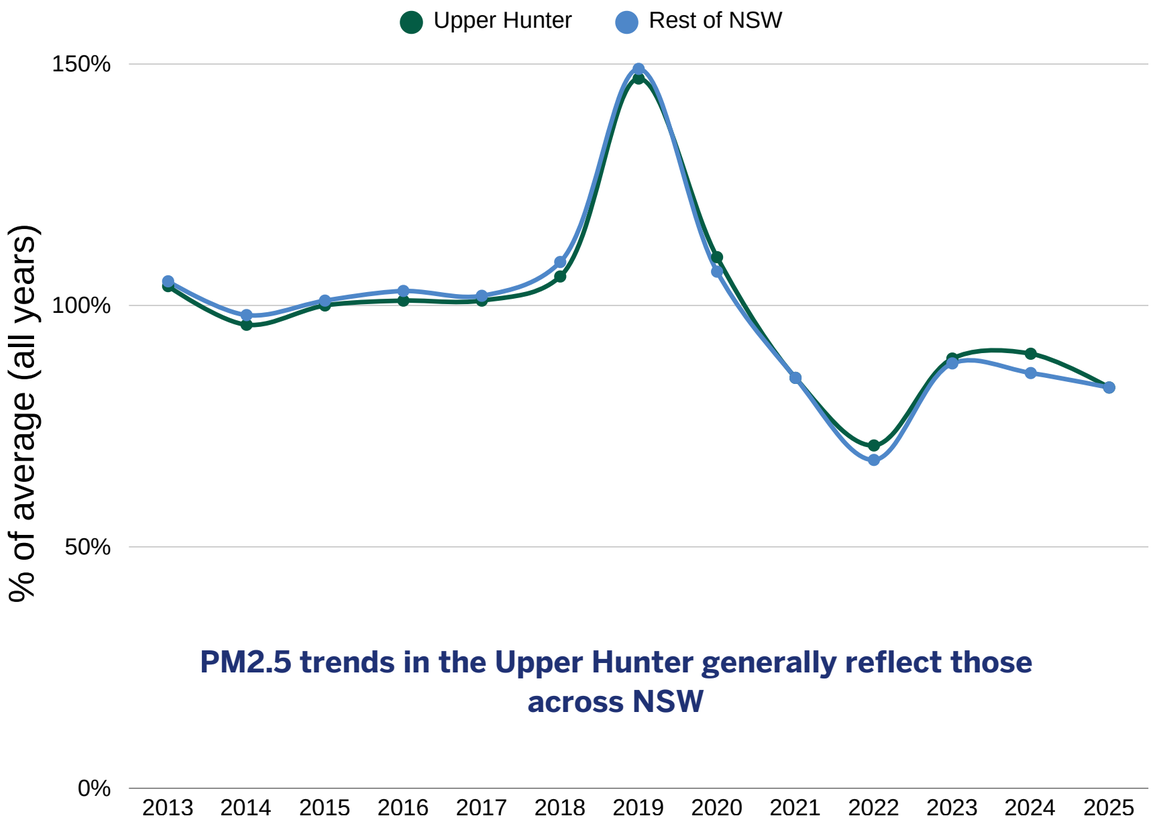
particulate matter 10 micrometres or less in diameter



PM10 trends in the Upper Hunter generally reflect those across NSW

PM2.5 variability between Upper Hunter and NSW

particulate matter 2.5 micrometres or less in diameter



PM2.5 trends in the Upper Hunter generally reflect those across NSW

Review of Upper Hunter Fine Particle Characterisation Study

- 2024 Community Forum feedback prompted a review of the relevance of the EPA's 2012 Upper Hunter Fine Particle Characterisation Study.
- The Study identified and quantified the major components of PM2.5 particles in the Muswellbrook and Singleton air regions.
- No significant changes in PM2.5 sources were identified in the available monitoring data.
- Overall, the review suggests the key findings of the 2012 study remain broadly relevant.

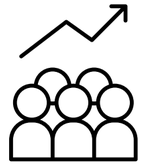
Impacts considered:



Liddell power station closure in 2023



Raw coal production



Population and dwelling growth



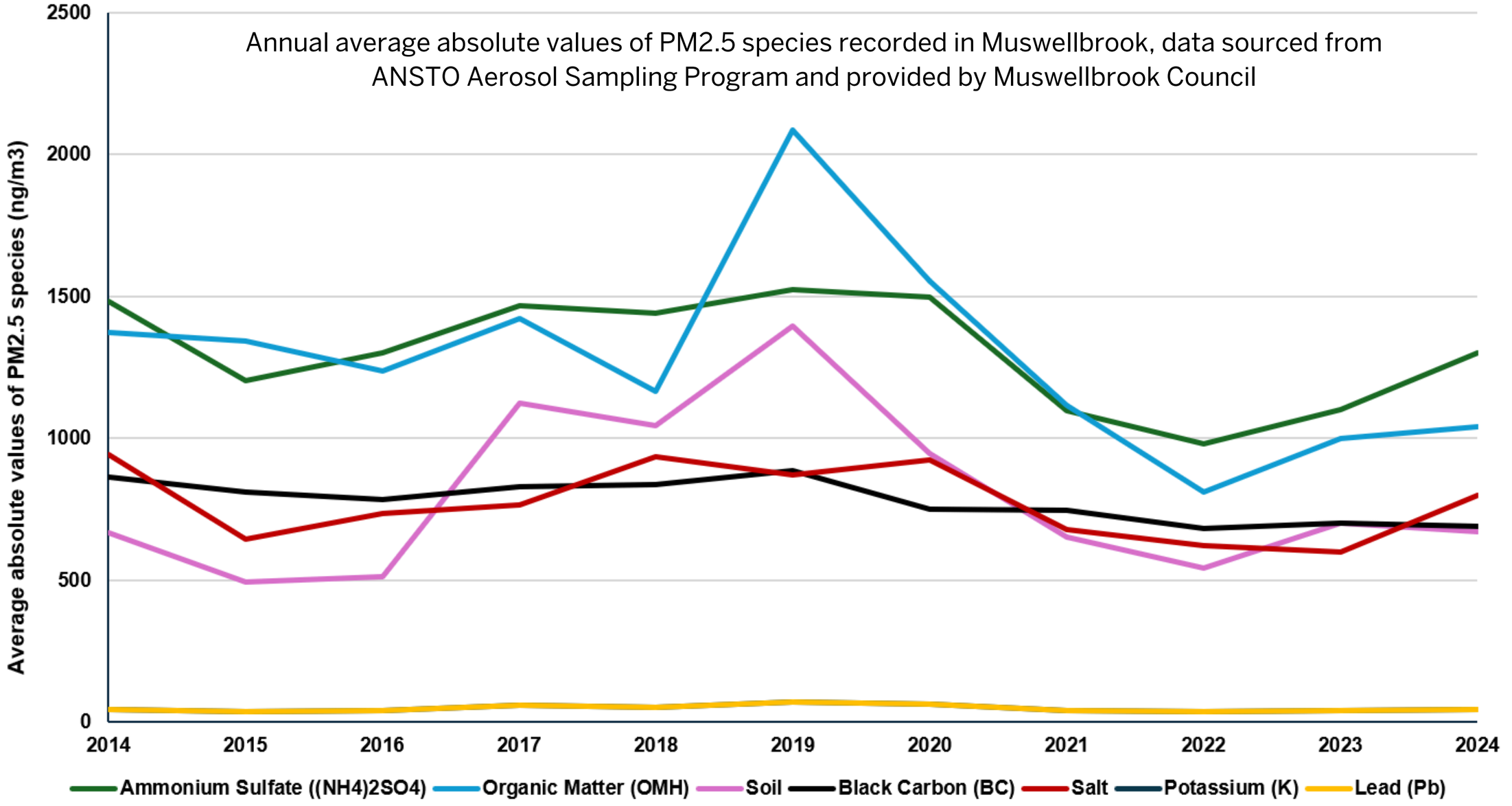
Mine land disturbance and rehabilitation



Wood smoke and domestic heating



NSW Government air quality monitoring trends


Annual average absolute values of PM2.5 species recorded in Muswellbrook, data sourced from ANSTO Aerosol Sampling Program and provided by Muswellbrook Council
Average absolute values of PM2.5 species (ng/m3)
2500
2000
1500
1000
500
0
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Ammonium Sulfate ((NH4)2SO4)
Organic Matter (OMH)
Soil
Black Carbon (BC)
Salt
Potassium (K)
Lead (Pb)

Keep Engaged

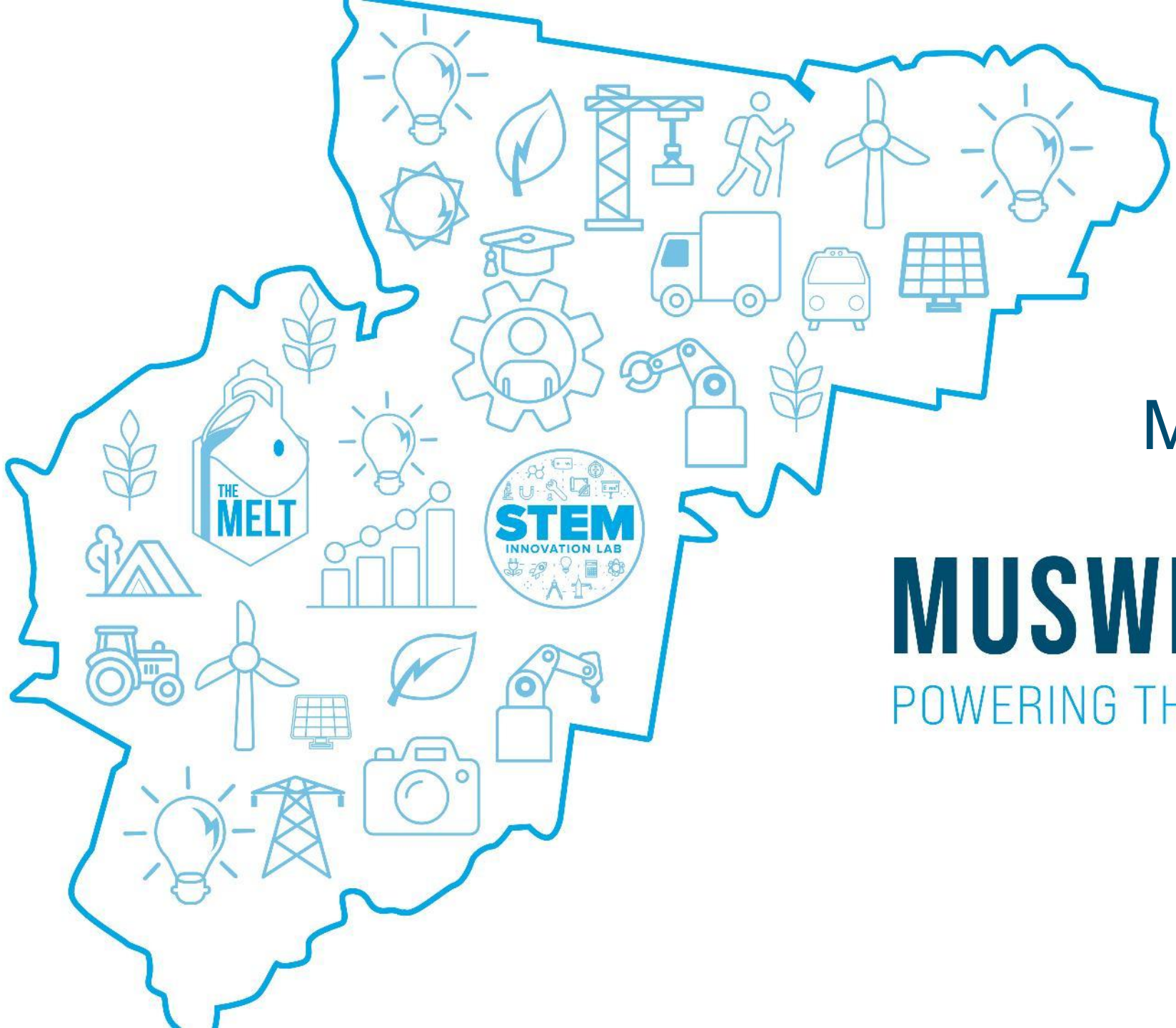
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info@miningdialogue.com.au





Upper Hunter Mining Dialogue

MUSWELLBROOK

POWERING THE FUTURE ECONOMY

muswellbrook shire council

Together Statement

Muswellbrook Shire Council is proud to acknowledge the Traditional Owners of the land on which we work and live. We pay our respects to First Nations Leaders and Elders, past, present and emerging who are the keepers of history, traditions, knowledge and culture.

We commit to working in collaboration with Traditional Owners in a spirit of Reconciliation and partnership. As we meet today, let us reflect on the knowledge and stories that have been shared on this land for thousands of generations and commit to walking together in a spirit of respect and understanding."


Protect today.
Build tomorrow.
TWO THINGS THAT DON’T COMPETE. THEY DEPEND ON EACH OTHER.

Master Plan and rezoning finalised, 23 October 2026

5,700 ha

Total precinct area

800 ha

Two priority areas for early activation

5,900

Potential new jobs

4,600 ha

Rehabilitated for agriculture and environment

Planning, Advocacy and Collaboration

One of two NSW pilots

Piloting how mining land can be put to productive use after closure.

Support through funding

Federal Government funding with NSW Government support.

At the table from the start

Collaboration alongside BHP, NSW and Federal Governments.

THE PLANNING FRAMEWORK IS SET.
FUTURE PROPOSALS ARE STILL ASSESSED AND REHABILITATION OBLIGATIONS STILL APPLY.

Partners While Still Operating

Early information

Closure timing, workforce and land plans shared while there's still time to act.

Land as an asset

BHP planned the next use of Mt Arthur's land years ahead of closure.

Investing locally

Local skills, suppliers, housing and wellbeing, while the mine is running.

Honest conversations

Including the hardest one: what happens when the mine closes.

THANK YOU TO THE OPERATORS WORKING WITH US WHILE STILL PRODUCING

12,000+

JOBS EXPOSED ACROSS OUR REGION OVER THE NEXT THREE YEARS

Protecting What We Have

Hunter Valley Operations

Council backed the approval of the Continuation Project.

Mount Pleasant Mine

Working to secure the future of MACH Energy’s operation.

Time to prepare

Every year of operation is another year to attract investment, build new industries and train our workforce.

Building What Comes Next

Future Jobs Authority

Established by the Future Jobs and Investment Bill, with a dedicated Fund for coal-producing regions.

Investment prospectus

Powering the Future Economy, now backed by a zoned precinct at Mt Arthur.

Training for the Future

- The Melt
- Stem Innovation Lab
- Industry Partnerships

NONE OF THIS REPLACES MINING OVERNIGHT.
IT MEANS SOMETHING IS READY TO TAKE ITS PLACE.

Three Asks of This Room

01 Talk to us early

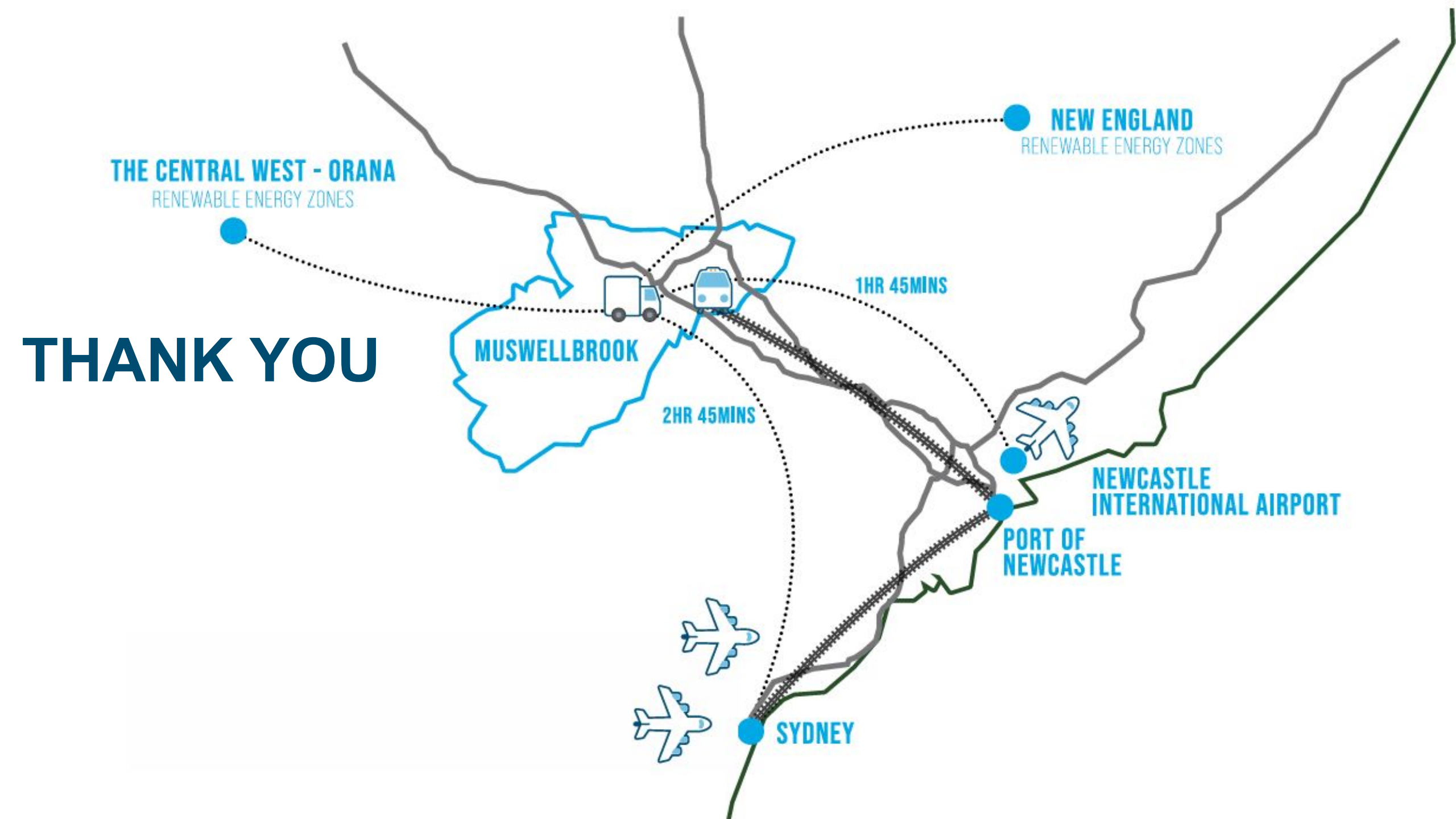
02 Plan for what we know, and what we don’t

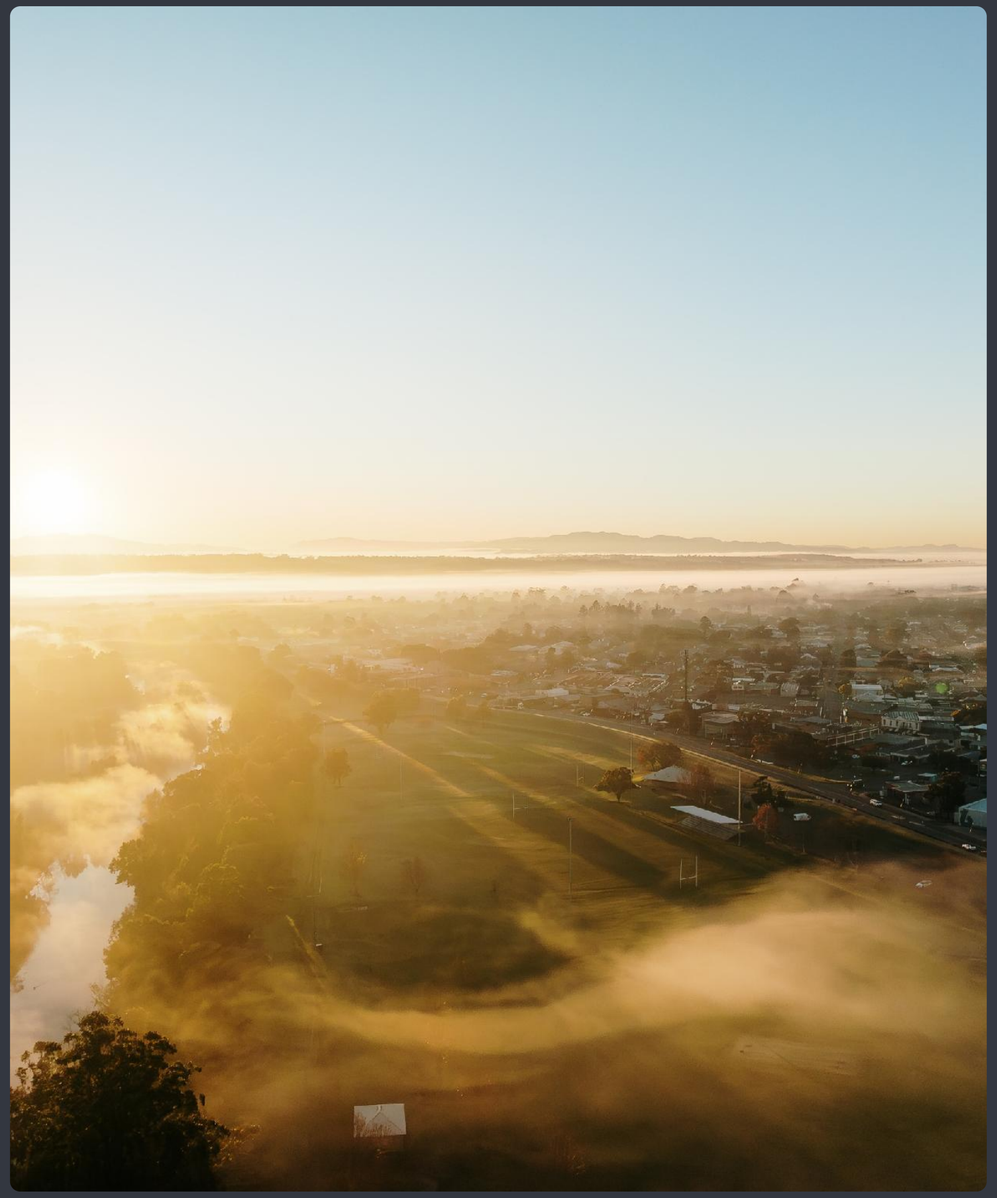
03 Keep investing in the community that hosts you



We have proved what’s possible.
Let’s keep working together for our community

THANK YOU


THE CENTRAL WEST - ORANA
RENEWABLE ENERGY ZONES
NEW ENGLAND
RENEWABLE ENERGY ZONES
MUSWELLBROOK
1HR 45MINS
2HR 45MINS
NEWCASTLE
INTERNATIONAL AIRPORT
PORT OF
NEWCASTLE
SYDNEY



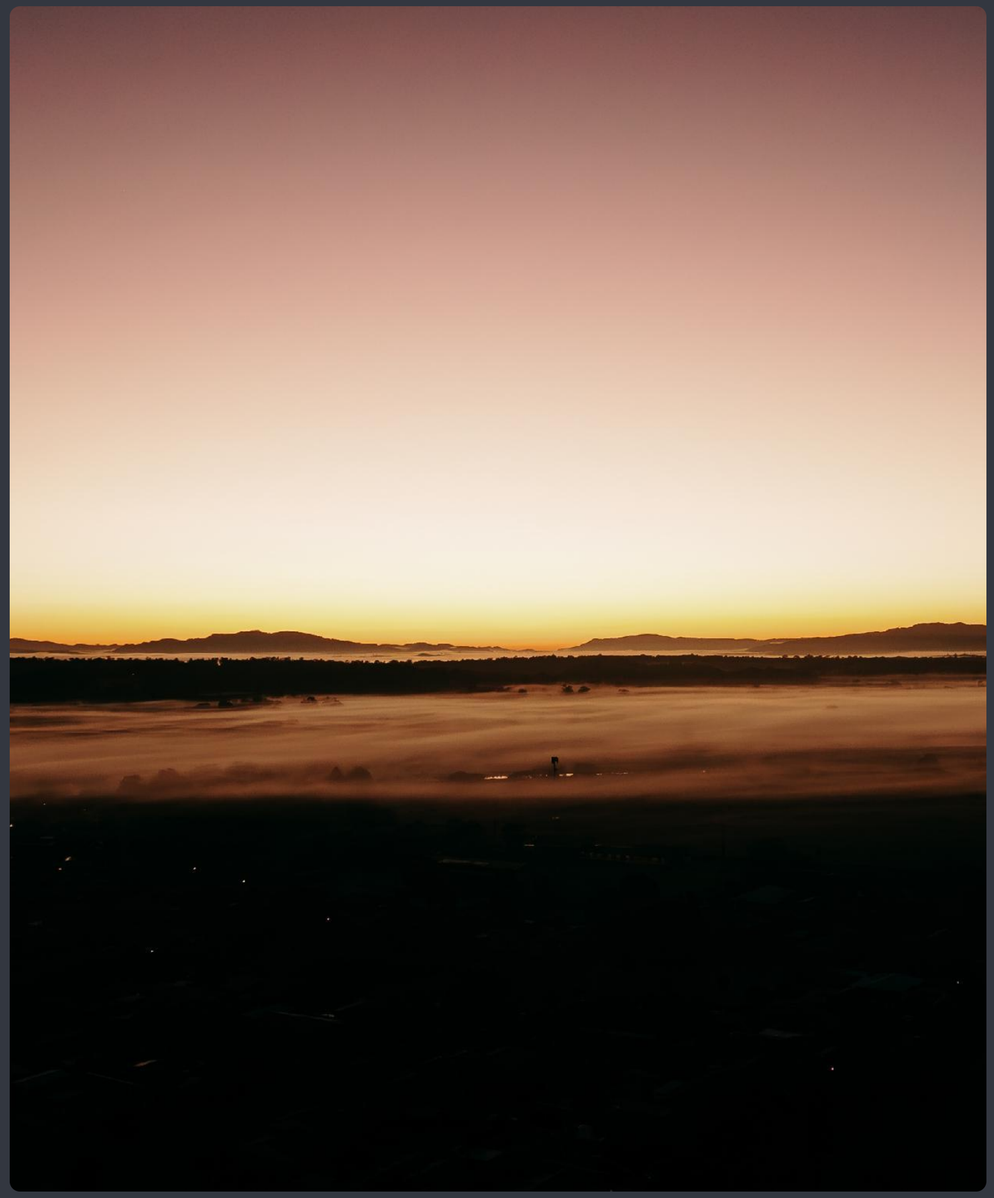
UPPER HUNTER MINING DIALOGUE COMMUNITY FORUM

Wednesday 18 November 2026

SINGLETON COUNCIL

ACKNOWLEDGEMENT OF COUNTRY

Singleton Council acknowledges the Wanaruah, Wonnarua people and their custodianship of the land in the Singleton Local Government Area. We pay our respect to all Aboriginal people from other nations that are here today.



SINGLETON
COUNCIL



ECONOMIC SNAPSHOT

- Singleton generates 10% of the Hunter's economic output with just 3.5% of the region's population.
- The Hunter's third-largest economy, underpinned by a strong mining sector and highly skilled workforce.
- Home to 12 active coal mining operations and more than 92,000 hectares of mining and exploration land.
- Mining approvals extending into the 2040s provide long term economic certainty while supporting future transition planning.

SINGLETON
COUNCIL

TAKE A NEW ROAD

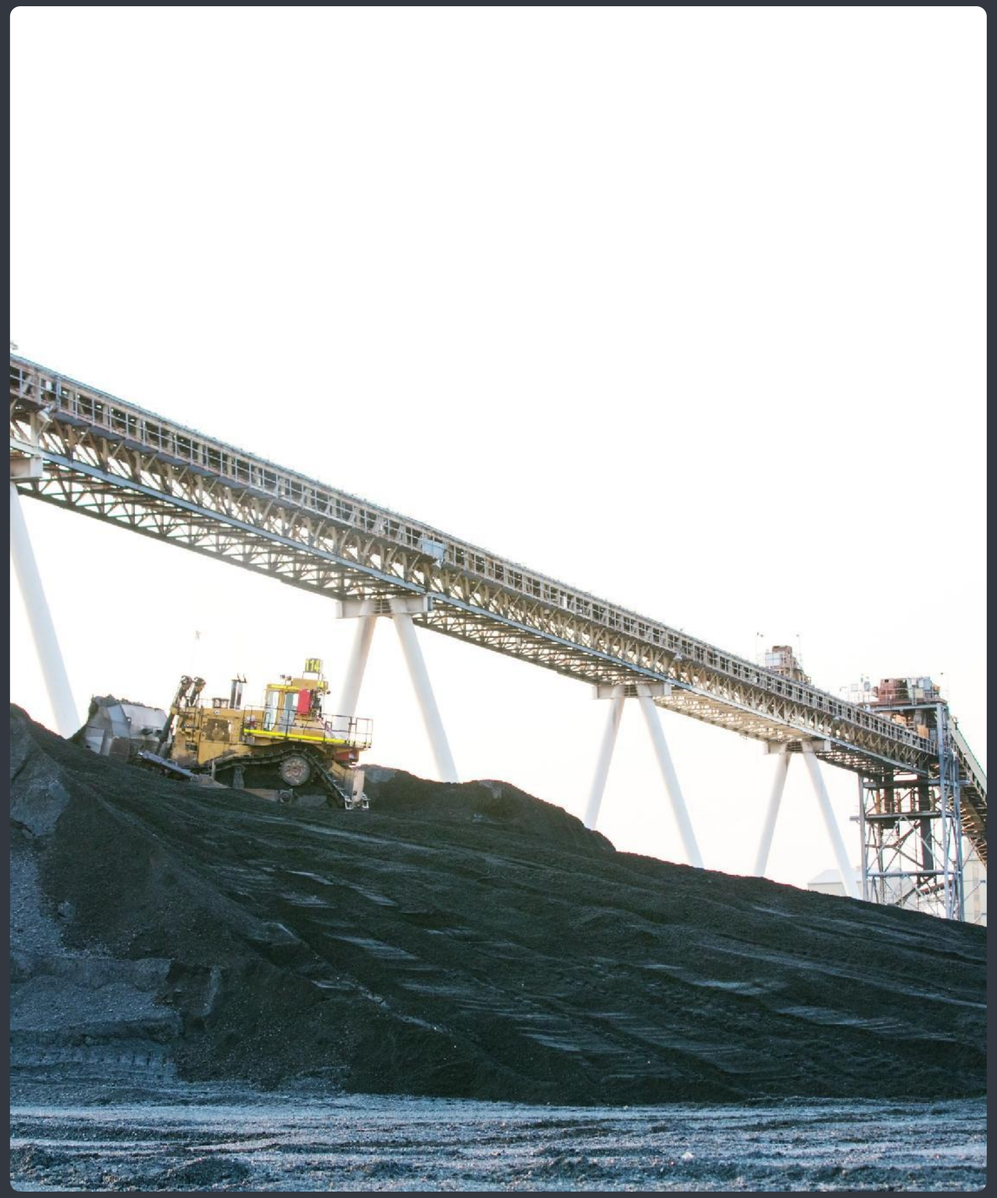
The **$700m Singleton Bypass is scheduled to open to the community on 22 November**, delivering a once-in-a-generation project to benefit our local community and our region.

Opportunities:

- Strengthening Singleton Town Centre as a destination.
- Supporting local businesses and attracting visitors and investment.
- Improving connections and reshaping how people experience Singleton.

SINGLETON COUNCIL





IMPORTANCE OF RECENT APPROVALS + ENGAGMENT

- HVO’s recent approval supports continued investment and employment.
- EIS for Rix’s Creek has been publicly exhibited.
- HVO and Rix’s Creek remain vital to Singleton’s economy.

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DUAL LANDUSE PLANNING

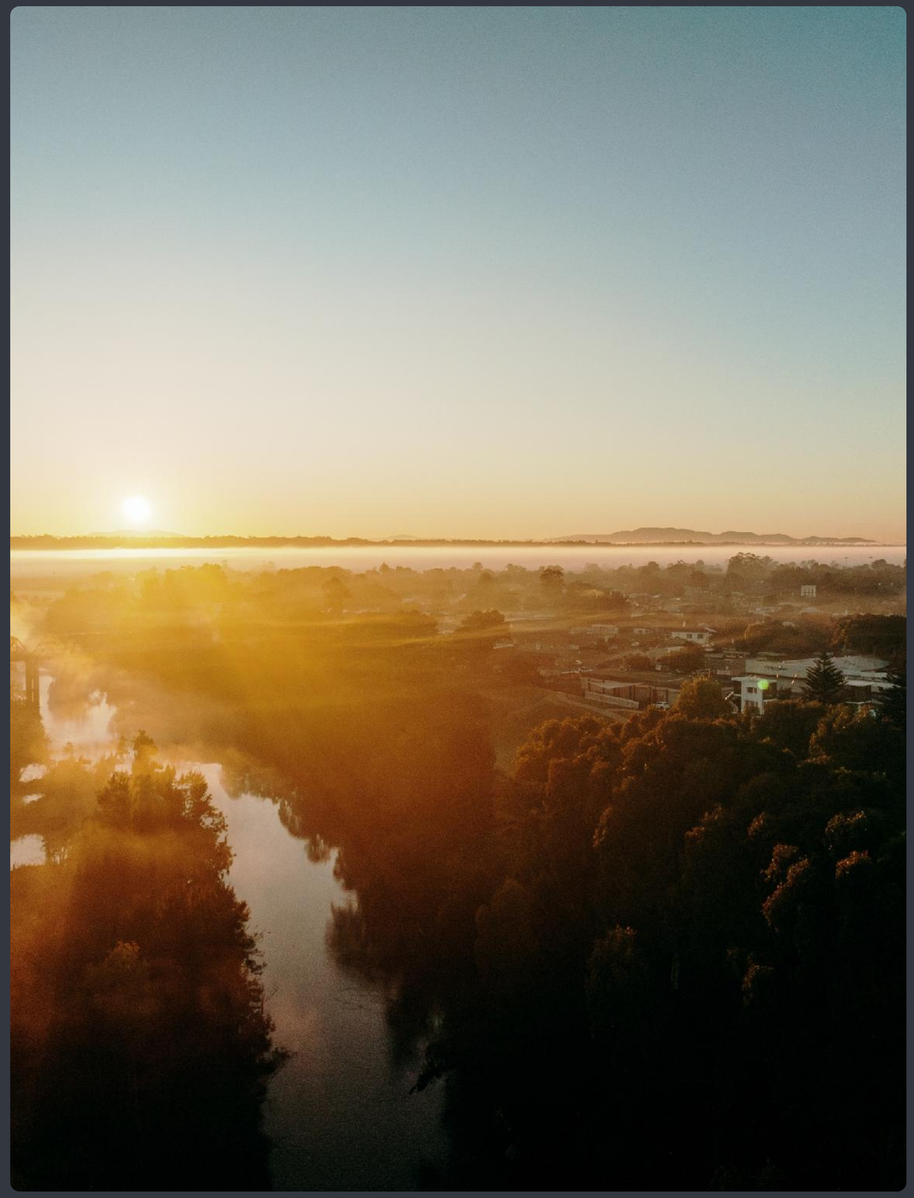
Singleton is not waiting until mining ends or other pilots are completed to act.

We are currently progressing ‘local pilots’ with mining companies through scoping proposals for compatible uses on suitable mine buffer land.

Some opportunities may already be permitted under RU1 zoning, subject to approvals and site constraints.

We will keep advocating to the State for practical progress on dual and post-mining land use suited to Singleton.

SINGLETON
COUNCIL





A STRONG MINING ECONOMY, PLANNING FOR THE FUTURE

- Progressing Council's long-term economic diversification and workforce transition agenda while recognising the ongoing importance of the mining industry and its workforce.
- 42.1% of employed residents work in mining
- Mining contributes $19.5 billion in output, representing 77.4% of Singleton's economy.
- The mining sector is nearly 18 times larger than the next biggest industry, Manufacturing ($1.1 billion).

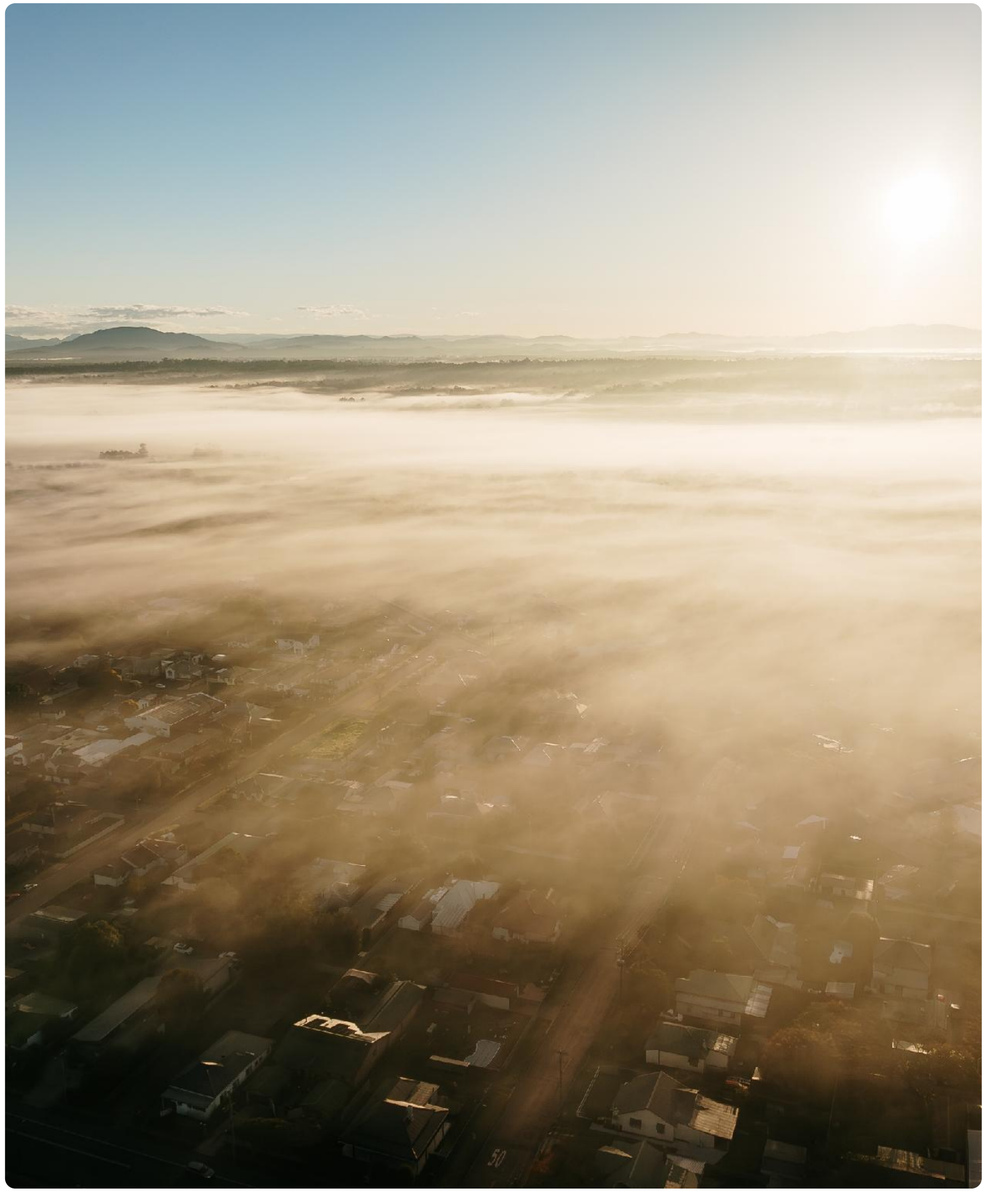
SINGLETON COUNCIL

BUILDING SINGLETON'S FUTURE ECONOMY

- Driving investment, industry growth and job creation through targeted economic development initiatives.
- Building local skills and workforce pathways through our **Industry Pathways Program.**
- Attracting investment and supporting future industries through our **Industry Growth Program.**



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STREAMLINING INVESTMENT + DEVELOPMENT

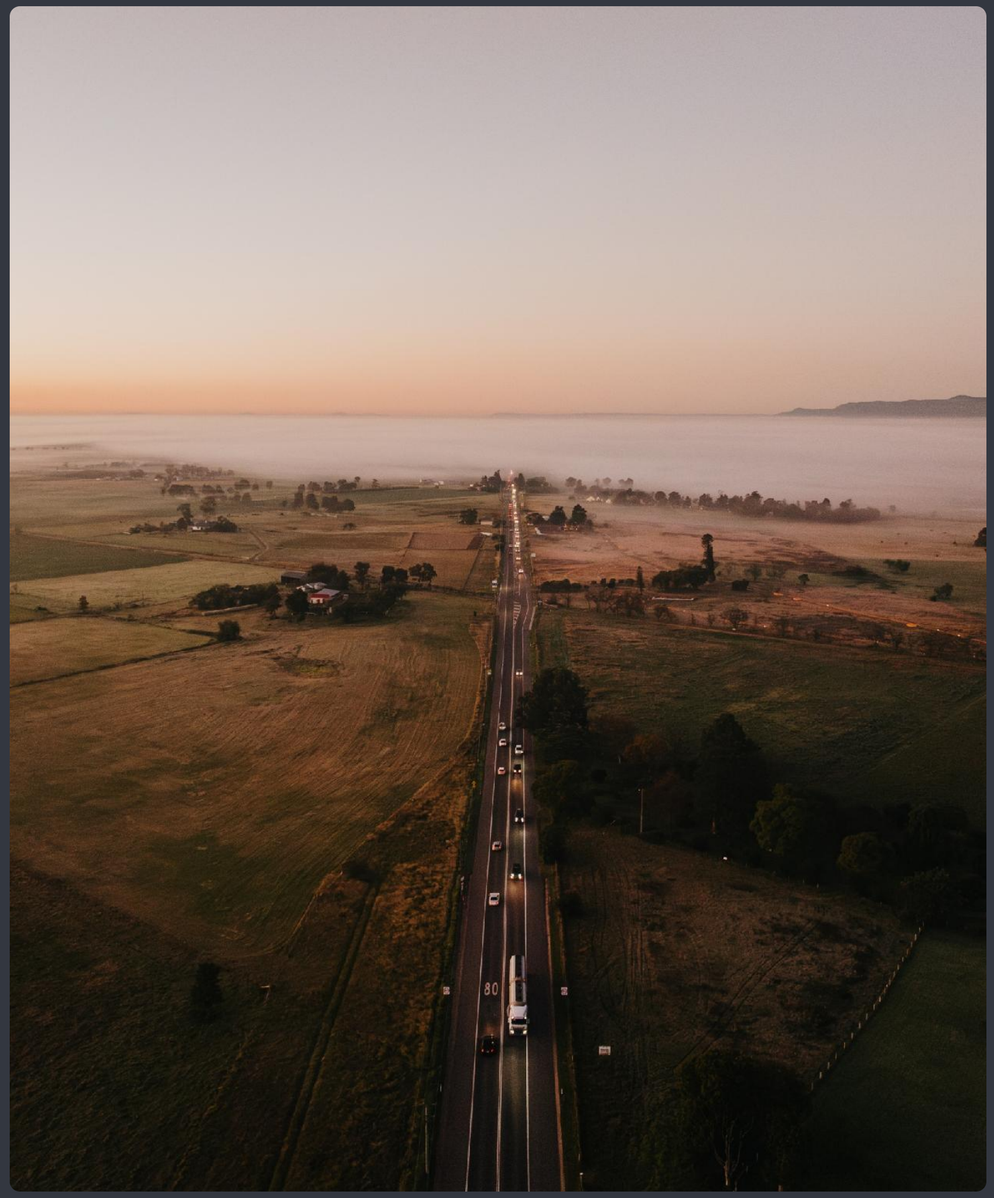
- Launched Investor & Business Support Concierge.
- Single point of contact for investors, developers and businesses.
- Simplifying Council processes and supporting navigation of Development Application (DA) requirements.
- Improving the investor experience and identifying barriers to investment and development.
- Supporting business growth.
- Informing future infrastructure, planning and economic development priorities.

PARTNERING WITH GOVERNMENT + INDUSTRY

- Our small Economic Development team is delivering targeted initiatives to grow and diversify Singleton's economy, but long term success will require strong partnerships and support from all levels of government and industry

- Continue advocating for greater State and Federal investment while partnering with government, industry and regional stakeholders to build a strong, resilient and future-focused Singleton economy.

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Net Zero Ec Authority

Upper Hunter Mining Dialogue Community Forum
18 November 2026

nzea.gov.au

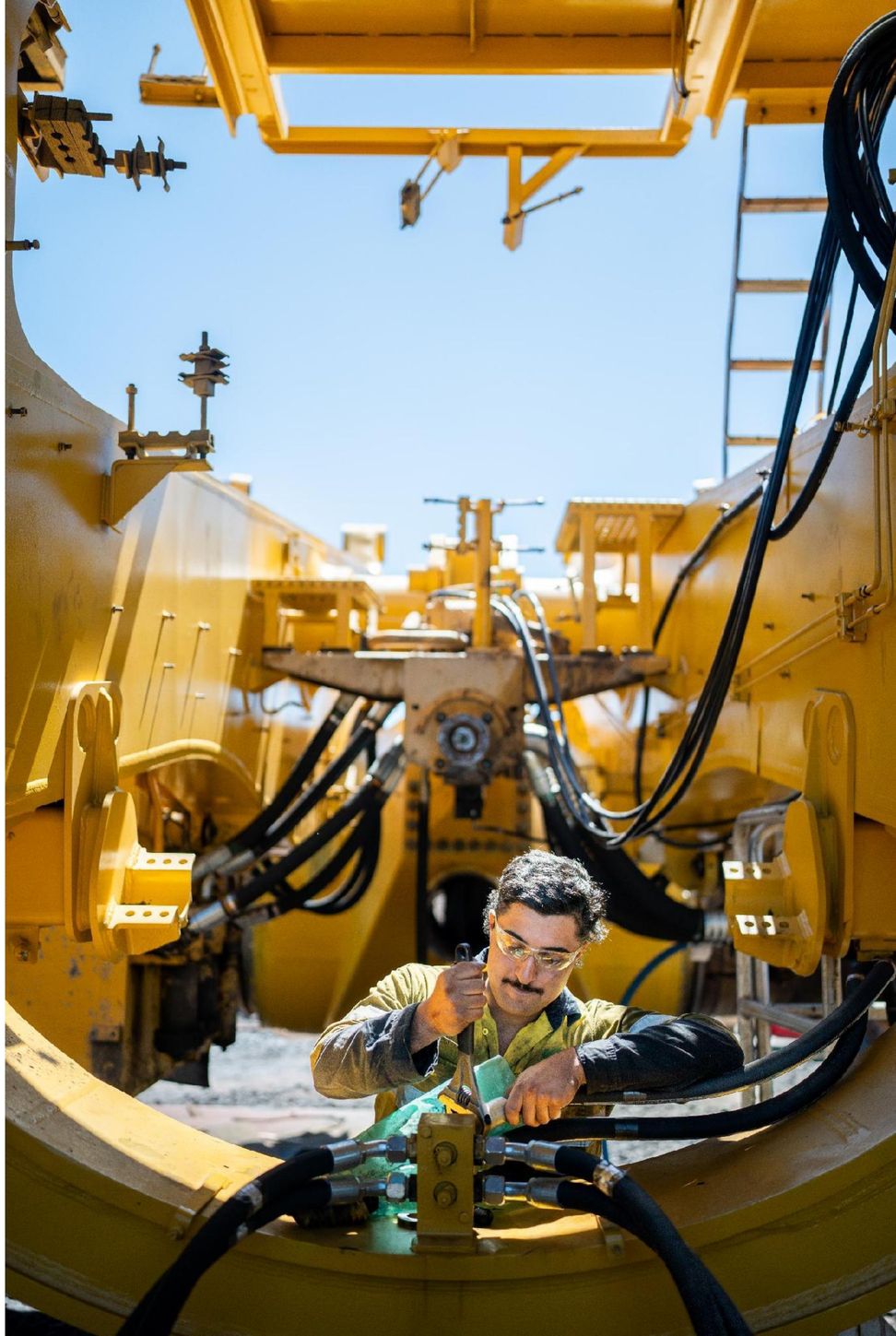


Our mission

- Help workers in coal and gas facilities affected by the transition to prepare for and find new well paid, safe and secure jobs.

- Support communities significantly affected by the transition to net zero to prosper, including through economic development and investment.

- Be a trusted and influential voice to build understanding of, and shape policy on, the regional net zero transition.



Our people in the Hunter

- We have 6 team members based across the Upper and Lower Hunter, working locally with workers, businesses and communities as the region's energy transition progresses.

- Being part of the community helps our team build local relationships, listen to the people experiencing change firsthand, and understand what matters to the region.



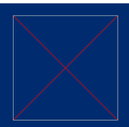
Priority industries for focused effort

- The NZEA considered a range of industry growth opportunities for the Hunter region and identified the sectors below as priorities for our work at this time.
- These sectors present good near and medium-term opportunities that draw from the region's comparative advantages, align with NSW Government priorities, and provide transition pathways for workers and businesses impacted by closures, including responding to the different needs of the Upper and Lower Hunter.
- While not a current focus for the NZEA, there are other industries with growth potential for the region's future that others are focused on, including green metals, health, construction and tourism.



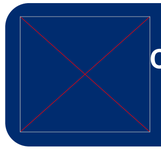
CLEAN ENERGY SUPPLY CHAINS

Clean energy related manufacturing and supply chains in the Hunter are in their infancy, with some committed investment. The Hunter has comparative advantages but supports are needed to bring the opportunity to scale.



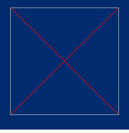
RAIL & ROLLING STOCK MANUFACTURING

Rail and rolling stock manufacturing has strong potential for the region. Building two new production lines in Lake Macquarie, the NSW Future Fleet Program, and high-speed rail can support future growth.



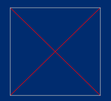
CIRCULAR ECONOMY, RECYCLING & LOW CARBON LIQUID FUELS

There are opportunities in areas such as recycling and innovative use of industrial and mining waste products. Hydrogen and low carbon liquid fuels also have potential, with three large hydrogen projects developing in the region.



DEFENCE & AEROSPACE

The Hunter is a defence and aerospace hub, home to the F-35A Joint Strike Fighters, large defence contractors ('primes') and the Astra Aerolab precinct. Greater planning and coordination can help expand the industry locally.



VALUE-ADD AGRICULTURE

Drawing on its strong reputation in primary production, the Hunter could grow value-add agriculture, such as food processing and manufacturing.

Priority areas for action

For each priority industry, the NZEA assessed barriers and enablers of growth in the Hunter region to identify priority areas for attention and specific actions the NZEA can take to help.

- **Activate industrial precincts and enabling infrastructure**
- **Secure investment and business development**
- **Facilitate workforce transition and development**
- **Empower First Nations participation**
- **Build understanding, engagement and collaboration**



Key actions NZEA has progressed



Mine site activation and planning

Worked with regional stakeholders to develop master plans for the **BHP Mt Arthur and Glencore Macquarie Coal** mine sites, identifying recommended actions to support precinct activation.

Established project control groups to oversee implementation and decision-making, and commenced infrastructure and delivery planning to support priority actions.



Hunter Australia Investment Opportunities

Collaborated across government and regional stakeholders to develop an investment attraction prospectus.

Promoting the Hunter's strengths and opportunities to attract new industries, investment and jobs to support a more diversified economy.



Hunter Advisory Committee

Established the Hunter Advisory Committee, bringing together regional stakeholders to provide strategic advice and oversight of transition priorities, with the first meeting held on 1 September 2026.



First Nations Action Plan

Finalised our **First Nations Action Plan.**

The Action Plan was developed in partnership with First Nations community-controlled representatives and will guide how we support First Nations people to take part in, and benefit from, the transition to net zero in our priority regions.

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Key actions NZEA is progressing



Hunter Regional Communications Strategy

Developing the Hunter Regional Communications Strategy to increase awareness, understanding and engagement with the transition, in collaboration with government partners.



Business Capability Uplift

Scoping capability uplift initiatives to support local businesses to upskill, diversify and expand.



Net:Zed Program

Supporting the Net:Zed program to educate secondary students on the economic and social opportunities arising from the energy transition.



International Just Transition Network (IJTN)

Establishing the International Just Transition Network (IJTN), bringing together nine national and sub-national organisations that advise on, scrutinise or implement policies consistent with a just transition away from fossil fuels.

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What's coming

- Hunter Australia Investment Opportunities Launch
- Deliver site reports on 4 key sites developed in collaboration with DPIRD
- Implementation of Hunter Regional Communications Strategy
- Continued international engagement with IJTN
- Investigate enabling infrastructure for circular economy and value-add agriculture
- Administer the Energy Industry Jobs Plan for Eraring



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Learn more about our work

netzero.gov.au/hunter

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Department of Primary Industries and Regional Development

Future Jobs and Investment Authority

Upper Hunter Dialogue Forum

November 2026

Julie Robertson

Director

Introduction

The purpose of today's presentation is to provide an update on the establishment of the Future Jobs and Investment Authority.

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Supporting NSW Coal Regions

Local communities require support to secure their long-term economic future after coal

Economic outlook

- Global energy transition and net zero commitments are key drivers of the long-term demand for coal from key trading partners
- Domestic coal demand will decline as the four NSW coal-fired power stations close by 2040

NSW Coal Industry 2026-50 outlines the NSW Government's position to continue to support coal mining in coal-producing regions to meet NSW energy requirements and demand from key trading partners.

The NSW government is committed to supporting NSW coal-producing regions as the demand for coal declines over the coming decades.

The Future Jobs and Investment Authority will support local communities in coal-producing regions to access new economic opportunities and secure their long-term future after coal mining ends.

Strategic objectives



Supporting NSW Coal Regions

The impacts of a decline in coal will be felt differently across the four coal-producing regions

Consent expiry for FY26 active mines and indicated closure dates for power stations



24,500 workers across 35 mines

1,200 workers across 4 power stations

14 LGAs across 4 regions

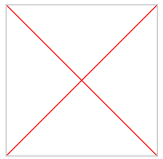
25 years closure timeframe

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Future Jobs and Investment Authority

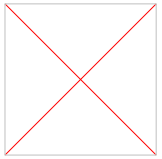
Key steps in the establishment of the Authority

Consultation



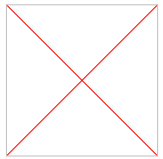
Roundtables and Issues Paper

Final Model



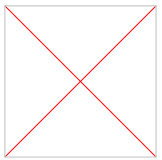
Review feedback and consultation outcomes

FJI Act



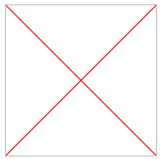
Develop legislation to enact final model

Regulations



Develop regulations and regulatory impact statement for consultation

Appointments

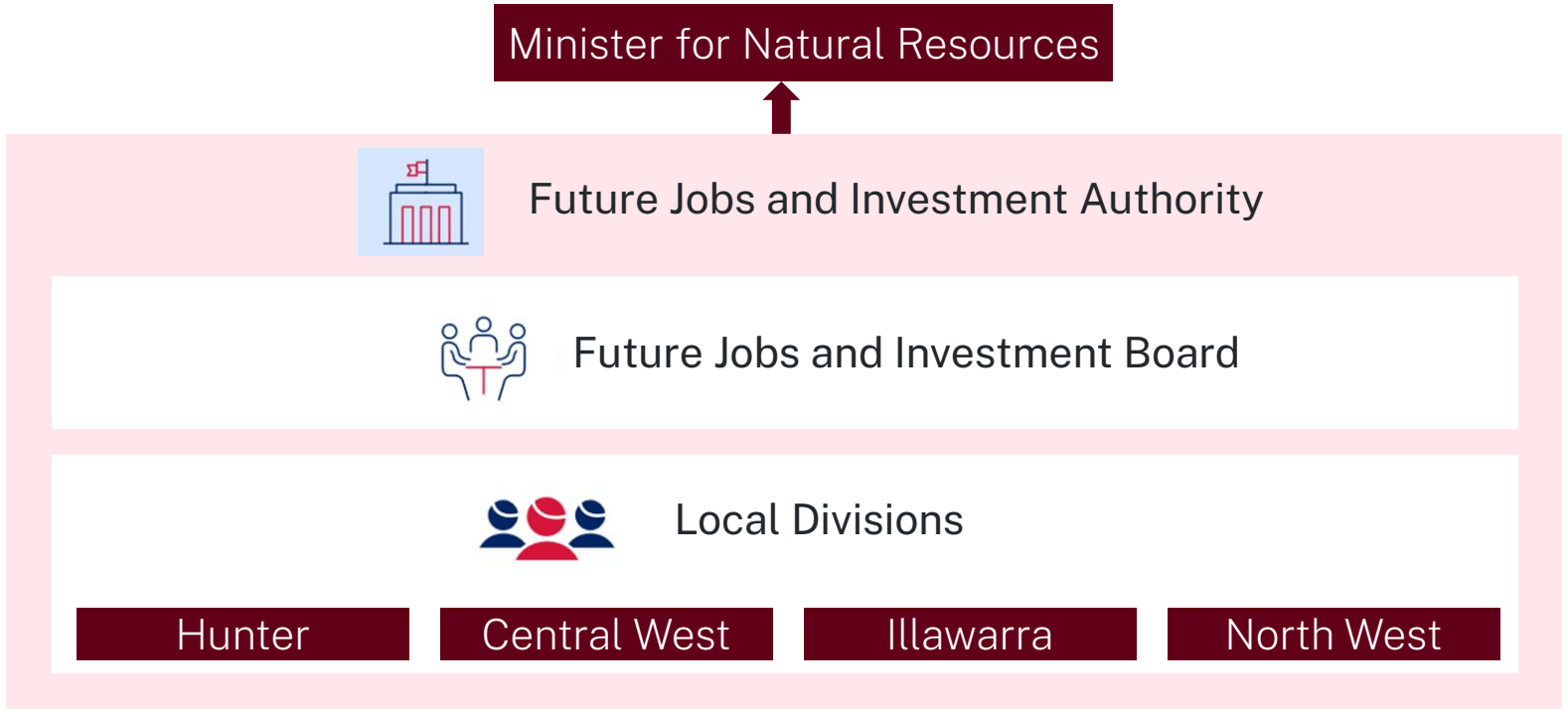


CEO, Board and Local Divisions in place

OFFICIAL

Future Jobs and Investment Authority

New legislation has been developed to establish the Authority



Ensuring local communities have a voice in their futures is a key feature of the Authority's model.

Future Jobs and Investment Authority

New legislation has been developed to establish the Authority

The *Future Jobs and Investment Act 2026* provides a framework to plan for and manage the economic adjustment of regions experiencing structural economic change as a result of changes in demand for coal or coal-fired power generation by:

a) facilitating strategic planning, development and the use of land in those regions

b) facilitating and supporting the development of diverse and sustainable economies for those regions

c) supporting workers and business in the coal mining and coal-fired power station sectors and supply chains with workforce planning.

Future Jobs and Investment Authority

Key features and powers in the *Future Jobs and Investment Act 2026*

1

Future Jobs and Investment Fund

- Services, projects and programs that promote object of the Act
- Governance framework to be published
- Annual reporting

2

Intended Closure Notice

- At least three years prior to intended mine closure (or as soon as reasonably practicable)

3

Workforce Planning

- Requirement to maintain and develop a workforce plan for a coal mine
- Submit within 90 days of notice of intended closure

4

Local Economic Structural Adjustment Plans

- Developed for each region to inform the work of the Authority
- Local Divisions provide input on local initiatives and priorities

Future Jobs and Investment Authority

Working together for a strong future in coal-producing regions

Strategic planning

- Site prioritisation
- Master planning
- Encourage investment

Workforce support

- Workforce plans
- Training and reskilling
- New job opportunities

Engagement

- Coordination across all levels of Government
- Local communities inform local priorities

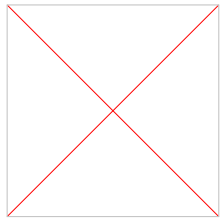
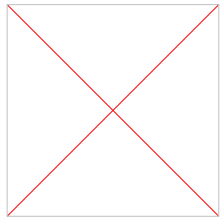
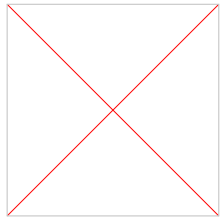
Evidence and intelligence

- Maintain a strong evidence framework
- Informed decisions and resource allocation

The key focus is ensuring that the right support is available in the right location at the right time.

Future Jobs and Investment Authority

A Skills Audit of the existing coal sector workforce helps build the evidence base

Outcomes and how the data can be used	Data and Insights
 **Provides a comprehensive skills audit of the existing NSW coal workforce** by detailing worker characteristics (where they live, their occupations, skills, qualifications, wages and age)	Australian Bureau of Statistics – ANZSIC and OSCA classification
 **Improves visibility of future workforce availability** by utilising mine consent expiry dates and extension applications, enabling government and industry to anticipate when and where workers will become available and what skills they bring	NSW Planning Portal and public announcements
 **Supports workforce transition planning** by applying practical data to identify opportunities to retrain or redeploy workers into new or growing industries, or skill shortage areas as coal mines close in the future	Application of workforce profile data

Future Jobs and Investment Authority

Demonstrating how post-mining land use outcomes can be delivered through pilot projects

Macquarie Coal Complex

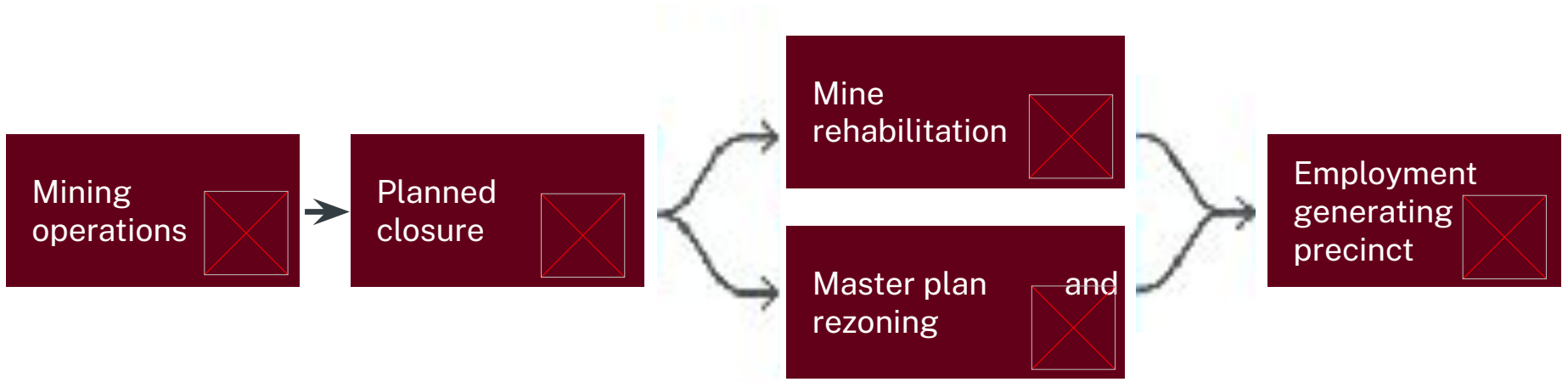
Key features of master plan and rezoning:

- Total area of 1,160 hectares
- Approx. 500 hectares of developable land
- Up to 1,130 new jobs

Mt Arthur Coal Mine

Key features of master plan and rezoning:

- Total area of 5,400 hectares
- Approx. 800 hectares of developable land
- Up to 5,900 new jobs




NSW
GOVERNMENT

INTEGRATED ENVIRONMENTAL MANAGEMENT AUSTRALIA

Mine Closure Literacy

Upper Hunter Mining Dialogue Community Forum
Muswellbrook | 18 November 2026



IEMA Mine Closure and Transition Team

Whole of Life Planning Mine Closure Planning Services

Capabilities

- Mine and facility closure planning
- Technical studies and closure risk assessment
- Rehabilitation cost estimation
- Policy and governance development
- Transition and post-operational land-use planning

Projects

- Austar Coal Mine (Yancoal)
- Muswellbrook Coal (Idemitsu)
- Northern Rhondda Colliery (Yancoal)
- Liddell Coal Operations (Glencore)
- Stratford & Duralie Coal Mines (Yancoal)
- Mangoola Coal Mine (Glencore)



Why this conversation is happening now

Regional planning, changing landscapes and a common closure language to underpin expectations

- Hunter mines have closed in recent years or have announced closure dates.
- Government and Hunter councils are actively considering regional transformation from a mining economy.
- Growing community interest: environmental outcomes, future land use, employment, infrastructure, trust and regional transition.
- Closure discussions need a shared understanding of regulatory obligations, technical constraints and realistic pathways.
- Transparent, factual, information helps drive conversations and frame realistic expectations.



BHP plans for diverse future at Mt Arthur coal mine after 2030 closure

By Amelia Bernasconi | ABC Upper Hunter | Coal

Posted 12 Aug 2024 at 2:58am

BHP says its 7,000-hectare Mt Arthur mine complex could host various uses once mining ceases. *(ABC Upper Hunter: Jake Lapham)*

The first task is to create a common understanding of what closure must achieve

First, some common terms

A shared vocabulary for the discussion

Mine closure planning	The planned transition from mining operations to post-mining land management. Starts before mining commences at design stage.
Final land use	The nominated use (also called ‘Post-Mining Land Use’) that rehabilitated land is intended to be capable of supporting.
Rehabilitation objectives & completion criteria	Measurable evidence used to assess whether characteristics of rehabilitated mined land is compatible with the approved post mining land use.
Rehabilitation	Treatment or management of disturbed land and water to be **safe and stable** and achieve the approved **Final Land Use**.
Relinquishment	Regulatory acceptance that relevant mining lease rehabilitation obligations for the lease area have been met . Generally, a precursor to mine lease cancellation and land release.
Beneficial reuse	A future use of mined land that may create additional social, economic, environmental or infrastructure value. May be subject to new development consent.

What regulators are looking for

Obligations, evidence and accountability

- **Rehabilitation undertaken progressively** (i.e. ‘as soon as reasonably practicable’) in accordance with **consent obligations** and **mining lease conditions.**
- Clearly defined **rehabilitation outcomes**, expressed as the **‘final land use’** and **rehabilitation objectives**.
- Measurable **completion criteria** for each objective, supported by **monitoring, maintenance** and **records**.
- Achievement of the approved final land use.
- **Risk-based assessments** of whether landforms, water and other rehabilitation features (e.g. retained structures) are safe, stable and sustainable for the intended use.
- **Clear assessment** and treatment of any remaining **long-term management** and **maintenance responsibilities** before rehabilitation acceptance or lease relinquishment.

A future development concept does not replace the mine operator’s rehabilitation obligation

Why the closure process is complex

Scale, technical challenges and timeframes to complete

Engineered landforms

- Final voids, highwalls and other steep slopes
- Mine entries, shafts and subsidence
- Tailings dams and overburden emplacements.

Material and water management

- Contamination and geochemical hazards
- Spontaneous combustion
- Tailings & rejects encapsulation
- Surface water and groundwater management

Land use and economic transition

- Socio economic factors
- Infrastructure removal or retention
- Rehabilitation performance
- Landholding investibility and divestment

Closure timeframes and land-use decisions are closely connected

Landform construction and revegetation





Source: Glencore, Coal Mine Rehabilitation 2025 Update, Ravensworth Case Study
Glencore Coal Mine Rehabilitation 2025 Update

Tailings cap construction





Source: https://atcwilliams.com/projects/mangoola-coal-operations/

Why do rehabilitation plans sometimes change?

expectations, technical knowledge and opportunities influence closure outcomes

External Factors

- Evolving regulatory and community expectations
- Changes to surrounding land uses
- External economic factors

Technical Knowledge

- Rehab methodology innovation
- Improved material characterisation / site knowledge
- Revised modelling data approaching closure (e.g.: groundwater)

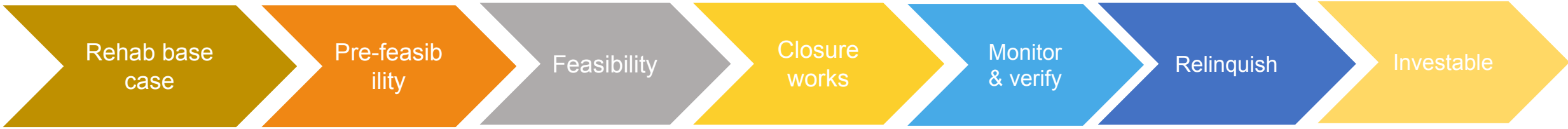
Business Decisions

- Technical or economic factors influencing closure timing
- Mine plan optimisation projects
- Staged relinquishment opportunities

Early closure planning relies on assumptions that may change

Typical closure delivery process

The closure delivery “spine”



- **Define the base case:** confirm obligations, final land use and the closure risks that must be resolved.
- **Design and prove the solution:** investigate options, develop the closure design and demonstrate it can meet completion criteria.
- **Execute, verify and release:** construct the works, monitor performance and assemble the evidence needed for relinquishment and future investment.

The long tail for closure verification is challenging for land transition

Project example: Austar closure - indicative delivery timelin

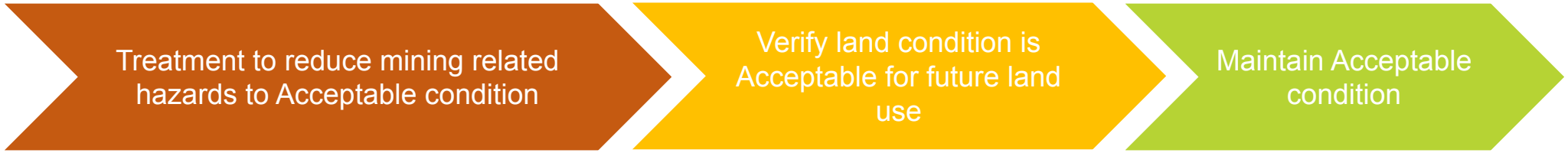
INTEGRATED ENVIRONMENTAL MANAGEMENT AUSTRALIA

The closure delivery “spine”



“Safe and stable” does not mean “risk-free”

Residual risk must be understood in the context of future land use



Eliminate

Remove the hazard where practicable and feasible.

Mitigate

Reduce risk through treatment or engineering.

Monitor

Gather evidence that performance remains within acceptable bounds.

Manage

Define reasonable ongoing actions to maintain acceptable residual risk.

Acceptability is linked to exposure: grazing, conservation, industrial and public recreation land uses create different risk contexts.

Mined land transition: from interests to outcomes

Legitimate interests translated into clear, measurable outcomes

Community interests

- Unlocking local and regional opportunity
- Natural resources and environmental values
- Jobs, skills and economic diversification
- Trust, transparency and governance

Decision-ready outcomes

- Master planning framework
- Clear roles, timeframes and decision pathways
- Land use technical constraints and land capability understood and considered
- Mine rehabilitation obligations satisfied

The bridge from concepts to outcomes is anchored in engagement and evidence

Rehabilitation obligation versus beneficial reuse

Related pathways, but not the same thing

REHABILITATION OBLIGATION

- Required by approvals and mining lease conditions.
- Addresses mining disturbance and hazards.
- Must achieve defined objectives and completion criteria.
- Supported by monitoring, maintenance and evidence.

BENEFICIAL REUSE

- Possible on suitable land, but not universal.
- May require new approvals, studies and infrastructure.
- Needs a willing proponent, funding and viable ownership pathway.
- Can create additional regional value beyond baseline rehabilitation.

Beneficial reuse is not a rehabilitation ‘shortcut’. Decisions may require additional evidence and accountability

Enabling transition means aligning several systems

A redevelopment opportunity is only viable when the pathways connect

Mining regulation

Obligations, criteria, security and sign-off

Planning system

Permissibility, assessment and development approval

Technical evidence

Landform, water, contamination, ecology and safety

Tenure and ownership

Who owns, manages and accepts responsibility

Infrastructure and investment

Connectivity, feasibility, funding and delivery

Community legitimacy

Transparent engagement and realistic expectations

The opportunity for the Upper Hunter is a predictable pathway from rehabilitation compliance to suitable long-term land use.

Three plausible transformation pathways

Market-led EOI, operator-led redevelopment and government infrastructure

- **Market-led — Rhondda Colliery / Black Rock Motor Sports Park:** an EOI tested whether a third party could bring a viable use, funding and an acceptable transfer pathway.
- **Government-enabled — Muswellbrook bypass:** regional infrastructure can change access, land configuration and the feasibility of future uses.
- **Industry-led — Muswellbrook Pumped Hydro Project:** jointly developed by Idemitsu and AGL, as part of a broader energy transition vision for the site including future solar and battery storage projects.



Pathways will emerge to match market demand and public infrastructure needs with the site.

Key takeaways

What I hope you retain from this session

1. Mine closure success is evidence-based.
2. Rehabilitation obligations are the foundation.
3. Closure delivery is a complex social, environmental and engineering project.
4. Future land use sets the risk context; not all mined land may be suitable for development.
5. Beneficial reuse can create additional and enduring value.
6. Mine operators, government, communities and developers can all drive opportunity outcomes.

Early alignment can enhance opportunities for safe, suitable and durable transition.

Idemitsu Australia

Upper Hunter Mining Dialogue Forum

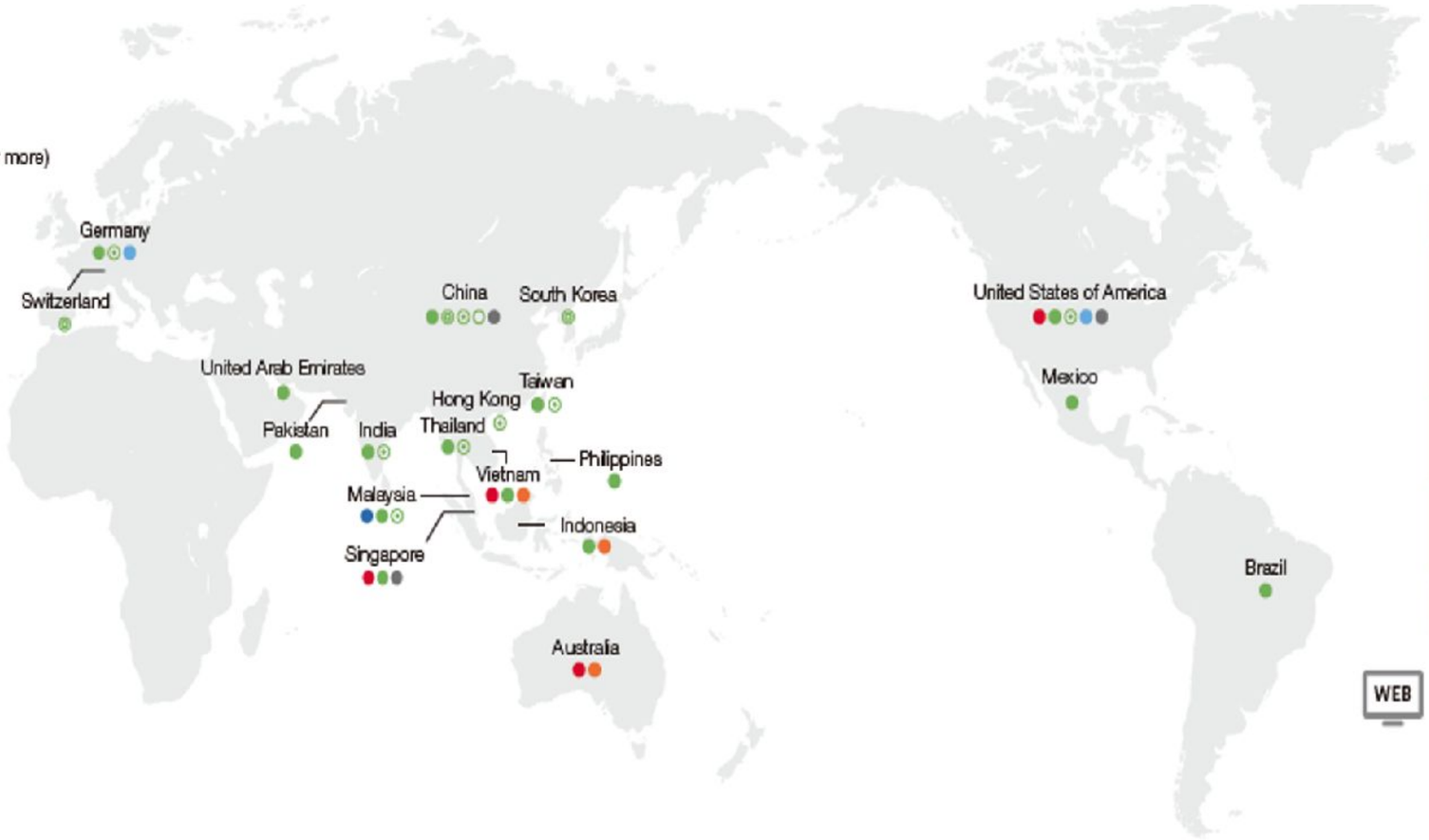
Ben Hopwood – Manager Relinquishment and Closure

18 November 2026

Idemitsu Kosan – Major Group Companies

Major overseas group companies

(Equity method / Idemitsu direct investment of 50% or more)



Business Category

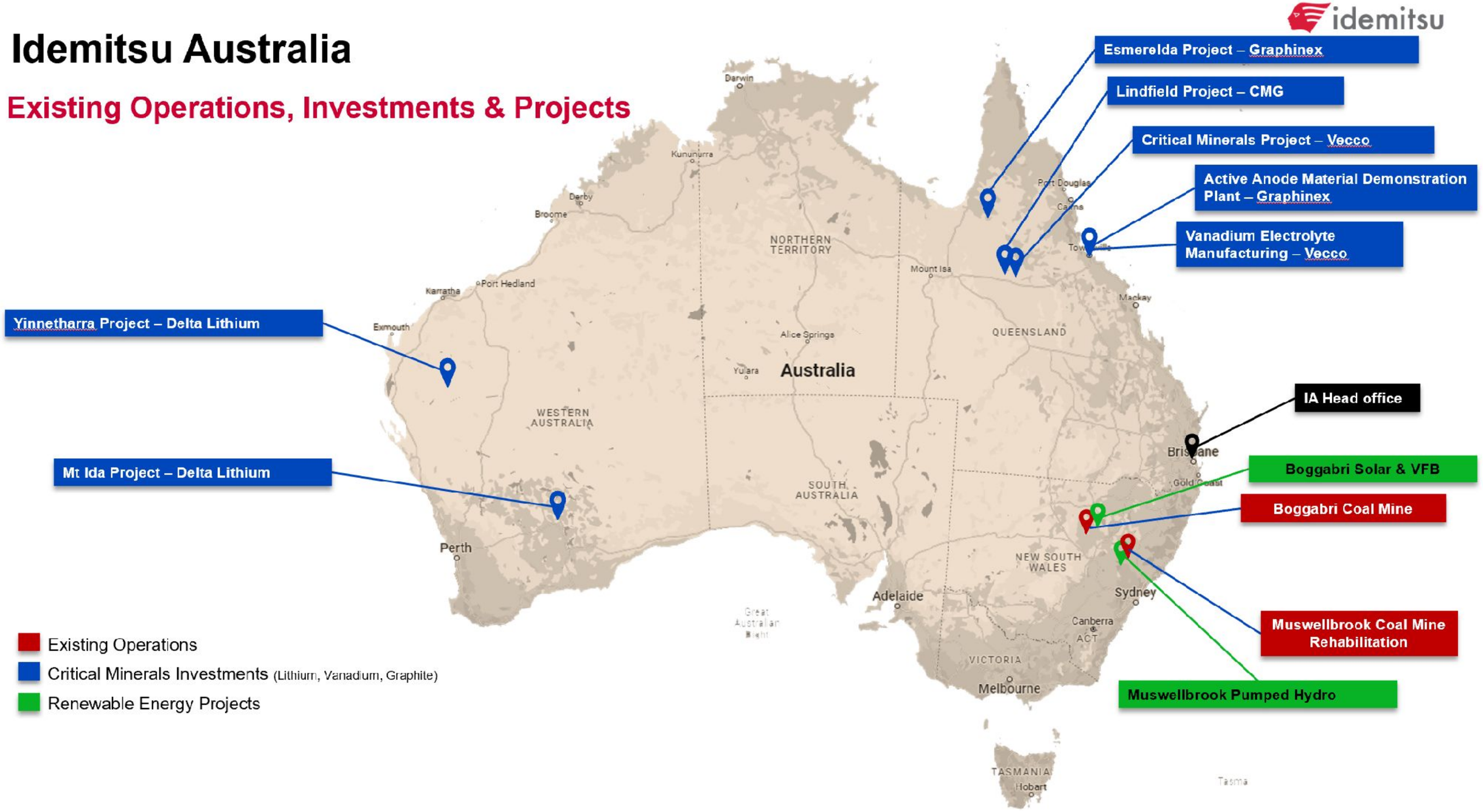
- Petroleum
- Basic Chemicals
- Functional Materials (Lubricants)
- Functional Materials (Electronic Materials)
- Functional Materials (Advanced Materials & Performance Chemicals)
- Functional Materials (Pesticides and Functional Feed)
- Power and Renewable Energy
- Resources
- Other

Net sales	9.2 trillion yen
Consolidated operating income + equity in earnings of non-consolidated subsidiaries and affiliates	184.8 billion yen
Consolidated number of employees	14,000 people
Overseas employees	3,100 people
Number of group companies	263

WEB About us > Group companies

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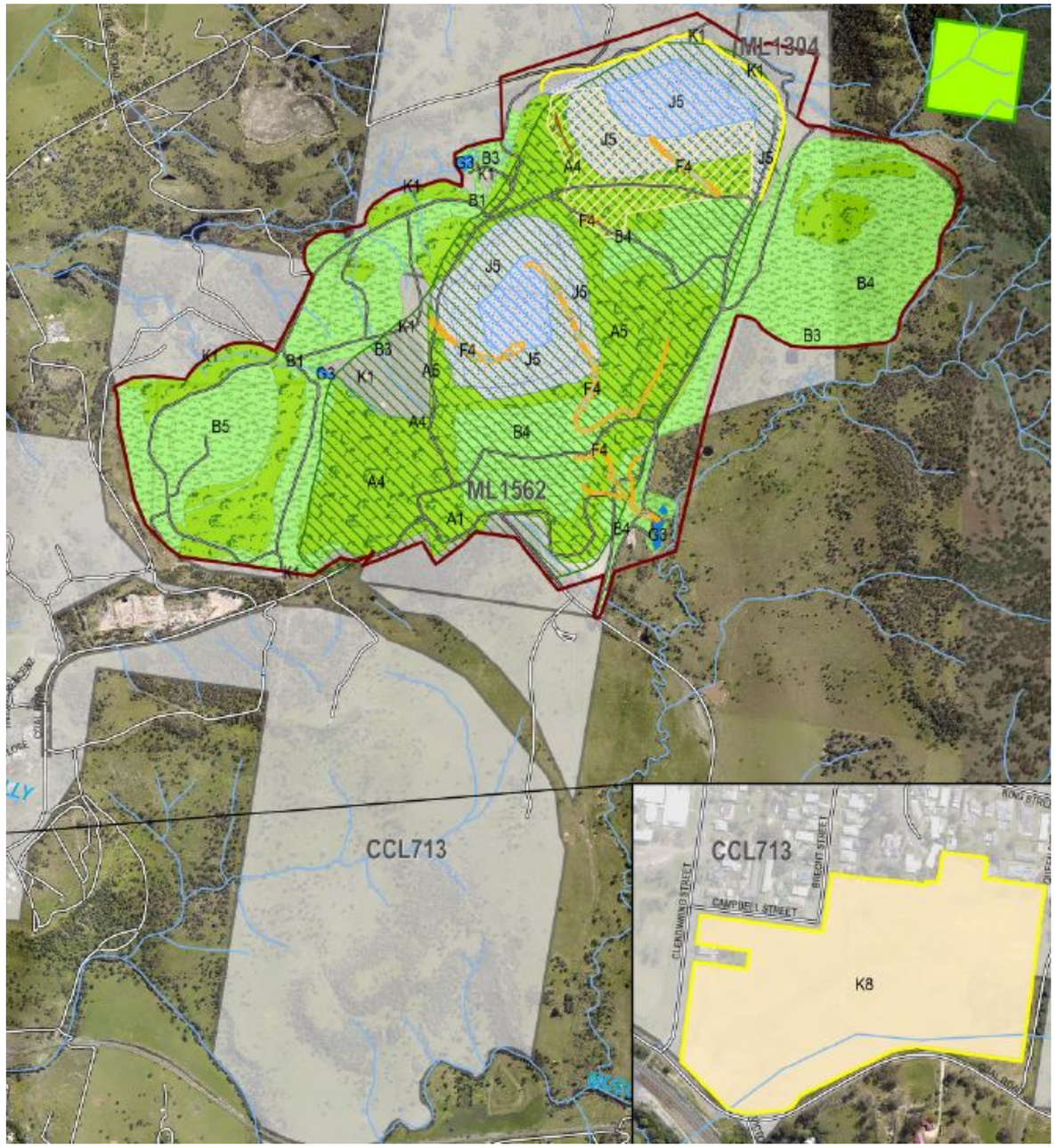
Existing Operations, Investments & Projects



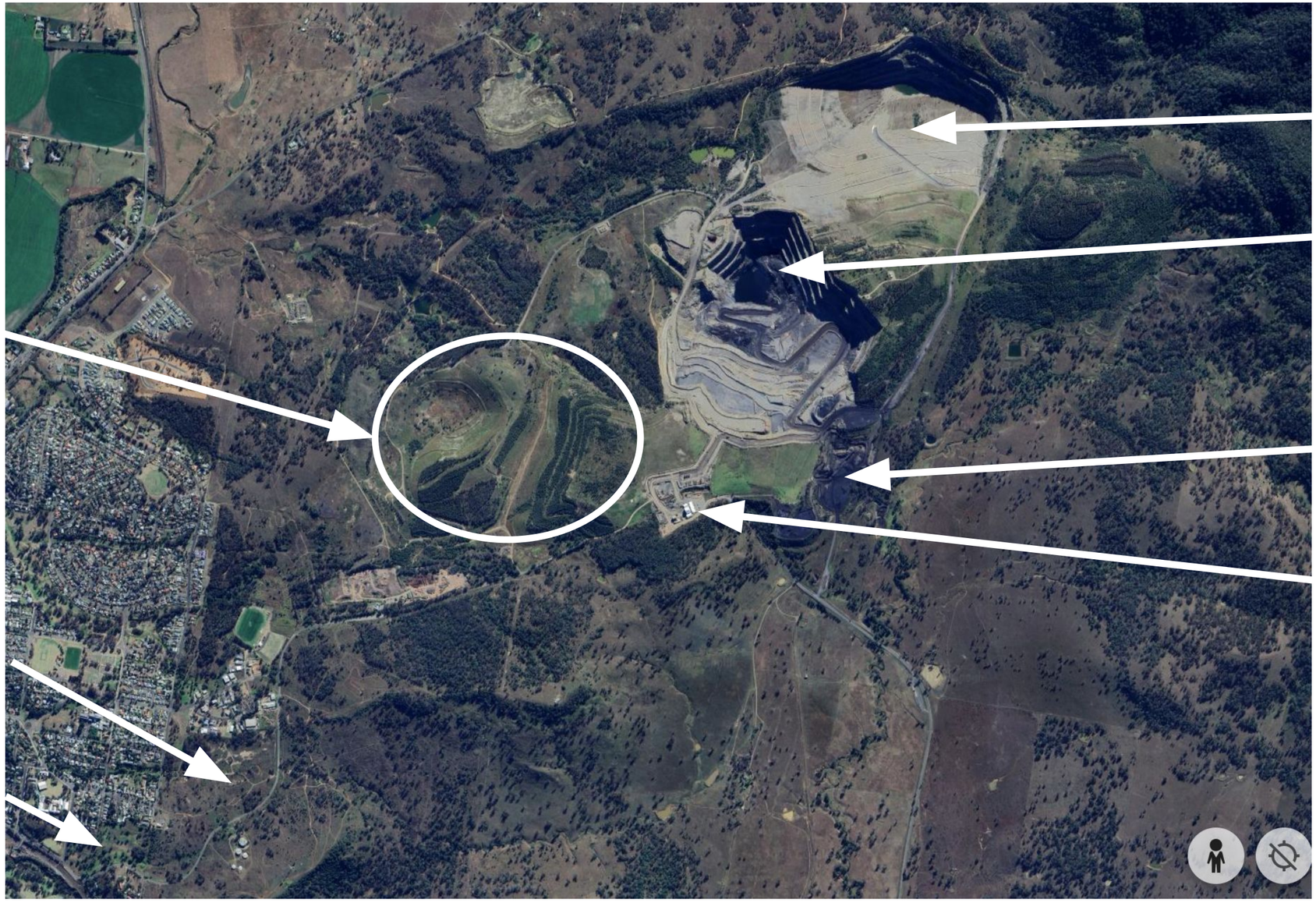
Muswellbrook & site closure

- 1944 open cut mining commenced
- 2022 final coal extraction
- 2023 coal storage and transport ceased
- 2025 final landform shaping, mulching, seeding completed

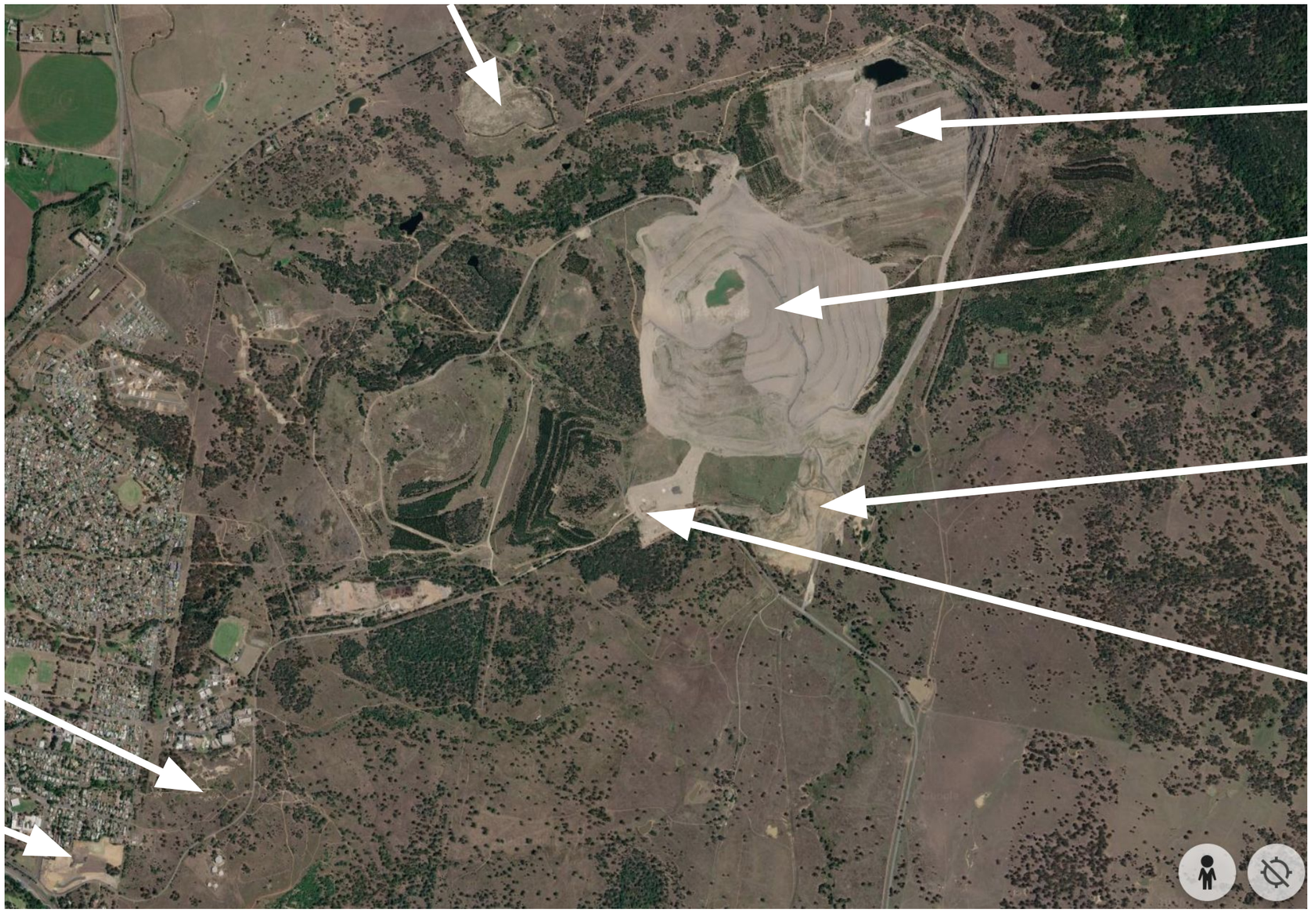
- All management transition from Muswellbrook site to Idemitsu Australia Brisbane office
- Retention of key of third-party specialists for the ongoing rehabilitation management and maintenance to achieve lease relinquishment and closure.
- Ongoing on-site monitoring and studies continuing to progress to lease relinquishment and closure.



Muswellbrook Site – Operations - 2023



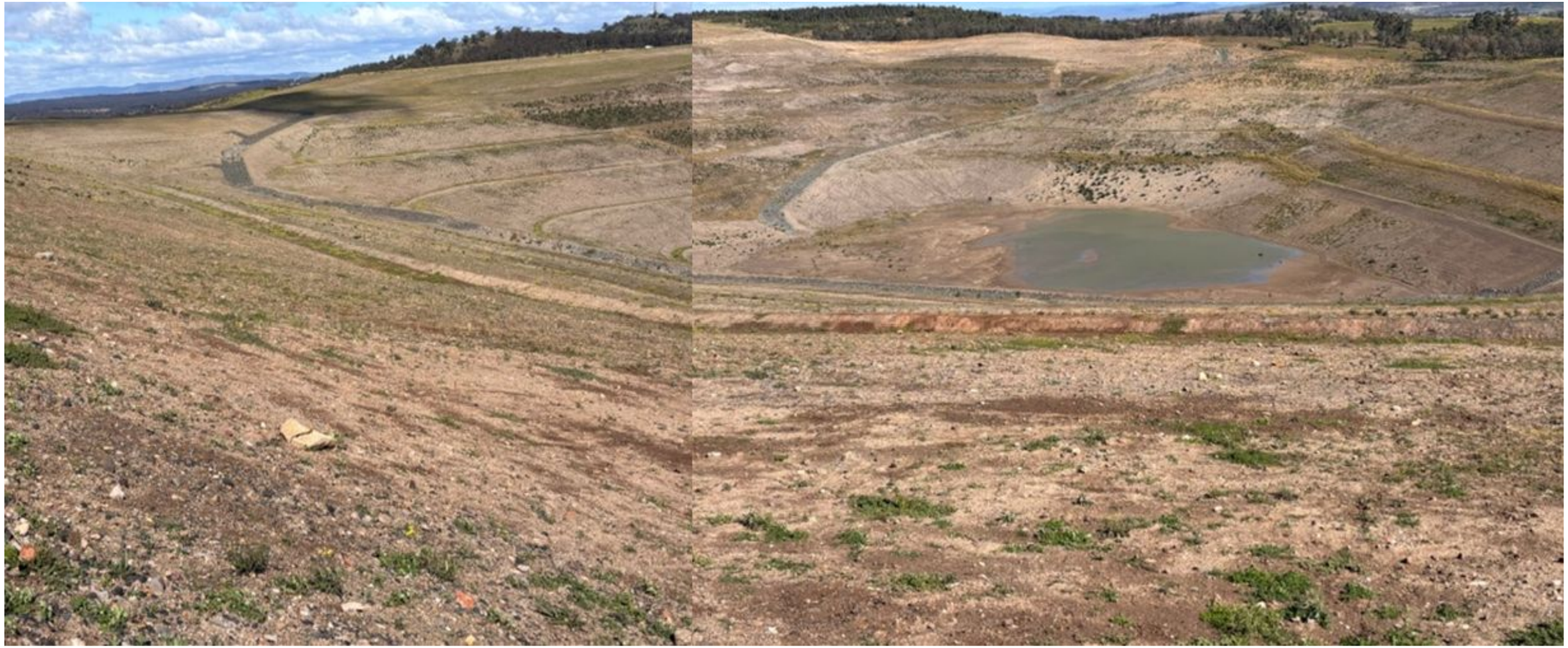
Muswellbrook Site Rehabilitation – January 2026



Pit 2



Pit 1 – after initial seeding



Next Steps – ongoing inspections and management



Weed Management
Acacia Saligna

Significant and ongoing removal of Western Australian native wattle (weed species) that was introduced into NSW and mining as a rehabilitation species.



Gas Management
Spontaneous combustion prevention

Deep burial of carbonaceous material, minimum 15m capping. Air quality measured at background levels (+0.5ppm)



Rehabilitation
Biodiversity

>700 hollows (for fauna habitat) installed across site in 2026 (new and relocated from solar project).

Partnerships
Research/Learning

Commenced working with local Landcare and planned research with University of Newcastle Students

Idemitsu Australia - Renewables

Upper Hunter Mining Dialogue Forum

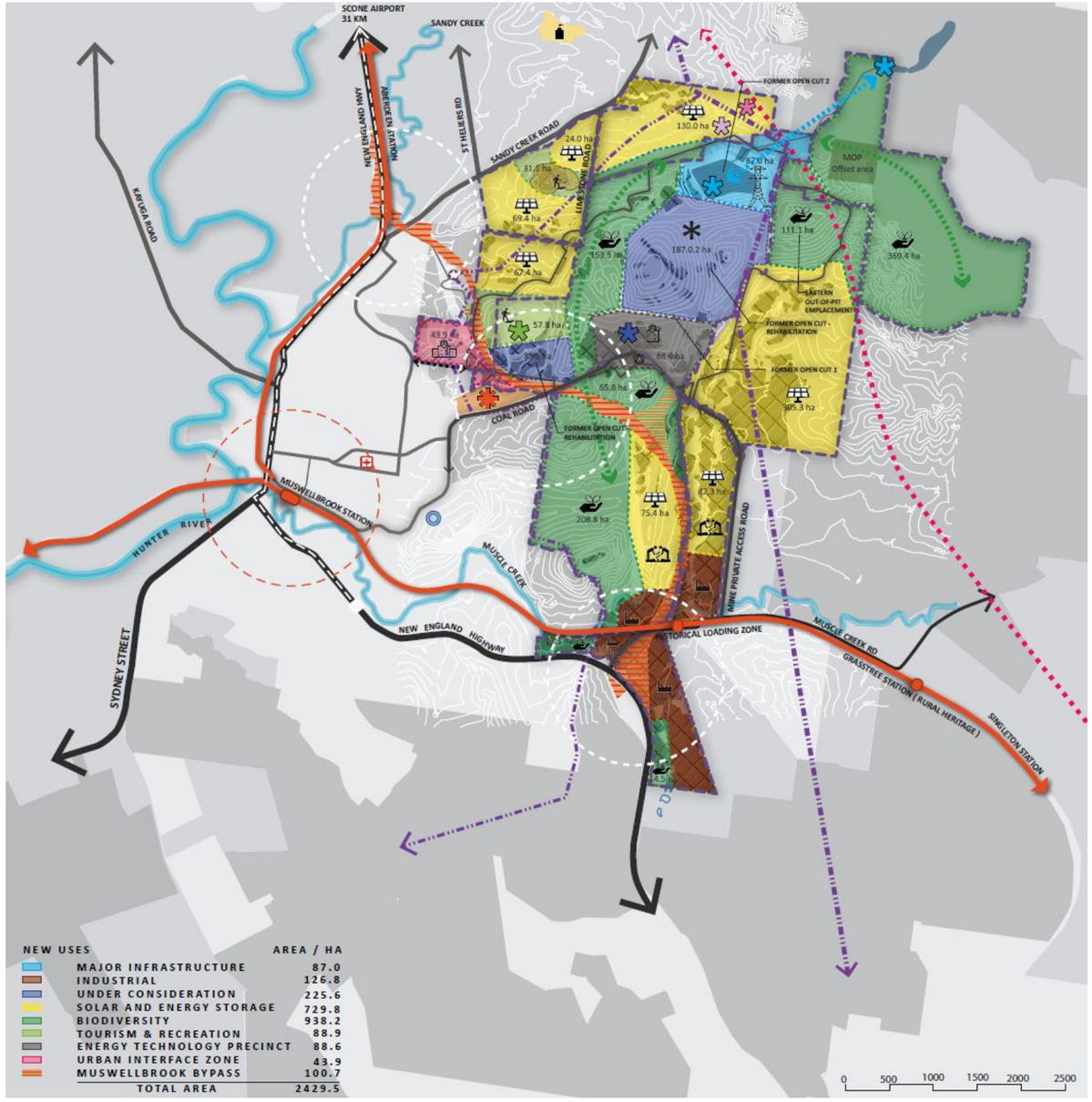
Mitch Cronin - Manager - Renewables Development

18 November 2026

Muswellbrook Clean Industries Precinct

Post-mining land use planning

- The closed Muswellbrook site provides significant land use opportunities for both buffer land and rehabilitated mining areas.
- Idemitsu Australia defined a Clean Industries Precinct concept in 2020 and have proceeded to develop several renewable energy projects at the site.
  - Muswellbrook Solar Farm (now under construction by OX2)
  - Muswellbrook Pumped Hydro (development phase)
  - Biodiversity Stewardship Areas
  - Hunter Vanadium Flow Battery Concept
- After significant site rehabilitation work we are now refreshing the vision to identify the best land uses.



A new mining industry – Our approach

Idemitsu Australia is continuing its development of Energy Projects with a focus on vanadium flow batteries. This is expected to flow through to demand for raw vanadium mining.

1

Demonstrate locally

- We are building a new 13MWh vanadium flow battery for our Boggabri coal mine. The largest of its kind in Australia.
- Contributing to our emission reduction targets and providing a positive return on investment

2

De-risk the supply chain

- We are supportive of a local supply chain for vanadium electrolyte production for delivery to MW scale battery systems.
- This includes ownership stakes in two vanadium mining businesses.

3

Scale up the vanadium mining industry

- Support the mining industry by providing reliable, long duration storage that can time shift cheap solar PV generation into overnight periods.
- Use the Boggabri Coal model to demonstrate the operational benefits of flexible generation on site.
- Build a much larger flow battery project on rehabilitated Muswellbrook Coal land.

idemitsu

Hunter vanadium flow battery

A world scale flow battery deployment on rehabilitated mining land

- The closed Muswellbrook site provides an ideal location for a commercial scale flow battery.
- Access to electrical infrastructure is the key (132kV & 330kV access).
- We are assessing siting & development options for a grid-connected VFB:
  - 100MW, 1050MWh (10.5 hours)
  - Approx. 456 battery modules
  - Approx. 55 million litres of electrolyte
  - Connecting to a local 132kV network
- EOI process underway with battery suppliers and construction contractors



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Thank you