MOUNT ISA FUTURE READY ECONOMY ROADMAP

February 2025

The Next Economy

CLIMATEKIC Australia

Acknowledgement of Country

We acknowledge the Kalkadoon People as the Traditional Owners of Mount Isa and its surrounding land and waters. We pay our respects to their Elders, past and present, and offer our solidarity and support to First Nations groups across the country working towards economic sovereignty and justice.

Acknowledgement

This project is an initiative of Mount Isa City Council, delivered in partnership with The Next Economy and Climate-KIC Australia.

Mount Isa City Council is driving economic development in the region as the gateway to the North West Minerals Province, supporting industries through encouraging investment, job creation, and infrastructure development while fostering diversification in the local economy. Council collaborates with industry to ensure sustainable growth including leveraging the region's mineral wealth for long-term economic benefits. To find out more visit: www.mountisa.qld.gov.au

The Next Economy is an economic development agency working with leaders across government, industry, investment and community organisations to create the conditions for a rapid, responsible and fair transition to a climate-safe, regenerative and socially just Australian economy. To find out more visit: www.nexteconomy.com.au

Climate-KIC Australia orchestrates collaborative efforts to deliver connected and coordinated climate action. They catalyse systems change by working across multiple levers including technology, business models, markets, finance and investment, policy and regulation, knowledge and skills, organisational culture and ways of working. To find out more visit: www.climate-kic.org.au

We are grateful to all the individuals and organisations in Mount Isa and across the North West region who shared their insights about their community and work, helping to inform the development of this Roadmap.

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Mayor's Message

Mount Isa, despite its relatively young age, is world-renowned for its rich mining history, pioneering exported mining technology, iconic annual rodeo, proud Kalkadoon culture, and multicultural beginnings. It has always been a City of Opportunity, and the saying that when one door closes, another opens, has never been more relevant for us than it is today.

The pending closure of Glencore's copper operations highlights the need for immediate action to sustain our workforce, diversify and attract new business, and invest in essential community infrastructure. Mount Isa has a strong and resilient economy, but it has issues across infrastructure, planning and social development that need to be addressed to survive and thrive. It is essential for the nation that Mount Isa remains a great place to live, work, and do business for years to come.

As the world transitions to a low-carbon future, Mount Isa is uniquely positioned to play a leading role. Located in the North West Minerals Province, our abundant resources, skilled workforce, and strategic location allow us to contribute to the national economy by producing and exporting much needed resources, including critical and strategic minerals.

The Mount Isa Future Ready Economy Roadmap outlines a clear vision for the region beyond our immediate challenges. The pathways, strategies and potential actions identified across five sectors key to our economy – energy, mining, transport, agriculture and tourism – have the potential to unlock enormous value for our city, state, and country. Future ready dimensions, including decarbonisation and climate adaptation, will build the foundations needed for Mount Isa to thrive.

With support befitting of this imperative from industry, the Queensland Government, and the Australian Government, the Mount Isa will add value to our natural resources, continue to research and develop pioneering mining and processing technology, and host world-first energy and logistics projects.

Since 2023, Council has worked closely with industry, government, experts, Traditional Owners, business leaders and community members to shape this Roadmap. With the right planning, investment, and support, Mount Isa will not only meet the challenges ahead but thrive—securing its future as a city of opportunity for generations to come.

Cr Peta MacRae
Mayor of Mount Isa

Executive Summary

The world is changing. Mount Isa, like many other industrial regions globally, is at the crossroads of major economic transformation. The world is in the critical decade to transition away from fossil fuels. Lived experiences of climate disasters, escalating financial risks and the falling cost of renewable energy supply have changed the global climate conversation. Major economies from the European Union to Japan and Canada have adopted policies and targets for net zero emissions, including tariffs on high-carbon imports, shifting global political and market dynamics.

In Australia, net zero policies include the Future Made in Australia Plan to boost domestic industrial capability and secure future trade, and the Queensland Energy and Jobs Plan to transform the state's energy system over the next 15 years. This global and national context is critical to consider as Mount Isa navigates its own economic challenges, including the planned closure of Glencore's Mount Isa copper mining operations and copper concentrator, expected to result in some 1,200 job losses from mid-2025. Business-as-usual is no longer an option for the region.

Mount Isa is the *City of Opportunity.* With the right planning and investment, Mount Isa can be a global player in a decarbonising world by producing and exporting critical minerals and materials. Mount Isa underpins a value chain liking the North West Minerals Province (NWMP) with Townsville's export facilities. The NWMP contains an estimated $680 billion in resources, including deposits and tailings. This connection drives over $16 billion in exports annually. With growing demand for the mined materials that enable decarbonisation, like cobalt, rare earths, copper, and zinc, Mount Isa could secure Australia's mineral endowments.

Mount Isa's mining legacy offers a skilled workforce and established industrial capacity. The region is set to significantly expand its renewable energy generation, enabling Mount Isa to become a leader in green minerals processing. The Australian Energy Market Operator (AEMO) has recognised the corridor between the NWMP and Townsville as having Eastern Australia's best co-located wind and solar resources. Critically, CopperString 2032—a 1,100 kilometre high-voltage transmission line connecting Mount Isa and the NWMP to Townsville with up to six new substations—is under construction. The region's abundant clean energy and mineral resources are key to unlocking economic diversification and resilience to future economic shocks in the critical North West region.

Key infrastructure, planning and social challenges must be addressed for Mount Isa to remain a good place to live, work and do business. Despite a rich asset base and a history of innovation and prosperity, multiple significant challenges now threaten the city's economic and community foundations. Mount Isa is simultaneously navigating pressures felt across Australia, including high interest rates, cost-of-living pressures, housing shortages and worsening climate impacts, as well as well as local challenges exacerbated by the region's remoteness and heavy reliance on a single large employer.

In the face of Glencore's closing copper operations, immediate action is needed to sustain Mount Isa's workforce, diversify the economy, and invest in the community infrastructure and services needed to prevent population decline. Mount Isa's challenges can be addressed in ways that deliver immediate and long-term benefits. Mount Isa City Council (Council) acknowledges the road ahead will be challenging, and maintains a future ready economy is within reach with the right planning, investment and stakeholder participation.

The Mount Isa Future Ready Economy Roadmap will inform a new era of development, guiding a strategic approach to immediate job creation and long-term benefits for the region. Council is committed to diversifying the local economy in ways that benefit businesses, the community, and the natural environment. Since 2023, Council has engaged in rigorous consultation with experts, local communities, Traditional Owners and First Nations organisations, government, industry, and other key stakeholders. These engagements have informed the development of strategic plans and new collaborations, including the Mount Isa Economic Diversification and Transformation Strategy and Memorandums of Understanding to support innovative regional energy and transport solutions, such as Green Gravity's energy storage system and Flying Whales' airship for cargo transport.

In 2023, Council approached The Next Economy, an economic development agency, for support to develop an economic development roadmap to guide decision-making and investment in Mount Isa's long-term vision for a thriving and resilient region. Throughout 2024, Council, The Next Economy and Climate-KIC Australia have brought together stakeholder input, research and existing plans to identify a series of Future Ready pathways capable of facilitating positive social, economic and environmental outcomes for Mount Isa in the near to long-term. These pathways are supported by strategies that are actionable by Council and stakeholders across industry, government, and the broader community.

The Roadmap is underpinned by a Future Ready Economy Framework to guide planning and investment decisions positioning Mount Isa for long-term success. The Framework has been applied to this Roadmap to identify strategies and actions that support positive development in the short and long term. It provides the foundations of a robust economic model adaptable for other regions and supports Council and stakeholders in assessing and prioritising opportunities across six key dimensions of resilient development:

- **Strong and Resilient Economy**
- **Circular Design**
- **Decarbonisation**
- **Environmental Impact and Regeneration**
- **Climate Adaptation**
- **Liveability and Social Wellbeing**

The Roadmap also explores strategies to strengthen the foundations of a thriving Mount Isa community, key to any successful economic development. They include education, training and workforce development, small and medium enterprises, essential community infrastructure, First Nations aspirations, healthcare and social services, and community safety, cohesion and liveability.

The Roadmap charts a path for five key economic sectors key to Mount Isa's future ready economy. Strategies and potential actions are identified to make each of these sectors 'future ready', including opportunities for value-adding:

Energy

There are significant new opportunities for Mount Isa to produce affordable and reliable renewable energy and implement innovation in energy storage including through the repurposing of legacy mining assets with gravitational energy storage systems. Timely completion of CopperString 2032 can help unlock this opportunity, decarbonise and expand other economic sectors including critical minerals mining and processing. Energy system challenges need to be addressed including but not limited to the balance of supply and demand, network reliability, energy pricing and the CopperString connection process.

Mining and Minerals

Mount Isa's capabilities as a mining town and gateway to the NWMP present a strategic opportunity to supply the critical minerals and green metals the world needs to decarbonise. To harness the opportunity presented by growing global demand for critical minerals and metals, Mount Isa requires investment and support to progress mining and minerals processing projects, adapt mining industry practices and technologies, develop common user infrastructure, and ensure regulations are fit-for-purpose.

Transport

Reliable and accessible transport and logistics infrastructure is essential for liveability and industry in the remote city of Mount Isa. Increasing rail volumes and upgrading roads will be essential to enabling more efficient transport of materials for industry, improving passenger safety, and strengthening resilience to worsening climate impacts. Innovative logistics solutions, such as airship freight transport, may unlock opportunities to establish new industries in Mount Isa.

Agriculture

There are opportunities to strengthen the environmental and economic resilience of Mount Isa's established cattle grazing industry and to diversify the local agricultural sector. Potential areas include dryland cropping, native botanicals and food production, which could connect to local tourism. Access to reliable water, research and development (R&D) expertise, and renewable energy to support more intensive activities are needed to leverage the sector's potential.

Tourism

From the Mount Isa Rodeo to Lake Moondarra, Mount Isa's unique culture and natural environment already support a strong tourism sector. There is a strong opportunity to strategically leverage these characteristics to expand and strengthen the sector. Key opportunities include supporting First Nations-owned and run operations and exploring multi-day adventures and study tours that offer insights into the region's special ecosystems, cultural and historical sites, and aspirations to develop innovative, future ready economic sectors.

To keep Mount Isa a great place to live and work –punching above its weight in the national economy – targeted investment and support beyond standard approaches are needed. Mount Isa has a bold agenda for its future ready economy. Already, Council and regional stakeholders are driving action to unlock opportunities and tackle barriers with priority actions including:

- Continued efforts to advance flagship projects: Green Gravity, Flying Whales, a Critical Minerals and Rare Earth Research Centre, a Battery Anode Material (BAM) Project, a Fertiliser and Battery Acid Plant, Acid production from pyrite in mine tailings, Truck Amenities and Fuel Depot, and Correctional Facility.
- The successful implementation of this Future Ready Economy Roadmap. Steps include developing implementation plans; establishing an appropriate governance structure; engaging investors; and working with the local community to build a deeper understanding of the Roadmap.

But, Mount Isa cannot go it alone. Traditional investment and support channels from industry and government remain important but are no longer fit for purpose. Standing at the crossroads of Australia's greatest economic opportunity of the 21st century, the scale of investment today will determine the magnitude of this opportunity in decades to come.

Council seeks greater commitment from the Queensland and Australian governments—a significant investment and support package is needed to respond to immediate economic challenges, transform and diversify the economy, build resilience, and sustain Mount Isa's contribution to the national economy and global decarbonisation.

To secure Mount Isa's opportunity, the region needs urgent support, including:

- Meaningful **engagement** with local, regional and national stakeholders to develop and resource implementation plans for Future Ready strategies and actions.
- Tailored **strategic coordination** to maximise local development efforts. A taskforce or regional transition body with a mandate to work with all levels of government, private sector investors and the community to design and leverage the necessary funds and investment needed for Mount Isa's economic transformation and the required expertise, would ensure Mount Isa has the backing it needs.
- **Significant and dedicated investment** to accelerate resilient and competitive industry growth. Establishing a multi-billion-dollar fund for Mount Isa to invest in the foundations of competitive new industries, innovation, and a thriving community is critical for the region. It is also essential for the economic future of Queensland's North West region, and achievement of Australia's net zero ambitions.

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Glossary

AEMO	Australian Energy Market Operator
AI	Artificial Intelligence
ARENA	Australian Renewable Energy Agency
CIS	Capacity Investment Scheme
DTS	Mount Isa Economic Diversification and Transformation Strategy
EPBC Act	Environment Protection and Biodiversity Conservation Act
ESG	Environmental, Social, and Governance
EV	Electric Vehicle
FID	Final Investment Decision
FIFO	Fly In Fly Out
GDP	Gross Domestic Product
GVP	Gross Value of Production
GESS	Gravity energy storage system
IEA	International Energy Agency
ISSB	International Sustainability Standards Board
JORC	Australasian Joint Ore Reserves Committee
LNG	Liquified Natural Gas
MITEZ	Mount Isa to Townsville Economic Development Zone
NEM	National Electricity Market
NRM	Natural Resource Management (regional organisation)
NWMP	North West Minerals Province
NWPS	North West Power System
NZEA	Net Zero Economy Authority
PBC	Prescribed Body Corporate
QCA	Queensland Competition Authority
QCS	Queensland Corrective Services
QEJP	Queensland Energy and Jobs Plan
QPS	Queensland Police Service
QR	Queensland Rail
REEs	Rare Earth Elements
REZ	Renewable Energy Zone
SMEs	Small and Medium Enterprises
SMI	Sustainable Minerals Institute
TACMIP	The Australian Critical Minerals Industrial Precinct
TAFE	Technical And Further Education
TCFD	Task Force on Climate-related Financial Disclosures
TNFD	Task Force on Nature-related Financial Disclosures

Introduction

The Mount Isa region, like many industrial regions globally, is at a crossroads of major economic transformation. Current challenges, including the decarbonisation of economic sectors, infrastructure gaps, a changing climate, and the high cost of doing business, threaten the city's economic foundations. However, Mount Isa can become a key global player in a decarbonising world by producing and exporting strategically important materials. This is a future within reach given the right planning and investment.

Recent shifts in the local resource sector underscore the need for immediate job creation and economic diversification, aligned with decarbonisation and climate adaptation. Mount Isa City Council is setting a future-focused direction to attract the right mix of investment and development while addressing vulnerabilities and building on the region's strengths to secure a thriving future.

'Mount Isa is rich in critical minerals yet faces population decline and mine closures. We've always punched above our weight for Australia's economy but now need State and Federal support to rise like a phoenix. With the right backing, we can become the powerhouse we're meant to be.' – Tim Rose, CEO of Mount Isa City Council

Following Glencore's announcement in October 2023 regarding plans to close its local underground copper operations and copper concentrator in 2025,[1] Mount Isa City Council accelerated efforts to identify new and immediate economic opportunities for the region. This proactive and strategic approach to economic development includes:

- Timely engagement of **technical expertise** to inform options for industry development and job creation, and support medium to long term planning for a future ready economy.
- Extensive and wide-ranging **consultation** with community and stakeholders across government, industry and community services to understand perspectives and priorities.
- Regular **engagement and coordination** with Queensland and Australian governments.
- Regular **engagement and coordination** with regional bodies and networks including North West Queensland Regional Organisation of Councils (NWQROC), Regional Development Australia (RDA) – North West, Mount Isa Townsville Economic Zone (MITEZ) and the Western Queensland Alliance of Councils.
- Exploration of **new enterprise opportunities,** such as signing memorandum of understandings (MOUs) with: Flying Whales to deliver an innovative airship freight solution; Cobalt Blue to investigate the potential for a pyrite tailings re-processing operation to produce sulphuric acid; and Green Gravity and Glencore to examine the potential of utilising mineshafts at Mount Isa Mines for renewable energy storage.
- Development of key **strategy and planning documents** to underpin and guide economic development efforts, summarised in the table below.

Table 1: Mount Isa City Council key strategies and plans for economic development

Strategy	Description
Mount Isa, Moving Ahead: Mount Isa City Council Economic Development Strategy 2023 – 2028[2]	This strategy provides a blueprint for enhancing economic growth and investment in Mount Isa. It presents six economic development objectives and a series of initiatives to support the vibrancy, diversity, liveability and sustainability of Mount Isa as the regional capital of Queensland's North West.
Mount Isa City Council's Corporate Plan 2020- 2025[3]	This plan sets out Mount Isa's vision and priorities and guides the allocation of resources over a five-year period. The long-term community vision for Mount Isa is focused on: establishing safe and healthy communities with a strong sense of identity; developing a prosperous and diverse local economy; establishing innovative and efficient infrastructure networks; and recognising, protecting, managing and promoting the region's unique natural environment; and practicing inclusive and ethical governance.
Transitioning Mount Isa's Economy: Response to Glencore Copper Mining Closure Strategy, 2024[4]	Mount Isa City Council contracted the services of consultants in specialised strategic areas to inform and develop a plan in response to Glencore's announcement in late 2023 regarding major changes to its copper operations. Reports were prepared for each of the key pillars of Mount Isa's economy: tourism, energy, resources, critical infrastructure, agriculture, and small and medium business. Additional analysis was undertaken regarding approaches to economic structural adjustment and investment, and pathways to building a future ready economy (this Roadmap).
Regional Transformation Strategy 2024 - North West Queensland[5]	Published by Queensland Government's Department of State Development, Manufacturing, Infrastructure & Planning (DSDMIP), this strategy identifies priorities for North West Queensland, aligned with Queensland Regional Transformation Objectives to: enable resilient regions with diversified, value-adding industries and a highly skilled workforce; sustainable regions with innovative industries that lead the way in a net zero economy; and thriving, liveable and inclusive regions that attract and retain people, businesses and investment.
Mount Isa Diversification and Transformation Strategy (DTS), 2024[6]	This strategy outlines the imperative for the transformation of the Mount Isa economy and Mount Isa City Council's agenda to diversify and strengthen the economy. The strategy presents a synopsis of key economic development projects, programs and initiatives for immediate delivery or initiation.
Mount Isa Future Ready Economy Roadmap, 2025	This document. Released in February 2025, the Roadmap identifies how Mount Isa can position itself in a rapidly decarbonising world to build on its natural advantages for long term resilience and prosperity.

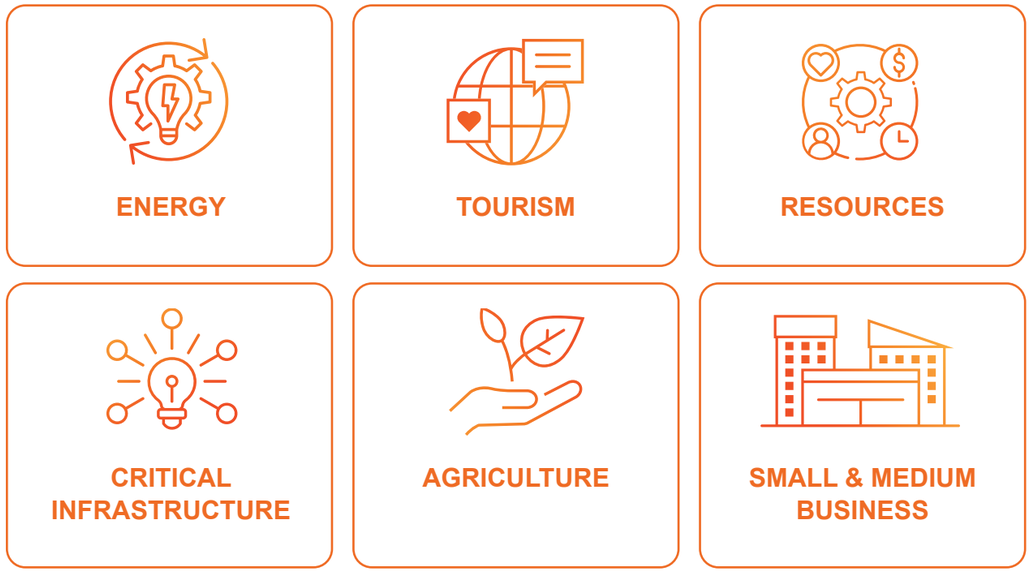
Mount Isa Diversification and Transformation Strategy

In October 2023, Glencore announced the closure of its copper concentrator and underground copper mines in Mount Isa, along with the Lady Loretta zinc mine in 2025.[1] These decisions will result in the loss of an estimated 1,200 jobs.[4]

This announcement necessitated a rapid response from Mount Isa City Council – to identify mechanisms to retain workers in the region, create new employment opportunities, and strengthen and diversify with economy, as quickly as possible. To inform this process, Mount Isa City Council engaged multiple consultancies to lead the identification of job creation and economic development opportunities across the six pillars of Mount Isa's economic base: energy, tourism, resources, critical infrastructure, agriculture and small and medium business (see figure, below).

Specific additional analysis was undertaken in relation to two other areas: specialist strategies for the overall transition of the Mount Isa economy, in partnership with the Mount Isa Copper Mine Closure Taskforce, and specialist analysis on opportunities to build a future ready economy, provided by economic development agency The Next Economy.

Figure 1: Six key economic sectors in Mount Isa investigated by consultants.



Source: Mount Isa City Council.

Over 60 projects were identified with substantive capacity for short term job creation and new revenue generation. Some 28 projects were prioritised with an estimated initial capital value of $2.7 billion.[6] Examples of prioritised projects include the Australian Critical Minerals Industrial Precinct and Julius Creek solar extension and battery energy storage system.

This work resulted in publication of the Mount Isa Diversification and Transformation Strategy (DTS). This strategy presents a synopsis of key economic development projects, programs and initiatives for immediate delivery, as identified through the response analysis for Mount Isa's economic pillars. It identifies leadership, investment and delivery requirements for Mount Isa, and the broad value chain impacts this work aims to generate.

Based on this work, Mount Isa City Council, together with industry stakeholders, is developing The Australian Critical Minerals Industrial Precinct (TACMIP), an industrial precinct north of the airport to host a number of priority future ready projects. The precinct will play a key role in facilitating coordination and collaboration across the mining sector and with key stakeholders in government and research, and will be developed to facilitate localised processing and logistics support. TACMIP will also serve as focal point to attract investment and support from state and federal governments. More details are provided in Chapter 4: Mining & Minerals Processing. Eight flagship projects currently feature in the TACMIP advocacy agenda, outlined in the next figure.

Figure 2: The Australian Critical Minerals Industrial Precinct (TACMIP) Advocacy Map is a tool developed by Mount Isa City Council to drive collaboration, local processing, and investment in the region. Source: Mount Isa City Council.

Details on each priority project are provided in the following sections of the Mount Isa Future Ready Economy Roadmap (this document):

Priority Project	Roadmap Location
Critical Minerals and Rare Earths Research Centre	Chapter 4, Pathway 3, Strategy 2
Battery Anode Material (BAM) Project	Chapter 4, Pathway 3, Strategy 6
Acid production from pyrite in mine tailings	Chapter 4, Pathway 3, Strategy 3
Fertiliser and Battery Acid Plant	Chapter 4, Pathway 3, Strategy 6
Green Gravity	Chapter 3, Pathway 3, Strategy 2
Flying Whales	Chapter 3, Pathway 4, Strategy 1
Truck Amenities and Fuel Depot	Chapter 5, Pathway 3, Strategy 1
Correctional Facility	Chapter 2, Pathway 6, Strategy 3

In December 2023, the Queensland Government committed to the delivery of a support package of up to $50 million for mine workers and the Mount Isa community.[7] Futher details on the Mount Isa Transition Fund and Mount Isa Mining Acceleration Program are provided in Chapter 1 - In Focus: Closure of the Mount Isa Mines' copper operations.

Mount Isa's Future Ready Economy Roadmap

In late 2023, Mount Isa City Council engaged The Next Economy, together with Climate-KIC Australia, to develop this Roadmap with two key objectives in mind:

1. Articulate Mount Isa's value proposition in the context of the national and global imperative to accelerate the net zero transition and build community resilience.
2. Identify pathways, strategies and actions for Mount Isa City Council and stakeholders across government, industry, business and civil society to effectively pursue positive economic outcomes for the region, aligned with a net zero future, and a thriving community.

The project builds on the work of the six consultancies that were commissioned by Council to identify initiatives that could stimulate rapid job creation to minimise the impact of the impending Glencore closures (see Appendix A for a list of reports). While their remit was to deal with the immediate impact and inform how State Government funding could be allocated in the short term, the Roadmap's project team was asked to identify how Mount Isa could position itself to generate long term economic benefits by responding to changing global market demands.

What followed was a year-long process, drawing on the work of Council and consultants, desktop research and the incorporation of insights from more than 100 stakeholders across industry, government, business and the community. The project team also actively engaged with Council, the Queensland Government and the other consultants in shaping its approach, a summary of which is provided in the timeline, below (see Appendix A for further information on methodology and participants).

Figure 3: Development of the Future Ready Economy Roadmap

The engagement process, ranging from in-person and online workshops to community forums and one-on-one meetings, was designed to elicit insights from stakeholders to:

- Develop a shared economic vision for the region, with an emphasis on future ready economy requirements including decarbonisation and climate adaptation.
- Build awareness with key stakeholders about what these changes mean for the region and how people can pursue emerging economic opportunities and manage risks.
- Broaden the conversation and thinking beyond the immediate need to respond to the Glencore's closure announcement to identify opportunities for the medium to long term benefit of the community.

'The workshops were a valuable opportunity to contribute to Mount Isa's growth and future. Staying informed, sharing what we are witnessing on the ground, and engaging in new ideas helps us better support Mount Isa families and individuals in need.'
– social service provider and workshop participant.

The following document, Mount Isa's Future Ready Economy Roadmap, is a result of these efforts.

Community and business leaders with Mayor Peta MacRae at a workshop in 2024. Source: The Next Economy.

Mount Isa Future Ready Economy Roadmap

The Mount Isa Future Ready Economy Roadmap identifies how Mount Isa can position itself in a rapidly decarbonising world by building on its natural advantages for long term resilience and prosperity.

The Mount Isa Future Ready Economy Roadmap will be a key resource for Council and its stakeholders over the next decade. Structured on key economic sectors, it starts with **Chapter One** exploring Mount Isa's challenges and opportunities in a changing world. This chapter introduces the Future Ready Economy Framework, a tool that underpins the Roadmap and guides future planning and decision-making.

In **Chapter Two**, the Roadmap focuses on the foundations critical to a thriving Mount Isa community, exploring a range of essential areas including education, training and workforce development; health and community services; First Nations economic development and SMEs.

Chapters Three to Seven focus on economic sectors key to Mount Isa's future ready economy: Energy (Chapter Three); Mining and Minerals (Chapter Four); Transport (Chapter Five); Agriculture (Chapter Six); and Tourism (Chapter Seven). Here, the Roadmap outlines pathways, strategies and potential actions to build future ready economic sectors.

The Roadmap **concludes** with details on implementation and next steps – including the types of investment, resources and support needed from government and industry – paramount to a future ready economy and a thriving community – for Mount Isa and the North West region.

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Chapter 1: Mount Isa's role in a changing world

Summary

Mount Isa is positioned to play a key role in the transformation of Australia and the world.

- We are in the critical decade to transition away from fossil fuels and avoid runaway climate change. Awareness of the need to act, along with the now low cost of solar and wind energy, have cemented global climate commitments and accelerated the transition to renewable energy and low-carbon technologies across the world.
- The energy transition is increasingly seen as an opportunity to address the shortcomings of 'business as usual' and ensure the economy better serves people and the planet.
- Communities and civil society organisations are increasingly demanding that the benefits of the energy transition flow equitably to communities, First Nations people, ecosystems, and future generations.
- Australia is taking steps to become a renewable energy leader and will play a key role in providing the critical minerals the world needs to decarbonise.
- Mount Isa has a strong and unique opportunity to build on its reputation for mining excellence and foster opportunities to create new jobs in the short term, while positioning the region to thrive as a key player in the long-term transition to net zero emissions.
- Mount Isa's current mining industry underpins the businesses, services, and broader community. Major setbacks within this industry could jeopardise the collective future of local industries, the community's viability, and the capacity of the North West Minerals Province to deliver the resources essential for the energy transition.
- Inaction or a delayed response to industry disruption could carry immense and lasting costs for the region, as well as for Queensland and Australia's broader economy.
- The Mount Isa Future Ready Economy Roadmap identifies opportunities for the region to harness its potential, align with emerging global trends, and thrive into the future.
- To assist with this process, a Future Ready Economy Framework has been designed to assess economic opportunities against key dimensions of positive and resilient development.

Mount Isa is poised to play a crucial role in helping the world decarbonise. Whether this potential is realised depends on current global and national trends, as well as the scale and type of support and investment it receives. This chapter provides a summary of the national, global, and regional contexts that shape Mount Isa's potential, through the lens of the Future Ready Economy Framework.

Global context

This is the critical decade to avoid runaway climate change by transitioning away from fossil fuels. The world is changing in response.

Extreme weather events and shifting climate conditions have been experienced on all continents, threatening the physical safety, livelihoods and food security of millions of people worldwide.[1] Driven by lived experience of climate disasters, multilateral agreements, and a growing need to mitigate climate-related financial risks, the global conversation about climate change has shifted after decades of inaction. This awareness of the need to act, along with the now low cost of solar and wind energy generation technologies, have cemented global commitments and accelerated the transition to renewable energy and low-carbon technologies across the world.

National governments, companies and financial institutions are setting net zero targets.

National targets to reach net zero emissions now cover over 90 per cent of global GDP.[2] Progress towards these targets has been slow, though many are complimented by near-term and sector-specific decarbonisation plans. For example, Australia has adopted an emissions reduction target of 43 per cent by 2030, a renewable energy target of 82 per cent by 2030, and decarbonisation pathways for six key sectors.[3]

Competition for investment in future industries is increasing. Escalating climate-related risks and rising demand for zero and low-carbon products are also reshaping financial markets. Over half of the world's largest companies have set targets to achieve net zero emissions.[2] Pressure from institutional investors, asset managers, insurers and banks are further accelerating global industrial decarbonisation, as the financial sector seeks to reduce portfolio exposure to climate-related risks. Transparent and independent reporting of environmental, social and governance (ESG) performance is becoming a mandatory feature of financial markets, driving increased accountability for corporate sustainability claims and environmental impacts.

There is a global race for capital to transition complex energy and industrial systems to zero- and low-carbon alternatives.

Ambitious policy agendas are being set to attract global capital, utilising a combination of targets and long-term policies that create a stable investment environment alongside direct investment and tax incentives. Australia is one of the growing number of nations adopting transformative clean energy industrial policies. The Future Made in Australia Plan aims to support the nation's next generation of advanced manufacturing and trade.

Global demand for critical minerals is set to surge. Supply chains and trade relationships are shifting.

Growth in the renewables sector drove a surge in interest in critical minerals in 2023,[4] doubling their market value to around US$320 billion. Demand for lithium tripled, cobalt demand increased by 70 per cent, and lithium demand by 40 per cent.[5] The International Energy Agency (IEA) predicts that by 2040, global demand for lithium, cobalt, nickel, and rare earth elements will be 42, 21, 19, and 7 times higher respectively compared to 2020.[6] It is important to note that predictions like these are reliant on a range of assumptions—for example, the extent of cultural paradigm shifts or recycling rates—so modelling may vary greatly between organisations and over time.

Regions around the world are positioning themselves to take advantage of the transition to net zero, developing new trade relationships and strategic supply chains for key materials, and improving energy security and development outcomes for citizens. This transformation of energy systems and trade relationships is occurring alongside other geopolitical and economic shocks and risks, including conflicts in Europe and the Middle East, the COVID-19 pandemic, and looming trade wars. These disruptions underscore the importance of secure and resilient supply chains, sovereign capabilities, and trusted trade partnerships.

For Mount Isa, the energy transition presents an opportunity to leverage Australia's reputation as a trusted trade partner and meet global demand for critical minerals.

Leaders are looking beyond decarbonisation. The energy transition is increasingly seen as an opportunity to address the shortcomings of 'business as usual' and drive opportunities for the economy to better serve people and the planet. Best practice energy transitions, whether led by governments or companies, are engaging and empowering diverse stakeholder groups and prioritising social and environmental co-benefits, including 'nature positive' outcomes, new jobs and economic opportunities for marginalised groups, and additional value streams enabled by circular design models.

Delivering a 'just transition' has become a central theme of global decarbonisation efforts.

Communities and civil society organisations are increasingly demanding that the benefits of the energy transition flow equitably to communities, First Nations people, ecosystems, and future generations. In tandem, governments around the world are implementing wellbeing economy principles. This approach looks beyond gross domestic product (GDP) to measure social progress, prioritising low carbon, socially just, and ecologically viable communities and economies.[7] There is also a greater demand for place-based planning and participatory development approaches, with community expectations extending to transparency and fairness principles informing governance decisions.[8]

Australia has a leading opportunity to meet the world's growing demand for the energy and materials needed to reach net zero emissions. Source: William Debois (Port of Gladstone).

Australian Context

Australia is taking steps to become a renewable energy leader.

The Australian Government has called the global energy transition Australia's 'biggest opportunity for growth and prosperity'.[9] To take advantage of the nation's abundant natural resources and strengths as a global trade partner, it has implemented a suite of policy and investment measures including:

- In the 2024 – 2025 Budget, more than $22.7 billion committed to the Future Made in Australia Act (2024) to increase clean energy generation, support clean technology development, value-add critical mineral production, and upgrade Australia's electricity grid over the next decade.[10]
- Implementing a mandatory disclosure regime to improve corporate reporting and management of climate-related risks and opportunities.
- Reforming the Safeguard Mechanism to support decarbonisation at the country's largest industrial facilities in line with national emission reduction targets.
- Establishing the Net Zero Economy Authority (NZEA) to enable a positive and orderly transition for affected workers, communities and businesses.

Federal policies are being complimented by state-based policies and targets. For example, the 2022 Queensland Energy and Jobs Plan (QEJP), supported by a commitment of $26 billion over four years[11], outlines a detailed plan to transform Queensland's energy system over a 15-year period.

Households and small businesses are leading the way.

The deployment of renewable energy is accelerating, led by households and small businesses who installed 3GW of rooftop solar in 2023, accounting for 60 per cent of new renewable capacity.[12] While large-scale renewable energy and storage projects face planning and supply chain challenges, many are still being developed with support from policies like the Capacity Investment Scheme (CIS) and private offtake agreements.

Rooftop solar accounted for 60 per cent of new renewable energy capacity in Australia in 2023. Source: Z Stock Photos.

Global demand for Australian renewable energy/clean technologies is growing.

Australia has strong trade relationships across the world, particularly in the Asia-Pacific. Built on Australia's historic supply of fossil fuels and metal ores, key trade partners like Japan and South Korea are exploring Australia's potential to support renewable energy exports and green metal production.[13] Australia's scientific and defence capabilities are also being applied to value-added mining and advanced manufacturing, supporting new export opportunities around the world.

Australia's critical mineral reserves are key to clean technology supply chains.

Australia will play a key role in providing the critical minerals the world needs to decarbonise. China currently produces over 80 per cent of rare earth elements used to make magnets in electric motors and wind turbines; an area of concern for the United States and its allies.[14] Australia is a trusted partner in global supply chains due to our trade reliability, robust regulatory environment, and experienced mining sector,[15] and is seen as critical to diversifying and de-risking critical mineral supply chains. For example, Australia, Japan, India and the US formed the Quadrilateral Security Dialogue in 2021, which led to multilateral initiatives including the Australia-Japan Critical Minerals Partnership.[15]

There is strong state and federal interest and funding for the development of a globally competitive critical minerals industry in Australia.

Recently, the Australian Government and all state and territory governments have developed strategies for critical minerals. For example, in October 2023, the Albanese Government announced a $2 billion expansion in critical minerals financing, building on the government's $4 billion Critical Minerals Facility.[16] The Queensland Resources Industry Development Plan (QRIDP) outlines a further A$90 million worth of investments to support future growth of the critical minerals industry in strategic regions across the state, including the North West Minerals Province (NWMP).[17]

Snapshot: Mount Isa, Queensland

Mount Isa boasts a long, proud history in mining and grazing, complemented by a rich lifestyle and natural environment. The city of Mount Isa is located along the banks of Leichhardt River on the traditional lands of the Kalkadoon people. It is located a 900 km drive west of Townsville and a 1,700 km drive northwest of Brisbane.

Mount Isa City Council serves around 18,700 people across 43,188 km², an area larger than Switzerland. It is one of Australia's largest Local Government Areas (LGA) by land mass.*

Mount Isa was established in 1923 following significant mineral discoveries. A century later, the city is a hub for essential services in the North West for communities and industries – including the NWMP's mining and minerals processing industry,[18] cattle grazing and tourism.

Mount Isa has a 'tropical continental climate' with cooler winters and hotter spring and summer months with temperatures averaging around 30°C and often reaching into the 40s. The climate in Mount Isa is already changing with predictions of hotter days, more intense downpours and increased fire risk.

Nationally significant wetlands, Lake Moondarra and Lake Julius, provide a reliable supply of water to the city, although given changes to the climate, it is uncertain whether water security will become a more pressing issue in the region in years to come.

Mount Isa is home to red soil desertscapes and more than 1,500 native fauna and flora, including Eucalyptus woodlands and threatened species like the Diamond Head Turtle, the Purple-necked Wallaby, and the critically endangered Curlew Sandpiper. Key threats to Mount Isa's biodiversity includes invasive pest plants and animals, the legacy of historic mining activities, new mining and processing activities, and worsening extreme weather from a changing climate.[19]

*The Mount Isa LGA includes the Camooweal community, 190 km northwest of Mount Isa on the traditional lands of the Indjalandji-Dhidhanu people. The scope of this Roadmap excludes Camooweal. Many of the strategies and actions identified to support First Nations self determination and economic development in Mount Isa may however be relevant for the Indjalandji-Dhidhanu people.

Source: The Next Economy.

Innovative Australian companies like AlphaHPA, with support from national critical minerals financing, are growing the next generation of mining, minerals processing and advanced manufacturing. Source: William Debois.

Mount Isa's Imperative and Value Proposition

Mount Isa has a strong and unique opportunity to build on its reputation for mining excellence and foster opportunities to ensure jobs in the short term and position the region to play a key role in the net zero transition and thrive into the future.

The global and national context presents a range of opportunities and challenges relevant to the development of a future ready economy. They are critical to consider as Mount Isa seeks to navigate current shocks to the economy, diversify its economy and maintain its jobs base.

Mount Isa City Council is drawing on regional knowledge and expert input to identify, prioritise and develop opportunities that will sustain Mount Isa's population, and position the region for success in the decades to come.

'Mount Isa sits in a zone abundant with critical minerals and rare earths, presenting immense opportunity. However, challenges like a declining population and mine closures loom. We've developed plans to become a powerhouse of the Australian economy and now need State and Federal governments to step up and help turn vision into action.'
– Mount Isa Mayor, Peta MacRae

Mount Isa is the heart of Queensland's North West region. The city boasts a long, proud history in mining and grazing, complemented by a rich lifestyle and natural environment. Source: The Next Economy.

Mount Isa's Opportunity

With growing demand for decarbonised materials, Mount Isa is well-placed to navigate current economic shocks, diversify its economy, and maintain its jobs base. By leveraging its skilled workforce, industrial capacity, and renewable energy potential, Mount Isa can support crucial government energy priorities and sustain the North West region. A snapshot of opportunities for Mount Isa are outlined below and explored in more detail in the subsequent chapters of this Roadmap.

Mount Isa is positioned to play a key role in the transformation of Australia and the world.

Mount Isa is located at the gateway to the North West Minerals Province (NWMP), one of the richest mining regions in the world. The NWMP contains an estimated $680 billion in resources in deposits and tailings, including over $500 billion of energy transition minerals.[20] A plethora of state and federal planning initiatives highlight the opportunities of the NWMP and identify the critical minerals sector as a key growth area. Significant opportunities exist for Mount Isa to continue to be a leading provider of mineral exports through the development of the energy transition mineral reserves of the NWMP including production of cobalt and rare earth minerals, and continued production of copper and zinc.

Market demand for decarbonised and responsibly produced materials is growing.

ESG standards will play an increasing role in shaping the critical minerals sector, and the mining sector more broadly, with the recognition that the world cannot address the challenge of decarbonisation by creating more environmental problems. Developing production to align with standards such as the Organisation for Economic Co-operation and Development (OECD) Due Diligence Guidelines and the Responsible Minerals Initiative will enable connection with market demand for decarbonised and responsibly produced materials, positioning Mount Isa as a key facilitator in the decarbonisation of Australia and the world.

As countries around the world look to secure sources of minerals aligned with standards on sustainability, safety and human rights, Australia's status as a trusted trading partner gives Mount Isa a competitive advantage. Realising this opportunity requires navigation of system level uncertainties, dynamics and risks shaped by geopolitics and market dynamics.

Mount Isa will play a central role in delivering key government energy policy priorities.

The Australian and Queensland governments have a range of policy and investment mechanisms in place (see Australian context, above). For example, the 2022 Queensland Energy and Jobs Plan (QEJP) outlines plans for the transformation of Queensland's energy system, aiming for 25 GW of renewable generation (to meet an 80 per cent renewable energy target), pumped hydro storage assets, batteries and grid firming facilities, and new high voltage transmission backbones by 2035.[21]

The future of Mount Isa has already been considered across several state and federal planning initiatives that highlight the opportunities of the NWMP. These initiatives have identified the critical minerals sector as a key growth area and enabler of the energy transition; that CopperString 2032 will unlock much-needed renewable energy capacity for the regions.

Mount Isa underpins a massive value chain from Darwin to Townsville. Mount Isa plays a central role in one of the Australia's most strategically important integrated regional industrial ecosystems. The Mount Isa to Townsville Economic Zone (MITEZ) is an integrated industrial economic zone connecting the minerals mining, processing and industrial manufacturing ecosystem of NWMP with the export facilities of the Townsville port. Every year, the MITEZ region generates over $16 billion in exports of minerals, manufactured metals and chemicals, food products, defence and transport services.[18]

The economic activity in Mount Isa and Townsville is symbiotic, with 15 per cent of Townsville's local economy and over 8,000 jobs directly related to the resources of the NWMP and the facilities in Townsville unlocking access to national and global supply chains for Mount Isa's production.[18] Mining in North West Queensland makes a significant contribution to Queensland and Australia's economy, producing $9.5 billion of gross output, $2.8 billion of gross value-add and $8.9 billion of exports.[23] In context, mining is Queensland's largest industry. In 2022[23], the mining sector contributed $86.5 billion in gross value-add.[24]

Mount Isa plays a central role in the Mount Isa to Townsville Economic Zone, one of Australia's most strategically important integrated regional industrial ecosystems. Source: Mount Isa City Council.

The Mount Isa region has a strong legacy in the mining and minerals processing.

Mount Isa Mines has produced crude lead bullion for over 90 years, and the Mount Isa lead smelter is one of a few advanced minerals processing facilities remaining in Australia.[25] Glencore's copper operations and Lady Loretta zinc mine are among Australia's most iconic mining operations, supplying enough copper to build more than 39 million houses and enough zinc to manufacture more than 535 million cars over 60 years of operation.[26]

Mount Isa has a skilled workforce, strong industrial capacity and reputation for innovation.

Mount Isa has a skilled workforce and industrial capacity especially in engineering, manufacturing and mining services. Mount Isa has also established a reputation for innovation. Mount Isa Mines is known as a pioneer and trusted source of mining expertise, necessitated by the isolated nature of the mine. The mine's remote location has catalysed innovation through partnerships with Australian universities and CSIRO to minimise costs and ensure viability across the century of mining operations.[27] The region can continue to build on existing capabilities with research, innovation and leading practice in green minerals processing to meet emerging market demand for green commodities.

Mount Isa is well suited for renewable energy to power economic development.

The Townsville to NWMP corridor is set to become a centrepiece of Australia's renewable energy development, offering opportunities for Mount Isa to access renewable energy. AEMO identified the corridor from Townsville to the NWMP as Eastern Australia's best co-located wind and solar resources, with a potential electricity generation capacity over 26 GW.[18] This electricity advantage can power the extraction, processing and export of new economy minerals through setting up a decarbonised minerals mining and industrial manufacturing economy.[18]

The construction of CopperString 2032 is expected to incentivise the development of new minerals-sector investment and production through access to flexible and competitively priced electricity from the NEM. Electricity prices are expected to reduce in the order of 40 per cent for delivered electricity, and by 50 per cent for average wholesale.[18]

Mount Isa provides essential services that sustain the North West.

Mount Isa is an important regional hub that provides key services for surrounding towns including Camooweal to the north-west, Cloncurry and Julia Creek to the east, Djarra to the south, and multiple small communities to the north including Gregory, Lawn Hill, Doomadgee, Bourketown and Four Ways. Mount Isa supports the North West region with essential skills and experience in healthcare and social assistance, education and training. For example, Mount Isa Hospital is the main referral centre within the North West Hospital and Health Service and provides a range of specialist treatment and care services. The hospital is also the major hub for telehealth services across the northwest service area, supporting five primary healthcare clinics and six hospital sites.

Mount Isa's Challenge

Immediate action is crucial to sustain Mount Isa's workforce and diversify its economy. A delayed or inadequate response risks triggering a cascade of adverse effects, including population decline and a significant erosion of business and community viability.

Mount Isa's current economic activity underpins the businesses, services, and broader community. Major setbacks could jeopardise

the collective future of local industries, the community's viability, and the capacity of the NWMP to deliver the resources essential for Queensland and Australia's energy transition. Inaction or delay will carry immense costs for the region, as well as for Queensland and Australia's broader economy.

Future solutions for Mount Isa that consider the region's unique characteristics and challenges will benefit the region in the short and long-term. These challenges include a high reliance on employment in the mining sector, infrastructure and transport deficiencies, limited access to affordable and renewable energy (though promising developments are underway), climate-related constraints, and issues affecting liveability and social wellbeing.

Challenges, such as those outlined in the table below, can diminish a city's attractiveness as a place to live and work. This can result in difficulties attracting and retaining a skilled workforce, potentially leading to a downward spiral. If the city loses critical mass, businesses may contract or relocate, further undermining Mount Isa's appeal and prosperity.

Table 2: Key issues being addressed in Mount Isa

Issues requiring coordination and investment	Issues regarding liveability and wellbeing
• Mount Isa is dependent on the mining sector, and specifically the Glencore copper smelter • Mount Isa's remote location presents a significant challenge for freight • Supply chains are impacted by the Port of Townsville • Energy constraints and CopperString 2032 uncertainty limit industry and impact liveability • Market expectations are changing • The climate in the North West Region is changing • Road and rail infrastructure are susceptible to weather impacts • Water is a key constraint that will shape future development options in Mount Isa	• Remoteness makes travel and visitation a challenge • Attracting and retaining workers is difficult • Housing stock is old, limited and expensive • Access to social housing is inadequate • Crime rates in Mount Isa have steadily increased since 2020 • Domestic violence and mental health issues are prevalent

Note: This is not an exhaustive list. Each of these key issues and others are explored further in Chapter 2, focused on foundations for a thriving community.

In Focus: Closure of the Mount Isa Mines' copper operations

Mount Isa has a long, proud and successful mining history. The discovery of significant deposits of metal ores led to the establishment of Mount Isa Mines (MIM) and the Mount Isa township itself in 1924.

After nearly a century in operation, in late 2023 Glencore announced MIM's underground copper operations, copper concentrator and Lady Loretta zinc mine would close in 2025. A combination of low ore grades in the remaining mineral resources, technological limitations for safe extraction and ageing infrastructure were cited as contributors to the decision.[28]

The closure of Glencore's operations will directly impact approximately 1,200 workers, and trigger flow-on impacts for the Mount Isa community.[29]

The announcement necessitated a rapid response from Mount Isa City Council – to identify mechanisms to retain workers in the region, create new employment opportunities, and strengthen and diversify the economy as outlined in the Introduction of this Roadmap.

Glencore's copper closure announcement sits within a broader context of change in the region. For example, the George Fisher Mine has a current life to 2036 and the copper smelter and refinery to 2030, subject to approval of additional capacity investment.[28]

It is possible this shock will be the first of several employment disruptions for Mount Isa, emphasising the need for a long-sighted approach to economic diversification and inclusive development in the region.

While more support is needed from the state and federal governments, a positive signal of support came from the Queensland Government in October 2023 with the allocation of $20 million worth of investment through the Mount Isa Transition Fund. To be matched by Glencore, it targets a series of regional projects and various initiatives that aim to improve liveability and support immediate job creation. The state has invested a further $30 million to expedite mining projects through the Mount Isa Mining Acceleration Program.[30]

A Future Ready Economy Framework

Given the global, national and regional context, and Mount Isa's potential to navigate significant challenges and emerge as a leader in a decarbonising world — the key question arises:

How can Mount Isa approach economic development to ensure the region can harness its potential, align with emerging global trends, and thrive into the future?

To address this question, a **Future Ready Economy Framework** has been designed to assess economic opportunities against key dimensions of positive and resilient development. The Framework can help ensure planning and investment decisions position Mount Isa for long-term success.

Key dimensions of a future ready economy

The Framework consists of six key dimensions:

1. Strong and resilient economy
2. Decarbonisation
3. Climate adaptation
4. Circular design
5. Environmental impact and regeneration
6. Liveability and social wellbeing

Each dimension is underpinned by a set of principles to support development that is good for people and the planet.

Beyond its application in this Roadmap, there is scope for the Future Ready Economy Framework to be adapted and utilised by other regions.

Dimension 1: Strong and Resilient Economy

Economic development across the world is increasingly focused on sustainability and community wellbeing, challenging traditional extractive models that often fail to retain local value. Resilient economies must adapt to global and domestic shocks, including recessions, trade shifts, and legislative changes.

For regional economies like Mount Isa, challenges such as inflation, supply chain disruptions, and high energy costs—exacerbated by the COVID-19 pandemic and global conflicts—pose significant threats to economic viability. The first dimension of the Future Ready Economy Framework prioritises opportunities with the potential to strengthen the foundations of Mount Isa's economy for the long term.

To reach this outcome, the Framework incorporates 12 **principles** for a strong and resilient economy:

1. Transform industry and diversify business in alignment with the future ready principles.
2. Build and retain an inclusive and skilled local workforce.
3. Create and sustain safe, secure and meaningful jobs and career pathways.
4. Strengthen supply chain capacity and capability.
5. Provide access to reliable, affordable and resilient essential infrastructure and services.
6. Plan for and invest in short-, medium- and long-term opportunities for economic stability and resilience, and capacity to respond to change.
7. Facilitate access to investment that is aligned with the future ready principles.
8. Ensure development is fair, inclusive and culturally appropriate, and prioritises lasting and equitable benefits for the community.
9. Retain profits in the region.
10. Collaborate to deliver strategic and efficient economic development outcomes.
11. Enable and support communities to thrive.
12. Contribute knowledge, products and services to the broader community.

Dimension 2: Decarbonisation

The second dimension of the Future Ready Economy Framework is decarbonisation. If Mount Isa is to remain competitive, it will need to meet increasing global demand for low carbon products. This requires the implementation of several strategies, including investing in and utilising renewable electricity and zero emissions energy sources, improving energy efficiency, and developing alternative zero and low emissions industrial processes and products to replace traditional emissions-intensive approaches.

Renewable energy and zero emissions technologies are transforming energy markets as they offer lower and more stable costs and reduced exposure to market shocks. Seizing these opportunities is vital for resilience and re-localising Mount Isa's economy.

The Framework incorporates four **principles** for decarbonisation:

1. Set decarbonisation targets, monitor progress and report on results.
2. Invest in renewable energy generation, storage and transmission.
3. Design and invest in projects, products, systems and process that avoid and reduce emissions.
4. Design, upgrade for, and invest in energy efficiency and fuel switching in projects, products, services and supply chains.

Dimension 3: Climate Adaptation

Communities around the world are experiencing a range of climate impacts driven by rising global temperatures, including more extreme weather events, environmental degradation affecting arable land, fisheries and fresh water supplies, and changing patterns of infectious diseases. The North West region is not immune to these changes and can expect higher temperatures, hotter and more frequent hot days, harsher fire weather and more intense downpours.[31]

This could mean:

- Harm to human health and wellbeing, for example, physical and mental harm caused by extreme heat or flooding.
- Damage to the built environment, for example the destruction of rail and road infrastructure and cuts to transport routes and damage to housing and businesses.

- Economic impacts, for example supply chain interruptions leading to loss of revenue, livestock loss and a reduction in tourism to the region.
- Harm to the environment, for example large scale soil erosion due to flooding, destruction of habitat and impacts on wildlife.

Given this context, the Future Ready Economy Framework considers how different economic opportunities will support the region to adapt to the expected impacts of climate change over the coming years.

The Framework incorporates five principles for climate adaptation:

1. Provide access to current climate data and forecasts, and support education, awareness and action to avoid or mitigate impacts.
2. Ensure all groups, especially those who are most vulnerable to impacts, have the resources they need to adapt to a changing climate.
3. Integrate climate risks into the business case for projects, site selection and planning.
4. Design, upgrade and manage infrastructure to be climate resilient, so it can withstand predicted: higher temperatures, hotter and more frequent hot days, harsher fire weather, and more intense downpours.
5. Manage operations to be climate resilient including to minimise water use in operations, withstand periods of reduced water availability, and withstand prolonged periods of high temperatures.

Dimension 4: Environmental Impact and Regeneration

Functional ecosystems are essential for adapting to climate change, providing clean water, food, carbon storage, and protection from droughts and floods. Solutions to the climate crisis must also protect and restore biodiversity. Reversing nature loss is becoming a business and government priority, with nature-related impact disclosure on the horizon and 196 of governments around the world committing to the Kunming-Montreal Global Biodiversity Framework to undertake greater efforts to protect 30 percent of all land and water by 2030.[32]

Mount Isa is located within a biodiverse region that is constantly navigating a complex array of environmental challenges, primarily due to the impacts of mining and minerals processing. To ensure that products from Mount Isa remain attractive to global markets, economic initiatives must demonstrate what they are doing to protect and restore the natural environment, including biodiversity.

The Framework incorporates seven principles for environmental impact and regeneration:

1. Protect and conserve biodiversity, especially in places of environmental and cultural significance.
2. Anticipate and avoid environmental harm before it happens and prioritise disturbed sites for project development.
3. Rectify environmental damage at the source and regenerate degraded ecosystems.
4. Hold parties responsible for environmental damage for costs and remediation activities.
5. Consider and mitigate the cumulative environmental impacts of development through a coordinated regional approach.
6. Collaborate with First Nations people to look for opportunities to integrate their knowledge and expertise into natural resource management practices in appropriate ways.
7. Use natural resources in an ecologically sustainable, economically efficient and socially fair manner.

Dimension 5: Circular Design

Circularity designs products and materials for reuse, recycling, or remanufacturing to reduce consumption and waste and boost resource efficiency. This approach decouples economic growth from resource use, minimises waste, and lowers reliance on virgin resources.

Adopting a circular economy approach presents a $4.5 trillion economic opportunity globally.[33] Nationally, it has been estimated that recovery of metals products alone could bring some $2 billion per year of value to the Australian economy.[34] This is roughly equivalent to annual state royalties from mining,[35] and highlights its importance to regional development and national revenue.

A circular economy approach can:

- Provide environmental benefits of reducing waste and new resource extraction, thereby making better use of finite resources and protecting human health and biodiversity.
- Benefit businesses through creating opportunities for innovation, reducing waste management costs and creating new sources of value.
- Generate benefits for government, including reduced landfill rates, increased regional resilience, new socioeconomic opportunities, and better community engagement.
- Create new jobs, with up to three times the amount of employment generated than sending waste to landfill.[36]

Figure 4. The 10R Levels of Circularity.

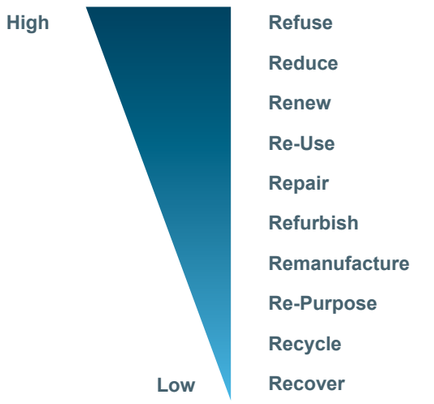

Figure 4 shows the 10R Levels of Circularity.[37] This conceptual framework, developed by Jacqueline Cramer (2017), aligns with circularity principles that ranks products according to their potential to retain value. The first R (refuse) is mostly strongly aligned with circular design, followed by reduce then renew. The final R (recover) is least preferable because the product's value is removed or 'lost' from the economy. The levels of circularity can be applied in a range of scenarios including design, production and procurement.

The Framework incorporates four principles for circular design:

1. Design out waste through a whole of life cycle approach that incorporates end of life considerations in early conceptualisation for products, projects, systems and processes.
2. Design / invest in products, equipment and technology to have an extended lifespan, encouraging reuse, repair and remanufacture of products and connecting waste streams to new opportunities to add value.

3. Design / invest in products with an efficient and integrated post-consumer recovery, reprocessing and marketing cycle.
4. Regenerate social and natural capital through promoting local and inclusive employment opportunities and integrating reuse, repair and utilisation of existing waste streams into business models.

Dimension 6: Liveability and Wellbeing

Good regional development foregrounds the needs and priorities of local communities to ensure quality of life for everyone now and into the future. Wellbeing is a positive state experienced by individuals and societies. It includes quality of life and the ability of people and societies to contribute to the world with a sense of meaning and purpose. The wellbeing of people and societies is influenced by social, economic and environmental conditions.[38] Liveability of a place is defined by how well its characteristics and qualities support quality of life, including access to housing and services, safe and connected communities, and natural spaces.[38] While liveability has a significant impact on wellbeing, it is not the only determinant.

Mid-sized towns and cities provide the foundation for regional economies, but often face unique challenges related to liveability. Mount Isa is no different. For people and families in Mount Isa to feel safe, healthy and strong; for First Nations people and communities to flourish; and for development to be inclusive, fair and beneficial over the long term, the Framework incorporates six **principles** for Liveability and Social Wellbeing:

1. Invest in essential community infrastructure, facilities and services so that everyone has what they need for good health and wellbeing (for example, housing, health services, education).
2. Foster a safe, inclusive and reconciled community.
3. Support First Nations peoples' aspirations for self-determination, health, wellbeing and economic development.
4. Implement inclusive and fair practices for community consultation, participation in decision making and benefit sharing.
5. Deliver transparency and accountability through all stages of economic transformation and development (planning, licensing and assessment, agreement-making processes, design, delivery, monitoring and reporting).
6. Build and maintain relationships, collaborations and partnerships to enable the coordinated, strategic and efficient delivery of development outcomes.

Chapter 1 has introduced the opportunity and imperative for future ready economic development in Mount Isa, and presented an overview of the Future Read Economy Framework. Chapter 2 outlines the work that needs to be done to build the foundations of a thriving community in Mount Isa.

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Chapter 2: Building the Foundations for a Thriving Community

Summary

Residents are proud of Mount Isa, especially the region's lifestyle. However, a range of issues impact negatively on quality of life and challenge the retention and attraction of new residents.

- Coordinated planning and investment are needed to ensure that the community and local economy is supported by strong foundations through the coming years of structural change.
- A future ready economy depends on skilled workers. Attracting and retaining workers is a key challenge across all sectors of the Australian economy, though it is extra challenging in Mount Isa due to its remote location. Initiatives such as the Regional Jobs Committee are helping to address key workforce challenges through a coordinated approach.
- Small – Medium Enterprises in Mount Isa provide essential services for the local community and economy. As industries and the economy transitions, SMEs will benefit from being well informed and prepared, to thrive in and service changing markets.
- Strong collaboration between education and training organisations, employment support agencies, and local businesses can create supported pathways for more people to access and sustain career pathways.
- Mount Isa faces significant challenges in ensuring essential community infrastructure—like housing, transport, and utilities—are reliable, affordable and accessible for all residents.
- The healthcare and social services sectors in Mount Isa are essential for community wellbeing and support the North West Region. To protect these contributions, service and infrastructure gaps—including for primary care, aged care and accommodation, child care, and a range of social services—need strengthening, including new facilities.
- Mount Isa's First Nations communities include the Kalkadoon people, Mount Isa's Traditional Owners, and a diversity of Elders and people who live and work in the city. Supporting the aspirations of First Nations people in Mount Isa is central to a thriving community.
- Mount Isa has the highest youth crime rate and one of the highest overall crime rates in Queensland, impacting residents' safety, sense of security and the local economy. Further investment into youth engagement and intervention, such as On Country programs, and local support services addressing key issues such as homelessness can improve outcomes for young people and the community.
- By being an attractive place to live and work, Mount Isa will be able to attract and retain workers, their families and new businesses, creating positive feedback loops for the local economy and community.

Mount Isa context

Mount Isa plays an essential role in North West Queensland, as the base for vital healthcare and social services, education and training opportunities, and regional industry supply chains.

Mount Isa City Council, business and community leaders have repeatedly expressed pride in Mount Isa, especially in relation to the region's lifestyle. Local leaders shared details regarding a range of established healthcare and social service organisations operating in Mount Isa, with dedicated and skilled teams, and depth of knowledge regarding the Mount Isa community.

Participants also shared insights into the challenges experienced in Mount Isa, impacting the community and the region's ability to attract and retain new residents. Challenges raised through Roadmap engagement activities include:

- Community safety and youth crime
- Lack of affordable housing and homelessness
- Worker retention in the region, especially following large-scale job losses
- Support for small and medium enterprises (SMEs) to navigate economic change
- First Nations economic development and self-determination
- Gaps in community care services including healthcare, and prevention and support services for domestic violence, drug and alcohol abuse and mental health
- Need for regionally appropriate criminal justice infrastructure

'What we're hearing, is that for Mount Isa to have any future at all, there are community foundations that need to be invested in today.' – Mount Isa City Council member during a 2024 workshop.

Challenges like the ones identified above can make cities an unattractive place to live and work, making it difficult to attract and retain a workforce and stable sense of community. Population loss can create a downward spiral, as a decline in population leads to a reduction in services, further reducing the appeal and prosperity of the town.

There is a high level of awareness amongst Mount Isa stakeholders that the development of strong and resilient industries in Mount Isa relies on investment to build and sustain a healthy and thriving community.

Pathways, strategies and actions for a thriving community

To strengthen the foundations of Mount Isa's community, eight key pathways have been identified:

1. Strengthen workforce development, education and training
2. Strengthen the Small and Medium Enterprise (SME) sector
3. Invest in First Nations self-determination, health, wellbeing and economic development
4. Strengthen essential community infrastructure
5. Strengthen community services and programs
6. Improve community safety and cohesion
7. Improve the attractiveness of Mount Isa
8. Undertake coordinated strategic planning and investment into the foundations for a thriving Mount Isa community

Each pathway contains strategies and potential actions as outlined in this chapter. A table summary of strategies and all potential actions to support a thriving community are presented in Appendix B.

The pathways, strategies and potential actions are a synthesis of information identified through desktop research, consultant analysis and stakeholder engagement activities directly undertaken by The Next Economy, Climate-KIC and Mount Isa City Council. Further stakeholder engagement is proposed to review, prioritise and further develop strategies and potential actions.

Consistent application of the Future Ready Economy Framework Principles detailed in Chapter 1 to development undertaken in the public, community and private sector will unlock additional benefits for the region.

Pathway 1: Strengthen workforce development, education and training

A future ready economy depends on skilled workers. Attracting and retaining workers is a key challenge across all sectors of the Australian economy and is even more difficult in Mount Isa due to its remote location.

Workers living in the region, rather than flying or driving in, benefit the town by supporting local businesses, and contributing to the population numbers needed to attract and maintain key services, sport and community activities.

Five strategies have been identified for Pathway 1: Strengthen local workforce development, education and training.

Strategy 1: Invest in a strategic, long-term approach to workforce development

Delivering workforce development requires a strategic and long-term initiative that can effectively identify, guide and help fund responses to place-based and sector specific workforce challenges. This work requires collaboration between education and training organisations, employers, and future employees.

A Regional Jobs Committee (RJC) has been established in Mount Isa to facilitate coordination and action addressing training and workforce challenges. There are 12 RJCs across Queensland, funded by the Queensland Government.[1] In late 2024, the Mount Isa RJC endorsed its Annual Action Plan, with 14 initiatives to strengthen Mount Isa's workforce.

Potential **actions** to support strategic, long-term workforce development include:

- Invest in the delivery of Mount Isa's RJC Annual Action Plan and the continuation of the RJC and Regional Jobs Coordinator position.
- Connect RJC Working Groups with the resources they need to successfully implement initiatives to address opportunities and barriers to workforce development.
- Build new capability and excellence in innovation, teaching and research to strengthen industry development in the resource, energy and manufacturing sectors, including the Critical Minerals and Rare Earth Elements Research Centre.

Strategy 2: Strengthen initiatives to support people seeking new employment

Support for job seekers is a significant need as Mount Isa navigates major economic change.

Work has been done to identify opportunities for worker transitions into new organisations and industries, while addressing existing gaps in the labour market.[2] On multiple occasions, stakeholders engaged in development of the Roadmap also identified the importance of apprenticeships as a pathway into employment.

Several organisations provide employment services in Mount Isa for job seekers and employers. Examples include Busy at Work, AWX Labour Hire, Rainbow Gateway, and Quality Innovation Training and Employment (QITE).

Potential **actions** to strengthen support for job seekers include:

- Coordinate support for workers well in advance of planned closures or substantive changes to the workforce. Support may include redeployment and training schemes, income support, and early retirement schemes.
- Coordinate with companies implementing closure plans or managing contracting operations to understand and maximise worker and community outcomes in relation to closure timelines.
- Ensure companies effectively discharge their obligations to workers and communities, including through the provision of transition support, regional investment and community dialogues.
- Enhance the digital skills of job seekers to better connect to economic opportunities such as training, jobs and markets, such as Mount Isa Library's 1 on 1 Technology Help initiative.
- Deliver and expand targeted skills and training programs for under-employed cohorts, including but not limited to young people, mature-age job seekers, women, and people with a disability.
- Increase participation in training programs and apprenticeships for job seekers to access and retain new employment opportunities.
- Connect and support local businesses and community organisations to identify training and employment opportunities and deliver employment support initiatives.

Strategy 3: Share the benefits of moving to Mount Isa with potential workers in sectors experiencing a workforce shortage

Stakeholders who contributed to development of the Roadmap highlighted the need to address workforce shortages across a range of industries, from the healthcare sector to mining and minerals processing.

Many participants expressed a desire for the government and employers to encourage and support new workers to become residents within the community.

Potential **actions** to attract and retain new workers to Mount Isa include:

- Advocate for and support initiatives that attract resident workers to Mount Isa for priority sectors, including training, education and professional development opportunities, higher salaries and benefits, sponsorship, and appropriate tax incentives.
- Work with the Queensland Government to review and increase skilled migration caps into remote areas like the North West region.
- Expand promotional activities that engage students and potential workers, such as offering remote work experience placements and participation in university open days in major cities.
- Address key barriers to workforce entry and retention, including investing in diverse childcare options and supporting flexible work hours to meet the needs of workers.
- Foster partnerships between government, businesses and unions to co-design and deliver medium to long-term training and employment programs into new industries. This could include on-the-job training and apprenticeship schemes.
- Improve planning and coordination of capital works projects to identify local economic development opportunities, increase local skill development and inclusive employment outcomes, and increase supplier diversity and readiness.

Strategy 4: Strengthen education and career pathways for students and job seekers in growing industries and service areas

Strong collaboration between education and training organisations, along with employment support agencies and business, creates connected and supported pathways for individuals to access and sustain employment and career pathways.

Targeted career pathway initiatives are needed for a range of job seeker cohorts, including students within the secondary and tertiary education system, people leaving an employer due to closure or business contraction, and people who may have experienced marginalisation in the workforce.

Examples of tertiary education and training institutions in Mount Isa include TAFE Queensland, James Cook University (Murtupuni campus), the Country Universities Centre (opened October 2024), Mount Isa Mines Skills Centre, Martyr Training, Krasue Health and Safety, and Calibre Training and Development.

Potential **actions** to strengthen education and career pathways include:

- Support students to develop the skills and knowledge for employment in new and emerging industries in Mount Isa, such as STEM courses and the Digital Careers Program under the Department of Science, Information Technology and Innovation.
- Provide job readiness training, pre and post-employment support to improve student transitions to further education, training and employment.
- Invest in education, training programs and apprenticeships for priority workforce shortages.
- Increase investment in vocational education and training (VET) and tertiary education providers, including TAFE and the Country Universities Centre.

Vocational Education and Training (VET) is critical to building Mount Isa's future ready workforce.
Source: Mount Isa City Council.

Strategy 5: Strengthen coordination and collaboration in education

The Queensland Government's Department of Education is implementing a collective impact model to strengthen outcomes for students through 'educational precincts'. The model brings together a cluster of schools to work together with local, cross-sector and cross-government partners to address challenges and meet needs within their precinct. Collaboration is facilitated in a structured and supported way, and aims to foster creative and community-centred solutions.[3] Work is now underway in Mount Isa to design and establish an education precinct to meet the needs of students, their families and teachers in Mount Isa.

Potential **actions** to further strengthen coordination and collaboration include:

- Expand existing initiatives, such as the education precinct model, that aim to improve coordination and collaboration to deliver stronger outcomes for students, families, educators and the broader school community.
- Invest in professional development and resources for leaders and staff within education institutions to strengthen their capacity for the delivery of strong and coordinated student outcomes.

Pathway 2: Strengthen the small and medium enterprise sector

Small and medium enterprises (SMEs) in Mount Isa provide essential services for the local community and economy.

The local SME sector includes business such as retailers, auto servicing and repairs, professional services, and healthcare and social service providers.

Commerce North West, Mount Isa's Chamber of Commerce, aims to contribute to the region's long-term sustainability and liveability by promoting North West Queensland and attracting new consumers, visitors, and investors. Commerce North West's focus areas include addressing employment issues, supporting regional economic development, maintaining positive government relations, fostering tourism growth, and managing events.[4]

Current challenges identified by business leaders include:

- Major industry changes, especially in the resources and energy sectors, will challenge local SMEs to access staff, training and facilities.
- Labour market mobility challenges and demographic changes will impact customer demand for products and services and the ability of businesses to attract and retain workers.
- Challenges attracting new workers, such as wages/salaries, housing and relocation costs, may be exacerbated with further economic structural change.

- Uncertainty regarding the availability of labour and sustainability of the local community impacts business confidence.
- Access to communication facilities, and education and training opportunities.
- Business productivity and opportunities for growth are impacted by labour market restrictions, such as the availability of childcare places.
- Poor business presentation, significant vacancies and a lack of street amenities, undermining confidence and community pride in spaces and places to do business.
- Increase in crime and associated security issues.
- A lack of clarity and communication regarding proposed projects that will impact on the Mount Isa economy and could undermine business confidence.

Four strategies with potential actions have been identified for Pathway 2: Strengthen the small-medium enterprise sector.

Strategy 1: Strengthen existing SMEs

Investment into the capacity, capability and viability of Mount Isa SMEs will increase entrepreneurship and business growth and strengthen a culture of innovation.

Through consultant engagement activities, business leaders identified a range of support areas including improved access to business resources, industry and market briefings, business skills workshops, access to networks, referral pathways and mentoring. SMEs also identified the need for affordable work and meeting spaces, internet and other office support needs.[5]

Potential **actions** to strengthen SMEs include:

- Increase participation in existing initiatives to build the capacity of businesses and deliver additional programs to fill capacity gaps.
- Establish a dedicated business hub to share resources with SMEs.
- Strengthen opportunities for SMEs to access finance and investment.
- Address barriers to SME viability, including land access and affordable power.
- Invest in initiatives to support specific business led by specific cohorts including women, First Nations people and young people.

Consultant engagement with local businesses identified strong interest in the establishment of a dedicated business hub to share resources with SMEs. The hub space could also provide affordable commercial space, maker/distributor space for e-commerce/creative startups, and start up space.[5]

Strategy 2: Attract and support new SMEs, including social enterprises

The diversification of Mount Isa's economy will bring new supply chains to the region, including demand for different goods and services. This demand creates an opportunity to establish new businesses and social enterprises.

Establishing and growing new enterprises can be achieved by fostering an environment of innovation and entrepreneurship within Mount Isa and bringing successful business models into the region, where potential local markets are identified.

A range of new small business opportunities were identified by workshop participants, including furniture and whitegoods repair and resale, waste oil recycling, and expanded fresh produce sales.

Potential **actions** to accelerate the creation of new business in Mount Isa could include:

- Stimulate new business establishment through improved access to innovation and entrepreneurship programs and early-stage business support, such as incubators.
- Connect new entrepreneurs with start-up resources to catalyse innovation and support the design and testing of new products and services, for example seed funding.
- Foster new social enterprises that address a specific area of social need and/or provide supported employment and career pathways for an under-employed cohort.
- Catalyse the establishment of new business/social enterprise that addresses market gaps and/or specific community needs including opportunities based on circular economy principles. Examples include tyre and glass recycling, furniture and whitegoods repair and resale, waste oil recycling, fresh produce sales.

Mount Isa City Council has built a Materials Recovery Facility to process local recyclable waste.
Source: Lauren Stowe.

Case Study: Tyre recycling

In Western Australia, Tyrecycle are recovering the valuable rubber from tyres sourced from Alcoa's bauxite mines to produce crumb rubber that can be used in roads, athletic tracks, and soft-surface playgrounds. Tyrecycle have eight tyre processing plants across Australia, collecting over 20 million tyres a year and providing 200 jobs.[6]

Once used, the huge tyres used by mining and agricultural trucks produce around 245,000 tonnes of waste, of which only 11 per cent is recycled.[6] According to the Tyre Stewardship Council, the high cost of recovery, lack of regulatory pressure, and market uncertainty has previously been a barrier to the development of an off the road (OTR) tyre recycling industry. But this is changing. The steel and crumb rubber from current waste OTR tyres equates to around $73 million of market value.[7] Economic benefits to regional areas will flow if markets for recycled rubber can be developed.

Companies like Tyrecycle are improving the environmental impacts of tyre use, including by helping to reduce the need for primary materials sourcing. The company estimates that each tonne of recycled rubber saves around 2,463 kg of CO_2-e going into the atmosphere.[8] Processing the rubber into crumbs ahead of transport can further reduce emissions because more material can be transported.[7] As mining companies increasingly adopt ESG performance standards, there is significant growth potential for this circular design opportunity.

For more information, see: https://tyrecycle.com.au

Strategy 3. Position and prepare SMEs for Mount Isa's economic transition

As Mount Isa's economy transitions and new industries develop, SMEs will benefit from being well informed and prepared to deliver new or expanded products and services.

Preparing for structural economic changes may include expanding production or organisational capacity, including through the development of new skills, products, supply chains and ESG reporting processes.

Potential actions to prepare SMEs for economic and industry changes include:

- Invite the participation of SMEs in planning and progress updates regarding Mount Isa's economic diversification and transition, so they are well informed and can best position their business in a changing economic climate.
- Deliver targeted initiatives with SMEs regarding new and emerging industries so that they can innovate and realise new market opportunities.
- Work with industry to promote and support increased procurement through local SMEs.

Strategy 4: Support future ready business practices

SMEs in Mount Isa will need to adapt their business practices to thrive in a changing economic context and climate. Business leaders who attended Roadmap engagement activities expressed interest in improved access to information and resources to support the adoption of leading practice in each of the future ready economy dimensions.

Potential **actions** to improve SME uptake of future ready practices include:

- Provide SMEs with resources and guidance to understand and implement:
  - o Decarbonisation plans, energy efficiency measures, transition from diesel to renewable energy and options for solar energy systems.
  - o Climate adaptation plans for their property, facilities and operations.
  - o Sustainability plans and environmental practice improvements.
- Facilitate knowledge sharing regarding the implementation of new business practices and collaboration to identify solutions to common issues.
- Facilitate business networks and introductions so that SMEs can connect with circular economy opportunities in the region.
- Bring SMEs together to coordinate and collaborate on their investment into community programs to maximise outcomes against community priorities.

Pathway 3: Strengthen First Nations self-determination, health, wellbeing and economic development

Mount Isa's Aboriginal and Torres Strait Islander communities include the Kalkadoon people, Mount Isa's Traditional Owners, and a diversity of Elders and people who live and work in the city.

Today, some 8,265 people living in Mount Isa identify as Aboriginal and/or Torres Strait Islander, which is just under one third of Mount Isa's population (27.6 per cent).[9] Mount Isa's Aboriginal and Torres Strait Islander communities make an important contribution to the region's community and economy through diverse roles and occupations including as business owners and entrepreneurs, community leaders, professionals, educators, artists, musicians, tradespeople and health workers.[10]

In Focus: Native Title in Mount Isa

In 2011, the Native Title rights and interests of the Kalkadoon People were recognised over 38,719 km^2 of land and waters in the Mount Isa region.[11] The Native Title claim area includes reserves, state land, pastoral leases and other leases – Kalkadoon people have exclusive hold over 4,078 km^2 of land, and non-exclusive native title rights over the remainder.[12]

A large number of Indigenous Land Use Agreements (ILUA) have been made to recognise and secure a range of non-native title interests within the Native Title determination area. Today, the Kalkadoon Native Title Aboriginal Corporation RNTBC (Kalkadoon PBC) manages the traditional lands, waters and reserves on behalf of Traditional Owners from the Kalkadoon Nation family clans.

Traditional Owners, elders, leaders across First Nations controlled organisations, and government agencies providing services to First Nations people and families shared their insights in interviews, meetings and focus groups as part of the Roadmap engagement process. A list of stakeholders engaged by The Next Economy is provided in Appendix A.

Stakeholders noted the importance of the programs, services and initiatives delivered by First Nations led organisations in Mount Isa, ranging from support services for youth at risk through to cultural experiences for tourists visiting Mount Isa.

A number of social challenges were raised during stakeholder discussions. Deep concern and a strong sense of urgency was communicated regarding the health and wellbeing of First Nations people in Mount Isa. The areas of greatest concern include:

- Youth crime and incarceration
- Domestic violence
- Drug and alcohol addiction
- Trauma and mental health issues
- Lack of affordable housing and homelessness

Five strategies have been identified for Pathways 3: Strengthen First Nations self-determination, health, wellbeing and economic development in Mount Isa. While many potential actions have been identified through the Roadmap development process, further engagement is recommended to review and prioritise actions.

Strategy 1: Support collective action for reconciliation

Contemporary truth-telling and reconciliation processes acknowledge and build understanding across the entire community of First Nations history and experiences under colonisation. They also facilitate opportunities to redress injustices, and support relationship building and healing between Aboriginal and Torres Strait Islander peoples and non-Indigenous peoples.[13]

Some truth-telling activities have been facilitated in Mount Isa, including a day of meetings organised by the National Aboriginal and Torres Strait Islander Women's Alliance (NATSIWA) in November 2022, focused on loss and trauma experienced during the COVID-19 pandemic. A key theme that emerged through discussions and storytelling was the sense of hopelessness amongst some young people in Mount Isa. It highlighted the imperative for trauma-aware and healing-informed care in Mount Isa. The establishment of a healing centre was also raised.[14]

A number of organisations in Mount Isa have implemented reconciliation commitments and action plans. For example, the North West Health and Hospital Service Statement of Commitment to Reconciliation and the Mount Isa City Council Reconciliation Action Plan.

Potential **actions** to support collective action for reconciliation in Mount Isa could include:

- Strengthen recognition and understanding of Indigenous history, culture and knowledge. This could include support for collective and inclusive, place-based storytelling and reconciliation initiatives, and investment into projects that share and celebrate First Nations culture, language, history and contemporary experiences, such as the proposed Kalkadoon Cultural Centre.
- Build business and community capacity to contribute to reconciliation. This could include the adoption of plans, policies, tools and other resources for cultural capability development and reconciliation e.g. Reconciliation Action Plans.
- Strengthen connections to Country, culture and language. Possible actions to progress this strategy could include:
  - o Expand support for Rangers Programs to strengthen Caring for Country work (and the associated training and employment opportunities),
  - o Invest in on-country initiatives that provide children, young people, adults and the elderly with opportunities to connect with country and sites of cultural significance, and
  - o Support two-way knowledge sharing practices and relationship building through projects e.g. tourism and environmental management.

Aboriginal and Torres Strait Islander people make an important contribution to Mount Isa's community and economy through diverse roles and occupations including as business owners and entrepreneurs, community leaders, professionals, educators, artists, musicians, tradespeople and health workers. Source: Mount Isa City Council.

In Focus: Mount Isa City Council Reconciliation Action Plan

In March 2022, Mount Isa City Council adopted a Reconciliation Action Plan (RAP) and communicated its commitment to leading reconciliation initiatives in the community. The RAP was developed with a working group chaired by long-term First Nations members of the Mount Isa community and Council staff.[15]

The RAP's objectives include:

- Increasing the understanding, value and recognition of Aboriginal and Torres Strait Islander cultures, histories, knowledge and rights through cultural learning;
- Researching best practice and principles that support partnerships with Aboriginal and Torres Strait Islander stakeholders and organisations;
- Improving employment outcomes by increasing Aboriginal and Torres Strait Islander recruitment, retention and professional development;
- Providing appropriate support for the effective implementation of Reconciliation Action Plan commitments; and
- Increasing Aboriginal and Torres Strait Islander supplier diversity, to support improved economic and social outcomes.

Mount Isa City Council can progress its role in reconciliation through the re-establishment of the RAP Working Group and the implementation of a Reflect Reconciliation Action Plan for Mount Isa City Council.

Strategy 2: Strengthen local capacity for agreement making and collaboration

Strong relationships, collaboration and agreement making between Traditional Owners and First Nations organisations, the public and private sector are central to reconciliation and a strong economic development agenda.

There is a substantive history of formal agreement making in Mount Isa, especially over the past twenty years, between Kalkadoon Traditional Owners, the Kalkadoon PBC, and land users like mining and pastoral companies.

More broadly, the imperative and opportunities for benefit sharing with First Nations communities is growing. Opportunities range from joint ventures and equity in new projects to comprehensive employment programs, capacity building initiatives and investment into priority community infrastructure. Leading practices enable the co-design of benefit programs, prioritise strategic and long-term outcomes, and strengthen regional coordination.

Potential **actions** to strengthen agreement making and collaboration in Mount Isa could include:

- Invest in the capacity of First Nations organisations to lead the co-design and implementation of new partnerships and benefit sharing agreements. This could be through:
  - o Awareness raising and education about benefit sharing models
  - o Support for processes that articulate priority development areas
  - o Expert input and skills building for negotiations.
- Invest in First Nations-led research that reflects the priority needs of First Nations peoples
- Invest in the capacity of non-Indigenous businesses and organisations to improve cultural safety and implement action plans to foster culturally inclusive workplaces. This could include access to mentoring, training and expert advice.
- Encourage all levels of government to increase opportunities for First Nations stakeholders to participate in decision making about relevant projects and programs.

Strategy 3: Support First Nations-led economic development

Mount Isa is home to a growing number of First Nations-owned and led businesses and organisations, especially in the areas of community services and tourism. Some business support initiatives are available for First Nations-owned businesses. For example, Outback at Isa supports emerging First Nations tourism initiatives and the Regional Service Centre for the Department of Women, Aboriginal and Torres Strait Islander Partnerships and Multiculturalism coordinates business skills workshops.

Interest in expanding economic development opportunities for First Nations people in Mount Isa emerged as a strong theme in stakeholder discussions.

Potential **actions** to strengthen support for First Nations-led economic development include:

- Foster the creation of new First Nations businesses by delivering incubator programs, networking opportunities, access to mentors, and targeting foundational business skills development.
- Improve access to seed funding and a pipeline of investment for First Nations entrepreneurs. This could include introductions to financial organisations (e.g. First Australians Capital, Many Rivers, Indigenous Business Australia) and support for grant applications and pitch development.
- Deliver initiatives that specifically work with First Nations women and young people to strengthen their economic security and empowerment.
- Position and prepare First Nations businesses to participate in and benefit from Mount Isa's economic transition and new industry development. This could be assisted through early access to industry information (trends, emerging opportunities, project pipeline) and networks to build relationships and industry knowledge.
- Work with government departments and local businesses to increase procurement from local First Nations businesses. This could be achieved through early engagement of First Nations businesses prior to tender process commencement and support to develop competitive tenders.

Strategy 4: Create and sustain new employment opportunities with First Nations people

First Nations people contribute significantly to Mount Isa's local workforce and economy, and have a strong history of employment in mining, cattle farming, government administration and health services in the region.

Access to meaningful employment was frequently raised in discussions with First Nations stakeholders, typically in the context of training and pre-employment support, and particularly for young people with limited or no prior employment experience. Table 3 shows the breakdown of key employment information among First Nations people in Mount Isa.

Table 3: Employment of First Nations People in Mount Isa[9]

Occupation, top responses Employed Aboriginal and/or Torres Strait Islander people aged 15 years and over			Industry of employment, top responses Employed Aboriginal and/or Torres Strait Islander people aged 15 years and over		
	People	%		People	%
Labourers	372	17.6	Local Government Administration	183	8.7
Machinery Operations and Drivers	348	16.5	Copper Ore Mining	161	7.6
Community & Personal Service Workers	334	15.8	Silver-lead-Zinc Ore Mining	107	5.1
Technicians and Trades Workers	250	11.9	Beef Cattle Farming (Specialised)	76	3.6
Clerical and Administrative Workers	233	11.1	Hospitals (except Psychiatric Hospitals)	76	3.6
Professionals	221	10.5			
Sales Workers	128	6.1			

Potential actions to create and sustain new employment opportunities with First Nations people include:

- Invest in strategic, long-term approaches to improve First Nations employment. The Regional Jobs Committee's new Aboriginal Empowerment Working Group could make an important contribution through improved coordination of opportunities and collaboration to address employment barriers.
- Strengthen initiatives that address employment barriers and provide pre-employment training including:
  - o Digital skills programs
  - o Continuing the Indigenous Driver Licensing Program
  - o Addressing housing challenges, which can be a barrier to employment (e.g. the Employment and Education Housing Program)
- Increase business capacity and capability to recruit and retain First Nations employees by:
  - o Strengthening business understanding of worker needs
  - o Supporting business implementation of Cultural Capability Action Plans
  - o Fostering partnerships between businesses and First Nations service providers to deliver training and improve employment outcomes
- Strengthening education and career pathways for First Nations students. This includes supporting First Nations students to develop skills and knowledge for employment in established and emerging industries in Mount Isa.

In Focus: Aboriginal Empowerment Working Group

In response to the Mount Isa Closing the Gap Focus Group meeting (April 2024), the Mount Isa Remote Jobs Committee (RJC) has established the Aboriginal Empowerment Working Group. The goal of the Working Group is to collaboratively address the barriers to employment and economic empowerment for Indigenous communities in Mount Isa LGA, creating sustainable pathways for success and contributing to the region's overall development.[16]

The Working Group's objectives are to identify and remove barriers to employment, co-design targeted training and employment pathways, support Indigenous business development and foster community and government collaboration. The RJC is currently engaging with First Nations stakeholders in Mount Isa to design and plan priority initiatives for the Working Group and the wider community, that complement existing initiatives and contributions made by Indigenous Leadership.[16]

Engagement in the workforce was identified as an important opportunity for young people to find a sense of purpose and strengthen independence, which mitigates disengagement and antisocial behaviours. In particular, participants referred to the value of apprenticeships and structured programs for recruits. Strong employment outcomes from Myuma's civil construction work program were raised by multiple participants.

Strategy 5: Strengthening Community Service Outcomes

Mount Isa service providers deliver a range of community programs and services for First Nations people, spanning primary health, childcare, aged care, youth engagement, child and family support. Service providers aim to deliver services that consider First Nations cultural perspectives and meet the specific health, care and support needs of First Nations people.

Services are provided by a range of First Nations controlled organisations, government agencies and non-profit organisations. Examples include Injilini Children and Youth Services, the Murri Court, Gidgee Healing, and 54 Reasons.

Key health issues for Mount Isa's First Nations population include diabetes, asthma, mental health and heart disease.[9] Issues impacting social and emotional wellbeing include domestic violence, housing stress and homelessness, and contact with the justice system.

Potential **actions** to strengthen community service outcomes with and for First Nations people include:

- Pursue innovative, people-centred and prevention-focused initiatives and approaches that work upstream to improve health and wellbeing with and for First Nations people.
- Strengthen communication, coordination and collaboration for the effective delivery of services with First Nations clients. This could be assisted by facilitating an increase in the participation of First Nations people in governance structures for service delivery, strengthening communication mechanisms between organisations, and supporting knowledge sharing and data projects.
- Strengthen the delivery of services with and for First Nations clients, including by:
  - o Investing in initiatives identified by the Closing the Gap Focus Group
  - o Increasing and providing long-term funding commitments to programs delivered by Aboriginal and Torres Strait Islander controlled organisations
  - o Addressing duplication in services
  - o Enabling more First Nations people to enter the community service sector through training, education and recruitment support
  - o Strengthening the leadership capacity of First Nations employees through professional development and mentoring programs

In Focus: Community Justice Group

The Mount Isa Community Justice Group (CJG) provides support to First Nations people within the criminal justice system. The Group identifies actions to address justice-related issues in Mount Isa and to decrease First Nations peoples' contact with the justice system.

Pathway 4: Strengthen essential community infrastructure

Community infrastructure includes housing, transport, and essential utilities like water supply and waste management. Whether these services are reliable, affordable and accessible for everyone are key determinants of social wellbeing.

Australia has high quality community infrastructure and services by international standards,[17] though quality and accessibility vary significantly across the country.

Factors like remoteness, population density, historic marginalisation, and socio-economic standing mean that some communities have poorer access to infrastructure than others.

Like many other remote and regional cities, the community in Mount Isa is impacted by a lack of public transport options, housing challenges, and aging infrastructure. Similarly to other mining communities, Mount Isa is also impacted by a wealth gap: while social infrastructure gaps negatively impact all residents, some community members are more vulnerable to poor health, social and economic outcomes in their absence.

Three strategies have been identified for Pathway 4: Strengthen essential community infrastructure in Mount Isa.

Strategy 1: Plan for the provision of affordable and reliable utilities and infrastructure

Reliable and affordable utilities are essential for community health and wellbeing. The quality of infrastructure in Mount Isa, like other rural and regional communities, can be impacted by remoteness and low population density.

Potential **actions** to ensure future access to and the resilience of affordable and reliable utilities and infrastructure include:

- Provide local households and businesses with support to transition to renewable energy and implement energy efficiency measures.
- Plan for changing water supply and demand and strengthen the resilience of the public water supply system in the context of changing industry usage and climate patterns.
- Ensure maintenance and expansions to the Mount Isa sewerage system, including for new commercial and residential developments, are budgeted for and resilient to projected climate impacts.
- Advocate for broad access to affordable, high-quality telecommunication services, particularly for underserviced neighbourhoods.
- Ensure vulnerable community members are not disadvantaged in their access to essential services or subject to unreasonable service agreements.

In Focus: Mount Isa Water Supply

Water in Mount Isa is covered by the Gulf Water Plan, managed by the Queensland Government. There are two major dams that supply supplemented water for urban use and mining activity across the Gulf: Lake Moondarra (operated by Mount Isa Mines and distributed by the Mount Isa Water Board) and Lake Julius (operated by Sunwater and distributed by the Mount Isa Water Board).[18] The Gulf Water Plan is currently undergoing scheduled review, with a second round of public consultation scheduled for 2026, and implementation of a new water plan in 2027.[19]

The 2023 Gulf Water Plan Performance Assessment Report identified the need to investigate:[20]

- How water is balanced between all water interests including the environment, culture and end of system fisheries in the Gulf, given growing demand for irrigated agriculture and the emerging critical minerals industry.
- Targeted engagement with First Nations peoples to improve understanding of cultural water values, aspirations and requirements.
- Consider cumulative impacts and risks across the catchment.
- Improve understanding of groundwater resources, and groundwater dependent ecosystems.

During Roadmap consultation workshops, it was highlighted that Mount Isa has a high level of water security that is reasonably unique across the Gulf, with access to water from both Lake Moondarra and Lake Julius. Stakeholders highlighted that Lake Moondarra (Mount Isa's closest lake) relies on wet season top ups, and after more than one wet season without replenishment water usage becomes a concern. Lake Julius is currently an underutilised water source that annually fills over 100 per cent.

Currently, less than half of water entitlements are used across Lake Moodarra and Lake Julius, and there is approximately 20,000 ML of uncommitted water in Lake Julius.[20] However, it is this underutilised and uncommitted water that ensures water security for the region. Lake Julius has occasionally fallen to lower levels as a result of needing to supplement Lake Moondarra, such as during dry years of 2013 to 2015. Had the full entitlements been extracted during these consecutive dry years, water security would likely have been a challenge. Whilst water supplies are secure based on current extraction, it is highlighted that extraction is significantly less than existing entitlements. Any new entitlements will need to consider the regional water security context and total extraction in relation to all water values.

Stakeholders noted that although the cost of pumping water the approximately 50 km from Lake Julius to Lake Moondarra is currently cost prohibitive (a concern raised by many stakeholders), with the connection of CopperString 2032 pumping is anticipated to become financially accessible (although stilly costly). As a result, Mount Isa Water Board considers that water is available to support diversification options, especially as water use from Glencore copper mining operations declines.

Strategy 2: Ensure Mount Isa residents have affordable and safe access to transport

Mount Isa faces a lack of reliable public transport. With summer temperatures exceeding 40°C and predictions for more hot days in the future, this has a serious and growing impact on mobility access for the community and visitors. High travel costs between Mount Isa and other cities can also be geographically isolating.

Concerns about transport in Mount Isa include:

- Limited public transport impacts elderly residents, people with disabilities, low-income families and young people who may rely on the networks to access services and social networks.
- A lack of public transport impacts school attendance during periods of extreme heat.[21]
- High travel costs are geographically isolating. Mobility is becoming increasingly inaccessible to many as petrol prices rise and airfares become more uncompetitive. In particular, the high cost of flights to Mount Isa was identified as a significant challenge for residents where travel is not associated with employment.

The State Government has subsidised air travel to Mount Isa in the past and currently offers subsidies for residents in remote communities in Far North Queensland (though not including Mount Isa).[22] Virgin[23] and Qantas[24] also offer discounted fares for airline members who are Mount Isa residents, although community engagements indicated not all residents are aware of these discounts.

Potential **actions** to improve access and affordability of transport in Mount Isa include:

- Investigate options for public transport within Mount Isa, such as a local bus and community shuttle services to enable public transport access to key locations including shops, health centres, the North West Hospital, schools, childcare and aged care.
- Investing in electric buses and supporting infrastructure, such as EV chargers, could further support Mount Isa's decarbonisation goals.
- Ensure all residents are aware of flight subsidies.
- Improve passenger services on the Inlander, including frequency, comfort and cost.

Strategy 3: Accelerate investment to address housing challenges in Mount Isa

The residential sector in Mount Isa has followed the mining industry through boom-and-bust cycles, resulting in high housing prices when the mining sector is doing well, and periods of contraction and low investment during industry lulls.

Mount Isa has 6,416 occupied dwellings, supporting an estimated resident population of 18,727. An estimated 60 per cent of this housing is formerly housing commission stock, with a relatively low proportion of apartments (4.1 per cent). Median rent is $270 per week across all dwelling types, increasing to a median of $500 for a 4 bedroom house. Some 17.2 per cent of dwellings are fully owned 31.1 per cent being purchased and 47.5 per cent rented. The median sales price from 2021 to 2022 was $309,000.[25]

Current building stock in Mount Isa is poorly designed and inefficient, making homes hot in summer and cold in winter. This impacts on the cost of living and the wellbeing of residents.

The vacancy rate in Mount Isa in 2022 was near 0.0%.[25] The situation has become so bad that there have been reports that people coming to Mount Isa have left their job due to a lack of rental options or rentals of a reasonable standard. Mount Isa City Council has reported struggling to hire staff due to a lack of suitable housing.[25] Rental challenges are exacerbated by subsidised housing policies for mine contractors. Locals who aren't employed by the mines can be effectively pushed out of the market, unable to secure or afford housing.[26]

Over the past 15 years, Mount Isa City Council has catalysed the construction of over 100 quality, sustainable houses through the development of 120 freehold allotments.[25] While this is a positive outcome, housing development gains to date have been largely offset by loss of stock resulting from poor conditions and lack of maintenance.

Developing new housing stock faces difficulties in Mount Isa, including limited freehold land available for this purpose, a lack of local builders, the high cost of construction in remote areas, and a reluctance among financial institutions to support property investment in Mount Isa.

The Queensland Housing Strategy 2021-2025 Mount Isa Housing Plan identifies housing challenges in the city and an initial set of priority actions to respond. The Plan also sets the foundations for longer-term responses to housing and homelessness and collaboration between key stakeholders through agreed actions.

Potential **actions** to continue addressing housing challenges in Mount Isa include:

- Measure and review progress against Mount Isa City Council's Local Housing Action Plan. Identify key outcomes to date, gaps in initiative delivery, outstanding actions and lessons learned.
- Work with key housing stakeholders to refresh the Local Housing Action Plan for the next five years, confirming or updating opportunities, actions and timeframes.
- Work with all levels of government and relevant industry, business and finance sector representatives to address barriers to the development of new housing stock, including the lack of builders, the high cost of construction, and a reluctance from lending institutions to support property investments.
- Develop the business case to establish and operate a Rapid Accommodation and Apprentice Centre (RAAC) in Mount Isa to accelerate the provision of accommodation using a modular design.
- Communicate progress towards the Local Housing Action Plan with the community, and especially key stakeholders identified in the Plan's response strategies.

Pathway 5: Strengthen healthcare and social services

Mount Isa is the central healthcare and social services hub for the North West region. The importance of effective health and community services was raised consistently during engagement activities. Services valued by the community in Mount Isa include primary care, specialist healthcare, aged care accommodation and services, mental health support, drug and alcohol rehabilitation facilities, and domestic violence accommodation suitable for families and young kids.

The challenges facing different types of social services in Mount Isa are distinct, though there are a common set of actions that could help to strengthen all aspects of this important sector.

This section offers summaries for **four key aspects** of social services in Mount Isa – healthcare, community services, aged care, and childcare – before discussing **five strategies** for strengthening the sector as a whole.

Aspect 1. Healthcare

Healthcare services are vital to community wellbeing and a key economic sector in Mount Isa, employing 11% of the local workforce and contributing $113 million to Mount Isa's economy in FY2023.[27] A number of critical service and infrastructure gaps could undermine these contributions.

Many health facilities and services based in Mount Isa also serve the broader North West and Gulf regions, including the North West Hospital and Health Services (NWHHS), the Royal Flying Doctor Service, and the JCU Centre for Rural and Remote Health at the Mount Isa campus.

Concerns raised about health services in Mount Isa include:

- Demand for the general hospital ward is often at or exceeds capacity. Demand pressures are exacerbated by patients coming into Mount Isa for treatment from the Northern Territory, without a patient transport scheme or service level agreement in place.[27]
- Undersupply of medical professionals, including General Practitioners (GPs) and specialists, creates long wait times, inconsistency in care, and a need to travel to other regional hospitals.[5]
- Gaps in primary care services put pressure on the essential service capacity of the NWHHS.[27]
- There can be insufficient critical services to meet high demand, including for renal dialysis, complex needs-related aged care, and mental healthcare.[27]
- Some health infrastructure is aged and not fit-for-purpose.[27]
- High travel costs to other regional centres can make it difficult for residents to seek medical treatment away from Mount Isa, which can exacerbate health conditions.
- Administrative requirements create additional barriers to access health services, which has a disproportionate impact on vulnerable people.
- Brokerage for clients accessing health services in Mount Isa or geographically remote locations.

Aspect 2. Community Services

The health and wellbeing of Mount Isa's diverse community is supported by a broad range of social service organisations. Public and private organisations provide youth programs, support for the elderly, financial wellbeing services, support for gambling addictions, drug and alcohol use, domestic violence prevention and response, disability support, and homelessness and housing services.

Concerns raised about community services in Mount Isa typically focused on the need for new facilities and include:

- Access to mental health support including a residential facility
- Alcohol rehabilitation facilities
- Domestic violence / crisis accommodation suitable for families and young children
- Undersupply of childcare
- Gap in affordable housing
- A need for more parenting programs
- A need for culturally appropriate youth mentoring and youth crime intervention programs

Aspect 3. Aged Accommodation and Care

Mount Isa is home to a growing population of people over 65 years of age. While some aged care and accommodation is available, there is a growing need to expand access to appropriate services.

Mount Isa has some privately run residential aged care facilities and services including the non-profit Laura Johnson Home's Residential Aged Care Service, the Injilinji Aged Care Unit which is an Aboriginal and Torres Strait Islander corporation, and the Uniting Church's BlueCare Mount Isa Community Care. There are an estimated 34 units and 12 houses classified as aged accommodation, and 53 aged care beds across Mount Isa.[27]

Concerns raised about aged care and accommodation in Mount Isa include:

- Recent analysis estimates a supply gap of both aged care beds and independent living units.[5]
- Residents who are unable to secure a space in the limited aged care options within Mount Isa may need to relocate, often away from family and friends.
- Mount Isa does not have a public residential aged care service, and there are currently no plans to develop further accommodation options.[25]

Aspect 4. Childcare

Mount Isa has some home-based childcare providers and a number of childcare centres, including the Goodstart Early Learning Centre and St Mary MacKillop Early Learning Centre. Other centres have recently closed, following challenges with the cost of operation and difficult securing staff.[5]

There are currently an estimated 235 childcare places available in Mount Isa, while daily demand for childcare is in the order of 600 places for children aged 0 - 4 years old.[5] In addition to today's supply gap, an estimated 494 new childcare places will be required by 2031. This represents a need for 4 to 5 new centres in Mount Isa.[5]

Limited access to childcare was identified by residents as a barrier for some parents to find employment[1] and other business opportunities.[5] Limited childcare access also impacts the hours that workers are able or prepared to accept.

Childcare is a critical community service for families in Mount Isa, though there is a chronic shortage of available spaces. Source: Mount Isa City Council.

Strategy 1: Develop business cases to support investment in new facilities

The need for new community service facilities was raised in multiple forums. Potential facilities can be assessed and prioritised according to the magnitude of the need, available and innovative service providers, and necessary investment.

Specific needs that were highlighted include:

- Residential drug/alcohol rehabilitation centre.
- Domestic and family violence accommodation, especially options that are appropriate for parents with children.
- Public aged care accommodation that caters for complex needs.
- Childcare facilities.
- Medical centre with allied health services including a pharmacy.

Strategy 2: Strengthen organisational capacity to deliver quality services

Sustainable and high-quality healthcare and social service delivery requires ongoing investment into the organisations that provide services.

Potential **actions** include:

- Secure long-term funding for organisations that demonstrate positive outcomes in the delivery of healthcare and social services.
- Invest in sector coordination mechanisms to reduce duplication, address possible gaps in service delivery, and increase collaborative care provision.
- Establish and invest in new services and innovative initiatives that address the shared causes of health and social challenges in Mount Isa.
- Strengthen the organisational capacity of the community services workforce through targeted training, professional development opportunities, and increased resourcing.
- Develop the governance, program delivery and hiring/recruitment capacity of healthcare and social service providers to reduce dependency on external organisations.
- Deepen engagement with clients, families and community members in program and service design and decision-making to ensure a people-centred approach.
- Promote and support volunteer programs and events, and showcasing the value of volunteering, an important contributor to the community and economy.

Strategy 3: Continue to strengthen coordination and partnerships across the sector

Participants in Roadmap workshops recognised the value of regional coordination in social service provision. Locals noted the importance of information sharing between service providers for individuals and families accessing services.

The Mount Isa and North West Queensland Regional Youth Alliance Network was shared as an example of regional coordination. Similarly, participants shared that the appointment of a Community Coordinator, supported by the Queensland Government, is supporting a collaborative, community-led approach to revitalise and redesign service delivery.

Potential **actions** that could build on existing initiatives include:

- Improve communication between service providers and clients to better understand needs and emerging issues, strengthen relationships, reduce duplication, and strengthen client outcomes.
- Resource coordination structures and processes for knowledge sharing, improved prioritisation and strategic decision making, resolution of common issues and identification of collaboration opportunities.
- Strengthen collaboration for regional data collection, impact measurement and reporting to inform decision making and investment into community services, including coordination and collaboration with the Northern Territory on common social issues.
- Catalyse and invest in new collaborations and partnerships with local and regional stakeholders to build capacity, promote innovation and deliver new initiatives that create social outcomes for the Mount Isa community.
- Position Mount Isa as a centre for innovation in people-centred approaches, addressing key social issues through proactive engagement with leading practice providers within Mount Isa and outside of the region, attracting new expertise and offering seed funding for innovative approaches.

Strategy 4: Support service providers to adopt future ready practices

Healthcare and social service providers in Mount Isa will need to adapt their operations to thrive in a changing climate and economic context.

Local changes are likely to include fluctuations in the population and service demand due to industry changes. Climate impacts that the community will need to adapt to include longer periods of hot weather, and an increased likelihood and severity of disaster events, such as flooding.

Potential **actions** to support future readiness in the sector include:

- Facilitate knowledge sharing within the healthcare and social service sector to promote improved understanding and implementation of:
  - Decarbonisation plans, including renewable energy and energy efficiency plans.
  - Sustainability plans and environmental performance improvements.
  - Changing climate patterns with a view to identifying and implementing adaptation plans for their facilities and operations (e.g. flood mitigation, facility cooling).
- Facilitate connections between service providers and local businesses to identify and pursue circular economy opportunities.
- Support service providers to understand leading practice and negotiate benefit sharing arrangements, program funding and social impact investment opportunities.

Strategy 5: Support impact measurement and reporting to enhance health and care service outcomes

Participants in Roadmap engagement activities did not specifically raise social impact measurement and reporting as a potential strategy. However, regular and transparent reporting are an important component of health and care service delivery which would benefit from further discussion and consideration.

Potential **actions** to strengthen impact measurement and reporting include:

- Review the aggregate or collective impact of health and care services and programs.
- Share outcomes from healthcare and social services with key stakeholders and the community.
- Develop an integrated social impact strategy and measurement framework to inform prioritisation of public and private investment into Mount Isa health and care services and programs.

Pathway 6. Improve community safety and cohesion

Mount Isa has the highest youth crime rate, and one of the highest overall crime rates, in Queensland,[28] impacting residents' safety, sense of security and the local economy.

Almost 45,987 offences were committed per 100,000 people in Mount Isa in 2023.[28] Domestic and family violence is the most common offending pattern in the region, with significant impacts for the health and wellbeing of residents. The domestic violence rate is about 7.5 times higher than the state average.[28] There were over 1,000 cases of unlawful entry[29] and up to 30 cars stolen per month in 2023, resulting in theft and property damage to businesses.[30] These crime rates have led some residents to feel unsafe in their home, as well as impacting the tourism industry.

Five strategies have been identified for Pathway 6: Improve community safety and cohesion.

Strategy 1: Increase investment into initiatives that engage youth at risk

Multiple programs are in place In Mount Isa to engage young people, prevent youth crime and minimise repeat offending.

Further investment into youth engagement, intervention and support services can reduce the burden of managing young people within the justice system and the negative impacts on the community.

Potential **actions** that may benefit from further investment include:

- Support on-country and outdoor initiatives that engage young people in culturally appropriate and safe activities focused on health and wellbeing, the development of life-skills, connections with safe adults and mentors.
- Design and pilot youth intervention and engagement models demonstrating effective outcomes in other regions, with a focus on re-engagement into education, training and employment.
- Review and improve access to services for mental health, drug and alcohol education and rehabilitation and respectful relationships..
- Review and expand the range and scope of initiatives available to engage young people of different backgrounds, at different times of the day and days of the week.
- Address housing and homelessness issues as a priority strategy to support youth at risk.

Strategy 2: Invest in youth crime interventions

Youth offending is a complex social issue that requires long-term, people-centred approaches.

Over the past 18 months, a range of initiatives have been implemented to mitigate youth crime and its impacts on the Mount Isa community. These include Taskforce Guardian, Co-Responder Teams, a High-Risk Team and a Stronger Communities Early Action Group.

Community services engaged in development of the Roadmap emphasised the importance of ensuring conversations about criminal justice infrastructure focus on the needs of people before they offend: for example, ensuring there is adequate and accessible housing, healthcare, early childhood, and social services available within the community.

Further collaboration and funding for community organisations addressing the root causes of youth offending and re-offending could benefit the whole community, not just young people at risk. Other possible actions include learning from the success of different approaches in other jurisdictions and contexts.

Strategy 3. Criminal justice infrastructure

Criminal justice infrastructure in Mount Isa is often strained. Key issues raised about these capacity constraints and associated challenges include:

- Limited capacity at the local residential rehabilitation centre and limited community rehabilitation services, impacting on the ability of QPS and QCS to make referrals to address the causes of offending behaviour.
- The Mount Isa watchhouse regularly exceeds its capacity of 30 detainees.[27]
- The absence of a correctional centre in Mount Isa requires people who are awaiting sentencing, or have been sentenced to a term of imprisonment, to be transferred to the Townsville Correctional Centre or the Capricornia Correctional Centre.[27]

The lack of local correctional infrastructure poses multiple challenges. Transporting offenders to the east coast is costly and geographically separates the person from their family, friends and community. On their release, there are further operational risks: offenders may struggle to navigate travel logistics, fail to meet community supervision requirements, or present other risks to the community. The travel distance also impacts on the health and wellbeing of staff on prisoner transport duties.[27]

A new correctional precinct in Mount Isa could address these challenges by accommodating inmates close to their homes and support networks. The importance of close proximity to family and on-country rehabilitation was raised by both First Nations and non-Indigenous stakeholders as a priority, and a pathway to reducing recidivism.

A future precinct should be designed to meet the demonstrated needs of the region. The precinct could include a wide range of support services that contribute to an effective rehabilitation process including education and training, pre-employment services, and health professionals, including psychologists.

Potential **actions** to address these challenges include:

- Explore what a locally appropriate model for a correctional precinct could be in Mount Isa, that prioritises the needs of offenders and sets people up for success post-release. Participants in Roadmap workshops highlighted that the development of a business case for this model could beneficially include locally led on-country programs.
- Explore leading practice models and lessons learned from evidence-based, youth crime prevention programs in other regions of Australia.

In Focus: MNYPA On Country Program

Mithangkaya Nguli - Young People Ahead Youth and Community Services (MNYPA) is the largest youth-specific First Nations community controlled service in Mount Isa. MNYPA supports young people 5 to 25 years through a variety of initiatives, including Kunparra Mount Isa Youth Shelter, Child Safety Residential Service and the Intensive On Country program.

Between 2020 and 2023, the Queensland Government Department of Youth Justice and Victim Support funded a three-year trial of an On Country Program in Townsville and Cairns. This community-led program provides cultural-based rehabilitation for First Nations young people, with a focus on repeat offenders with high and complex needs. Program activities included on-country camps, cultural experiences and mentoring.[31] Stakeholders felt the program had strong potential to reduce reoffending and was successful in reconnecting young people with culture, family, community and Country, according to an outcome evaluation of the pilot program.[32]

In July 2024, MNYPA announced that it was successfully awarded the tender to deliver the first intensive “On Country” youth intervention and rehabilitation program for Mount Isa, with $24 million invested by the Queensland Government. The program will combine cultural re-engagement, emotional healing, practical life skills and connection to future employment opportunities for young people in the youth justice system. The program aims to break the cycle of re-offending. It is informed and supported by a cultural authority advisory roundtable, comprised of a dozen Elders from Traditional Owner groups across the North West and Gulf regions.[31]

It is the wishes of the Elders group that the Intensive On Country Program is given an opportunity to see success and continued funding, so as to Close the Gap in the overwhelming number of First Nation people in contact with the criminal justice system and to fix the issues sitting in community and the homes of these young people.

Strategy 4. Improve neighbourhood safety

Neighbourhood safety is impacted by the quality and accessibility of public spaces and services. In addition to targeted youth engagement and interventions, other opportunities to improve neighbourhood safety in Mount Isa focus on enhancing accessibility to critical community services and infrastructure.

Potential **actions** to improve neighbourhood safety include:

- Increase investment in housing and services for people experiencing homelessness, drug and alcohol abuse, and mental health challenges.
- Strengthen support for school initiatives targeting student retention, and increase options for young people who are repeat school refusals.
- Establish a local bus to enable public transport access to key locations including shops, health centres, the North West Hospital, schools, childcare and aged care.
- Invest in community-led initiatives that engage young people during the day and evenings.

Strategy 5. Strengthen community cohesion and connection

City design and place activation can strengthen community connection, cohesion, and sense of safety while contributing to early crime prevention. Revitalising public spaces and supporting initiatives that engage different members of the community in creating, improving and maintaining public spaces offers another opportunity to improve social wellbeing.

Potential **actions** to build community cohesion and connection include:

- Design and implement placemaking initiatives, which are participatory processes that engage community members in designing and developing public spaces.
- Repurpose disused and rundown spaces.
- Improve lighting in public spaces.
- Design new public spaces and adapt existing public spaces that are inclusive, vibrant, appeal to young people and adults, and encourage community socialising.
- Design for and promote mixed use of spaces and use at different times of the day.

Pathway 7. Improve the attractiveness of Mount Isa

By being an attractive place to live, work and do business, Mount Isa will be able to attract and retain workers and businesses, creating positive feedback loops for the local economy and community. This perspective has been emphasised as a critical starting point throughout community and Council engagement for the development of this Roadmap.

Five strategies have been identified for Pathway 7: Improve the attractiveness of Mount Isa.

Public art can showcase the unique characteristics of a place and provide an attraction for visitors and locals, like the water tank mural at the Mount Isa look out. Source: Mount Isa City Council.

Strategy 1: Enhance the physical environment in urban areas

The benefits of enhancing physical environments include improved community access and connectivity, safety, biodiversity, and climate regulation.

Potential **actions** to enhance the appeal of urban areas could include:

- Improve the visual amenity of public spaces of Mount Isa through cleaning, maintenance and built form improvements (e.g. street furniture, lighting, wayfinding, art, murals, pavement surface treatments).
- Implement greening initiatives in public spaces, thoroughfares and streets including tree planting and garden bed establishment, including food forests that utilise regionally appropriate crops and bush foods. This can create cooler and more pleasant environments, improving the visual and physical amenity of the city.
- Create new open spaces that celebrate the unique history and culture of Mount Isa. These spaces can also represent future opportunities for Mount Isa, including the city's aspiration to be a national enabler in the clean energy transition.
- Install entrance statements and other large-scale public art projects that reflect aspects of the region that locals are proud of.

Strategy 2: Provide equitable access to public amenities across the city

Participants in Roadmap engagement activities expressed concern regarding the absence of public amenities in some areas of Mount Isa, noticing a connection between the socio-economic status of different suburbs and the quality of parks and the provision of play equipment and public toilets.

Potential **actions** to improve equitable access to quality public facilities in Mount Isa include:

- Ensure equitable provision and maintenance of public facilities across all neighbourhoods.
- Improve street accessibility, maintenance, and visual appeal, for example, through street murals and installations.

Strategy 3: Improve the Mount Isa retail experience

Community members and business leaders who participated in Roadmap engagement activities raised a number of opportunities to improve Mount Isa's retail experience.

Potential **actions** to improve the retail experience in Mount Isa include:

- Incentivise retail diversity especially new businesses addressing market gaps e.g. shoe shops.
- Review the opportunity to increase trading hours e.g. 7-day trading, late night trading initiatives.
- Create vibrant and inclusive spaces for pop-up shops, for example the Renew initiative.
- Support the revitalisation and renewal of the Mount Isa town centre through events and activations, streetscape improvements and business initiatives e.g. tied funding to encourage landlords to upgrade commercial premise frontages.

Strategy 4: Set young people in Mount Isa up for success

A range of services are currently available for young people in Mount Isa, including programs delivered by schools and sport clubs for example programs delivered by Mithangkaya Nguli – YPA and PCYC. Young people are seeking further support to address the challenges they experience.

Potential **actions** to set young people up for success include:

- Provide safe, age-appropriate places to gather and socialise after school.
- Invest in public sports facilities and diverse and accessible sports clubs.
- Provide information about the effects of alcohol and drug use, including vapes, and ensuring support services are accessible.

Community leaders can also establish and invest in mechanisms for young people to influence decisions about their future. Further potential **actions** include:

- Share the Mount Isa Future Ready Economy Roadmap with young people, including leaders of youth organisations and programs. Seek feedback on strategies and actions, and discuss engagement, priorities and actions.
- Work with the Mount Isa Youth Council and Mount Isa Youth Collaborative (MIyC) to measure and review implementation of the Mount Isa Youth Strategy 2023 to 2027, identifying key outcomes to date, gaps in delivery, outstanding actions and lessons learned.
- Support the Mount Isa Youth Council and MIyC to confirm and identify future outcomes and priority activities to support youth engagement and retention in Mount Isa.
- Communicate progress towards the Mount Isa Youth Strategy 2023 to 2027 with the Mount Isa community, and especially with young people.

Diverse and accessible sports are an important aspect of liveability in Mount Isa. Source: Mount Isa City Council.

Strategy 5: Enhance the liveability of Mount Isa

Participants in Roadmap engagement activities repeatedly raised the importance of attracting and retaining people and families in Mount Isa. Residents highlighted Mount Isa's liveability as a strength and articulated the importance of enhancing liveability into the future.

Potential **actions** to strengthen Mount Isa's liveability include:

- Deliver a strong program of events and activations (e.g. festivals, youth events, street activations) that draw people to Mount Isa from across the North West.
- Maintain existing recreation and sports infrastructure and invest in new facilities with a focus on equity and inclusion.
- Develop new entertainment and recreation precincts and invest in festivals and large events.
- Invest in operational expenses to fully activate sports and recreation infrastructure.
- Invest in local fresh food production.
- Improve air and water quality to safeguard community health and wellbeing.
- Improve access to trades, retail and community services.
- Advocate for fare caps for air travel between Mount Isa and major cities.

A diverse calendar of events supports community wellbeing for residents and draws visitors to Mount Isa, like Triple J's One Night Stand, held in Mount Isa in 2017. Source: Mount Isa City Council.

Pathway 8. Undertake coordinated strategic planning and investment for community development

Mount Isa is home to diverse people, organisations and industries. Strategic planning and coordinated investment are needed to ensure that the community and local economy is supported by strong foundations through the coming years of structural change.

Transformative community development engages and serves the whole community. The development pathways, strategies and potential actions outlined in this chapter provide a starting point for Mount Isa to work with community organisations, industry, government and other vital stakeholders – including investors and other regional communities – to prioritise and deliver projects that support strong community foundations in Mount Isa for decades to come.

Three strategies have been identified for Pathway 8 that could assist in structuring this participatory development process.

Strategy 1. Establish expectations for new development in the region

There is an opportunity to set expectations for how future development will be done, across all economic sectors.

Expectations could be articulated through a set of local principles developed with the community and could inform and support agreement making with project proponents.

Stakeholders engaged in Roadmap workshops expressed interest in understanding approaches, like Hay Shire Council's principles, that support communities to better understand development processes and develop clarity about their expectations of industry.

Stakeholders noted the importance of setting expectations that industry can realistically achieve. Stakeholders also noted the importance of policy, regulatory and financial settings that support agreement making, and scope for the process and benefits to be innovative and creative.

Case Study: Regions articulate aspirations to guide local development

Examples are emerging as regions across Australia take proactive steps to guide development that aligns with the aspirations of their community.

Hay Shire Council published their Fundamental Principles for Successful Renewable Development in Hay in February 2024.[33] This document outlines the Shire's ten fundamental principles for renewable energy development. It aims to maximise opportunities for the people of Hay, whilst minimising potential negative impacts. The document details how the strategic use of Access Rights Funding and Community Benefit Funding can deliver tangible community benefits - through community projects and programs.

The Central Western Queensland Remote Area Planning and Development Board (RAPAD), together with VisIR, have developed the RAPAD Power Grid Community Benefits Royalty Agreement (CBRA) (October 2024).[34] This agreement aims to provide communities and investors with a clear framework for the creation of direction financial benefits for the community. It defines the calculation of direct cash payments the Central Western Queensland communities (in addition to rates to host local governments and payments to individual host landholders).

Mining stakeholders expressed strong support for clear community expectations, noting ongoing dialogue between industry and government to ascertain what can be realistically achieved.

Potential **actions** to improve the community outcomes of the next wave of development include:

- Develop principles to set expectations for new development in the region.
- Leverage the significant tax and royalty income that will be generated by new mining projects for the Australian and Queensland Governments to achieve greater investment back into regions generating the revenue.
- Advocate for policy, regulatory and financial settings that allow benefit sharing to be more creative and innovative.
- Build community capacity and positioning to hold equity in new or expanding business ventures.

Strategy 2: Strengthen communication and collaboration between all levels of government and key community and industry stakeholders

Effective service delivery and prioritisation that serves the future ready outcomes described in this Roadmap rely on strong and transparent communication between all stakeholders, including members of the community itself.

Responsibility for social services and community infrastructure is divided between multiple levels of government, service providers and other community organisations. Strong communication, processes, and feedback loops between these stakeholders and service users is critical.

Potential **actions** include:

- Invest in roles, structures and tools to strengthen communication between all levels of government and the providers of community and social services.
- Develop and strengthen shared expectations regarding communication and engagement processes, including actions supporting transparency and accountability.
- Strengthen collaborative decision making for new programs and projects.

Strategy 3. Strengthen benefit sharing with and for the community

Benefit sharing is the concept that the economic benefits and costs of industry development are shared equitably between the local community and industry actors. Community benefit sharing can take many forms, ranging from industry-managed community grants to community equity in assets.

Potential **actions** include:

- Assess emerging opportunities to establish community benefit sharing models and processes alongside new industry development in Mount Isa.
- Build business and community understanding of benefit sharing models, as well as effective engagement models for the co-design and co-delivery of community outcomes.
- Build community capacity to hold equity in new or expanding business ventures.

Foundations for a thriving community – Outcomes

The following outcomes illustrate the characteristics of a future ready community in Mount Isa.

Framework dimension	Potential outcomes
Strong and resilient economy	• Businesses and community service organisations have a skilled and engaged workforce undertaking meaningful work. • Jobs and career pathways are well supported and connected with inclusive education, training and professional development opportunities.
Decarbonisation	• Energy efficiency and renewable energy is accessible for local organisations.
Climate adaptation	• Climate risks are proactively managed for community infrastructure. • Businesses and organisations have the knowledge, skills and resources to adapt their facilities and operations for climate resilience
Environmental impact and regeneration	• Businesses and organisations contribute to the regeneration of land, improving environmental value and greening the environment.
Circular design	• The amount of waste produced in Mount Isa is minimised. • New enterprises support Mount Isa's circular economy by keeping products and materials in use at their highest value and addressing market gaps.
Liveability and social wellbeing	• People and families in Mount Isa are safe, healthy and have their core needs met (food, water, housing, health, education, employment, social stability). • Youth in Mount Isa have safe places to gather, are engaged in diverse programs and have a voice in decision making that impacts their lives. • People in the justice system are supported in their rehabilitation journey. • Cost of living pressures are minimised and managed equitably. • Mount Isa's built environment is inclusive and inviting. • The community in Mount Isa is inclusive and practices reconciliation. • The rights, culture, history and experiences of Traditional Owners and First Nations peoples in Mount Isa are acknowledged, respected and supported. • The community participates in inclusive decision making and benefit sharing. • Economic transformation strategies and development projects benefit the community in Mount Isa, equitably and for the long-term. • Mount Isa has strong partnerships between government, businesses and community organisations. Information, opportunities and challenges are shared and addressed together to maximise collective impact.

In Profile: Community in Mount Isa

Mount Isa is a remote and diverse city of approximately 18,700 people in the North West region of Queensland, built on the traditional lands of the Kalkadoon people.[35] Mount Isa is home to many Aboriginal and Torres Strait Islander peoples, who represent approximately 21 per cent of the community. Migrants, predominantly from New Zealand, the Philippines or England, represent a further 26.1 per cent of the community in Mount Isa.[35]

While Mount Isa has experienced population peaks over the past decade, the number of residents has declined by approximately 12 per cent between 2011 and 2021. The greatest decline has been observed for people aged 40 to 50 (23 per cent decrease) and 20 to 30 (20 per cent decrease), in contrast to population growth among people aged over 70 (30 per cent increase). Despite a shift towards an older population, the median age in Mount Isa is 31, significantly lower than the national median age of 38.[35]

Mount Isa was established alongside vast copper and silver-lead-zinc ore mining operations. The prominence of this industry and its historic nature as a male-dominated field have shaped the local community and economy over the past century. For example, more men (51.6 per cent) than women (48.4 per cent) live in Mount Isa, though this distribution is more even than a decade ago. Most of the Mount Isa labour force lives locally (89 per cent), with a relatively small fly-in fly-out population that is based predominantly in Townsville and Brisbane.[36]

Copper and silver-lead-zinc ore mining remains the main industry of employment in Mount Isa, accounting for 30 per cent of the total labour force and 23.7 per cent of the local First Nations labour force. The next biggest industries by employment are healthcare and social assistance (12.5 per cent), education and training (8.4 per cent) and retail trade (7.4 per cent).[35]

The most common occupations in Mount Isa are technicians and trades workers (21 per cent), professionals (18 per cent), and machinery operators and drivers (16 per cent). Occupations are strongly disaggregated by gender in Mount Isa: for example, women make up 75 per cent of the community and personal service profession while men account for 88 per cent of technician and trade workers.[35]

The median household weekly income in Mount Isa is 27.8 per cent higher compared to the national median. The Mount Isa Local Government Area also has the third highest median total income in Queensland, and thirteenth highest in Australia.[37]

Like many other mining towns where mine workers receive a higher income than other industries, Mount Isa also experiences a greater degree of wealth inequality.[38] Income inequality is particularly visible between Indigenous and non-Indigenous households in Mount Isa, which have a median weekly income of $1,534 and $2,361 respectively.

Wealth inequality in Mount Isa has a negative impact across a range of social wellbeing indicators. For example, about 2.5 per cent of the community in Mount Isa is estimated to be homeless, while more than 40 per cent of dwellings in Mount Isa are rented. Mount Isa also has the highest youth crime rate in Queensland.[36]

Mount Isa is known as an iconic outback city with a world-class mining industry and events like the Mount Isa Rodeo. Source: Mount Isa City Council.

In Profile: Mount Isa's Environment

Biodiversity

Mount Isa is biodiverse. Over half the LGA contains state significant remnant vegetation, some 17 per cent of which is considered habitat for threatened species.[40] The area around Mount Isa is home to more than 480 native fauna species and over 1,100 native flora species, some of which are unique to the region. This environment provides crucial habitats for 31 threatened species of plants and animals, including the Diamond Head Turtle, Purple-necked Wallaby, Carpentarian Grasswren, and the critically endangered Curlew Sandpiper, Eastern Curlew, and Great Knot.[40]

Lake Moondarra is a permanent water source for the city and supports over 80 bird species. Other significant areas include Wiliyan-ngurru (Camooweal Caves) National Park, Boodjamulla (Lawn Hill) National Park and the UNESCO World Heritage listed Riversleigh Fossil Site.[39]

Mount Isa's biodiversity faces a range of threats including invasion by pest plants and animals; intense grazing pressure; the legacy of mining activities; land clearing; changed fire regimes; recreational activities; pollution; and extreme weather events.

Climate

Mount Isa's climate is 'tropical continental' with three main seasons: spring (Sep-Dec), summer (Jan-April) and winter (May-August). Temperatures during the hot season reach well into the 40s, with an average temperature of 30°C.[41] Winters are milder with occasional frosts.

Annual rainfall is highly seasonal, with a historical average of 465mm. Rain is closely associated with intense heat and thunderstorms in the summer months,[42] when intense and prolonged rainfall caused by passing ex-tropical cyclones can lead to flooding. With low rainfall in winter, the failure of rainfall in a summer can lead to drought.

Climate Change

The climate in Mount Isa is changing. Temperatures have risen by 1°C over the past 100 years. The Queensland Government suggests warming could be between 1.0 to 4.1°C depending on the levels of future emissions.[41]

The region can expect higher temperatures; more intense downpours; hotter and more frequent hot days; and more frequent and harsher fire weather.[41] The seasonal pattern of rainfall is forecast to increase in summer and decrease during winter and spring. Flash flooding already negatively impacts the Mount Isa community and businesses.[43]

Land

Mount Isa's bioregions include a varied and complex landscape with metamorphic and volcanic rocky hills, sandstone platforms and limestone karst systems.[39,40] About 90 per cent of land tenure within the Mount Isa LGA is managed under a pastoral lease term, while nature conservation reserves account for 5.5 per cent.[44] Grazing has the largest land use by area. Mining leases cover a relatively small proportion of the LGA's land area.

In the Mount Isa LGA, Native Title has been recognised for the Kalkadoon People and the Indjalandji-Dhidhanu People. The Kalkadoon People have exclusive rights over 4,000 km^2 to the north of Mount Isa City.[45]

Air Quality

Air quality is a key environmental management consideration in Mount Isa, and subject to significant regulation and control, given the scale of the region's copper, lead, zinc and silver mines. Since 2011, Mount Isa Mines has been regulated under a special agreement act and operates under a Queensland Government approved Environmental Authority.[46]

Since 1975, the Air Quality Control System in Mount Isa has monitored air quality across 15 stations, including real-time sulphur dioxide monitors and dust samplers for heavy metals.[47]

Programs like the Backyard Improvement Program and LEADSmart education initiatives raise awareness of lead, its potential health effects, and actions to limit exposure. Free blood lead level testing is also available.[47]

Water

Water in Mount Isa is managed by the Queensland Government under the Gulf Water Plan. There are two major dams that supply water for urban use and mining activity in Mount Isa - Lake Moondarra and Lake Julius.[18] The Gulf Water Plan is currently undergoing scheduled review, with the implementation of a new water plan scheduled for 2027.

Lake Moondarra, a nationally significant wetland, is a hotspot for biodiversity and recreational activities including bird watching, in the region. Source: Mount Isa City Council.

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Economic Sectors and Value Adding

The following chapters detail opportunities to strengthen five key economic sectors in Mount isa, in ways that are future ready. The chapters address:

1. Energy
2. Mining and minerals processing
3. Transport
4. Agriculture
5. Tourism

To be future ready means undertaking development in alignment with the Future Ready Economy Framework and its underpinning principles (see Chapter 1).

Each chapter explores the context for the economic sector then presents key pathways, strategies and potential actions a range of stakeholders could take to ensure the sector is future ready. A table at the end of each chapter presents the range of outcomes that could be achieved by investing in the future readiness of the economic sector.

Value Adding

Expanding value adding across Mount Isa's economic sectors will increase economic diversity and resilience. Opportunities for value adding have been identified across the five economic sectors. Look for the value adding symbol.

The opportunity for value adding in Mount Isa's mining and minerals processing sector is shown in Figure 5.

Figure 5. Opportunity for Value Adding in Mount Isa

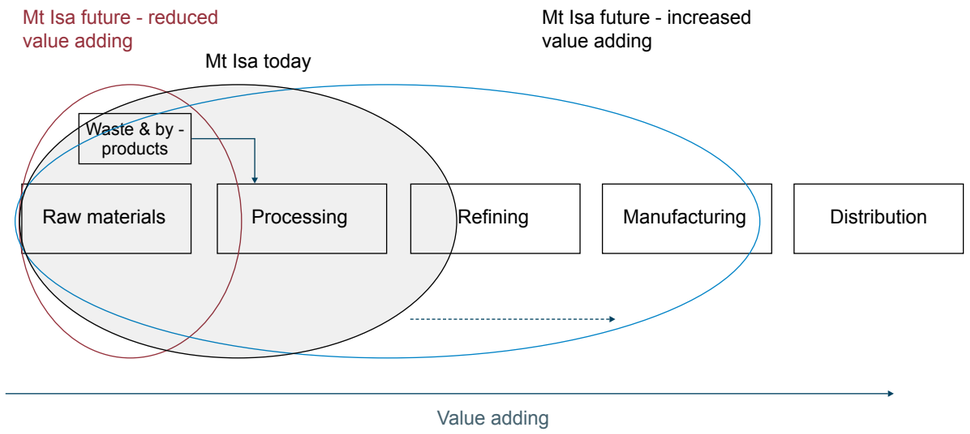


Figure 5 is illustrative of the mining and minerals value chain in Mount Isa, based on raw materials, waste or by-products. The potential to capture and retain value and profit increases from the left side of the diagram to the right (based on Porter's value chain analysis model)[48]. The black ellipse is indicative of Mount Isa's position on the value chain today - focused on mining and minerals processing, with some refining. The blue ellipse represents progressing up the value chain and the opportunity to capture more profit through additional processing, refining or manufacturing activity. Conversely, the red ellipse represents a reduction in refining and processing activity, which could lead to a constriction in the value chain and potentially less profit capture. This could happen if the copper smelter were to close, impacting copper mining and processing, as well as sulphuric acid production and possibly fertiliser production.

A snapshot of value adding opportunities is provided below for each sector, along with the Roadmap reference.

Sector	Examples	Roadmap Reference
Energy	Solar panel reuse and recycling	Chapter 3, Pathway 1, Strategy 2
Mining & Minerals	Battery Anode Material (BAM) project Fertiliser and Battery Acid Plant	Chapter 4, Pathway 3, Strategy 6
Transport	Transport and Logistics Centre	Chapter 5, Pathway 3, Strategy 1
Agriculture	Spinifex grass applications Wild game processing	Chapter 6, Pathways 2 & 3
Tourism	Regional tourist circuits and packages	Chapter 7, Pathway 4, Strategy 1
SMEs	Tyre recycling, glass recycling	Chapter 2, Pathway 2, Strategy 2

Further development of value adding opportunities in Mount Isa will require significant coordination and investment from industry and business, different levels of government and the community. Positive gains in one industry through value adding have the potential to create new opportunities for other industries, generating a positive feedback loop. On the other hand, a reduction in value adding operations in Mount Isa may impact other sectors (for example loss of customers for SMEs providing products and services) and lead to a contraction of economic activity, reduced confidence in Mount Isa's economy and a reduction in investment.

Possible strategies to expand future ready value adding in Mount Isa include:

- Facilitate ecosystem connections and coordination;
- Ignite imaginations and attract and develop new capability;
- Support exploration and feasibility studies;
- Crowd-in investment; and
- Support access to land and facilitate approvals for value adding projects.

Mount Isa Future Ready Economy Roadmap

Source: The Next Economy.

Chapter 3: Energy

Summary

Access to affordable, reliable decarbonised energy will be critical to future readiness, economic diversification and liveability in Mount Isa.

- Significant opportunities exist for the Mount Isa region to contribute to renewable energy generation and storage locally, and potentially at a state level, through development of renewable energy projects and showcasing the innovative repurposing of legacy mining assets with gravitational energy storage systems (GESS).
- The timely completion of CopperString 2032 will be key to existing and diversified industries in Mount Isa. It will provide access to lower energy prices, incentivise renewable energy development, stabilise the grid in the northwest, and unlock the potential for the Mount Isa region to contribute to the national energy market (NEM). However, interim measures will be necessary to support strong economic development prior to scheduled completion in 2029.
- Significant planning and coordination will be required for an orderly transition of the energy sector to match future generation and demand, including shifts to electrification and potentially hydrogen.
- The transformation of the energy system will require support from industry, business and the community, and development should seek to maximise community benefit and local workforce development.

Energy context

Global context

Global trends highlight that the ability to produce affordable, decarbonised energy presents regions and industries with a range of new economic opportunities, if the transition can be managed well.

Global energy systems are currently undergoing the most rapid change since the Industrial Revolution. The clean energy transition has accelerated in recent years, driven by government policy, industrial strategies, and intense competition for leadership in clean energy sectors that offer opportunities for innovation, economic growth and employment.[1]

Renewable energy produced 30 per cent of the world's electricity in 2023.[2] This is expected to grow to over half the world's electricity before 2030 as many countries turn to renewable energy to prioritise energy security.[3] More than 140 countries have set net zero targets which now cover 92 per cent of global GDP,[4] including the world's biggest polluters (China, the United States of America, India and the European Union).

It is now cheaper to build new wind and solar capacity than new carbon-intensive generation for over 75 per cent of the world's population, and the cost of solar modules has dropped 90 per cent in the last decade.[5] This shift has driven increased uptake of renewable energy.

The global energy transition faces rising complexity as it seeks to balance decarbonisation imperatives with affordability, energy security, geopolitical tensions and political shifts.[6] Amongst rising uncertainty, the International Energy Agency highlights the key trends in its 2024 World Energy Outlook:[1]

- Choices by governments, industries and consumers will shape the future of the energy sector, and the extent of changes within the climate system.
- Renewable energy is entering the energy system at an unprecedented rate, with over 560GW of new renewable capacity added in 2023. Deployment varies by technology and country.
- China is playing a large role in renewable energy globally, accounting for 60 per cent of new renewable energy capacity installed globally in 2023.
- Demand for electricity is increasing globally, driven by industrial electrification, electric mobility, demand for cooling, and growth in data centres and AI.
- Fossil fuel demand is set to peak by 2030. The rising supply of renewable energy is expected to meet increasing global energy demand after this point.

Solar farms are one source of large-scale renewable energy that will meet future energy demand when paired with battery or other storage. Source: Budd Photography.

Australian context

Australia is aligned to global trends and has adopted a national emissions reduction target of 43 per cent by 2030 and net zero emissions by 2050.[7] The Queensland Government is even more ambitious, with an interim target to reduce emissions by 75 per cent by 2035.[8]

Decarbonising the energy sector is critical to meeting net zero commitments, as electricity generation is Australia's highest emitting sector and accounts for 35 per cent of emissions.[9] The Australian renewable energy industry reached a critical tipping point in 2024, generating nearly 40 per cent of Australia's electricity. This was driven by record breaking investment in utility scale storage and continued rooftop solar installations by Australian households and businesses.[10]

Queensland currently generates 27 per cent of its energy from renewable sources.[8]

At a national level, renewable energy development continues to face several challenges including:

- State, national and global political changes, which impacts policy and investment certainty.
- The complex nature of balancing competing demands of land use, which calls for significant planning, coordination and community engagement.
- Growing opposition from some sections of communities impacted by large-scale infrastructure developments.
- Limitations in planning and approvals systems, including long approval timeframes, inconsistent and lengthy assessment process, frequent and unclear information requests, and poor coordination between agencies.
- Limitations in regulatory systems, which need to be updated to accurately reflect the nature, speed and complexity of changes required across the National Energy Market (NEM) and other electricity systems that supply Australian states and territories.
- Complications for renewable energy projects seeking to connect to the electricity grid, including uncertain timeframes, and a lack of consistency and transparency in calculating expected performance of developments impacting investor confidence.
- Shortages of workforce and skills needed.
- Global competition for critical minerals and other materials, which is expected to intensify.

Mount Isa context

The Mount Isa region is currently supplied with electricity through the North West Power System (NWPS) which operates in isolation from the NEM. It is expected that the CopperString 2032 project will connect Mount Isa to the national grid by 2029. This section presents an overview of Mount Isa's current energy sector context, drawing on analysis conducted by Mott MacDonald (2024).

Currently, 80 per cent of Mount Isa's energy supply comes from gas generation which is operated primarily by APA. Mount Isa Mines also contributes significantly to meeting demand at its X41 site.[11]

There is a growing component of solar generation, which currently supplies 20 per cent of demand in the NWPS. This consists of the 88MW Dugald River solar farm and 14MW of rooftop solar, which is growing rapidly with year-on-year growth between 10 per cent and 25 per cent.[11] The Mount Isa Acid Plant power station can also generate up to 14MW through waste heat recycling.[11]

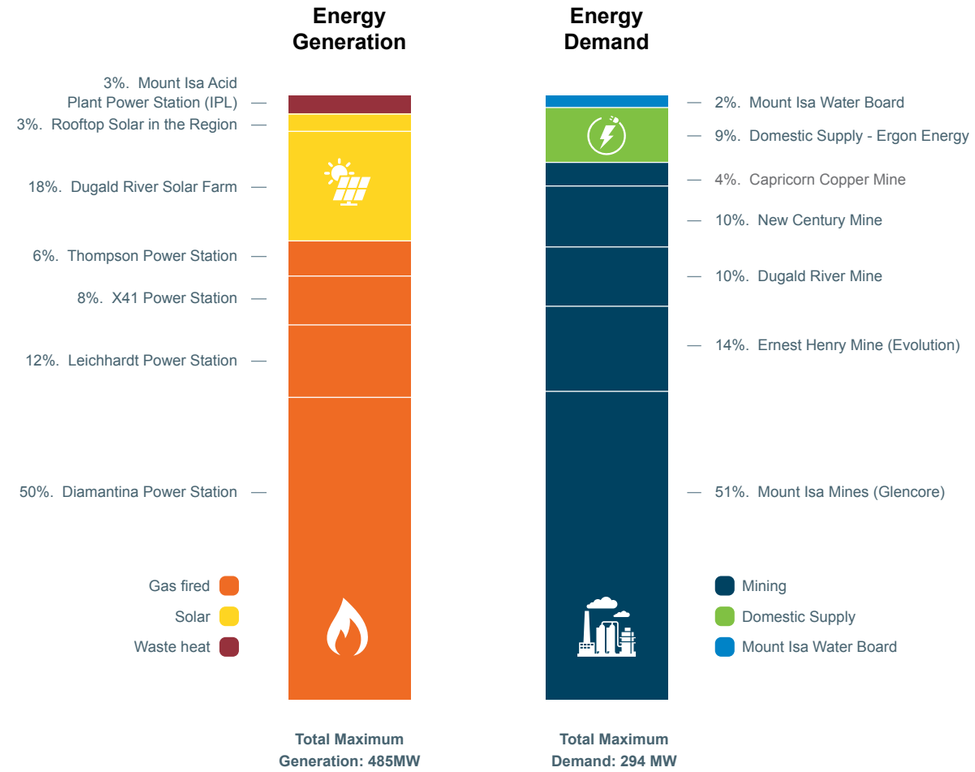
Energy demand in the NWPS amounts to approximately 300MW, with 51 per cent of demand from assets owned and operated by Glencore, and only 9 per cent used for domestic supply.[11] The announced closure of the copper mine and concentrator in 2025 and copper smelter in 2030 would therefore significantly reduce demand in the NWPS.

There are numerous remote mine sites in the region that are not connected to the electricity network, representing over 300MW of additional demand that is currently met by off-grid supply.[11] Cost-benefit analyses will be required to determine the viability of connecting these sites to the grid, given these sites are far from existing transmission networks. This process is underway for potential Northwestern and Southern spurs linked to CopperString 2032.

Mount Isa's mining legacy may present another innovative economic opportunity. Gravitational energy storage systems (GESS) can utilise old mine sites for energy storage. Source: Chris Ison.

Mount Isa Future Ready Economy Roadmap

Figure 6. Energy generation and demand in Mount Isa



Source: Adapted from Mott MacDonald (2024), based on Mount Isa City Council data.

Specific **challenges** affecting Mount Isa's energy supply include:

- High energy costs of approximately double the average cost of users connected to the NEM and other countries engaged in the mining of copper.[12]
- Limited competition, with APA dominating energy generation through the NWPS, tends to reduce pressure to keep prices low, stifle innovation, and reduce service quality.
- Reliability of the NWPS, primarily due to load shedding which results in frequent energy outages.[11]
- Limited generation diversity, with an overreliance on LNG and vulnerability to fluctuating LNG prices which have steadily risen since 2011 in Australia.[13]
- Inflexible 'take or pay' supply contracts which commit users to long-term agreements.[12]
- Effectively managing financial and social costs associated with transitioning away from LNG supply and infrastructure as renewable energy meets an increasing share of demand.

Why energy matters in Mount Isa

Access to reliable and affordable energy is critical for economic development and diversification in Mount Isa, and to ensure that the region remains an attractive place to live and do business.

High energy prices, limited energy infrastructure, and a lack of certainty around future policy decisions impact the viability and growth opportunities for mining, minerals processing, industry and business and their supply chains.[14] For example, remote mine sites often rely on diesel generators, limiting them to expensive and emission intensive sources of power which is often cost prohibitive for junior miners. Access to cheaper electricity will significantly enhance the ability of industries to attract investment, secure capital and be globally competitive.

Ensuring cheap and reliable access to decarbonised energy opens opportunities for industry to meet growing international demand for low carbon products.[15] Mount Isa's energy sector will also play a critical role in enabling the decarbonisation of other economic sectors through electrification. Significant planning and coordination is required to ensure additional loads can be accommodated.

Connection to the NEM via CopperString is predicted to lower electricity costs and access to renewable energy by 2029. However, this connection will not arrive soon enough to support a pipeline of new projects that are needed to replace job losses associated with Glencore closures in 2025. Local energy solutions and renewable generation are needed to support strong economic development in the interim period.

Through this Roadmap, Mount Isa is setting long term goals to mitigate political uncertainty at other levels and bring energy security to the region.

Energy pathways, strategies and actions

A future ready energy sector in Mount Isa provides certainty that local industry, businesses and residents will have access to affordable, reliable and diversified energy to meet future demand, including to accommodate electrification opportunities.

Featuring decarbonised generation backed by storage, a future ready energy sector will withstand predicted climate impacts, maximise circular opportunities for infrastructure at end of life, and create opportunities for community benefit and ownership.

Key pathways for a future ready energy sector

To achieve future readiness for Mount Isa's energy sector, **five key pathways** have been identified:

1. Plan for future energy needs
2. Decarbonise energy generation
3. Develop storage to support renewable energy generation
4. Invest in transmission infrastructure
5. Explore hydrogen industry development

Each pathway contains **strategies** and **potential actions** as outlined in this chapter. A table summary of strategies and all potential actions for the energy sector is presented in **Appendix B.**

The pathways, strategies and potential actions are a synthesis of information identified through desktop research, consultant analysis and stakeholder engagement activities undertaken by The Next Economy, Climate-KIC and Mount Isa City Council. Further stakeholder engagement is proposed to review, prioritise and further develop strategies and potential actions.

Consistent application of the **Future Ready Economy Framework Principles** detailed in Chapter 1 to development undertaken in the energy sector will unlock additional benefits for the region.

Lake Moondarra. Source: Lauren Stowe

Pathway 1: Plan for future energy needs

Coordinated planning supported by a clear understanding of the future scale and requirements of energy demand is foundational to navigating change in the energy sector.

Energy stakeholders during Roadmap consultation workshops highlighted the critical feedback loop and interdependency between future demand for generation, storage development, and customer development plans. Stakeholders suggested that coordinated planning is essential, with certainty about future conditions required by all parties to plan and secure investment. This interdependency highlights a need for coordinated planning across a range of sectors:

- The mining sector in Australia has been showing an increasing preference for electrification across the mining value chain powered by renewable energy to reduce emissions and offset the rising cost of fossil fuels, often choosing to establish their own onsite generation in remote areas due to a lack of access to renewable energy.[16, 17]
- Minerals processing is showing a growing trend of electrification to meet international commitments to decarbonise energy-intensive industries,[18] with these industries looking to secure renewable power purchase agreements to meet their needs.[19]
- Australia's transport sector is rapidly growing its demand for electricity with electric vehicles making up 9.4 per cent of new car sales in April 2024, and the number of fast and ultra-fast charging points increasing by over 90 per cent compared to 2022.[20] The New Vehicle Efficiency Standard aims to increase the supply of affordable electric vehicles[21] and is likely to further increase uptake of electric vehicles and hybrids.

Meeting local demand shifts at the necessary pace will require strong planning and coordination across the energy sector and with energy users, demand management, collaboration across levels of government, an effective investment environment and a workforce with the right skills and capacity.

Four **strategies** have been identified for Pathway 1: Plan for future energy needs.

Strategy 1: Understand future energy demand, requirements and priorities

A data-based outlook of future energy demand in the region is necessary to ensure development and investment are best placed to service future generation, storage and transmission needs.

Potential **actions** include:

- Engagement with major energy users to understand decarbonisation activities, electrification and emerging opportunities.
- Identifying and assessing potential locations for future energy intensive industry development to determine how to best service this growth.

Strategy 2: Develop an energy sector strategy

Potential actions to support the development of a local energy sector strategy include:

- Incorporating demand side management through initiatives to promote electrification and energy efficiency. This ensures the efficient use of energy production and reduces the need to build new infrastructure, supporting lower energy costs. Energy costs contribute up to a quarter of operating costs for local mines,[14] providing a strong imperative for an ongoing focus on energy efficiency. For example, upgrading the energy efficiency of urban building stock improves cost of living and liveability outcomes for businesses and residents.
- Plan for the full lifecycle of renewable energy assets. Stakeholders in Roadmap consultation workshops raised concerns about end-of-life planning for solar panels and want to see circular opportunities designed from the outset (see *Value Add Opportunity*, below).
- Prepare for the integration of the NWPS into the NEM with the completion of CopperString 2032 through coordinated engagement with key stakeholders. Mount Isa City Council has already implemented initiatives to do this (for more information, see Pathway 3).

Value add opportunity: Solar panel reuse and recycling

The cumulative volume of discarded solar panels in Australia is expected to exceed 1 million tonnes by 2035.[22] Avoiding landfill makes environmental and economic sense, with the end-of-life materials fetching an estimated $1000 per tonne.[22] Although the initial need will be focused in large cities, utility-scale waste will start to ramp up in the regions as, for example, the 184,000 panels from the Dugald Solar Farm in Mount Isa reach end of life.

Reuse and refurbishment of solar panels will be an important end-of-life pathway that retains the most value possible from these assets. In Australia, almost 30 per cent of decommissioned PV systems are less than 10 years old, due to failures of junction boxes, cabling, mounting systems etc, in which case there is a strong opportunity to reuse functional panels.[23]

Small marketplaces exist to test, repair and refurbish PV systems in Europe, North America and Australia. For example, Victoria based Elecsome starts their process with reuse of panels from larger farms taken to smaller projects where possible.[24] However, this industry is immature, and development of certification and regulation is needed to achieve efficiencies and scale. The Institute for Sustainable Futures published an in-depth analysis of how to enable a circular system for solar panel reuse in Australia.[23]

Recycling will be the best option for older or damaged panels. Lotus Energy in partnership with JR Hammer have established a chemical-free solar panel recycling facility in Victoria.[25] Their process recycles all parts of the panels to produce silicon, aluminium, copper, and silver that can be used to manufacture new products, including new solar panels. This creates local job opportunities, with both companies recently hiring people who have previously faced barriers to finding work through the Victorian Government's New Energy Project.

Strategy 3: Advocate for energy priorities

The data-based outlook and local energy strategy will be used to advocate for energy sector priorities.

Potential **priorities** for advocacy, highlighted during Roadmap development engagements, include:

- The timely completion of CopperString.
- Ensuring regulation, planning and assessment processes are fit for purpose and consistent across levels of government. For example, legislation is in place to support the identification of productive and beneficial post-mining land use. A review and approval process will be required for the implementation of gravity energy storage systems in Mount Isa as an 'approved post mining land use'. See Pathway 3.
- Ensuring policy encourages effective energy sector investment and development.
- Ensuring a transport option to accommodate loads associated with the development of assets such as wind turbines, either through Flying Whales services or ensuring regional rail or road infrastructure can accommodate load requirements.

Strategy 4: Develop a local skilled energy sector workforce

Development in the energy sector has the potential to create hundreds of ongoing jobs, with significantly more needed during construction phases.[11]

This was highlighted as an important strategy by stakeholders during Roadmap consultation workshops, as access to capability is time sensitive and could become a major barrier to timely development. Stakeholders also suggested that the energy sector could provide future careers for young people across region, as Mount Isa builds its capacity to support energy development and decarbonisation across the North West.

Potential actions highlighted during Roadmap development engagements include:

- Establish incentives for local training and residency.
- Develop training offerings covering skills needed for local energy sector development in collaboration with TAFE and the local university.
- Support pathways into the energy sector locally, including through existing initiatives endorsed by the Regional Jobs Committee and programs to support former mine workers into new jobs.
- Expand the electro-mechanical TAFE course to include solar and high voltage line construction.
- Incorporate micro-credentials into energy skills training.
- Build the capability of the energy sector, for example through exploring opportunities to build local capacity supported by mentoring and knowledge sharing from areas of high industry capability, such as experienced government owned corporations.
- Integrate future energy workforce requirements into education sector plans.

The North Mount Isa TAFE campus provides vocational education and training for residents in Mount Isa, which is a key enabler of the region's future workforce. Source: Mount Isa City Council.

Pathway 2: Decarbonise energy generation

Decarbonising energy generation in the region will enhance Mount Isa's energy sector by reducing reliance on LNG and enabling opportunities to decarbonise mining, processing and manufacturing. Mount Isa currently generates 20 per cent of its energy from solar.[11] During Roadmap development workshops, participants expressed strong support for increasing renewable energy supply.

Four strategies have been identified for Pathway 2: Decarbonise energy generation.

Mount Isa is ideally suited for renewable energy generation with an abundance of solar and wind, and low cyclone threat.

Strategy 1: Incentivise large scale renewable energy development

Mount Isa's location enables solar production during the evening peak on the coast, providing a significant opportunity to support times of high demand across the state. There are over 350MW of wind and solar projects in the pipeline or under consideration in the Mount Isa region.[11] Mount Isa also plays a critical role in supporting renewable energy aspirations in the region. For example, Mount Isa City Council is currently supporting the codesign of Camooweal community aspirations for energy service delivery as Ergon considers implementing microgrids at the regional townships of Camooweal, Doomadgee and Burketown which currently run on diesel.

The connection of Mount Isa to the NEM through the CopperString project is already incentivising renewable energy development in the region by enabling greater options for energy export. However, local renewable energy generation is required before the anticipated connection in 2029 to enable industry diversification.

Challenges to establishing additional renewable generation include difficulties in connecting remote generation and demand sites to the grid, land access, securing offtake agreements, and coordinating demand shift from gas. Small and isolated networks such as the NWPS can make the integration of renewable energy sources complicated, requiring spinning reserves or storage systems to support reliability.[11] The remote location of Mount Isa also results in high costs and difficulties associated with materials, transport, labour and skills, leading to a need for additional support and incentives.

Potential **actions** to incentivise large scale renewable energy development include:

- Publish Mount Isa's energy demand outlook (see Pathway 1) to provide certainty to renewable energy developers and support advocacy for the timely completion of CopperString.
- Advocate for the establishment of a Renewable Energy Zone (REZ) to attract renewable investment and development. The benefits of REZ include cost-effective and coordinated planning across construction and connection of renewable energy and associated infrastructure, greater energy reliability, consistent community engagement and attraction of investment.[21]
- Develop the skills and capacity of the local workforce (see Pathway 1).

In Focus: Considerations for future ready renewable energy development

- **Energy security:** Ensure sufficient renewable production, storage and network infrastructure to meet local needs during periods of disconnection from the NEM (following connection to CopperString).
- **Increase circular design:** The end-of-life impacts of renewable infrastructure was often raised as a concern during community consultations. Proactively managing this concern could be achieved by requiring all new energy generation projects to develop maintenance and end of life plans that maximise the lifespan of infrastructure and the reuse or recycling of materials at end-of-life. There is a need to establish local end-of-life systems and markets to enable this private sector action.
- **Prioritise land use co-benefits:** Agrivoltaics, grazing of sheep under solar panels, and development of connected habitat corridors under transmission infrastructure are examples of land use co-benefits. These measures allow industry to demonstrate environmental stewardship and goodwill towards local community needs, which can significantly increase community acceptance of new infrastructure.
- **Maximise community benefits:** Developers can promote community values, procedural fairness and distributive justice by conducting early and comprehensive community consultation and agreement making. New infrastructure should minimise adverse impacts to residents, ecosystems and cultural heritage sites.
- **Demonstrate new models of project ownership, governance and benefit sharing** with Traditional Owners and the broader community. See *Case Study: Marlinja Microgrid.*

Case Study: Marlinja Microgrid, First Nations community-owned solar microgrid

Original Power, a First Nations organisation, has led the development of Australia's first First Nations community-owned solar microgrid for the 60 person Marlinja community in the Northern Territory. This remote community previously faced unreliable and expensive power supply.

Marlinja Microgrid features a 100kW solar array and a 136kWh battery storage system, providing the community with clean, renewable energy and reducing their dependence on diesel generators.[26] The project has brought significant social, health, and economic benefits, including the opportunity for the Marlinja people to learn new skills in construction of clean energy technologies.[26]

The panels have been made to withstand the harsh conditions of the NT, including cyclones.[27] The system works by crediting the amount of electricity created by the microgrid to the power meters of the 18 households at Marlinja.[28] The microgrid is reportedly saving the community hundreds of dollars and fuelling interest in the creation of new enterprises, now possible because of the reduced cost of electricity.[26]

Strategy 2: Maximise existing sources of decarbonised generation

Local energy solutions are required to secure decarbonised and affordable energy until CopperString is connected in 2029.

Potential **actions** are explored in depth below.

- **Maximise rooftop solar generation.** Mount Isa has strong uptake of rooftop solar, with installed capacity of 14MW.[11] Mount Isa City Council has been investing in rooftop solar on Council and community buildings (see *In Focus: Celebrating the wins* below).

  During Roadmap consultations, energy stakeholders highlighted that a focus on the household scale is important, as there is scope for immediate value and it helps to build participation, understanding, and a sense of momentum around a renewable energy agenda for the region.

  Significant scope exists to increase rooftop solar and ensure its benefits are evenly distributed across the community, through potential **actions** such as:

  - Support residents to install solar panels. Mount Isa's housing stock is primed for rooftop solar with electric cooking appliances the norm. Residents can achieve greater energy security and reduced energy bills by adding rooftop solar, electric heating, and battery storage, potentially through electric vehicles. The benefits of energy efficiency and renewable energy generation should be accessible across the community, and the Social Housing Energy Performance Initiative is offering $116 million in funding to upgrade approximately 32,000 homes across Queensland by 2027.[29]
  - Encourage industry and business with large building footprints to install rooftop solar.
  - Energy stakeholders during Roadmap consultation workshops suggested that virtual power plant technology could be used to establish a baseload community solar and battery system with gravitational energy storage to facilitate access to renewable energy for social and public housing, with government support.

In Focus: Celebrating the wins – Rooftop solar achievements in Mount Isa

Mount Isa City Council is implementing innovative measures to reduce Council's energy use and carbon emissions, including:

- Secured $1 million grant in 2024 to install additional solar panels (taking total to over 1MW) and battery to cover Council facilities.
- Supported the installation of renewable energy on not-for-profit organisations through the Environmental Grants Program.
- Set standards for new buildings.
- Installed solar panels at the Splashez Aquatic Centre.
- Installed solar-powered street lights around the region.

- **Explore options to expand generation from waste heat in collaboration with industry.** Heavy industry and minerals processing industries in Mount Isa operate at very high temperatures, creating opportunities for energy generation from waste heat. For example:
  - o The Mount Isa Acid Plant power station can also generate up to 14MW through waste heat recycling,[11] which can contribute significantly to the economics of operating the plant.[30]
  - o The ISASMELT™ process used at Glencore's Mount Isa Mines copper smelter features waste heat recovery.[31]

Strategy 3: Support off grid renewable energy systems for remote mining operations

Off grid systems can be the best option for remote mine sites given the high cost of building new transmission networks.[32] The Australian mining sector is leading a global trend of establishing off grid onsite renewable energy to power remote operations, achieving benefits of greater self-sufficiency and flexibility, reduced exposure to rising fossil fuel prices, lower operational carbon emissions, and even as a recruitment attraction.[33]

Reliability requirements can also incentivise off grid systems to avoid unreliable remote connections, with diesel-solar hybrids currently a popular option to secure uninterrupted power,[33] although commercial-scale hydrogen could replace diesel in the future.[34]

Some of the **challenges** associated with off grid power on remote sites include:[34]

- Capital intensiveness,
- Requires large enough deposit and lifespan to justify investment,
- Adds complexity to the onsite energy system and requires technical expertise to install and maintain, making access difficult for smaller companies,
- Access to land, including environmental impact assessments, and
- Requires local storage, typically also with back up diesel generation.

Potential **actions** to promote off grid renewable energy systems include:

- Pool resources between proximate mine sites.
- Provide technical support to install and maintain renewable energy systems.
- Secure state or federal funding. For example, the United States invested US$475 million in five off grid renewable energy projects on current and former mine sites to support industry to decarbonise, catalyse clean energy projects and local workforce development, and demonstrate innovative mine conversion to clean energy for replication across the country.[35]

Strategy 4: Explore the feasibility of other sources of decarbonised generation

Ensuring Mount Isa has access to the best possible energy mix requires early consideration of a wide range of energy opportunities. Mount Isa City Council will continue to monitor and evaluate the relative development potential of a range of decarbonised energy generation and storage options.

This includes geothermal, nuclear, pumped hydro and compressed air. These assessments could inform the development of a Mount Isa and regional policy position on different energy generation and storage options.

Case Study: Uncertainty challenges investment in remote mine sites

The Eva Copper Mine Project, located 95km northeast of Mount Isa, is poised to become an essential local source of copper ore to supply Mount Isa's copper smelter after the closure of Glencore's Mount Isa Mine in 2025. It has the potential to generate 800 jobs during construction and 450 ongoing operational jobs.

The project will be a significant consumer of electricity and is assessing options for long-term, low-emission power supply, including on-site renewable power generation. Subject to timing and cost, CopperString 2032 will provide potential access to grid power.

However, uncertainty regarding the timeline for completion of CopperString, and the cost of delivered power and associated transmission lines, are complicating the investment decisions required to bring the project into earliest production.

In Focus: Local opportunities and community discussions about energy generation options

During community, industry and government workshops that informed Roadmap development, participants expressed an interest in understanding and discussing geothermal and nuclear energy. Key points from participant discussions about these energy options are included below.

Geothermal

The development of geothermal energy in the region could offer Mount Isa city and industry access to locally produced decarbonised energy, as well as a solution to powering remote mine sites.

Work to date includes:

- Exploration studies have identified the Millungera Basin around Julia Creek (260 km east of Mount Isa) as the most prospective site for geothermal in Australia, with 611,000 petajoules (almost 170,000TWH) of inferred geothermal energy and proximity to the CopperString transmission corridor.[36]
- Sydney-based Greenvale Energy has plans to develop Australia's first geothermal power station pilot in Longreach using closed loop CeraPhi Energy's closed loop technology, which is expected to pave the way for a larger plant in the Millungera Basin.[37]
- Greenvale is already exploring the mineralisation potential of geothermal fluids around Julia Creek which include lithium, tellurium, silver, and other rare earth elements.[38]

Nuclear

Nuclear power generation has gained prominence in Australia's energy debate. While the current federal government does not support nuclear power generation, the federal opposition party (LNP) energy policy is currently based on the establishment of seven nuclear reactors around Australia.[39] Uranium has played a significant part in Mount Isa's history. The Mary Kathleen uranium mine is a significant local tourist attraction, and local uranium deposits are the largest in Queensland.[40]

Nuclear was raised in several of the community, industry and Council workshops, with mixed views. There is interest in understanding the potential, implications and considerations that nuclear generation and uranium mining present in the region.

Council is open to investigating options around uranium mining, though some members of the community have expressed concern, and there remains a ban on the establishment of new uranium mines in Queensland.[41]

Nuclear is not expected to play a key role in meeting Mount Isa's energy needs due to the absence of large local loads to absorb constant supply, as well as water limitations in the region. It would also not provide an energy solution within the timeframes needed to support economic diversification and local jobs due to the long timeframes and high costs of development[42, 43] in addition to the Queensland government's current ban on the construction and operation of nuclear facilities.[44]

Pathway 3: Develop storage to support renewable energy generation

Significant energy storage solutions will underpin a reliable energy system capable of integrating new renewable energy generation in Mount Isa, enabling the manifold industry and community benefits associated with decarbonisation.

A mix of energy storage is required, from short-duration systems to manage power quality and meet daytime loads, to multiday storage for night-time loads and weather variability. Grid stability was highlighted as a key concern during industry consultation and there is strong industry appetite to see storage options developed.

Two strategies have been identified to support Pathway 3: Develop storage capacity to firm renewable energy generation.

Strategy 1: Develop a plan for energy storage in the region

An energy storage plan will be developed as part of the energy sector strategy (Pathway 1) to quantify the amount of storage needed to reliably firm renewable energy production to meet the needs of the region. This includes covering core needs during periods of disconnection from the NEM post completion of CopperString 2032.

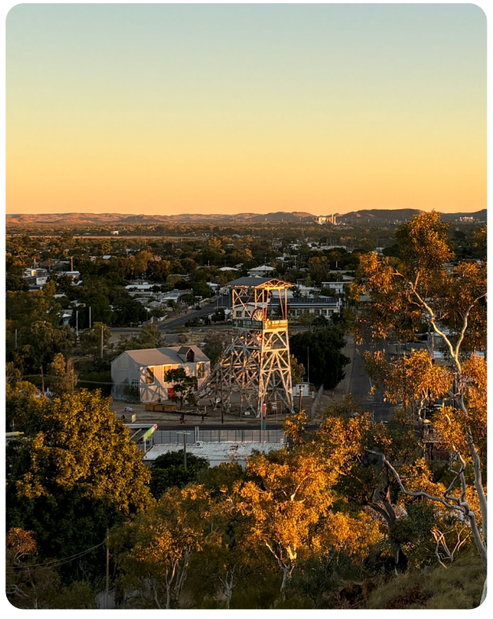
Storage projects under consideration in the region include a 50MW (100MW peak) battery storage system at the Dugald River solar farm, 50MW battery system at Harmony Gold, pumped hydro, manganese batteries, and Gravity Energy Storage Systems (GESS).

Strategy 2: Determine the feasibility of gravity energy storage systems in the region

GESS use weights moved vertically to capture and release gravitational energy, with legacy mine shafts in Mount Isa holding significant potential. In October 2024, Mount Isa City Council signed a Memorandum of Understanding with company Green Gravity (see Case Study: *Gravity Energy Storage*, below).

Potential **actions** that can be pursued through the MoU with Green Gravity include:

- Support a demonstration pilot to advance technology readiness and address industry questions.
- Ensure policy, planning and mining regulation are fit for the purpose of converting legacy mining assets into GESS.



Mount Isa's long mining history means the region has a wealth of mining infrastructure that can be repurposed for innovative energy storage options like gravity energy storage systems. Source: The Next Economy.

Case Study: Gravity energy storage in disused mine shafts

Priority Project: Green Gravity

Green Gravity, an Australian gravity energy storage technology developer, has expressed interest in developing Gravity Energy Storage System of up to 2GWh in multiple disused mine shafts of Glencore's Mount Isa Mines.[38] This could create over 350 full time equivalent jobs during development.[45]

Green Gravity signed a Memorandum of Understanding with Mount Isa City Council in October 2024 outlining a shared commitment to investigate the role of Gravity Energy Storage Systems (GESS) to enhance Mount Isa's energy sector. This work can include fostering collaboration to drive local decarbonisation and innovation, and workforce reskilling to retrain and upskill the local workforce, including those affected by the closure of Mount Isa Copper Operations.[38] Green Gravity has commenced regional studies to assess potential supply chain and manufacturing options, mine site concept engineering and community engagement in collaboration with Council and Glencore.[46]

This project is considered an economic development priority for Mount Isa City Council as it seeks to secure jobs and diversify the economy, whilst addressing a key priority for local renewable energy solutions.

In Focus: Considerations for future ready storage

GESS are a storage option that is strongly aligned with the dimensions of the Future Ready Framework.

- **Strong and resilient economy:** Opportunity to demonstrate innovation in the repurposing of mine assets, and with long duration storage. This aligns well with interest among Council and the community to establish Mount Isa as a demonstration centre for new and innovative energy solutions.
- **Low carbon and circular design:** Low carbon construction including opportunities to re-use and repurpose mining infrastructure and has a long asset life of up to 50 years.[47]
- **Climate adaptation:** Doesn't require significant water resources and maintains performance in high heat conditions.
- **Environmental impact and regeneration:** Avoids new land impacts, repurposing legacy mine shafts for a beneficial purpose and does not generate hazardous waste.
- **Liveability and social wellbeing:** Potential to create hundreds of jobs that connect readily with the existing skills in Mount Isa's industrial workforce.

Mount Isa's nationally critical industry base relies on a reliable and affordable supply of decarbonised energy.
Source: The Next Economy.

Pathway 4: Invest in transmission infrastructure

The most significant piece of transmission infrastructure needed to unlock a future ready energy sector in Mount Isa is already underway with CopperString 2032 (see In Focus: Copperstring, below).

During Roadmap consultations, energy stakeholders were mindful of the fact that CopperString will represent a significant shift for Mount Isa's energy system. Locals requested clear messaging around the transformation of the energy system, including what it will look like before and after connection with CopperString. Business development is underway to secure energy customers in the Mount Isa region.

Two strategies have been identified under Pathway 4: Invest in transmission infrastructure.

Strategy 1: Plan for and invest in regional transmission infrastructure development

Planning and coordinating transmission infrastructure upgrades and new connections will be essential to the timely and cost-effective connection of new renewable energy generation and energy storage systems with major energy users.

Potential actions to plan for Mount Isa's future transmission network include:

- Initiate the development approval process with Powerlink and the State Government for the Mount Isa phase of CopperString.
- Advocate for Northwest and Southern spurs, demonstrating demand for NEM connection by building project support amongst current and future industry and developers.
- Plan for transmission infrastructure development to enable expansion of renewable energy generation, new energy storage projects, potential hydrogen development and the expansion of industry.
- Upgrade existing connections to meet NEM requirements.
- Ensure new transmission infrastructure is climate resilient: can withstand high temperatures, uses bushfire resistant materials and is located outside flood prone areas.

Strategy 2: Plan for effective integration with the National Electricity Market

Planning for connection of the NWPS with the NEM will be developed as part of the energy sector strategy (see Pathway 1).

Potential **actions** to enhance integration with the NEM include:

- Understand the implications of connection to the NEM for Mount Isa's energy system and assist households and industries to prepare.
- Establish mechanisms to facilitate the integration of private transmission assets into the NEM.
- Prepare for potential delays.

In Focus: CopperString 2032

The CopperString 2032 project aims to connect the North Queensland Renewable Energy Zone (NQREZ) and the NWMP to the national electricity grid. It consists of a 1,100 km high-voltage electricity transmission line from Townsville to Mount Isa with up to six new substations and represents a transformational opportunity for the decarbonisation of North Queensland. It is North Queensland's largest economic development project to date, costing an estimated $5 billion.[48]

Funding for CopperString has been committed by the State Government, and preliminary works have been completed. Construction commenced in Hughenden in July 2024 and is forecast to be completed by 2029, followed by commissioning and energisation of the transmission line from 2031. There is strong interest from industry to expedite projects and proactively collaborate to ensure CopperString is delivered on time.

Two additional spurs (transmission lines branching off the main line) have been proposed to deliver energy infrastructure to significant resource development areas of the NWMP:

- Southern Spur: To the south of Cloncurry and Mount Isa with notable mines including Selwyn, Cannington, Osborne and Phosphate Hill. Under investigation by Powerlink.
- Northwestern Spur: To the north of Mount Isa and Cloncurry with notable operations including Century, Lady Loretta, the Eva Copper Project (Harmony) and other mining operations to the north. Not currently under formal consideration. Mount Isa City Council is leading the development of a proposal for consideration by Powerlink and the Queensland Government.

CopperString presents several **benefits** for the Mount Isa region including:

- Access to affordable, reliable and renewable power for industry, businesses and community with prices expected to reduce by 40% for delivered electricity, and 50% for average wholesale.[12]
- Energy certainty for the critical minerals sector to incentivise new investment and production.
- Reduced reliance on fossil fuels such as LNG and diesel.
- Catalysing new renewable energy development by enabling energy export to the national market.

Key **challenges** regarding the Mount Isa connection include:

- Delivery of CopperString is highly complex and costly.
- Uncertainty around viability and financing for the proposed Northwest and Southern spurs.
- Uncertainty around timing of completion and final energy costs.
- Technical issues such as human resources and materials.

Pathway 5: Explore green hydrogen industry development

Green hydrogen is an emerging renewable fuel with the potential to contribute significantly to Australia's net zero transition through enabling decarbonisation of hard-to-abate sectors. Uses include industrial processing, grid stabilisation, off-grid and remote power systems, decarbonised smelting and transport fuel.

There is a nascent green hydrogen industry in Australia. The industry faces economic and technical challenges, though targets, strategic policy measures and early-stage investment support have been adopted to help accelerate the growth of the sector for competitive domestic use and exports.

For example, the National Hydrogen Strategy 2024 seeks to position Australia as a global hydrogen leader by 2030.[50] Funding is available through the Hydrogen Production Tax Incentive, $4 billion Hydrogen Headstart Program, and $59 million in research and development through the Australian Renewable Energy Agency (ARENA).

The Queensland Hydrogen Industry Strategy 2019-2024 aims to position Queensland to capitalise on emerging opportunities, with over $300 million invested to stimulate the green hydrogen industry. In 2022, the Queensland Government conducted a detailed assessment of Queensland's potential for hydrogen production, focusing on ports to facilitate export.[51]

Some small-scale green hydrogen production and refuelling stations operate in Australia. Significant investment has been made to establish a green hydrogen industry in Queensland, with an initial focus on hubs in Townsville and Gladstone.

For example, construction commenced in 2023 on Ark Energy's SunHQ Hydrogen Hub in Townsville, with Phase 1 consisting of a 1MW electrolyser to produce up to 155,000 kg of hydrogen annually using energy from the Sun Metals Solar Farm.[52] SunHQ will enable sister company Townsville Logistics to decarbonise its heavy vehicle fleet operating between the Sun Metals Zinc Refinery and the Port of Townsville, with additional capacity to supply renewable hydrogen.

Three strategies have been identified to support Pathway 5: Explore green hydrogen industry development.

Strategy 1: Understand the potential for green hydrogen development in Mount Isa

A preliminary investigation commissioned by Mount Isa City Council found Mount Isa's strong solar and wind resources could facilitate green hydrogen production to establish a hydrogen production hub, which would strengthen the reliability of the local power network and create job opportunities.[11]

However, the viability of a local green hydrogen industry is highly dependent on land access, the availability and cost of water and renewable power, and nearby hydrogen off takers.[11] Investment in enabling infrastructure would also be required, in addition to workforce development and community acceptance of the industry.

Industry participants in Roadmap workshops identified water as a key consideration for the development of a hydrogen industry in Mount Isa, indicating that this industry is better suited to the coast where the water supply is more secure and there is direct access to ports for export.

Further investigation is needed to understand the potential for green hydrogen industry development in Mount Isa. This will require engagement with local industry, government and community to understand potential uses, demand, infrastructure requirements, benefits and risks.

This work needs to consider Mount Isa's competitive advantage compared to other regions, potential development zones that could support hydrogen production and storage, engagement with adjoining local governments to identify and coordinate regional opportunities and planning, and how to incorporate infrastructure and resource requirements into planning.

Potential **actions** for further investigation include:

- Mount Isa's potential as the region's inland refuel supplier for hydrogen-powered heavy transport (see Transport chapter).
- Transition from natural gas to green hydrogen in ammonia production.
- Green hydrogen production from wastewater.
- Establishment of new industrial processes using green hydrogen.
- Access to hydrogen through the repurposing and upgrade of the Carpentaria Gas Pipeline.

Strategy 2: Develop a green hydrogen policy position and roadmap

If the potential for green hydrogen merits further exploration in the Mount Isa region, information gathered could be used to develop a policy position on green hydrogen and inform the development of a hydrogen infrastructure roadmap. This would assist to coordinate development of the industry and attract investment. A demonstration pilot project would further assist in industry development.

Strategy 3: Build industry capacity to engage in the hydrogen sector

Industry in Mount Isa is already investigating the feasibility of hydrogen as an alternative fuel source. Improving industry access to clear data on the commercial viability of green hydrogen for different industries and leading practice in infrastructure development can accelerate hydrogen uptake.

Potential **actions** to support industry capacity building include:

- Support to transition existing infrastructure and vehicles to hydrogen.
- Supporting industry access to investment through the Advanced Hydrogen Fund and ARENA's Investment Strategy for Commercialising Renewable Hydrogen.
- Research and demonstration projects focused on hydrogen smelting and the generation of hydrogen from poor quality water such as mine site tailings.

Participants in Roadmap development workshops shared insights. Source: The Next Economy.

Future ready energy sector – Outcomes

The following outcomes are illustrative of a future ready energy sector in Mount Isa.

Table 4: Future ready energy outcomes for Mount Isa

Framework dimension	Potential outcomes
Strong and resilient economy	• The Mount Isa region has reliable access to affordable decarbonised energy. • Leading education facilities offer hands-on training on renewable energy and the decarbonisation of mining and industry, establishing a locally-based and highly skilled workforce that provides expertise across the North West region. • New and sustained employment is established across the energy system and new industry and business enabled by improved energy access. • Strong supply chains support the renewable energy sector. • Diverse companies provide generation, storage and transmission services.
Decarbonisation	• Renewable energy generation and long duration storage provide firmed, low emissions power to industry, business and the community. • Industry, business and households are electrified as much as possible. • Demand management and energy efficiency are maximised. • Opportunities for research and innovation in the development of renewable energy based on local competitive advantage are realised.
Climate adaptation	• Generation and transmission infrastructure can withstand high temperatures and is located outside of flood prone areas. • Sufficient local renewable production and storage can meet core needs during periods of disconnection from the NEM post construction of CopperString 2032.
Circular design	• A circular system is developed in a timely and holistic manner to reuse and recycle materials effectively across the renewable energy supply chain.
Environmental impact and regeneration	• Environmental impact minimisation and regenerative practices are standard across the energy sector.
Liveability and social wellbeing	• Social license is strong for new generation, storage and transmission infrastructure and new technology development. • Community benefits from the energy sector are significant, transparently communicated, and range from co-ownership to employment opportunities.

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Chapter 4: Mining and minerals processing

Summary

Mount Isa has the expertise, infrastructure and capabilities to continue its legacy as a mining pioneer, this time focused on establishing a critical minerals mining and processing industry to support the global transition to net zero emissions. Mount Isa City Council is committed to this ambitious future and now needs the support of the Queensland and Australian governments to overcome barriers and accelerate the development of this new generation of Australian mining.

- Global trends shaping the mining sector include a growing demand for the critical minerals and other materials that enable decarbonisation; pressure to improve ESG performance; and rising geopolitical tensions that impact global supply chains.
- Australia has a strategic opportunity to supply the critical minerals and materials the world needs to decarbonise. National ambitions to build a globally competitive, net zero economy rely on mining towns like Mount Isa decarbonising quickly and effectively.
- Mount Isa is well positioned to continue its role as a leading provider of mineral exports owing to its strong mining legacy, skilled workforce, industrial capacity and proximity to rich mineral resources. However, substantial new investment is needed to deliver the different infrastructure, skills and processes involved in mining and processing new critical minerals.
- Securing sulphuric acid supply will be critical to growth in mining and minerals processing, battery development and fertiliser production. Mount Isa City Council is pursuing local solutions through new technology collaborations.
- Adopting future ready commitments to decarbonisation, environmental impact reduction, circular design and community benefit will improve Mount Isa's ability to attract investment and access global markets, despite ongoing political uncertainty.
- Mount Isa can build on its reputation for innovation and add value to its mineral resources by fostering new research partnerships and opportunities for advanced and green minerals processing.
- Industry collaboration is on the rise as a strategy to mitigate risk. There is appetite for greater coordination of common user infrastructure, services and transport in Mount Isa.
- Now is the time to invest in Mount Isa to ensure that the city retains its established workforce, infrastructure and supply chains.

Mining and minerals processing context

Global context

The net zero transition is increasing demand for mineral resources. Global demand for critical minerals has doubled to $320 billion over the past five years, driven by the growth of clean energy technologies and electric vehicles.[1] Over the coming decades, it will be necessary to secure a reliable supply of critical minerals to support a future energy system that is reliable, equitable, affordable and decarbonised; while meeting ESG standards across mining, processing and manufacturing supply chains.[2] There is a significant opportunity for Australia, and the North West Minerals Province (NWMP) in particular, to contribute to meeting this demand.

The resources that will be in high demand are outlined below (see *In Focus: Critical Minerals and Strategic Materials*). While there is consensus that demand will grow, modelling varies greatly.[1] The International Energy Agency predicts that global demand for cobalt, nickel, and rare earth elements in 2040 will be 21, 19, and 7 times higher respectively compared to 2020.[3] World Bank predictions are an order of magnitude lower.[4]

The development of critical minerals and strategic materials globally face challenges of long lead times between exploration and production, financial barriers including high and uncertain capital expenditures for mining projects, commercial risks of scaling and deploying innovations, and regulatory systems that are not yet fit for purpose.[5] In addition, mining value chains are often more complex for critical minerals and rare earth elements than for other mined materials. Significant investments of time, expertise and resources are required globally to bring the industry to maturity.[6]

High levels of risk and uncertainty will shape emerging opportunities

The mining and minerals sector is shaped by an increasingly complex and interrelated set of risk factors, including:

- Environmental, social and governance (ESG) performance, including modern slavery risks, environmental impacts, and adherence to local regulatory requirements,
- transparency and trust with stakeholders, regulators and the broader community,
- brand value,
- controlling costs, and
- the impacts of climate change.[7]

Climate impacts and supply chain disruptions caused by COVID-19 and recent geopolitical conflicts are also shifting the global trade landscape.[1] For example, China currently produces over 80 per cent of the rare earth elements used to make magnets in electric motors and wind turbines.[8] To diversify this supply chain, national governments are reinvesting in sovereign capabilities and establishing supply chains with political allies and economic partners with similar commitments to climate action, environmental standards and workers' rights.[9] Key traits identified to mitigate trade risks in 2025 include innovation, collaboration, partnerships, agility, and thinking beyond yield to invest capital for long-term value.[7]

In focus: Critical Minerals and Strategic Materials

Critical minerals are those materials needed for key modern technologies and national defence with supply chains that are vulnerable to disruption.[10] Each country defines critical minerals differently.[11]

The Australian Government has identified 31 official critical minerals, including:[8]

High Purity Alumina (HPA)	Magnesium	Silicon
Antimony	Manganese	Tantalum
Arsenic	Molybdenum	Titanium
Beryllium	Niobium	Tungsten
Chromium	Nickel	Vanadium
Cobalt	Platinum group-elements	
Fluorine	Rare-earth elements	
Gallium	Rhenium	
Graphite	Scandium	
Lithium	Selenium	

Australia's Strategic Materials List includes minerals that are important for the renewable energy transition, but whose supply chains are less vulnerable than those on the critical minerals list:

Aluminium (Bauxite)	Tin
Copper (classified as critical in Queensland)	Zinc
Phosphorus	

Most states in Australia and the Northern Territory have developed their own critical mineral strategy and list.

Rare Earth Elements (REE) are needed in very small quantities for modern technologies, and are generally found in such low concentrations that environmental and economic costs of mining and processing (involving large amounts of energy chemicals and water) means they are rarely economically viable and so often not extracted.[12] There are 17 REEs.

Critical minerals and rare earth elements are used to manufacture key technologies that enable the transition to net zero emissions, including:

- electric vehicles,
- batteries,
- permanent magnets,
- wind turbines,
- solar photovoltaics,
- hydrogen electrolysers.

They are also used in technologies with important applications across a range of sectors, including defence, space, energy, transport, agritech, medicine, computing, telecommunications.

Critical mineral development benefits for society

The clean energy transition presents an opportunity to address challenges within critical mineral value chains, improve mining practices, and support progress towards justice and prosperity.[13] The United Nations' Panel on Critical Energy Transition Minerals establishes Guiding Principles for the development of critical mineral value chains:[13]

Principle 1	Human rights must be at the core of all mineral value chains.
Principle 2	The integrity of the planet, its environment and biodiversity must be safeguarded.
Principle 3	Justice and equity must underpin mineral value chains.
Principle 4	Development must be fostered through benefit sharing, value addition, and economic diversification.
Principle 5	Investments, finance and trade must be responsible and fair
Principle 6	Transparency, accountability and anti-corruption measures are necessary to ensure good governance.
Principle 7	Multilateral and international cooperation must underpin global action and promote peace and security.

Growing expectations of ESG performance create risks and opportunities

The rush to extract critical minerals is occurring in the context of the inter-related crises of a changing climate, biodiversity loss, and rising expectations of the global mining sector's ESG performance.[14] The mining sector is experiencing increased expectations and scrutiny from shareholders, with EY's mining and metals business risk and opportunity analysis highlighting ESG performance as the top priority in 2023 and 2024.[7] Access to capital is predicted to be the top consideration in 2025 due to challenging macroeconomic circumstances, with environmental stewardship efforts and nature positive obligations a second priority.[7]

Many of the world's largest mining companies have committed to net zero emissions by 2050 or sooner across their operations (see Table 5), and are publicly disclosing their ESG performance.[3] Over recent years, key global mining companies have shown improving trends on worker safety, gender equity and community investment, although more action is required to convert targets into measurable outcomes for greenhouse gas emissions, water withdrawals, and waste generation.[3]

Improving ESG performance will become increasingly urgent as it progressively impacts reputational and supply chain risks, investment and the cost of capital, and the ability to access ESG focused markets and benefit from emerging green premiums.[3] For example:

- Pressure from the finance sector to understand emerging opportunities and risks has driven the uptake of internationally comparable reporting through the Task Force on Climate-related Financial Disclosures (TCFD) and International Sustainability Standards Board (ISSB).[15]
- Industry will face growing pressure to provide detailed, transparent and granular information to allow stakeholders to assess performance relative to their peers, measure progress over time, and accurately trace impacts through supply chains and product life cycles.[3]
- Over 500 organisations representing $17.7 trillion of assets under management have committed to disclosing material nature-related impacts, dependencies, risks and opportunities under the Taskforce on Nature-related Financial Disclosures (TNFD).[16]
- The Minerals Security Partnership between Australia, Japan, South Korea, and countries across North America and Europe emphasises a commitment to high ESG standards.[14]
- Most countries have established environmental standards for responsible mineral sourcing.[3]
- A failure to develop climate strategies that meet shareholder and market expectations can damage business credibility and investor confidence, even for large companies.[17]

Table 5: Mining company net zero emissions targets

Company	Profile	Decarbonisation commitments
Glencore	World's largest mining company by revenue 2024[18]	• Net zero emissions by 2050 • Interim targets for 2026, 2030 and 2035[19]
Rio Tinto	Australia's largest energy user	• Net zero emissions by 2050 across global operations • Interim target to reduce emissions by 50% by 2030 • Reducing Scope 3 emissions from steelmaking through supply chain collaborations and decarbonisation performance measures[20]
BHP	World's 3rd largest mining company by revenue in 2024[18]	• Net zero operational emissions by 2050 • Interim target to reduce operational emissions by 30% by 2030[21] • Announced need to spend US$4 billion by 2030 to meet commitments[22]
Sun Metals	2nd largest single site consumer of electricity in QLD in 2020[23]	• Committed to power entire operations with renewable energy by 2040 • Interim target of 80% by 2030[23] • Invested $200 million in solar at Townsville refinery, partnered with Acciona on MacIntyre Wind Precinct[23]
Fortescue Metals Group	4th largest iron ore producer in the world	• Net zero operational emissions by 2030 • Net zero Scope 3 emissions by 2040[24] • Committed to electrify vehicle fleet to avoid 630 million litres diesel annually • Investing US$6.2bn in renewable energy growth in Australia by 2030[25]

Coordinated supply chains are needed to meet demand at pace

For the net zero transition to progress at the pace and scale necessary to meet global targets while navigating volatile markets, materials supply chains must be intentionally developed.

Critical minerals supply is expected to fall short of global demand by 2030 due to underinvestment in mining and exploration, creating risks of missed net zero transition targets, increased price volatility, and negative social and environmental impacts.[2] The development of new minerals deposits are facing long lead times around the world.[2] Coordinated planning, innovation and public-private collaboration will be essential for fostering resilient global supply to meet demand.[26] Investment is needed to bring new mines into production in a timely manner, foster new techniques and technologies for mineral processing and extraction, and ensure mining meets ESG expectations relating to environmental impacts, human rights and good governance.

Australian context

Australia is poised to play a key role providing the critical minerals and strategic materials the world needs to decarbonise.

Australia has some of the world's largest recoverable resources of critical minerals including cobalt, lithium, manganese, rare earth elements, tungsten and vanadium,[27] and is among the top exporters globally of key minerals needed for the energy transition including copper and nickel.[28] The Australian Critical Minerals Strategy highlights[81] major critical minerals project in the pipeline as of December 2022, with an estimated value between $30 billion and $42 billion,[10] and 57 investment-ready critical minerals projects are showcased in the Australian Critical Minerals Prospectus.[29] Australia also has abundant renewable energy resources to power green minerals processing.

The Australian Government is calling the global shift to clean energy Australia's "biggest opportunity for growth and prosperity."[30] In the May 2024 Federal Budget, the Australian Government built on the previously announced $2 billion Critical Minerals Facility established in 2021, and committed:[31]

- $7.1 billion over 11 years to support refining and processing of critical minerals.
- A Critical Minerals Production Tax Incentive and a trade enhancement initiative.
- Continued funding for the Northern Australia Infrastructure Facility (NAIF).
- $225 million for Geoscience Australia's Exploring for the Future program.[32]
- National Mine Waste Assessment to support recovery of critical minerals from tailings.[32]

The Queensland Government's vision for the future follows similar themes.[33] Through the Queensland Resources Industry Development Plan (QRIDP) and other initiatives, the Queensland Government[ii] has committed:[31]

- $245 million of initiatives including rent reductions, common user processing facilities, geoscience research, and the Critical Minerals and Battery Technology Fund.
- $5 billion for CopperString 2032 to support the development of the NWMP.
- $75 million for a Queensland Resources Common User Facility in Townsville.

However, opportunities will be impacted by the global system level uncertainties and risks shaped by geopolitics and market forces as outlined above. It will be necessary to work at multiple levels to navigate these dynamics, guided by the strategic pursuit of opportunity and considered risk management.

Critical minerals: Mining, but not as we know it

"This kind of mining [of critical minerals] is very new and more complex than the type of mining Australia's been used to in the past. It is not economic in the same way and the government really doesn't understand this. For this to really get up, government has to come to the party and invest a lot more in the research, infrastructure and processes we need." - Mining industry representative and workshop participant

Some experts suggest significantly more investment is needed to reflect the scale of the opportunity and attract private capital.[28] This was echoed by stakeholders in Roadmap workshops, who highlighted that the level of maturity of critical minerals mining and processing is still in its very early stages, with a lot to be done to unlock the sector's potential and move from discovery to development.

Stakeholders highlighted that the development of critical minerals is going to look different to traditional approaches to mining in Australia, likely including:

- Smaller projects with smaller economic returns that may be uneconomic on their own.
- Complex ore bodies requiring novel and complex extraction processes, which is currently contributing to high levels of uncertainty about reserve potential (see In Focus box, below).
- Greater risks due to new markets.
- New technologies and processing requirements, with significant gaps in project development capacity and technology.
- Investment uncertainty, with new projects often perceived as too risky by markets and investors and so failing to attract the necessary capital to move from discovery to the pre-feasibility study (PFS) and definitive feasibility study (DFS) stages to determine whether a project is viable.
- Greater collaboration between companies, for example coordinating expertise on different minerals to extract maximum value present in a deposit (rather than one major commodity) to achieve economic viability for the project. This is likely to involve a combination of junior miners working partnership with major mining companies.

Stakeholders engaged in development of the Roadmap shared that it will be necessary to bring all of these different pieces together for the critical minerals industry to develop effectively, and markets will struggle to navigate these risks and uncertainties without support.

Stakeholders identified that different kinds of government support will be required for the critical minerals industry including:

- Significant patient capital, with a greater appetite for risk.
- Investment in common user infrastructure.
- Regulation that enables innovation.
- Investment that is timely and de-risks the complex and often long development process, including freeing up capital during early stages of project development.
- Support to build the maturity of the sector through developing new knowledge, skills, and workforce capacity.

[ii] A new Queensland Government was elected in October 2024. While a change in government may lead to a shift in some priorities, early indications show continued support for the development of critical minerals mining in the state.

Other regions across Australia and the world are grappling with the same challenges. This presents an opportunity for Mount Isa to lead in the development of the critical minerals industry in a similar fashion to the pioneering role Mount Isa played in the mining sector in the 1930s and again in the 1980s to 1990s,[34] if the right support is provided now.

In Focus: Updates required in real time to unlock critical minerals

Current investment frameworks and legislation are based on traditional styles of mining, and stakeholders during Roadmap workshops raised that updates are required to make them fit for purpose for the development of critical minerals and rare earths.

For example, the Australasian Joint Ore Reserves Committee (JORC) Code is the standard used by Australian metals and mining companies to classify and report on exploration results, mineral resources and ore reserves. This is used to inform investors (including potential investors) and is especially important for exploration companies who are yet to generate revenue, as their market value is largely determined by JORC-compliant declarations on the size, grade and quality of undeveloped discoveries.[35]

During Roadmap workshops, stakeholders highlighted that the Code was developed for traditional, large-scale mining, and is not suited for the complex, generally smaller scale mining that occurs with critical minerals. For example, the concept of 'Reasonable Prospects of Eventual Economic Extraction' can be difficult to apply to critical minerals where market dynamics and technology are rapidly evolving, leading to challenges accurately assessing the potential of these projects. The JORC Code is currently undergoing revision.

The European Union has developed new terminology to deal with this issue under The United Nations Framework Classification for Resources. This enables consistency in communicating the potential of projects that would traditionally be considered uneconomic, so investors can learn about projects with appropriate context.

Australia has strong foundations with leading mineral resources, stability, and reputation as a trusted trade partner

Australia consistently ranks among the most attractive regions in the world for mining investment,[36] owing to world leading mineral resources, a modern and experienced mining sector, robust ESG practices, a stable economy, low sovereign risk, and strong rule of law.[37] Globally recognised expertise within Geoscience Australia and state and territory geological surveys improve understanding of resource potential, which industry highlights as valuable for exploration.[36]

Australia is a trusted partner in global supply chains.[4] Australia's minerals are seen as critical to diversifying and de-risking supply chains by allies, as evidenced by the Quadrilateral Security Dialogue, the Australia-Japan Critical Minerals Partnership and the Climate, Critical Minerals and Clean Energy Transformation Compact with the United States.[38]

There is work to do to establish regulation that supports industry development, communities and conservation

Updates to regulation and approvals processes are required to enable accelerated growth of new mining opportunities while meeting standards for community consultation and protection of the environment and cultural heritage:

- Industry has highlighted key concerns of regulatory duplication and inconsistency, uncertainty about environmental and cultural heritage regulations and inconsistent enforcement.[36, 1]
- The Australian Conservation Foundation advocates for a balance between development and protection, including a 'fast no' process for proposals with unacceptable impacts on threatened species and First Nations culture and heritage[39] and for 'fixing' the EPBC Act (1999).[40]
- Engagement fatigue is affecting Australian communities experiencing mining and energy developments, which can lead to cynicism and reduced participation.[41]
- Recent strategies such as the Queensland Critical Minerals Strategy are beginning to address concerns, with bioregional planning to protect key biodiversity areas and provide certainty on no go areas, and attempts to streamline approvals.[42]
- An outcomes-based approach may enable greater flexibility (see In Focus box, below).

Clear policy settings and support is required to encourage future ready outcomes:

- Canada is driving fleet electrification through air quality standards, a 30% capital tax write-off for electric equipment, and grants to fund early adoption. In contrast, Australia maintains a diesel tax credit that is expected to cost $37 billion from 2024-2030.[43]
- Chile imposes a diesel tax on mines ($0.12 per litre). BHP has committed to significant electrification of its Chilean fleet before 2030, but delayed for 2030-2040 in Australia.[43]
- European mining is subject to the European Union's ambitious climate targets and focuses on resource efficiency and circularity.[44]
- Canada and Europe have established a universal price on carbon, while Australia's Safeguard Mechanism only covers 219 facilities, excluding many mines.[43]
- The United States is leading in technology development, with significant investment in innovation, automation and AI based solutions to improve efficiency and safety.[45]
- Australian standards for diesel particulates are 6 times higher than Safe Work Australia's safe levels for underground miners, and ventilation regulations often do not differentiate between diesel and electric equipment, meaning benefits can't be captured to encourage investment.[43]

In Focus: Getting regulation right on mine rehabilitation will require a focus on responsibility, adequate resourcing, and a little creativity

There is little public data about the closure and rehabilitation of mines, however studies suggest that there are over 50,000 abandoned mines across Australia where responsibility for rehabilitation cannot be connected with entities responsible for the original mining activities.[46, 47]

Mine abandonment has left state governments with millions of dollars in cleanups, in addition to costs left to communities through a degraded environment and ongoing environmental risks.[47] In addition to regulations not effectively holding industry to account, regulators are generally not resourced sufficiently to undertake enforcement and compliance.[48] Only 4% of inactive mine sites were classified as rehabilitated in 2020,[49] growing concerns that the extended use of 'care and maintenance' is being used to avoid mine closure responsibilities.[46] Limited examples of successful mine relinquishment is growing demand for solutions for mine closures that optimise social, environmental and economic outcomes.[50]

The development of technology to reprocess tailings dams presents an opportunity to mitigate legacy risks. The Mount Morgan gold mine represents an ongoing cost to the Queensland Government[51] for efforts to contain highly acidic waters contaminated with high levels of heavy metals and sulphates that have leached into the adjacent Dee River for over 100 years.[52] The Queensland Government and Northern Australia Infrastructure Facility have announced funding to support revival of the abandoned Mount Morgan mine, with Carbine Resources taking on the rehabilitation of the site while processing tailings to recover gold and copper, and removing acid-forming pyrite from tailings.[53,54]

In Mount Isa, there is strong interest to repurpose no longer productive mine sites for gravity energy storage systems (GESS), which present an innovative use of legacy mine sites that will benefit local community and industry by providing a reliable energy storage solution. Updates to mine rehabilitation regulations are required to facilitate creative mine closure projects.

Beneficial uses of legacy mine sites can be identified through careful consideration of specific risks and regional needs. Source: Mark Higgins (Mary Kathleen tailings dam).

Australia and Queensland need Mount Isa to succeed

Mount Isa plays strategic roles to support the economic activity and development aspirations of Queensland and Australia. Investing in Mount Isa now to ensure that it is vibrant, affordable and liveable into the future will retain the established workforce, infrastructure and supply chains to service national and state ambitions. Attracting investment in the NWMP and Northern Australia more broadly will become increasingly difficult if Mount Isa's economy is in decline, and reversing the cycle of decline down the track as new industries emerge will be a much more difficult task.

Significant government support in the form of funding to develop common-user infrastructure and progress projects beyond the exploration phase, efficient and timely approvals processes, and new, fit-for-purpose regulatory frameworks are crucial to support Mount Isa to:

Fulfil the promise of the clean energy transition: Mount Isa is the gateway to the NWMP, one of Australia's richest mining regions.[55, 56] A plethora of state and federal planning initiatives highlight the NWMP and critical minerals sector as strategically important to national decarbonisation and key growth areas. Mount Isa is the regional service centre for the NWMP, providing access to administrative, health, commercial and industrial services.[57] The services, infrastructure and supply chains based in Mount Isa will be critical to developing the resources of the NWMP and delivering state, federal and global clean energy ambitions.

Maintain economic activity: Mount Isa plays a central role in one of the most strategically important integrated regional industrial ecosystems in the country. The Mount Isa to Townsville Economic Zone (MITEZ) connects the minerals mining, processing and industrial manufacturing ecosystem of the NWMP with the export facilities of the Port of Townsville, and contributes significantly to Queensland and Australia's economies by generating over $16 billion in exports and services annually.[58] The economic activity in Mount Isa and Townsville are linked through this economic zone, with 15 per cent of Townville's economy and over 8,000 jobs directly related to the resources of the NWMP,[55] and the facilities in Townsville unlocking access to global supply chains for Mount Isa's production.

Secure sulphuric acid supply for the future of mining, agriculture and manufacturing: Mount Isa produces 47% of Queensland's sulphuric acid supply using waste gas from Glencore's Mount Isa Mines Copper Smelter.[59] Sulphuric acid is crucial for mineral processing, battery development, and fertiliser production. Demand for sulphuric acid is expected to at least double in the near future to 2.86Mt annually (or as high as 5.23Mt if all speculative projects are developed)[59] as new critical minerals mining and battery electrolyte projects come online across Queensland.[59] However, Glencore's intentions to close their copper smelter in 2030 will see production almost halve as demand surges. Significant sulphuric acid supply shortfalls are predicted in Queensland by 2035,[59] which will impact the viability of mining projects and threaten fertiliser production.[59] In 2024, Mount Isa City Council signed a Memorandum of Understanding with Cobalt Blue to develop an innovative process to produce acid to meet local demand (See Pathway 3).

Mount Isa context

Mount Isa has a strong mining legacy, industrial capacity, and a skilled workforce with a history of innovation. Combined with its strategic location at the gateway to the NWMP and growing global demand for the minerals found there, Mount Isa is positioned to continue to play a leading role in the mining and minerals processing sector.

The NWMP has an estimated $680 billion known in-ground resources, including over $500 billion of energy transition minerals.[55, 56] Across North West Queensland more broadly, mining contributes $9.5 billion of gross output and $8.9 billion of exports.[60]

Current mining activities in Mount Isa are focused on production of copper, zinc and lead, which are used widely across electronics, construction, alloy production, industrial machinery, batteries and transportation.

Mount Isa Mines, owned by Glencore, has produced crude lead bullion for over 90 years, and the Mount Isa Lead Smelter is one of few advanced minerals processing facilities remaining in Australia.[61] Glencore's copper operations and Lady Loretta zinc mine supplied enough copper to build more than 39 million houses and enough zinc to manufacture more than 535 million cars over 60 years of operation.[62]

Phosphate mining is also significant in the region. Incitec Pivot Limited's Phosphate Hill plant has operated for 25 years with capacity to produce over one million tonnes of ammonium phosphate fertiliser per year.[63]

Also of note, North West Phosphate is the largest phosphate resource holding in Australia. The company has recently commenced operations at its Paradise South site and plans to supply its primary customer in Queensland with 40,000 tonnes of phosphate rock in early 2025.

In Focus: Decarbonisation imperative under the Safeguard Mechanism

The Safeguard Mechanism requires facilities that emit more than 100,000 tonnes of carbon dioxide equivalent annually to report on emissions and energy data, manage excess emissions, and reduce emissions over time. The Safeguard Mechanism establishes decarbonisation as a key consideration for larger mines in the region as they scale operations. Mount Isa Mines and Incitec Pivot Limited reported under the Safeguard Mechanism in 2022-23.[64]

Future mining opportunities in the Mount Isa region include:

Copper	The Mount Isa Project by Mount Isa Minerals includes several exploration permits covering large areas with significant copper mineralisation.[65] Copper is needed for electrical wiring, electronics, renewable energy, industrial machinery and transport.
Cobalt	The Mount Isa region hosts many known deposits, in addition to significant stores in copper and nickel mine tailings. Cobalt is needed for cathodes in Lithium-ion batteries and is considered particularly scarce.[4]
Rare Earth Elements (REEs)	The Mount Isa region contains mineral occurrences enriched in REEs, and work is underway to identify major deposits in the region.[66] REEs are needed for electronics and powerful magnets in wind turbines and electric motors.
Graphite	High grade graphite deposits have been found at Burke and Corella, representing a combined inventory of 4.42 Mt.[67] Graphite is used for batteries, including lithium-ion.
Zinc, lead and silver	The Queensland Critical Minerals Map highlights significant commodities to the north of Mount Isa.[68]
Secondary prospectivity	The Queensland Critical Minerals strategy identifies Mount Isa as a high potential area for critical mineral development based on the reprocessing of mine waste.[42]
Vanadium	Deposits have been identified around Julia Creek, 260km east of Mount Isa.[68]

Significant assessment and exploration of mineral potential has been conducted around Mount Isa and the NWMP over the years, and there are hundreds of prospective projects at various stages of development.[69] The Queensland Critical Minerals Strategy, published in 2023 by the Queensland Government, provides a map of resources, projects (including mineral mines, refineries and smelters), export ports and freight infrastructure for the State.

However, many junior mining companies are failing to make the transition from exploration to production across North Queensland, due to challenges including difficulty attracting investment during early high risk phases, and lengthy approval timeframes.[70] Access to energy, water, rail, and other common user infrastructure also often limits the viability of new projects (see Pathway 3). Numerous failures of junior mining companies in recent years have left local businesses and Councils with unpaid debt and wondering why their resource rich communities aren't prospering.[70]

Mount Isa Future Ready Economy Roadmap

Why mining and minerals processing matters in Mount Isa

The mining and minerals processing sector has been foundational to Mount Isa since its establishment and remains Mount Isa's greatest future opportunity for economic development and diversification.

Mount Isa has an opportunity to build on existing mining capabilities with research, innovation and by adopting leading practices in green minerals processing. These strategies can foster opportunities to retain jobs in the short term and position the city to play a key role in the net zero transition globally.

Achieving this vision presents several challenges for Mount Isa, which will require decision-making and investment that fosters the long-term growth of the sector while enhancing the viability of the city as a whole.

This means:

- Ensuring a diversified and resilient mining sector.
- Supporting local employment in new industries wherever possible to retain families in the region and strengthen local services, vibrancy and liveability.
- Learning from previous boom and bust resource cycles to capture long term benefits and investment.
- Managing land use and clearly communicating the trade-offs and limitations shaping planning decisions.
- Finding ways to avoid and minimise the impacts of mining and minerals processing activities on land, water and biodiversity.

Mount Isa can build a distinctive culture of excellence to attract new proponents and investors for the next generation of future ready mining. Source: The Next Economy.

Mining and minerals processing pathways, strategies and actions

A future ready mining and minerals processing sector grows the liveability and vibrancy of Mount Isa through quality local jobs, regional benefit sharing, and a globally recognised brand for leading environmental practice powered by renewable energy.

Diverse proponents leverage industry-research partnerships, and Mount Isa leads the world in developing the processes and innovation required to sustainably mine and process minerals and materials needed for the energy transition.

Key pathways for a future ready mining and minerals processing sector

To achieve future readiness for Mount Isa's mining and minerals processing sector, four key pathways have been identified:

1. Use the development of the mining and minerals processing sector to strengthen Mount Isa
2. Improve coordination, collaboration and regulation to advance regional industry priorities
3. Foster the development of minerals mining and processing
4. Attract investment for mining and minerals processing

Each pathway contains **strategies** and **potential actions** as outlined in this chapter. A table summary of strategies and all potential actions for the mining and minerals processing sector is presented in the **Appendix.**

The pathways, strategies and potential actions are a synthesis of information identified through desktop research, consultant analysis and stakeholder engagement activities undertaken by The Next Economy, Climate-KIC and Mount Isa City Council. Further stakeholder engagement is proposed to review, prioritise and further develop strategies and potential actions.

Consistent application of the **Future Ready Economy Framework Principles** detailed in Chapter 1 to development undertaken in the energy sector will unlock additional benefits for the region.

Pathway 1: Use the development of the mining and minerals processing sector to strengthen Mount Isa

The next wave of development in the mining sector represents an opportunity to set expectations for how future development in the sector should be done across the region, articulated through a set of local principles to guide new development (see Chapter 2).

Mining stakeholders expressed strong support for establishing clear community expectations of the sector during Roadmap workshops, noting ongoing dialogue between industry and government to ascertain what can be realistically achieved.

Three strategies have been identified for Pathway 1: Use the development in the mining and minerals processing sector to strengthen Mount Isa.

Strategy 1: Stimulate benefit sharing and revenue retention in the region

The development of new mining and minerals processing industries represents an opportunity to further improve local practices of community consultation, participation in decision making and benefit sharing. This means improving how industry players can establish partnerships with the region that facilitate more meaningful community participation in decision making about the impacts and benefits of mining to leave a strong positive legacy.[iv]

Potential **actions** to improve the community outcomes of the next wave of development include:

- Establish local principles to set expectations for new development in the region.
- Build and resource community capacity (encompassing knowledge, leadership and agency) to participate meaningfully in planning and the negotiation of beneficial outcomes from new projects, including negotiation processes between Native Title holders and prospective mining developers.
- Leverage the significant tax and royalty income that will be generated by new mining projects for the Australian and Queensland Governments to achieve greater investment back into regions generating the revenue.
- Establish policy, regulatory and financial settings that allow benefit sharing to be more creative and innovative.

[iv] An example of a new approach in another context is the New South Wales Access Scheme.

Strategy 2: Maximise local opportunities for employment and training

Ensuring that local workers benefit from new mining and minerals processing development maximises the future liveability of Mount Isa, which in turn attracts more development. Planned research facilities (see Pathway 3) also present the opportunity to make Mount Isa once again a hub for industry learning and innovation and attract expertise from around the world.

Potential **actions** include:

- Prioritise employment of residents in new mining and minerals processing operations.
- Ensure new roles are safe, secure, well paid, and covered by strong labour standards. For example, in issue raised during Roadmap workshops is that current shift structures impact on worker ability to commit to sports coaching.
- Establish incentives for development and training to lead to local employment and residency.
- Integrate future workforce requirements into existing workforce initiatives and sector training plans.
- Support growth of SMEs to provide products and services to the critical minerals sector, which also benefits the sector through short supply chains less susceptible to international disruption.
- Leverage planned research facilities to raise the profile of Mount Isa for training and development.

Strategy 3: Proactively seek desired environmental outcomes from the sector

The valuable economic and material contributions of mining and minerals processing typically come with costs to vegetation, biodiversity, air and water quality and aquatic health, in addition to their emissions footprint, exacerbating climate change.[71] Establishing expectations for environmental controls and rehabilitation efforts as upfront development conditions can help to prevent long lasting impacts on local environmental quality.

Potential **actions** include:

- Ensure that environmental protection is consistently legislated and resourced to perform enforcement functions.
- Consider and mitigate the cumulative environmental impacts of all proposed projects together through a coordinated regional approach.
- Ensure infrastructure and operations are able to withstand predicted conditions under a changing climate (see In Focus: Preparing for a changing climate, below)
- Establish clear, outcome based criteria for mine rehabilitation, including mine waste, at end of mine life with ongoing funding for monitoring and maintenance. There is also strong interest in the region to demonstrate innovative beneficial uses through mine closure, such as renewable energy generation and storage. During Roadmap workshops stakeholders noted that state legislation currently impedes investigating and investing in old sites through obligations to leave the site close to the pre-mining state under the Environmental Protection Act.

In Focus: Preparing for a changing climate

Climate change is already impacting communities, ecosystems and industries across Australia. To ensure mining operations are resilient in the future, new infrastructure developments and upgrades need to be designed to withstand predicted conditions. In Mount Isa, key factors to consider include:

Flooding

The failure of tailings dams has had catastrophic impacts around the world, including in Australia, which can be driven by environmental conditions such as heavy rainfall.[v, 72, 73] With predicted future conditions of more intense rainfall, tailings dams and other waste facilities should be designed and maintained to function effectively during future predicted rainfall patterns.

Drought

Increased rainfall variability is also likely to see periods of drought. Minimising water use in operations and developing plans for periods of reduced water availability will improve climate resilience of future mining and minerals processing and the ability of other water users to meet their needs.

Hot days and fire

The design of infrastructure and operations should incorporate facilities and safety protocols to accommodate longer periods of hot days. During Roadmap workshops, mining stakeholders also expressed interest in working with First Nations groups on sustainable land management practices and cultural burning approaches to reduce fire risk and improve site access.

Pathway 2: Improve coordination, collaboration and regulation to advance regional industry priorities

"The variety of mining and mineral opportunities present in Mount Isa is a potential advantage if new ways can be found to combine the strengths of multiple projects to be greater than the sum of its parts." – Mining workshop participant

Collaboration, innovation and agility are increasing across the sector to address challenges, navigate uncertainty and embrace new opportunities.[7] Locally, industry stakeholders highlighted during Roadmap workshops that the high cost of doing business, challenges in attracting and retaining a skilled workforce, and investment shortfalls are impacting development opportunities, and expressed a strong appetite for increased collaboration to address common challenges. This will strengthen the regional industrial ecosystem, improving both the broad investment appeal of Mount Isa and the viability of specific local mining and minerals processing operations.

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[v] For example, the spill of untreated mine water from Lady Annie Copper Mine in 2009 during widespread flooding impacted river systems and grazing land.[72, 73]

Two strategies have been identified for Pathway 2: Improve coordination, collaboration and regulation to advance regional industry priorities.

Strategy 1: Establish a body for future ready coordination and decision making

During Roadmap workshops, local industry stakeholders expressed a desire for a coordination body to bring industry stakeholders together to determine and champion local priorities.

Structures to support ongoing industry collaboration were seen as important to addressing the sector's global and local challenges and establishing long term direction that cuts through political cycles. It was suggested that the body could consist of a broad range of stakeholders including Mount Isa City Council, industry, regional and resource associations, and state government.

Strategy 2: Develop and advocate for priorities for common user infrastructure, collaboration and future readiness

The principal purpose of a collaborative body could be to develop and advocate for regional priorities based on shared needs, and coordinate activities to advance the future readiness of the sector.

Priorities for potential **actions** led by the body include:

- Facilitate access to common-user infrastructure: Industry stakeholders highlighted key bottlenecks and limitations in transport infrastructure, resource processing including smelting and leaching capacity, and access to water, power, transport and telecommunications infrastructure.
    - o Coordinating efforts for efficient and streamlined access to common user infrastructure would result in cost savings for industry and government while enhancing the viability of new mining projects. It also provides the opportunity to attract investment in new future ready facilities that could serve the entire regional industrial ecosystem.
    - o For example, the Queensland Government has committed $75 million to build a state owned common user facility in Townsville to trial production processes for vanadium and other critical minerals.[74]
    - o A new common user smelter in Mount Isa could align with federal priorities such as securing copper and acid production and decarbonising minerals processing for example through hydrogen smelting.
- Improve transport of goods and products: More affordable access to freight and loading facilities were identified as a priority.
- Strategic collaboration on workforce planning: Collaboration includes strategic joint recruitment efforts to attract skilled workforce to Mount Isa and pooled resourcing through job portals. These actions are seen as a way to manage and retain a local workforce between peaks and lulls affecting related industries and companies.
- Advocate for regulation and approvals processes that are fit for purpose: These were raised as barriers for investment and development in the mining sector. Suggestions identified during the consultation process included measures to ensure that:
    - o Mining and minerals processing regulation is consistent across all levels of government and streamlined with parallel processes where different departments are involved.
    - o Regulatory departments are resourced appropriately to minimise wait times.
    - o Clear upfront document and information requests to avoid delays from repeat requests.
    - o "Fast no" decision making for projects with unacceptable impacts on biodiversity and First Nations culture and heritage.
    - o Regulation is enabling of future ready opportunities. For example: an outcome based approach or a competitive tax regime for expenditure on research and development to encourage new and creative approaches in the mining and minerals sector to long term issues such as tailings reprocessing.

Regional coordination to implement priorities for a future ready mining and minerals processing sector will also lead to efficiencies and cost savings across the industry.

This includes potential **actions** on:

- Decarbonisation priorities: For example the transition to electric, hydrogen or biofuel vehicles. Many larger companies in the region have already developed net zero targets and decarbonisation strategies (see Global context), although resources can be limiting for juniors and mid tier mining companies.
- Circular design in tailings management and reprocessing: Incorporating circular principles into business strategy can make mining operations more resilient through creating new forms of value, reducing liability associated with tailings management, and offsetting rising costs as ore grades decline.[75]
- Industry engagement in research and innovation: To promote rapid uptake of best practice.

Industry stakeholders in Mount Isa discussed the value of coordinating access to common-user infrastructure, such as a copper smelter and transport facilities. Source: Dziurek.

Pathway 3: Foster the development of minerals mining and processing

Over the last two years, the Australian government and all state and territory governments have developed critical minerals strategies, vying to establish positions at the centre of this new wave of extraction which is highly competitive and developing at speed globally.

Six strategies have been identified for Pathway 3: Foster the development of minerals mining and processing.

Strategy 1: Support the development of new, future ready mining projects

"The discovery of mineral deposits is relatively cheap, but getting to FID [Final Investment Decision] and doing prefeasibility work is so much more expensive… there's a huge capability and investment gap and it takes a long time. We need to be honest about that." – Mining industry representative

With Glencore's announced closures, it will be necessary to build up the pipeline of new mining activity to maintain the critical mass needed to sustain the local mining sector and build business and community confidence in the future of the region. This will include development of new types of critical and strategic mineral deposits in the medium to long term. In the short term, developing new copper deposits will be necessary to keep the Mount Isa copper smelter open until at least 2030. This is critical to maintain activity and jobs in the region while new critical minerals and processing industries emerge and scale up, maintain acid and fertiliser production, and enable new copper mines in the region to enter production.

Supporting junior miners to transition from exploration to production will be key to securing Mount Isa's pipeline of new projects, and diversifying companies in the sector.

"We need to work out how investing in multiple projects and proponents could generate value at a regional level, and so what is needed at a regional level. The challenge is that they [lots of smaller projects] won't be self-sustaining on their own compared to the bigger traditional projects, but if there is collaboration and shared infrastructure in place, it could work.

But we also need new methodologies in place to support that collaboration, and for shared investment models, because the status quo doesn't support that." - Mining industry representative

Potential **actions** to support the development of new mining projects include:

- Investigate potential of local or state government funded upgrades to energy, water, transport and telecommunications infrastructure to incentivise mining development.
- Secure patient capital to support promising proposals to progress quickly by co-funding feasibility, scoping, sampling and early works (see Pathway 4 for a range of actions on attracting investment).
- Provide accessible capability and support for prefeasibility work through TACMIP to support new projects reach a FID.

Investing in copper mining in Mount Isa is critical to maintaining jobs and economic activity in the region while the next generation of projects come online. Source: G Whitton.

- Undertake region wide pre-competitive heritage studies and environmental assessments to identify and communicate no go zones for new development, support 'fast no' decisions, and support and fast track appropriate new resource projects.
- Develop new models to support junior minors through collaboration, shared infrastructure and shared investment.
- Advocate for clear and accessible approvals pathways that progress promising proposals quickly from concept to development, allow for earlier investor confidence, and minimise capital burden during early phases.
- Advocate for schemes to support near mine and brownfields exploration in the North West region.

Strategy 2: Accelerate development of The Australian Critical Minerals Industrial Precinct (TACMIP)

Mount Isa City Council is leading development of The Australian Critical Minerals Industrial Precinct (TACMIP), an industrial precinct that will host a number of priority future ready projects.

The precinct will play a key role in facilitating coordination and collaboration between the mining sector, key stakeholders in government and research institutions.

TACMIP is expected to facilitate localised processing and logistics support according to the industry priorities identified through Pathway 2 above. The Precinct will also serve as focal point to attract investment and support from state and federal governments. The land use agreement for the precinct is currently being finalised with Glencore, with development of this site anticipated for 2025. Priority mining and minerals processing projects that have been identified by Mount Isa City Council to be hosted at TACMIP are described below.

Priority Project: Critical Minerals and Rare Earths Elements Research Centre

Mount Isa has been identified as a strategic location for the development of a collaborative research centre with The University of Queensland's Sustainable Minerals Institute (SMI) based on its proximity to nationally significant critical mineral deposits.[76] The Centre will undertake research and training that accelerates development of Australia's critical minerals deposits, with an initial focus on rare earth elements, cobalt and indium. The first phase of development will focus on laboratory research facilities with technical processing equipment and infrastructure for mineral flotation, leaching and basic characterisation equipment. Work is currently underway on the Stage 2 Business Plan. Investment of $400,000 needed for initial commencement studies.

The proposed collaborative model will see the Centre benefit from SMI's technical expertise, and will provide new opportunities to train local workers. The Centre will include training facilities for 30-50 people, with pathways into local employment opportunities. The Centre could also be used to drive innovation in the region, particularly in areas that would support greater levels of future readiness for the industry such as new ways to support decarbonisation and circular economy systems. Mount Isa City Council will invite companies involved in the mining of critical and strategic minerals and rare earth elements in the region to use available land at the TACMIP for product research and development, fostering research collaborations with direct industry application. During Roadmap workshops there was strong support for the Centre, and animated discussions about the potential for Mount Isa to once again lead the world in mining expertise.

Mount Isa is the gateway to the North West Minerals Province, which has nationally significant reserves of critical minerals and strategic materials, including copper. Source: Budd Photography.

Strategy 3: Secure production of acid

Sulphuric acid is critical to mining activities in the NWMP and beyond. With the announced closure of the copper smelter in 2030, new sources of acid production are required to support the growth of critical and strategic minerals mining and processing in Mount Isa as well as fertiliser production and battery development.

Potential **actions** include:

- Progress partnership with Cobalt Blue for acid production from pyrite in mine tailings.
- Engage industry stakeholders to connect production with demand.
- Advocate for government funding for pilot and scale up, based on state and national needs.

Priority Project: Acid production from pyrite in mine tailings

Mount Isa City Council signed a Memorandum of Understanding with Cobalt Blue in December 2024 to develop local solutions to the predicted sulphuric acid shortage.[77] The partnership will see Cobalt Blue advise Council on the requirements, challenges and barriers to establishing operations to re-process pyrite tailings in the region to produce sulfuric acid.[78]

This advice will be based on Cobalt Blue's patented ReMine+ minerals processing technology, which can produce either elemental sulphur or sulphuric acid in addition to metals (including gold, cobalt, nickel and copper) from pyrite deposits, without toxic emissions.[79]

This technology has been demonstrated at their Broken Hill facility in New South Wales, producing around 10 tonnes of elemental sulphur over the last 5 years.[80] Council intends to build a pilot-scale plant at TACMIP to evaluate technologies, feedstocks and outputs and progress proof of concept.

This partnership will see significant benefits for Mount Isa in addition to acid production, including increasing the economic viability of the reprocessing of mine tailings waste, and reducing the capacity of tailings waste to generate acid mine drainage, reducing environmental risk and management costs.

Strategy 4: Establish a regional zone for the strategic development of critical and strategic minerals mining

Mount Isa's mineral, technology and infrastructure assets mean Mount Isa is ideally placed to become part of a series of critical minerals regional hubs across Australia.[69] Establishing a strategic regional zone will accelerate development of critical minerals resources by bringing together a coordinated focus on mineral access, key infrastructure, and specialist capabilities and experience in the region. This will improve efficiencies and attract investment throughout the critical minerals value chain.

Potential **actions** include:

- Understand and catalogue potential opportunities for the next phase of the Mount Isa minerals economy.
- Develop a coalition to pitch the opportunity and importance of designating Mount Isa as a strategic zone for the development of critical minerals to the Australian Government. For example, as a Strategic Critical Minerals Hub as per the national Critical Minerals Strategy.

Strategy 5: Support tailings mining

Tailings and waste management was ranked as the second most scrutinised ESG factor by investors for the mining and metals industry in 2024, after local community impact.[7] At the same time, the value of mining waste is gaining attention across government, academia and the mining industry, with an estimated US$ 3.4 trillion worth of precious, critical and strategic minerals accumulated in mining waste streams and tailings dams globally.[81]

Connecting these facts offer an opportunity to unlock new value streams while reducing risk and costs associated with managing mining waste, through reprocessing tailings dams to extract minerals that have previously been overlooked but attract higher value in today's markets. Opportunities are currently being explored through: research programs to understand how to best reprocess tailings dams; mapping of resources through Geoscience Australia's Critical Minerals Atlas; and the Queensland Government's $5 million investment to promote circular economy in mining through the re-commercialisation of abandoned mines including a pilot at the Mount Oxide mine.[82]

There is a strong opportunity to develop critical minerals from tailing dams in the Mount Isa region.[42] Existing tailings owned by Glencore from almost 100 years of mining by Mount Isa Mines contain valuable resources including pyrite, cadmium, tellurium and cobalt. Cobalt represents a significant opportunity for Mount Isa. It is estimated that at least 10 kt of cobalt is discarded into copper tailings every year in Queensland, worth $800 million at current market price.

The Democratic Republic of Congo currently leads global production of cobalt with 170 kt of production in 2030, however unregulated artisanal mining in this country has been associated with human rights abuses and child labour.[83] Australia is currently the fourth largest producer of cobalt globally producing 4.6 kt in 2023,[83] however reprocessing tailings to recover cobalt could make Queensland one of the world's major sources of this metal.

Potential actions to support the development of new mining projects could include:

- Use the Cobalt Blue pyrite pilot to test technical and economic viability.
- Elevate successful local and international case studies through local networks, and identify solutions to common barriers (see Pathway 2).
- Connect with active research programs to develop locally suited technologies and processes.

Strategy 6: Build regional capability for advanced and green minerals processing

Retaining and establishing new advanced minerals processing capabilities in Mount Isa creates the opportunity to generate greater mineral income in the region by moving up the value chain. Ensuring mineral processing facilities prioritise decarbonisation, energy efficiency and circularity creates further opportunity for value generation in emerging markets that are likely to pay price premiums for responsibly and sustainably produced commodities.[3]

Mount Isa aspires to build on its reputation for innovation by establishing a 'green minerals processing' commitment and brand focused on the adoption and development of innovative and leading practice, supported by the SMI Research Centre at TACMIP.

This includes transparent commitments and reporting aligned with international ESG frameworks and standards, which will build trust, evolve the sector's brand[7] and attract proponents and investors committed to high ESG standards and the future ready economy agenda.

Potential **actions** include:

- In collaboration with the Critical Minerals and Rare Earths Research Centre, establish research and demonstration projects for new techniques and technologies to support the implementation of innovation in the region. Key focus areas include decarbonisation, circular economy in mining and minerals processing, and new methods of extraction for critical minerals.
- Incorporate training facilities and opportunities to develop the skills of the local workforce, with pathways into local employment.
- Secure access to concentrating and smelting capabilities in the region, based on identified priorities (see Pathway 2). This could include undertaking a feasibility study for a green advanced minerals processing facility in Mount Isa or implementing strategies to prolong the lifespan of the existing smelter.
- Explore opportunities for advanced manufacturing and local value added products with a focus on green minerals, clean energy and the agricultural sector.
- Establish a theme or focus groups during the 2025 North West Mining Expo on producers and miners of critical mineral and rare earth elements in the NWMP.

Value add opportunities

Priority Project: Battery Anode Material (BAM) project

The Battery Anode Material facility being developed by Axon Graphite will shape and purify graphite flake from deposits and Burke and Corella, and ship purified graphite to international anode makers for use in the manufacturing of lithium-ion batteries and other battery energy solutions.[84]

Priority Project: Phosphate electrolyte project

North West Phosphate manages one of Australia's largest phosphate deposits and is exploring the potential to produce phosphate electrolyte to be used in phosphate batteries. This type of battery provides a slower rate of discharge and are suited to large applications such as trains and electric vehicles.[85]

Pathway 4: Attract investment for mining and minerals processing

In the past, the NWMP has attracted significant and targeted support packages—including $39 million over four years in the Queensland Government's 2017-18 budget to implement the Strategic Blueprint for *Queensland's North West Minerals Province*—to drive exploration, common-user infrastructure development, and small-scale projects during periods of challenging economic conditions.

In Mount Isa, exploration activity and investment in recent years has been curtailed by lower commodity prices.[60] Timely and strategic investment in the future of the region's significant critical mineral mining and processing potential is once again paramount to establish the next generation of miners in the region that will provide local jobs and secure supply for minerals processing operations.

Four strategies have been identified for Pathway 4: Attract investment for mining and minerals processing.

Strategy 1: Secure funding and investment from established Australian and Queensland government sources

There is a need to ensure that public commitments for critical minerals development reach the NWMP.

Potential **actions** to secure funding for the NWMP through announced sources include:

- Coordinated support for project proponents to apply for grants, concessional loans and other types of financial support from relevant funds, including the Northern Australia Infrastructure Facility and the Queensland Government's Critical Minerals and Battery Technology Fund.
- Funding and investment for innovation, commercialisation and research partnerships from relevant funds, including AusIndustry's R&D Tax Incentive and Industry Growth Program and Australia Economic Accelerator's Ignite (proof of concept) and Innovate (proof of scale) grants.

Strategy 2: Establish new sources of patient capital to increase conversion from exploration to production and support diversity of players in the sector

"The situation in Mount Isa is very complex... For this to really get up, government has to come to the party in a different way and invest a lot more." - Mining industry representative

Potential **actions** to secure funding for the NWMP through announced sources include:

- Invite potential funders and investors to visit Mount Isa to engage directly with key regional stakeholders to understand opportunities and challenges for investment.
- Invite the Queensland and Australian governments and Opposition to travel to Mount Isa to see first-hand the challenges and complexities faced by the industry and discuss what it will take to establish the industries outlined in state and federal strategies.
- Establish a Royalties for the North-West Region Fund, funded through a portion of mining royalties with a mandate to support expansion of the critical minerals sector in the region.

Strategy 3: Grow strategic relationships and elevate the profile and prioritisation of Mount Isa

In the global race to secure capital to expand the critical minerals sector, there is a need to ensure that potential investors recognise Mount Isa as a globally strategic location for such investment. This can be achieved through leveraging examples of Mount Isa's global leadership in the mining sector, the Future Ready Economy Roadmap, and the Queensland Critical Minerals Prospectus.

Potential **actions** include:

- Build collaboration and alignment with regional development agencies and industry associations advocating for the advancement of critical minerals development.
- Continue to advocate the value proposition of Mount Isa and North West Queensland with State and Federal Government and the Opposition.
- Use the Critical Minerals and Rare Earths Elements Research Centre to develop solutions to challenges the sector is facing globally, and attract expertise, attention and investment.
- Use TACMIP to foster partnerships between mining and minerals processing, innovation projects, renewable energy developers and the transport sector. Promote the capabilities of these unique partnerships nationally and internationally eg. potential for Flying Whales to deliver critical minerals directly to Asia.
- Build visibility of the North West Region with the Minerals Security Partnership Finance Network.
- Build relationships to connect mineral production with countries and businesses displaying high demand for these minerals to supply existing demand and future growth. For example, through approaching Austrade for contacts and assistance to bring international critical mineral buyers and manufacturers to Mount Isa.

Strategy 4: Build a culture of excellence to attract proponents and investors that are committed to high ESG standards and the future ready economy agenda

The Queensland and Australian governments reference the effective management of ESG risks as a key contributor to the competitiveness of Australian mining and processing operations.[86, 87] Corporate commitments that align with global ESG standards for miners—including the Initiative for Responsible Mining Assurance (IRMA) and Sustainable Critical Minerals Alliance—promote transparency, accountability for Indigenous, labour and other human rights, environmental protection, and good governance. Considering this context, Mount Isa is taking a proactive approach to establish a future ready profile for the region.

A culture of excellence will underpin long-term, sustainable value creation in Mount Isa's mining sector, minimising external harms and maximising opportunities for the community.

Potential **actions** include:

- Communicate expectation that local project proponents will exhibit excellence in mining practices, referencing industry standards and the Mount Isa Future Ready Economy Roadmap.
- Proactively engage with potential proponents and investors to leverage the region's commitment to ESG excellence to attract values-aligned investments in future ready projects.
- Engage with supply chain participants to encourage off-takers for green commodities.

Future ready mining and minerals processing sector – Outcomes

The following outcomes are illustrative of a future ready mining and minerals processing sector in Mount Isa.

Table 6: Future ready mining and minerals processing outcomes for Mount Isa

Framework dimension	Potential outcomes
Strong and resilient economy	• Regulation and approvals process are streamlined, consistent across levels of government, and encourage future ready outcomes. • Coordinated and cooperative local processes manage common industry challenges, set priorities and maximise positive outcomes for the region. • Industry profits are reinvested in the region for long term benefits.
Decarbonisation	• Companies across the region develop and implement decarbonisation plans with targets for electrification, fuel switching, and efficiency. • Green hydrogen smelting for copper and lead are piloted in Mount Isa. • The new Critical Minerals and Rare Earth Elements Centre of Excellence supports innovation and works closely with industry on adoption.
Climate adaptation	• Operations, including tailings dams, are designed to accommodate increased rainfall events without environmental impact. • Transport and logistics systems are designed to be resilient to climate impacts. • Facilities are designed to withstand increased periods of hot days. • Fire risk and site access issues are managed through cultural land management practices in collaboration with First Nations groups.
Circular design	• Circular principles are standard industry practice to reduce waste, optimise resource use, and ensure materials are reused and recycled effectively. • Tailings processing extracts resources including pyrite and critical minerals from legacy sites, while reducing their impact and management costs.
Environmental impact and regeneration	• The cumulative impact of all proposed projects is considered, with areas of high biodiversity or cultural value protected from new developments. • Water is used efficiently. Innovation drives down water consumption. • Environmental protection is legislated and resourced, including remediation. • Legacy mine sites are repurposed for beneficial usage where appropriate.
Liveability and social wellbeing	• The mining sector creates secure, safe and well-paid local jobs. • Communities can effectively participate in decision making regarding the design, expansion, rehabilitation and transition of projects in their region.

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Chapter 5: Transport

Summary

Significant investment is needed to create the accessible, resilient, safe, decarbonised and integrated transport sector needed to enable economic development and diversification in Mount Isa.

- The transport sector is undergoing significant and often disruptive change globally, with electrification, hydrogen and biofuels increasing their presence in the sector to meet decarbonisation imperatives.
- Reducing emissions from heavy vehicles in the mining and agricultural sectors is a priority focus of the federal government, which are both key industries in Mount Isa.
- The transport sector is a key enabler for Mount Isa's economy given its remote location, however a lack of sufficient, reliable and accessible transport and logistics infrastructure has limited development for years.
- Road and rail transport lacks resilience in the Mount Isa corridor, prompting calls for greater investment in flood mitigation measures.
- Improving access to and utilisation of the Mount Isa railway has been an industry priority and ongoing dialogue for years. Further progress will require greater collaboration between rail users and Queensland Rail and would benefit decarbonisation outcomes and road safety.
- Mount Isa City Council is developing transport infrastructure to meet industry needs into the future, diversify access routes and improve community safety.

Transport context

Global context

Global trends show that affordable access to decarbonised transport options is key for industries and regions to succeed.

The transport sector accounts for up to a quarter of total carbon emissions worldwide, and many countries are rethinking their approach to transport to meet decarbonisation targets.[1] Following a similar trend, many mining companies have set net zero targets by 2050 or sooner and are trialling electric and hydrogen vehicle technologies backed by renewable energy, and low carbon liquid fuels (see Table 7, below). As diesel typically represents the largest source of emissions for mining operations, decarbonising transport is key to achieving these corporate net zero goals. The world's largest companies are also increasingly looking beyond their own operations to reduce Scope 3 emissions in their supply chains, including freight.

Table 7: Corporate decarbonisation commitments in the transport sector

Company	Decarbonisation commitments
Aurizon	• Target: Zero operational emissions by 2050. • Strategy to deliver zero-emissions capable freight across national portfolio based on world leading initiatives that don't require expensive railway electrification:[2] o In 2023 started work on a battery-electric locomotive retrofit that could be rolled out on Aurizon's existing fleet for freight up to 400 km. Being built in Queensland with on-track trials expected in late 2025.[3] o In 2024 secured $9.4 million grant from the Australian Renewable Energy Agency (ARENA) to develop, test and trial a battery-electric tender for freight up to 850 km, with on-track trials expected in early 2026.[4] o In 2021 commenced investigation of electric battery-operated trains with hydrogen fuel cells for long distance freight, with dynamic braking that generates energy going downhill or slowing (collaboration with UQ and Anglo American).[5,4]
Rio Tinto	• Target: Reduce carbon emissions by 50 % by 2030. • In 2022 purchased 4 battery-electric trains to be operated as diesel hybrids with regenerative braking to haul iron ore in the Pilbara.[6] The FLXdrive manages energy distribution, with benefits to energy efficiencies and operating costs.[7]
BHP	• Target: Net zero emissions by 2050. • Identify diesel as single largest source of GHG emissions (63 % in FY24).[8] • Trialling electric excavators, jumbos, and light vehicles, aim to scale in late 2020s.[8] • Consider biofuels as a back up if electrification is delayed or unsuccessful, trialled hydrogenated vegetable oil in mining equipment in FY23.[8]
Fortescue Metals	• Target: Real zero operational emissions by 2030.[9] • Aim to eliminate diesel in transport by 2030.[9] • Conducting onsite trials of a battery electric haul truck which can fast charge in 30 minutes, a hydrogen powered battery electric haul truck and onsite refuelling station that produces 530 kg of hydrogen per day, and electric excavators.[9] • Developing the 'Infinity Train', which charges the battery electric system on loaded downhill sections, removing the need for charging for the return trip.[10] • Developing green ammonia and hydrogen train engines with Deutsche Bahn.[11]
Ark Energy	• Construction commenced in 2023 on Ark Energy's SunHQ Hydrogen Hub in Townsville. Phase 1 consists of a 1 MW electrolyser to produce up to 155,000 kg of hydrogen annually using energy from the Sun Metals Solar Farm.[12] • SunHQ will enable sister company Townsville Logistics to decarbonise its heavy vehicle fleet operating between the Sun Metals Zinc Refinery and the Port of Townsville, with additional capacity to supply renewable hydrogen.

Technology, including automation and artificial intelligence, are expected to play a growing role in the transport sector, enabling efficiency, cost reduction, transparency, greater safety and real time tracking.[13] In the context of growing investor and consumer expectations for efficiency and sustainability, these shifts are predicted to transform industries such as mining in coming years.[14]

Australian context

The transport sector was the third largest source of greenhouse emissions in 2023 in Australia, contributing 21 per cent of national emissions.[15]

The Australian Government is currently developing a Net Zero Roadmap for the transport sector, which has identified reducing emissions from heavy vehicles in the mining and agriculture sectors as a priority focus, and promotes the shift of freight to rail where feasible.[16]

Mount Isa context

The transport sector plays a key enabling role for current and future industries in Mount Isa, though it is highly susceptible to weather impacts.

Rail, road and air are all essential to Mount Isa's economy, connecting materials and workforces across the regional industrial ecosystem and to global export markets. They are also essential for community mobility and the tourism sector.

Rail

The Mount Isa line, also known as the Great Northern Railway, is a 1,032 km rail line from Stuart near Townsville to Mount Isa, including a branch from Flynn to Phosphate Hill. The rail line is a critical link between the North West Minerals Province and the Port of Townsville, transporting bulk mineral concentrates, containerised mineral products (mineral concentrates, refined metals and phosphate rock) and industrial inputs (cement, grinding media, fertiliser), and cattle.[17] Incitec Pivot Limited is the highest user of the rail line. The Inlander (operated by Queensland Rail) also offers two weekly passenger return services between Townsville and Mount Isa on the Mount Isa line.

An analysis of the transport sector conducted in 2024 identified the following **challenges and limitations** with the Mount Isa rail line:[18]

- Lack of resilience and reliability: Over the wet season the rail line can be out of operation for months at a time.
- Operational limitations: Double stacking is currently not viable due to structural gauge limitations, bridges, and line quality. Despite a signed speed of 80 km per hour, most trains only achieve 30 to 40 km per hour.
- Cost: The pricing of rail access charges restricts access to the rail network for some potential users such as smaller producers and mines.
- Uneven freight flow: More freight travels from Mount Isa to the Port of Townsville.
- Lack of coordinated development and investment to enable greater usage on the line, which currently utilises less than 50% of its capacity.
- Logistical bottlenecks impact supply chain efficiency from Stuart to the Port of Townsville.[19]

Road

Mount Isa's road network connects surrounding communities to Mount Isa's essential goods and services, including healthcare and education. The road network also enables tourism right across regional and remote Queensland and is increasingly utilised for heavy freight transport. The combination of rail limitations and the remote location of some mining sites have driven a preference for road freight, which has led to a significant shift from rail to truck haulage in recent years (see In Focus: Service availability, below).[20] For example, all of Mount Isa's fuel is currently transported by truck, despite being transported via rail in the past.

Heavy freight significantly increases structural damage to roads and impacts the safety and comfort of other road users.

Truck and heavy vehicle crashes on the Flinders and Barkly Highways have resulted in fatalities, road closures and environmental spills, prompting calls over the years for improved rail access to shift heavy freight traffic off roads.[21]

Residents of Mount Isa and surrounding towns report feeling unsafe driving on many local highways with the combination of poor road conditions and a high number of large transport trucks, especially when train lines are down, and additional haulage is diverted to roads. Truck drivers have also highlighted that local roads are not fit for purpose to support industry needs, which is exacerbated during the tourist season.[22]

In Focus: Service availability and price signals shift viability and preferences between road and rail

Aurizon offered containerised rail freight services between 2006 and 2017, after which it discontinued the offering due to an inability to achieve the necessary scale and customer base.[23] As a result of this closure, containerised freight shifted to road along the Mount Isa corridor.[20]

Aurizon re-entered the containerised freight market in 2022 to meet its ambitions to grow revenue from non-coal parts of the business.[24] Aurizon now offers the Mount Isa Line Integrated (MILI) Freighter with up to two containerised services per week, no lock in contracts, and end to end supply chain management services after acquiring Townsville Bulk Storage and Handling in 2020.[25,26]

While some containerised products have returned to rail, a portion remains on road due to a reluctance to enter into the rail industry's longer term take-or-pay contracts and the greater flexibility and competitive backloading opportunities that road enables.[20]

Air

The Mount Isa airport facilitates rapid travel for tourism, a fly-in-fly-out (FIFO) workforce, freight, and access to healthcare. The high cost of flights to Mount Isa was identified during Roadmap community workshops as a significant challenge for residents, especially when travel is not associated with employment. The airport currently operates near capacity, particularly on days that align with FIFO schedules.[18]

In 2024, construction began on $31.8 million of upgrades to improve patient care and response capabilities for LifeFlight and the Royal Flying Doctor Service at the airport, which service a growing demand for aeromedical care in the region.[27] Building additional aircraft apron capacity at the airport could facilitate additional flights such as tourism charters, Airforce or VIP flights, however would require an increase in demand to be viable.[18] Council also notes that the Mount Isa air strip is long enough to accommodate larger cargo plane routes, which could facilitate future connections between agricultural producers in the Mount Isa region and new markets across Asia.

Transport infrastructure is highly susceptible to weather impacts

The transport corridor from Mount Isa to Townsville experiences some of the harshest weather in Queensland, including flooding and periods of extreme heat.[28]

The Flinders Highway and Mount Isa rail line are often impacted by floods during the wet season, resulting in significant supply shortages and industry disruption which adds vulnerability to Mount Isa's supply chains. The railway was closed for four weeks in February 2024, and in 2019 was closed for extensive repairs of flood damage across 307 km of track.[29] A Pacific National train hauling various products including zinc, lead and copper anode was inundated at Nelia during the 2019 floods: authorities were unable to stop lead and zinc spilling into floodwaters, which required an extensive cleanup effort.[30]

Disruption to the rail line during the wet season also diverts heavy traffic onto roads. This causes damage to roads built on black clay soils, which impacts safety, causes greater wear on vehicles, and slows traffic, adding to trip times and driver fatigue.[31]

Mount Isa is a remote city accessible from major coastal cities like Townsville and Brisbane by air, or long trips on rail or highways. Source: Budd Photography.

Why transport matters in Mount Isa

Access to sufficient, reliable and accessible transport and logistics infrastructure has been a limiting element in the development and diversification of Mount Isa for years.

The remote location of Mount Isa makes for high transport costs, impacting investment and development decisions in local industry. This enabling infrastructure is becoming increasingly critical for emerging opportunities in renewable energy, critical minerals and agricultural expansion. In addition, it is expected that approximately 4 million tonnes of extra haulage will be required to Mount Isa annually to meet ore requirements at the Mount Isa copper smelter to 2030 after closure of the Mount Isa copper mine in 2025, and for current and future phosphate production.[31] This is anticipated to increase heavy freight flows and impacts on the national highway which runs through Mount Isa's CBD, and arterial roads. There is already a haulage shortage, and undersupply is expected to increase.

The transport sector is also a key enabler of liveability and social wellbeing. High freight costs elevate prices for local goods and services, impacting residents and challenging the viability of local small businesses. For example, finding furniture and undertaking home renovation projects can be difficult due to the high cost of freight. See Chapter 2 for more detail on the transport sector in relation to needs of local residents and community.

While the Australian Defence Force (ADF) does not currently have a large local presence, Mount Isa is strategically located between ADF's assets in the South East, Darwin and Townsville. The ADF has suggested that the transport and logistics sector is the most promising avenue for further investment in Mount Isa,[18] which could open the door to new defence related development opportunities if requirements for rail transport and other infrastructure are met.

Transport pathways, strategies and actions

A future ready transport sector in Mount Isa meets demand and provides common access to affordable freight and mobility services that are decarbonised and resilient to wet weather and periods of extreme heat.

Key pathways for a future ready transport sector

To achieve future readiness for Mount Isa's transport sector, **four key pathways** have been identified:

1. Plan for a future ready transport sector
2. Optimise access to and utilisation of the Mount Isa rail line
3. Develop transport infrastructure to meet industry and community needs into the future
4. Diversify access routes to Mount Isa

Each pathway contains **strategies** and **potential actions** as outlined in this chapter. A table summary of strategies and potential actions for the transport sector is presented in **Appendix B.**

The pathways, strategies and potential actions are a synthesis of information identified through desktop research, consultant analysis and stakeholder engagement activities undertaken by The Next Economy, Climate-KIC and Mount Isa City Council. Further stakeholder engagement is proposed to review, prioritise and further develop strategies and potential actions.

Consistent application of the **Future Ready Economy Framework Principles** detailed in Chapter 1 to development undertaken in the transport sector will unlock additional benefits for the region.

Access to sufficient, reliable and accessible transport and logistics infrastructure is essential to Mount Isa's economic future. Source: Budd Photography.

Pathway 1: Plan for a future ready transport sector

Planning, coordination and cooperation will be required to ensure that Mount Isa has sufficient access to the affordable, resilient and decarbonised freight and mobility services needed for industry and community to thrive into the future.

Key requirements for Mount Isa's future transport sector:

Accessible	Overcoming barriers to access for rail freight will support mode shift from road to rail, with benefits for operating costs and business viability, road maintenance requirements, emissions reduction, and improved safety.
Safe	With increasing heavy freight traffic expected in the region, investment is needed to improve the safety of all road users.
Resilience	Upgrades are needed to ensure the resilience of road infrastructure to future climate conditions. This will benefit business viability, lower costs and better link towns and communities during and post severe weather events.
Decarbonised	Decarbonised transport and freight options are increasingly a priority as a key component of decarbonised supply chains for other sectors, like mining.
Integrated	Road, rail and air transport are all key to Mount Isa's transport sector, enabling different opportunities and priorities. A future ready transport sector allows each mode to contribute strengths to an effective, integrated system.

One strategy has been identified for Pathway 1: Plan for a future ready transport sector.

Strategy 1: Develop a regional transport strategy

A regional transport strategy to accelerate decarbonisation and improve resilience should be developed in collaboration with government, industry and the community stakeholders.

Potential actions to be considered during the development of a sector strategy include:

- Understanding industry intentions to decarbonise transport.
- Supporting mode shift to rail where feasible.
- Improving supply of, and access to, freight services to meet growing demand.
- Identifying priority infrastructure requirements.
- Deciding, with expert input, the level of resilience required by stakeholders for road and rail infrastructure to cope with projected climate impacts, including extreme heat and flooding. The level of resilience required will have significant implications for the level of investment required. For example, achieving resilience to 1 in 100 year flooding requires significantly more upgrades and investment than resilience to 1 in 10 year flooding.
- Supporting the shift to biofuels, electric or hydrogen vehicles.
- Exploring options to improve public and active transport, and uptake of passenger Electric Vehicles (EVs).

Pathway 2: Optimise access to and utilisation of the Mount Isa rail line

Access to rail is a critical enabler for many industries in Mount Isa. However, the current system is not meeting the needs of rail users, impacting the development of prospective mines, ongoing viability of established mines, agriculture and grazing industries, and the construction industry.[18]

High access costs and take-or-pay contracts represent significant barriers to rail access. This is especially true for new operations at the early stages of production,[32] but can also affect economic viability of established copper mining, which may undermine the sustainability of the rail line without new users after the closure of Glencore's copper mine.[33] Rail users have noted that investment[18] and operational performance[17] on the Mount Isa line have been declining. For example, speed restrictions on 150 km of the line add approximately 8 hours to a Townsville to Mount Isa service.[17]

As a result, the share of mode contestable freight transported by rail has decreased over time in favour of road transport,[17] and up to half the capacity of the Mount Isa line is unutilised.[18] There are significant opportunities to attract more freight to rail through improving access, fostering collaboration and upgrading the line.

Attracting more freight will benefit rail service providers through increasing traffic and revenue generation on the line, support operational costs and viability for rail users, and reduce truck volumes on the Flinders Highway, resulting in the reduction of emissions and improvements in road maintenance costs and safety.[17]

Three strategies have been identified for Pathway 2: Optimise access to and utilisation of the Mount Isa rail line.

Strategy 1: Improve affordable access to rail

Reducing the cost of rail and improving access to loading facilities can improve the viability of established industries and the success rate of new businesses in Mount Isa. This includes proposed mining operations such as the Eva Copper Project and Paradise South Stage 1 that could support approximately 1,600 future jobs.

Three options are explored below (see In Focus: Options to improve rail access in Mount Isa).

In Focus: Options to improve rail access in Mount Isa

Option 1: Common user loading facilities

Mount Isa has one freight terminal owned by Aurizon. Other loading facilities in the region are privately owned and integrated into the supply chains of major mining companies, limiting access to rail transport.[17] Common user loading facilities were identified as a top priority by industry stakeholders during Roadmap workshops to overcome logistical bottlenecks, reduce monopoly influence, and facilitate affordable rail access for smaller mining operations.

Option 2: Subsidy or incentive scheme

A subsidy or incentive scheme for emerging operations in the region, such as a direct percentage subsidy to operators, a rail haulage charge deferment scheme, or a rebate initiative for operator costs, has been proposed by a recent analysis of the sector undertaken by Scyne Advisory.[18] While a subsidy scheme would be an ongoing cost to the State Government, it would require no upfront capital expenditure and could be implemented immediately.

The Queensland Department of Transport and Main Roads offered the Mount Isa Line Incentive Scheme between 2019 and 2023, offering $80 million over four years to make rail freight more competitive for mining operators and intermodal services.[34] Livestock and passenger services were not eligible under the scheme, the outcomes of which have not been published.

A new subsidy scheme could have broader eligibility to support diversified use of the line and incentivise different industries according to their specific dynamics.[18] For example, the Remote Communities Freight Assistance Scheme came into effect from 9 September 2024, under which the discount on essential goods (such as milk, bread, vegetables, detergent) was increased from 5.2% to 20% in the Northern Peninsula, Torres Strait and Gulf regions.[35]

During Roadmap consultations, some stakeholders expressed that infrastructure is a better target for policy and investment compared to subsidy schemes, as it leaves a lasting legacy of transport improvement in the region.

Option 3: Regulatory reform to Queensland Rail's access charges

The Mount Isa Line is Queensland Rail's (QR) only purely commercial rail system: it is required to charge access rates to cover its operating costs rather than relying on subsidies to remain commercially viable.[32] As a result, access is costly. Aurizon has suggested that access charges for containerised minerals are 2-3 times higher than comparable corridors.[17]

Recent analysis ranked QR regulatory reform as the most strategic option to increase the accessibility and affordability of critical infrastructure in Mount Isa.[18] Work is underway: The Queensland Competition Authority (QCA) is reviewing QR's 2025 Draft Access Undertaking (DAU). This will replace the current terms and conditions for pricing and access to the rail network, and is scheduled to come into effect on 1 July 2025.[36]

Consultation for this review saw submissions from rail users. A summary of proposed changes to access charges and QCA's draft decisions are presented in Table 8, below.

During Roadmap workshops, stakeholders also highlighted that MITEZ provided a valuable platform for key stakeholders to coordinate on priorities for long term and strategic improvements to regional transport infrastructure, including road and rail, and advocate for government investment.

Table 8: Overview of proposed changes to access charges, and draft decisions under Queensland Rail's 2025 Draft Access Undertaking

Proposed change to access charges	Description	Draft decision and justification from QCA[37]
Greater price differentiation between rail users	Multiple submissions to the 2025 DAU suggested changing pricing rules to enable greater price differentiation between rail users to increase rail volumes. Suggestions included price differentiation for premium pathways or subsidised pricing to support demand from junior miners.	Not recommended: • QR already provides some commercial incentives for smaller customers, further differentiation may distort competition and reduce QR's ability to invest in the network. • Specific commercial initiatives through policy and assistance schemes (eg. subsidies) are more suitable than regulatory access changes.
Changes to pricing arrangements to redistribute risk	QR's current pricing arrangements allocate risk to access holders: • Fixed charges and take-or-pay obligations introduce risk to rail users where loads and commodity prices are variable and uncertain, especially for junior miners. • Long term contracts with high path relinquishment fees present risk to freighter services where demand from rail users is variable and uncertain, unless underpinned by take-or-pay contracts.	Not recommended: • Rail users are best placed to forecast volumes and manage this risk. • Short-term contracts are available. • Fixed charges and take-pay obligations are necessary for efficient network use, incentivising rail users to only contract necessary capacity. This will be vital for efficient utilisation as traffic grows on the Mount Isa line. • QR requires certainty it will recover fixed costs associated with providing access and investments to meet future contracted capacity.
Greater differentiation of access charges for different products on multi-product trains	This is suggested to grow rail volumes through providing more flexible options and incentivising emerging demand.	Not recommended: • QR is not able to efficiently price-differentiate due to limited knowledge of end customers and goods within each container. • This would increase the complexity of contract negotiations, encourage disputes, hinder market efficiency, and add administrative burden.

Strategy 2: Support supply chain collaboration to coordinate rail freight

New collaborative models are required to address the complex and expensive task of improving long-distance rail transport, pooling resources across industry, investors and all levels of government.

Limited supply chain collaboration was highlighted as a barrier to greater efficiencies and innovation in recent analysis of the transport sector,[18] and industry stakeholders agree. During industry workshops for the development of the Roadmap, there was also interest in aggregating access to common resources and services (see In Focus: Improve freight collaboration, below).

In Focus: Improve freight collaboration

Option 1: Collaboration to address bottlenecks

Greater collaboration can help overcome critical bottlenecks in the rail supply chain. In 2021, the Queensland Government funded a $1.8 million trial aiming to support junior miners and potential new ventures to access the Mount Isa line with TransBulk Logistics, the results of which have not been published.[38]

Option 2: Balancing eastbound and westbound train trips

Currently, more rail freight travels east from Mount Isa to the Port of Townsville than in the opposite direction, meaning the back haul route is significantly underutilised.[18] Various mining input and construction products are currently transported westbound by road in the Mount Isa corridor, including cement, sulphur and fuel.[20]

Further investigations are needed to determine how more of this freight could shift from road to rail, which would lead to higher utilisation rates of the Mount Isa line and potentially lower costs for users.[38] For example, one stakeholder reported that Aurizon is in the process of arranging for wagons delivering sulphur to Incitec Pivot to return with phosphate from Centrex.[31]

Strategy 3: Upgrade the Mount Isa rail line

Recent analysis suggests upgrades to the rail line could generate jobs, lower the cost of access to rail, increase use and efficiency of the line, including west bound freight flow, enable increased economic activity, and support a modal shift from road to rail for heavy freight.[18]

Upgrades would involve significant collaborative funding from rail users, Queensland Rail, and both the state and federal government. Upgrades benefit rail users through reducing operational costs and increasing Queensland Rail revenue, including the company's ability to reinvest in the line. Key opportunities for line upgrades are outlined in Table 9.

Table 9: Key opportunities for future upgrades on the Mount Isa rail line

Opportunity	Description[18]
Improve weather resilience	• Upgrades could include resleepering, rerailing, and bridge and culvert upgrades. This will also reduce the cost of repairs post floods. • Queensland Rail is planning a program of works to replace steel sleepers with full depth concrete sleepers and replace light rail with 60 kg/m rail, with timing depending on growth along the line to fund works.[28]
Enable double stacking to improve efficiency and bi-directional freight flow	• 5 bridges currently limit double stacking and require upgrading. • Improving structural gauge and pinch points will also be required.
Address logistical bottlenecks in Townsville	• The MITEZ Strategic Plan identifies the need for efficient, cost effective regional infrastructure such as improved freight handling efficiency and cost effectiveness on the Mount Isa line, including supporting first and last mile logistics projects for road and rail, and advocating for common user infrastructure to facilitate the integration of mining activities.[39] • In 2024, the Queensland Cabinet committed $2 million funding to re-examine the feasibility of the Townsville Eastern Access Rail Corridor project, an 8.3 km rail corridor connecting the North Coast Line directly to the Port of Townsville.[40]

The Queensland Department of Transport and Main Roads has focused its investment on roads in the north west,[41] but intends to invest $14 billion in railways (compared to $22 billion in roads) through the Queensland Transport and Roads Investment Program from 2024 to 2028.

Rail lines are vital infrastructure connecting people and industries between Mount Isa and coastal cities like Townsville, which act as service centres and export ports. Source: Stockarch.

Pathway 3: Develop transport infrastructure to meet industry and community needs into the future

Fit for purpose and future ready transport infrastructure is key to enabling investment, development and diversification. It is also critical to the safety of residents and industry in the region.

"It can't be road vs rail: we need an integrated solution. Otherwise, we compete and don't have an effective system." – Transport industry representative

Two strategies have been identified for Pathway 3: Develop Mount Isa's transport infrastructure to meet industry and community needs into the future.

Strategy 1: Continue to progress development of the Transport and Logistics Centre

The development of a Transport and Logistics Centre is an ongoing priority for the Mount Isa region, aiming to improve capacity for both road and rail. Initial steps towards the development of the Transport and Logistics Centre are currently progressing under a narrowed scope with a focus on road transport, with the proposed Truck Amenities and Fuel Depot project (see Priority Project, below).

Feedback from industry stakeholders during Roadmap consultations suggests common user access to rail loading facilities continues to be a key priority, with investment needed to secure these facilities.

Priority Project - Truck Amenities and Fuel Depot

A Truck Amenities and Fuel Depot has been proposed at TACMIP. Funding of almost $2 million was secured for the depot in 2024 through the Mount Isa Transition Fund, and work is currently underway to finalise land tenure and start engineering.

Future upgrades will expand scope at the site, incorporating additional features, such as:

- Connection to the Mount Isa rail line.
- Common user rail loading facilities. This could be undertaken in stages, with initial investment covering a common user rail siding, with loading facilities improved over time.
- Heavy vehicle maintenance facilities for freight and mining vehicles, creating opportunities to retain machinery maintenance and repair jobs locally.
- Amenities and overnight accommodation.
- Facilities for the transport and storage of perishable goods.
- Facilities for agriculture industries including additional land for holding yards, spelling and storage.
- Green design features including solar, wind and waste-to-energy systems.
- EV charging for commercial and private vehicles to support electric freight and travel.
- Hydrogen refuelling for commercial and private vehicles to support hydrogen freight and travel.

Strategy 2: Plan for road infrastructure to meet future needs

The road network around Mount Isa is critical for the mobility of residents in surrounding towns, tourism, agriculture and grazing industries, and mining.

A recent analysis of the transport sector by Scyne Advisory identified the following priorities to safely meet the needs of road users:[18]

Priority area	Indicative actions
Identify priority highway upgrades to improve resilience	• Raising flood-prone sections of the Flinders and Landsborough Highways. • Closing highways to heavy haulage for a defined period after water has inundated highways, particularly on black clay soils that are susceptible to damage. • A state-controlled grader to regularly maintain unsealed roads in the dry season.
Identify priority highway upgrades to accommodate increased mining traffic and improve safety	• Some parts of remote highways are not suitable for the increasing traffic loads including heavy vehicles and road trains as mining expands in the region. For example, the 300 km highway connecting Mount Isa to Boulia is often narrow or one lane with rocky shoulders, with residents and truck drivers alike highlighting that the road is becoming increasingly dangerous.[22] • The sealing of the Plenty Highway is also likely to put additional pressure on the single lane Mount Isa – Djarra road south of Mount Isa, with traffic entering Queensland from the Northern Territory. • A bypass road could divert heavy vehicles out of the CBD to improve safety of road users in the city.
Identify priority highway upgrades to support the agriculture sector	• Sealed roads for major stock transport routes. • Regular grading of gravel roads in the region.
Define requirements for access roads to mine sites	• Currently, there are not clear requirement specifications or responsibility delegation for the development and maintenance of access roads to remote mine sites. As a result, access roads are often unsealed and only one lane despite heavy vehicle traffic. • This could be addressed by establishing clear requirements and responsibilities to improve safety and reduce ongoing maintenance costs. For example: "All roads connecting Mount Isa to mines with a life of greater than 50 years must be sealed and double lane."[18]

Pathway 4: Diversify access routes to Mount Isa

The Flinders Highway and Mount Isa railway are often impacted by floods during the wet season and associated repairs, resulting in vulnerability in Mount Isa's supply chains, disrupting operations and creating supply shortages.

Diversifying access routes will provide greater resilience during times of extreme weather by minimising disruption and creating more possibilities to align transport solutions with different needs. This will contribute to both a strong and resilient economy and liveability in Mount Isa.

Two strategies each consisting of a specific development project, have been identified for Pathway 4: Diversify access route to Mount Isa.

Strategy 1: Flying Whales

"We are excited by this project and it's really captured the imagination of our Council. We are eager to host the base which will facilitate the delivery of the Queensland Energy and Jobs Plan and the Nations Net Zero goals."
– Mount Isa Mayor, Peta MacRae

Flying Whales is a French-Canadian aeronautical company who have developed a 200 m helium-lift airship that can transport heavy loads of up to 60 tons with low to no emissions.[42] The airships are designed to transport heavy, bulky items such as wind turbine blades or construction materials to remote locations without requiring ground infrastructure.

More diversified freight and commuter access to Mount Isa will improve liveability and economic resilience in the region.
Source: The Next Economy.

This is particularly advantageous for areas where roads or bridges can't facilitate access (for example the load is too heavy for bridges or too long for corners), or when roads or railways are not transitable, (for example during flooding).

In October 2024 Mount Isa City Council signed a memorandum of understanding with Flying Whales to build its first Australian base in Mount Isa, citing advantages of predictable weather, proximity to remote mines, and the growth of wind projects in the North West.[43]

Strategy 2: Rail link to Tennant Creek

A new rail line between Mount Isa and Tennant Creek (covering a distance of approximately 660 km) would connect the Mount Isa line with the Alice Springs to Darwin Railway. This would provide benefits such as greater supply chain resilience to Mount Isa during times of flooding, and access to rail for industries along the corridor, lowering freight emissions and cost.

The proposed rail line would connect industries in North West Queensland with access to the Port of Darwin, which has significant export capacity and provides a closer option to Asian and Indian ports.[44] Potential benefits include:

- Improve freight access into north Queensland from the south and west.
- Reduce trucks on the Barkly Highway between Mount Isa and Tennant Creek, reducing road maintenance costs and improving safety for communities such as Camooweal.
- Reduce freight traffic across the Great Barrier Reef through the Port of Townsville.

The project has been considered in various formats since 2015. Early assessments found additional mining and agricultural production was required for the line to be commercially viable, and highlighted challenges including flooding, cave and sinkhole networks, and land tenure including Native Title.[45]

During Roadmap workshops stakeholders suggested that given federal decarbonisation priorities and the expansion of critical mineral mining in the region, it may be the right time to reconsider the feasibility of this infrastructure. However, careful consideration of the wider freight ecosystem will be needed to understand if the investment is warranted and minimise adverse impacts on existing transport networks.

Future ready transport sector – Outcomes

The following outcomes are illustrative of a future ready transport sector in Mount Isa.

Table 10: Future ready transport outcomes for Mount Isa

Framework dimension	Potential outcomes
Strong and resilient economy	• Freight services meet growing demand with a diverse range of affordable and accessible options that do not compromise community safety.
Decarbonisation	• Emissions are minimised across road, rail and air transport. • Mount Isa facilities support low carbon fuels (e.g. EV charging).
Climate adaptation	• Transport infrastructure is upgraded and proactively maintained to remain operational during periods of moderate flooding, hot days and fire. • A diversity of transport routes and options keep Mount Isa connected during extreme weather events.
Circular design	• Circular design is implemented when building all new transport infrastructure. • A regulated second-hand market supports the future adoption of electric and hydrogen vehicles for community and industry.
Environmental impact and regeneration	• New transport infrastructure minimises environmental impacts.
Liveability and social wellbeing	• Mount Isa residents have access to affordable and diverse transport options.

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Chapter 6: Agriculture

Summary

Diversification of Mount Isa's agriculture sector has the potential to expand opportunities for employment, local income generation, and access to local produce.

- Agriculture is the region's second major export earning sector following mining. The sector consists primarily of beef cattle grazing.
- In Australia, pressure to decarbonise the agriculture sector, particularly meat and livestock industries, is likely to increase over the coming years.
- Australia's agriculture sector is vulnerable to the changing climate with more frequent and intense weather events increasingly impacting productivity.
- Growing demand for activities such as renewable energy development, critical minerals extraction, conservation and biodiversity restoration, carbon projects as well as population growth and urbanisation are placing significant pressure and stress on Australia's land systems.
- Alternative approaches to farming, production and land management that improve livestock quality, soil condition, biodiversity value and waterway health - provide an opportunity to adapt and strengthen the existing beef cattle industry.
- Diversification of the sector, through supporting the development of new on-farm business activities and the establishment of new agricultural industries, can expand opportunities for employment, local income generation, and access to local produce.
- Creating a strong enabling environment is essential to reducing risk for investors and strengthening the capacity of farmers, producers and relevant stakeholders at all levels to lead innovation and change in Mount Isa's agriculture sector.

Competition for land use is increasing across Queensland. Source: The Next Economy.

Agriculture context

Global context

The global agriculture sector faces multiple pressures from environmental, economic and social factors, which is driving significant, and in some cases disruptive, change.

Governments around the world are driving action with the agricultural sector to reduce GHG emissions and reverse long-term trends of environmental degradation and biodiversity loss by adopting targets, policies and regulations. For example, the European Union has introduced regulations requiring producers to demonstrate their products do not originate from recently deforested land. The Kunming-Montreal Global Biodiversity Framework, adopted at the fifteenth United Nations Biodiversity Conference of the Parties (COP15), is driving Government policy development around the world to protect and restore ecosystems.

Cross sectoral forces such as the rise of digital and remote information technology and data, artificial intelligence, biosecurity, geopolitical developments, supply chain vulnerabilities and access to regional workers will continue to impact and transform agricultural operations. So too will demand side shifts for food, fibre and fuel, as consumers seek to reduce their environmental impact and use their buying power to support organisations and businesses that produce goods aligned with their ethical preferences.

Australian context

In Australia, the effects of a changing climate, including increased rainfall variability and more frequent and extreme droughts and floods are impacting agricultural productivity.[1] At the same time, growing demand from various activities and sectors of the economy, such as renewable energy development, urban and residential expansion, conservation and biodiversity restoration, carbon projects as well as critical mineral extraction, are driving competition for land use.[2]

The Australian Government has committed and developed a roadmap to restore 30 per cent of areas of degraded ecosystems, as well as protect and conserve at least 30 per cent of Australia's land and marine areas, by 2030.[3,4] It has also legislated a voluntary nature repair market with the aim of driving nature positive outcomes that achieve social and environmental co-benefits.[5]

Beef cattle grazing is a key pillar of Mount Isa's agricultural sector. Source: Panther Media Seller.

In Focus: Decarbonisation and Australia's agriculture sector

The agriculture sector contributed approximately 16.8 per cent of Australia's national greenhouse gas emissions in the 2020 to 2021 financial year.[6] Agricultural emissions are largely associated with enteric fermentation in livestock (methane), fertiliser use and crop residue burning (nitrous oxide) and lime and urea use (carbon dioxide). While not counted as part of Australia's agricultural emissions,[7] the sector also generates emissions through vehicle use, and plant and equipment use. On the other hand, the sector has the potential to contribute to the draw down of carbon out of the atmosphere.

The Australian Government is currently developing a Net Zero Roadmap and Action Plan for the agricultural sector. The Roadmap identifies several areas where action could be taken to influence the technical, economic, social and market-related factors that will significantly impact the potential of the agriculture and land sectors to reduce emissions. These actions include:

- driving innovation to develop, scale and support zero and low-emissions technologies and practices;
- building capacity across industry and communities to respond; and
- system-level investments such as improved emissions accounting.

Mandatory climate-related financial disclosures will take effect in Australia from July 2025. This will require certain businesses to disclose total emissions, including Scope 3 (supply chain) emissions. These changes will apply to large beef graziers that supply domestic markets, as well as businesses along related supply chains, and will increase pressure to achieve emission reductions.

There are clear signals that global and domestic markets, supply chains and private capital are seeking products and investment options with lower emissions, reduced exposure to climate risks, more positive outcomes for nature, as well as greater economic resilience.

Industry bodies are supporting producers to manage these changes through the development of frameworks, research and development, investment and target setting. For example, the National Farmers' Federation, with support from the Australian Government, has developed the Australian Agricultural Sustainability Framework (AASF) to demonstrate a unified understanding of sustainability objectives including environmental stewardship, taking care of people and animals, and ensuring economic resilience for the community and industry.[8] The Australian red meat industry has set a target to be carbon neutral by 2030 and is investing in research and development.[9]

As the global economy decarbonises, Australia's agriculture sector will play key roles, including:

- a significant source of greenhouse gas emission reductions;
- producing alternative, renewable resources that enable other sectors to decarbonise;2 and
- enabling greater emissions sequestration.

Mount Isa context

In Mount Isa, the establishment and growth of the agriculture sector has been dictated by the local climate, which is characterised by high temperatures, low humidity and low rainfall; the region's location and proximity to market; the skills and expertise of the local population; as well as the regions proud farming history.

The Mount Isa region has an established livestock industry, primarily beef cattle for live animal export and domestic processing supply. Livestock sales in Mount Isa achieved an estimated gross value of production (GVP) of $114 million in the 2023-24 financial year, representing 0.68 per cent of Queensland's total estimated GVP.[10]

In Mount Isa, the agriculture sector utilises most of the regions land mass and contributes 23 per cent of the region's GHG emissions.[11]

While demand for Australian beef exports is strong, partly attributed to declines in American exports and a global shortfall of supply,[12] the global trends outlined above will continue to put pressure on the local agricultural system. This pressure may cause the sector to contract unless significant efforts are made to decarbonise and reduce other environmental impacts.

Mount Isa hosts a range of resources that can be leveraged to support the agricultural sector to become more resilient to change and disruption. These resources include:

- an abundance of space and land,
- developed agribusiness supply chains and markets,
- ongoing infrastructure investment, and
- access to a skilled and educated regional population ready to take advantage of new employment opportunities.

These conditions present significant opportunities for innovation in the existing beef cattle industry, as well as potential to diversify and expand the agricultural footprint of the region into areas such as cropping, native botanicals and food production. Access to reliable and sustainable water, research and development expertise and renewable energy for intensive activities will be critical factors in leveraging this potential.

With careful consideration, integrated planning, and cross sector collaboration, Mount Isa can lead a transition towards a more diverse and stronger regional agricultural sector and primary production system that is ready for the future.

Agriculture pathways, strategies and actions

A future ready agriculture sector in Mount Isa is better prepared to adapt and respond to future global and national policy shifts, a changing climate and emerging market opportunities, all whilst serving the local economy, community and natural environment.

Three key pathways for a future ready agriculture sector

To achieve future readiness for Mount Isa's agriculture sector, three key pathways have been identified:

1. Strengthen the beef cattle grazing sector
2. Explore options for diversification of the region's agriculture sector
3. Create an enabling environment to support a future ready agriculture sector

Each pathway contains **strategies** and **potential actions** as outlined in this chapter. A table summary of strategies and all potential actions for the agriculture sector is presented in **Appendix B.**

The pathways, strategies and potential actions are a synthesis of information identified through desktop research, consultant analysis and stakeholder engagement activities undertaken by The Next Economy, Climate-KIC and Mount Isa City Council. Further stakeholder engagement is proposed to review, prioritise and further develop strategies and potential actions.

Consistent application of the **Future Ready Economy Framework Principles** detailed in Chapter 1 to development undertaken in the agriculture sector will unlock additional benefits for the region.

Pathway 1: Strengthen the beef cattle grazing sector

Mount Isa's beef cattle grazing industry is critical to the ultimate success of efforts to decarbonise the region's agriculture sector. The industry is also increasingly vulnerable to the impacts of a changing climate.

Variable rainfall and weather reliability, increasing temperatures and evapotranspiration, and more intense extreme weather events are expected in the Mount Isa region.[13] These factors will continue to impact the local environment and capacity of native pastures to provide sufficient feed for grazing operations, presenting significant risks to local agricultural businesses.

There is scope to shift current approaches towards practices that reduce emissions, improve the capacity of operations to adapt to a changing climate, and be better prepared for the pressures noted in the context section above. While changes may pose a cost and risk to businesses, efforts to convert operations can also present new opportunities for the agriculture sector in Mount Isa to thrive and prosper.

Four strategies have been identified for Pathway 1: Strengthen the beef cattle grazing sector.

Strategy 1: Strengthen feed security

Increasing the capacity for onsite and/or regional feed production is key to increasing feed security and the future resilience of the grazing sector.[14]

Potential **actions** to support this objective include:

- Exploring opportunities for dryland forage and fodder production on-site and across the region, considering the impacts of drought.
- Current strategies, like adopting new feed supplements, on-site technologies and infrastructure solutions, will continue to support good feed availability and distribution for good stock health.
- Localised resources and providing up-to-date information on new practices can help producers adopt an adaptive approach to feed management and ensure reliability and access of feed.

Strategy 2: Decarbonise grazing operations

There is significant global interest and investment into approaches that will reduce methane produced through enteric fermentation in cattle and other livestock. This source accounts for 64 per cent of agricultural emissions in Australia.[6] Grazing operations also produce emissions through the use of equipment and vehicles that rely on fossil fuels.

Potential **actions** to decarbonise grazing operations in Mount Isa include:

- Mount Isa's graziers and producers are well positioned to be strategic partners on significant research and development initiatives with industry, government and research institutions to collaboratively explore innovation in areas such as fodder types and alternatives, feed supplements, forage mixes and breed selection.
- Replacing plant, equipment and vehicle fleets with assets that can be powered from renewable energy sources can also reduce emissions in grazing operations.

Livestock methane emissions account for over 60% of agriculture sector emissions. Source: Mount Isa City Council.

Strategy 3: Adopt land and grazing management practices that prioritise the health of soil, vegetation and ecosystems

Working to regenerate natural ecosystems can benefit agricultural production, help to mitigate climate risks, reduce grazing inputs and in some cases provide an opportunity to generate an alternative source of income.

Potential **actions** aligned with these approaches include:

- Land management actions include limiting land clearing, minimising soil disruption, maintaining ground cover, protecting waterways, enhancing landscapes through additional plantings, controlling erosion for waterway health, minimising chemical use and focusing new activities on sites that have already been disturbed. These practices can restore and strengthen key ecological processes that are good for soil health, carbon sequestration, plant and animal biodiversity, ecosystem function, erosion reduction and water retention.[15]
- Grazing management includes strategies such as adaptive stocking rates support producers to intensify grazing management and improve the resilience of a livestock system exposed to climate shocks. The adaptive approach responds to seasonal cycles of pasture growth and water availability and can contribute to improvements in pasture quality and quantity, as well as water retention.[16]
- Facilitating the sharing of local knowledge and providing training on sustainable and regenerative agriculture principles can also provide an opportunity to demonstrate practices that enhance production while supporting the restoration and protection of natural ecosystems.

Strategy 4: Explore options for leading practice in implementing digital technologies

Agricultural technology is increasingly able to provide real time information to support effective decision making.[17] The digitalisation of agriculture may allow for remote monitoring and more efficient and responsive management of herds.[18] However, it also poses several risks and challenges, including data ownership, dependence on technology, access to reliable internet and over reliance on automated decision-making. For example, geo-spatial mapping, remote sensing and satellite imagery can be used to understand changes to pasture cover and biomass - and inform herd movements for forage.[19]

Over the coming years, technology will likely expand to more accurately help producers and land holders understand carbon sequestration practices and efforts to enhance natural capital as technology matures over time. Digital technology applied in other operational areas can also reduce occupational health and safety (OH&S) risk, increase farm management efficiency and address gaps in the labour force. For example, remotely operating water points and virtual fencing[20] can be utilised to remotely manage herds; and mustering using drone offers opportunities to reduce hazardous activities, emissions and costs.[21]

Pathway 2: Explore options for the diversification of the region's agriculture sector

There is an opportunity to leverage emissions reduction and biodiversity conservation drivers as well as local capabilities to diversify grazing operations and establish new agricultural industries in Mount Isa. Diversification of grazing systems can provide access to new revenue streams that are less dependent on climate conditions, and the development of new local agricultural industries can build the sector's economic resilience while creating co-benefits that contribute to market advantage.

The development of new agricultural industries in Mount Isa, particularly cropping, comes with a range of concerns such as: difficult climatic conditions; limited access to reliable water that wouldn't tip the region's natural resources into water stress when used; market access for wholesale produce; cost of transport and logistics; vulnerable road infrastructure; limited local processing capacity; and access to labour and skills. Despite these touch local conditions, recent analysis undertaken by Scyne Advisory[14] has highlighted a range of opportunities that may exist to service global, domestic and hyper-local demand.

Three strategies have been identified for Pathway 2: Explore options for the diversification of the agriculture sector.

Strategy 1: Explore opportunities for new agricultural industries

Examples of industries and markets that could diversify the agriculture sector in Mount Isa include:

Carbon and nature repair markets	Carbon and nature repair markets include projects that focus on carbon sequestration, emissions reduction and actions to restore and protect the environment, such as emissions reduction through herd management practices, emissions avoidance credits earned through controlled fire burning in savanna ecosystems,[22] pest management and re-establishing native vegetation. For example, in Mount Isa, Southern Gulf NRM is supporting biodiversity conservation outcomes through working to improve both ecosystem services and resilience of grazing operations.[23]
Renewable energy generation	Co-locating assets for renewable energy generation projects on grazing land can generate a consistent and resilient new revenue stream for producers. Assets such as solar panels can also provide co-benefits such as shade for animals, which reduced herd stress and evapotranspiration.[24] (See Value Add: Solar Grazing, below).
Dryland cropping	Utilising crop production method and species that do not rely on irrigation (such as cotton, chickpeas, sorghum and supplementary feed) offers potential across the region. Consideration of rainfall reliability, the need for landscape changes, a changing climate, efficient management of precipitation[25] and good planning and execution are all required for this industry to be viable. Additional water applied through irrigation can increase yields and quality.
Intensive agriculture	Intensive agricultural activities have the potential to create economic growth and generate more jobs. Intensive agricultural options were identified through consultant analysis of diversification opportunities.[14] Key challenges to intensification include high energy and input demand, implications for existing landscapes, access to people with the relevant expertise and local processing capacity. Secure access to water is required for all intensive agriculture and the scale of intensive agriculture production should be considered against water availability and regional water security modelling.[26] These challenges require review, especially in the context of a changing climate and environmental impact. Different types of intensive agriculture include: • Aquaculture: The aquaculture sector is growing in Queensland. A preliminary assessment completed for Jade Perch and/or Redclaw fish have found some promise despite challenges with the climate and location of Mount Isa.[14] • Fruit tree production: Crops that are suited to the local climatic conditions such as date palms and citrus have production potential when compared to similar climates and production regions worldwide. • Protected cropping: Producing crops such as fruit and vegetables in climate-controlled facilities, shade houses and greenhouses modifies growing conditions, protecting crops from pests and diseases while overcoming growing challenges associated with the local climate.[27]
Bespoke opportunities	Examples listed below are further along the commercial pathway: • Abattoirs: Establishing local abattoirs for processing game has the potential to have a direct positive impact on the existing grazing industry and pest management efforts underway across the region. • Native Food and Botanicals: In the Australian Native Foods and Botanicals industry, spinifex grass provides an opportunity for local enterprises in manufacturing, processing and value-adding for industrial products. • Cotton: Limited transportation and proximity to a cotton gin has restricted growth of the dryland cotton industry in western Queensland to date. The Mount Isa to Townsville Economic Development Zone has undertaken a feasibility study to explore appropriate locations for a regional cotton gin that is close to production areas, irrigation projects and markets.[28]
Artisanal goods	There are increasing opportunities and consumer demand for reliable, fresh, quality products that are locally grown and produced. The development of an artisanal food industry and production of high value products such as camel meat, alternative milks and cheeses have been identified as an emerging opportunity for the Mount Isa region as the local culture shifts and regional tourism industry expands.

Value Adding: Solar Grazing

In Australia there are over 13 large-scale solar farms grazing sheep.[29] This includes New England Solar, six kilometres east of Uralla in NSW, which grazes 6,500 sheep on a solar farm that, once fully operational, will have 720MW generation capacity.[30]

Incorporating vegetation management planning into the design phase of the solar farm is necessary to ensure the design and layout can maximise the co-benefits of sheep grazing and facilitate efficient maintenance.

Strategy 2: Support new and emerging native plant and fibre industries

First Nations communities around Australia play a key role in addressing the biodiversity and climate crises, as well as sectoral transformation efforts, by utilising traditional knowledge to care for Country. The commercial use of First Nations knowledge is being realised in carbon offsets through fire management, feral animal abatement and replanting initiatives.[31]

Greater First Nations participation in the agriculture sector and leadership development of a regional Native Food and Botanicals industry can be achieved through respectful collaborations, and investment in local First Nations enterprises.

For example, The University of Queensland (UQ) is working with the Indjalandji-Dhidhanu people, Traditional Owners of the upper Georgina River region, in far northwestern Queensland on the development of spinifex nanotechnology (see *Value Adding: Commercial applications for local spinifex grass*, below). Like other native botanicals, spinifex grass has properties that can be utilised for a wide range of industrial and commercial uses such as packaging, biomedicine, latex production, carbon fibres and road materials.

Significant research into the potential application and market for other Australian native foods and botanicals is underway across Australia.[32] The Mount Isa region is well placed to explore opportunities to leverage the local environment, climate and existing expertise within the region to support First Nations led innovation, and the development of new products and industries that merge First Nations biocultural knowledges with Western science.

The Australian Native Food and Botanicals industry provides an opportunity for First Nations communities to further self-determination, strengthen economic sovereignty, connect with and care for Country, and drive other positive economic, governance, environmental and wellbeing outcomes.

Strategy 3: Adopt and leverage circularity principles to inform new economic opportunities

An increasing focus on circular economy approaches in regional areas provides an opportunity for Mount Isa to gain market advantage through early adoption. By exploring synergies and resource flows across businesses and industries in the region, Mount Isa may identify compelling opportunities for innovation, product development and new enterprises.

Potential **actions** that promote circular economy principles include:

- Facilitating collaboration across the region to identify opportunities to reduce and repurpose agricultural waste and by-products, optimise logistics and promote responsible sourcing.
- Co-locating a range of facilities in close proximity to agricultural production activities, manufacturing businesses and hospitality venues to minimise transport emissions.
- Investing in resource recovery precincts to increase reprocessing capabilities.
- Establishing community food and resource hubs that provide services including markets, food share initiatives, local processing and repair facilities, and community education spaces.
- Leveraging and processing underutilised resources to develop alternative products for agricultural inputs. For example, fertiliser products manufactured from wild pigs.
- Looking at waste streams of other sectors and the potential for utilisation in new products and inputs in agricultural activities.

Value Adding: Commercial applications for local spinifex grasses

The Indigenous-owned Trioda Wilingi Pty Ltd has established a collaboration with UQ to produce commercial applications of local spinifex grasses. Studies have shown that when the long nanofibres of spinifex are added to latex it becomes stronger and more flexible,[33] providing benefits to packaging, biomedicine, surgical gloves, condoms, and even roads.[33] Recent developments have shown future applications for injectable medical gels that can treat arthritis and osteoarthritis.[34]

The group of companies that Trioda Wilingi is part of is based in Camooweal, approximately 200 km northwest of Mount Isa and home to the Indjalandji-Dhidhanu people. Following a successful native title claim in 2002, the Dungalunji Corporation established a commercial arm to harness financial opportunities and provide labour hire services to mining and other industries. Spinifex research is conducted at the Arid Zone Field Station where scientists and Aboriginal people can share knowledge and skills. The ability to do this work on Country brings benefits to both parties and is assisting with Indigenous self-determination through giving Indjalandji-Dhidhanu people control over the research agenda and commerciality of the knowledge.[35]

Further support for Aboriginal-owned businesses and manufacturing driven by Indigenous knowledges will be realised through the Queensland Government's $2.75 million funding of a National Indigenous Science Translation Centre at the University of Queensland.[36]

Pathway 3: Create an enabling environment to support a future ready agriculture sector

There are many factors that can hinder the uptake of new approaches and strategies in the agriculture sector, including:

- understanding of and attitudes towards climate change,
- knowledge and understanding of trends, drivers and emerging opportunities,
- real and perceived risks associated with changing farm and enterprise practices,
- the upfront cost and investment of converting systems and practices,
- responding to policies and regulations,
- dealing with workforce capacity limitations, and
- managing input security.

The creation of a strong enabling environment is crucial to support Mount Isa's agriculture sector as it reorients itself towards action for future readiness.[37] Relevant activities may include:

- developing fit-for-purpose regulations and policies,
- providing appropriate infrastructure,
- improving awareness of the benefits that new agricultural management methods can have,
- facilitating connections with producers and businesses that have already successfully implemented new approaches,
- expanding people's understanding of the opportunities in new and emerging industries, and
- providing practical support to derisk adaptation and development efforts, such as incentives and upfront finance and investment.

Activities such as these can help to reduce risk for investors, and strengthen the capacity of farmers, producers and relevant stakeholders at all levels to lead innovation and change in Mount Isa's agriculture sector.

Five strategies have been identified for Pathway 3: Create an enabling environment to support a future ready agriculture sector.

Strategy 1: Develop a regional sector transition strategy

A regional agriculture transition strategy co-developed with stakeholders from multiple sectors at a regional, state and national level could create multiple benefits. It could help accelerate the transition of Mount Isa's agriculture sector and support industry, government and community stakeholders collaboratively manage the risks, trade-offs and opportunities across the sector.

A sector transition strategy could outline emission targets, principles, actions, roles and responsibilities. It could also include an adaptive management framework to drive the adaptation and expansion of existing activities, and development of new agriculture industries that align with regional objectives.

Strategy 2: Facilitate access to information, knowledge and training

With increased access to knowledge, information and resources, Mount Isa producers and sector stakeholders will have greater capacity to identify risks, remove barriers and implement change. Additionally, bringing local producers together around business development and educational opportunities strengthens social capital, builds trust and connections, manages the potential for disinformation and fosters two-way learning.

In 2023, Mount Isa regional stakeholders identified a range of key topics and areas of interest for knowledge and information sharing. These include land tenure, regulatory matters (mainly water access rights and biosecurity), carbon farming, alternative forage crops, options for on-farm feedlots and access to funding and relief measures.

There are multiple organisations and institutions located within the Mount Isa region, including local and state government, that already play a role in facilitating information sharing, networking and opportunity development across the local agricultural community, such as Southern Gulf NRM and Mount Isa and Townsville Economic Zone (MITEZ).

Potential **actions** that could build on these efforts to expand knowledge sharing in Mount Isa include:

- Development of a regional knowledge hub that provides access to data, bespoke and hyper-localised information and services. Activities may include:
  - o Providing farmers with on-farm training and mentoring to build literacy in areas such as climate adaptation, trends and risks; carbon and natural capital accounting; disaster risk reduction; regenerative agriculture; circularity; and sustainable land management.
  - o Developing regional demonstration sites and bespoke trials for sustainable and regenerative practices.
  - o Supporting on-farm field days within the region.
  - o Investing in expert advisory services that provide practical support to farmers and producers on adaptive practices.
  - o Developing socio-technological solutions to support adaptation and diversification outcomes.
  - o Convening collaboration and coordination across the sector within the region.
- Incentivising greater collaboration between producers and researchers to develop innovative and practical solutions.
- Facilitating school-based apprenticeships to support the development of a future ready workforce and demonstrate pathways to students.
- Investing in industry scholarships and tours to support local stakeholders visit and learn from other producers and agricultural regions in other parts of Australia.

Strategy 3: Upgrade infrastructure to meet the future demands of the agriculture sector

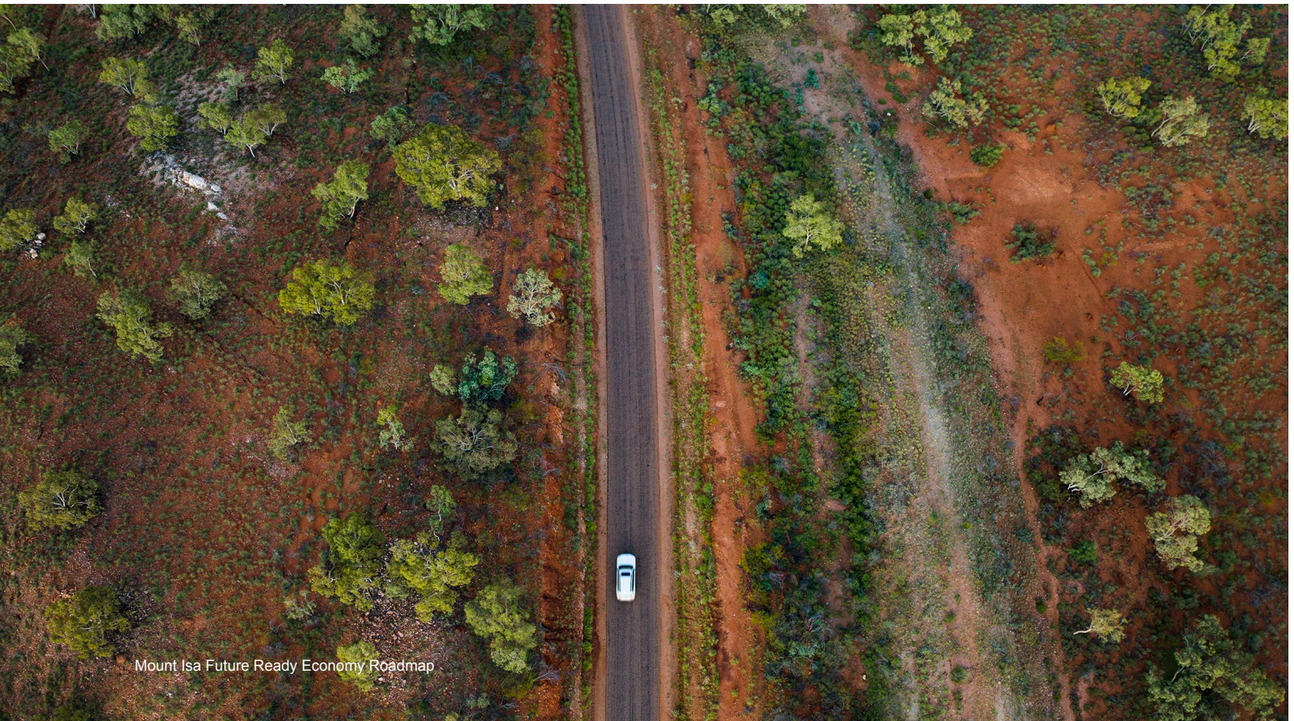
Infrastructure has a critical role to play in enabling circular strategies and approaches, supply chain efficiencies and commercial viability of many industries within the agriculture sector.

Sector specific infrastructure and facilities—including a helicopter flying school,[38] local reprocessing facilities, manufacturing precincts, water efficiency assets and renewable energy infrastructure for hard-to-abate activities—can help regional agriculture sectors be future ready by enabling innovation in, and the commercial viability of, different industries. This in turn drives broader economic benefits. Infrastructure upgrades also enhance liveability and ensure connectivity for business operations, which helps to retain community members and a local workforce.

Potential **actions** to enhance the quality, accessibility and resilience of infrastructure includes:

- Upgrading critical infrastructure such as roads, communication lines, and air services to strengthen resilience and reliability.
- Maintaining road infrastructure in the remote Mount Isa region is critical to enabling the transport of inputs and produce, enabling access to domestic and international markets.
- Road infrastructure is vulnerable to changing weather patterns and events. Climate-informed road management will increasingly be required to maintain these lifelines across the region.

Reliably accessible roads are vital infrastructure for communities and industries in the remote Mount Isa region.
Source: Mount Isa City Council.



Strategy 4: Support producers to access finance to transition practices and explore new opportunities

The impacts of climate change, diverse and multiple policies and regulations, competing demands for land and market shifts create pressure on farming businesses, other regional livelihoods and the community as a whole. Without incentives or accessible funding and investment, actions to transform agricultural practices and address escalating economic and environmental pressures may seem out of reach.

Potential actions to reduce the financial risks that regional producers may face in adapting to market and environmental changes include:

- Raising awareness and facilitating access to existing grants available for agricultural adaptation and innovation through community, corporate, philanthropic and government programs.
- Identifying and connecting with potential philanthropic foundations that have aligned objectives. For example, Macdoch Foundation[39] and Sustainable Table[40] partner with initiatives that drive the transition to more regenerative food and fibre systems across the full value chain, and accelerate adaptation and uptake of resilience strategies for farmers and rural communities.
- Providing incentives and creating finance mechanisms that focus on direct investment in producers and farming businesses that are focused on agricultural diversification and adaptation that improve biodiversity, ecosystem services (carbon sequestration) and reduce emissions.

Strategy 5: Support implementation of integrated water resource management in the Mount Isa region

Expanding agriculture sector stakeholder participation in water resource governance across the catchment offers the opportunity to increase literacy around water requirements, availability and access rights, as well as provide a sector perspective on water market operation (allocation, trading and entitlements) and demand/supply management. Allowing trade of entitlements over multi year periods may encourage landowners to invest in water efficient technologies and infrastructure.[38]

Value adding opportunities in agriculture

Pursuing diversification within Mount Isa's agricultural sector may identify opportunities to develop value-added products for local use in other sectors and/or for export. For example:

- Local wild game processing may incentivise more pest-management practices.
- Native Food and Botanicals enterprises can supply unique tourism offerings.
- Cotton seed, a byproduct of cotton processing, may be utilised a protein source for cattle feed.

Facilitating further access to information and training in the development of agricultural diversification options (Pathway 2) may allow further value to be generated and build capability (Pathway 3).

Future ready agriculture sector – Outcomes

The following outcomes are illustrative of a future ready agriculture sector in Mount Isa.

Table 11: Future ready agriculture outcomes for Mount Isa

Framework dimension	Potential outcomes
Strong and resilient economy	• The region has a diverse agriculture sector supplying to local and international markets. • Ecological and social outcomes are integrated into business and operational decision-making processes. • First Nation enterprises are delivering broad social, economic and environmental benefits.
Decarbonisation	• Agricultural businesses and new developments are taking active steps to reduce and minimise greenhouse gas emissions. • The sector is transforming land management practices to increase the capacity of the region's land mass to draw down carbon.
Climate adaptation	• Agriculture practices are informed by climatic risks on an adaptive basis. • Natural capital is protected and restored to reduce climatic impacts. • Transport infrastructure is developed and managed with consideration of climate risks to safeguard future access. • Water is used efficiently, recognising the social, environmental and economic value in all its competing uses.
Circular design	• Fertiliser, water and energy are increasingly sourced from renewable and regenerative sources. • Locals can access fresh food that is produced in the Mount Isa region. • The region's agricultural system is transforming waste and other by-products into valuable resources for the agriculture sector, other industries (within the region) and external markets.
Environmental impact and regeneration	• Appropriate practices control erosion and health of adjacent waterways. • The biodiversity value of productive land in maximised, including through ecosystem protection and restoration. • First Nations people have the opportunity and resources to integrate Indigenous knowledge into resource management with landholders.
Liveability and social wellbeing	• Producers have access to the resources they need to connect and explore emerging pathways and business opportunities. • First Nations people are increasingly supported to connect with and steward initiatives that care for Country.

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Chapter 7: Tourism

Summary

Tourism supports economic diversification and social wellbeing, two key objectives of a future ready Mount Isa.

- Mount Isa's tourism sector includes diverse local businesses, attractions and events.
- Investing in the ongoing coordination and future readiness of the tourism sector through strategic planning and business development initiatives can foster economic resilience, and surface opportunities to create new value through circular design and collaboration with other economic sectors (for example, multi-day study experiences in collaboration with local mining and minerals processing or renewable energy sectors, farm-to-table experiences featuring iconic local produce).
- While tourism and the broader visitor economy are vulnerable to environmental and economic shocks, there are opportunities to strengthen the resilience of the sector.
- Investment in public amenities, recreational sites, events and attractions creates a positive experience for visitors and locals alike, helping to extend visitor stays and attract new residents.
- There are multiple opportunities to support First Nations economic development aspirations, including through the realisation of a Kalkadoon-led cultural centre and incubation of First Nations owned and operated visitor enterprises.
- The local industry can build upon existing marketing strategies to build Mount Isa's profile as a recognisable and attractive outback destination for visitors from across the state and the country.

Lake Moondarra is a distinctive part of Mount Isa's landscape, attracting a diverse range of visitors.
Source: Mount Isa City Council.

Tourism context

Australian context

The tourism sector is an important and growing economic driver in Australia. In 2023-24, the sector generated $78.1 billion in GDP, representing 2.9 per cent of all national economic activity.[1] The sector is forecast to grow over the next five years, though it remains vulnerable to global economic, social, and environmental shocks, including extreme weather events, health crises like the COVID-19 pandemic, geopolitical conflicts and inflation.[2]

The Australian tourism sector was significantly impacted by COVID-19, with direct tourism GDP nearly halving from $60.3 billion to $30.9 billion between 2018-19 and 2020-21.[1] Over the past three years, the sector has experienced a remarkable bounce back from this shock:[1]

- There were 59,500 more jobs in the sector during 2023-24 compared to 2018-19 (the last pre-pandemic year). In 2023-24, 619,000 people were directly employed in tourism, accounting for 1-in-23 jobs in the Australian workforce. This compares to approximately 219,000 employees in the mining sector.[3]
- Tourism GDP increased 9.1 per cent between 2018-19 and 2022-23, generating an additional $17.7 billion.
- International visitor spend was worth $28 billion in 2023, recovering from a post pandemic low of $1.45 billion in 2021.

Tourism is part of Australia's broader visitor economy, which includes domestic and international travel for holidays, visiting family and friends, and engaging in business, work, and study.[4] Total visitor spend in Australia has experienced a long-term growth trend and was worth $170.3 billion in 2023, over 80 per cent of which came from domestic travellers.[5] This trend is positive for the outback tourism industry in Mount Isa.

Tourism Research Australia, a branch of the Australian Trade and Investment Commission (Austrade), has forecast continued growth in the visitor economy over the next five years.[2] Alongside this positive outlook, the forecast also identifies key risk factors to the Australian visitor economy:

- Growing geopolitical risks may reduce confidence in international travel.
- Inflation and high interest rates in several countries may continue to impact household budgets.
- Changing consumer preferences and emissions regulations may affect long-haul flights to Australia.
- High airfares, driven by slowly increasingly route capacity, higher operating costs and reduced competition may impede travel in the context of ongoing household budget pressure.
- Policies designed to cap international student numbers in Australia will take effect from 2025.
- Increased competition with destinations offering visa-free travel, including in Southeast Asia, may reduce the number of international visitors to Australia.
- Increasingly unpredictable and damaging weather events may impact travellers' plans and appetite for travel to a growing number of destinations.

Each of these risk factors could impact on visitation to Mount Isa, highlighting the importance of building sector resilience.

THRIVE 2030 is a national strategic plan for the long-term sustainable growth of the Australian visitor economy.[6] The strategy identifies three guiding themes:

- Diversifying markets, experiences and destinations, including through the inclusion of First Nations peoples, history and culture
- Modernising the visitor economy workforce, infrastructure and business practices
- Collaborating between industry and government, including by using high quality data and insights

Sustainability is another key theme within the Australian tourism sector. This theme is a response to the growing appetite among domestic and international visitors for low emissions and sustainable tourism experiences in Australia's unique natural and cultural environments.

The National Sustainability Framework for the Visitor Economy,[7] endorsed by the Australian Government and state and territory governments, recognises that sustainability is key to preserving Australia's natural and cultural assets and meeting changing consumer preferences.

Mount Isa context

Outback tourism is one of the main economic drivers in Mount Isa and North West Queensland. Consistent with national visitor trends, a majority of visitors to Mount Isa are from Australia: each year, the city receives approximately 154,000 domestic visitors and 10,000 international visitors.[8]

Mount Isa hosts a range of outback tourism attractions and events. Outback at Isa, Mount Isa's main tourism facility, hosts an information centre and a range of tours, a fossil discovery centre, and cultural experiences led by First Nations people.

Another major cultural attraction is the annual Mount Isa Rodeo, which is the largest rodeo in the Southern Hemisphere. In 2023, the Rodeo attracted over 45,000 visitors who spent over $7.39 million in Mount Isa during a long weekend of bull riding, live concerts and markets.[9] The rodeo, like many other large-scale events across Australia,[10] has experienced financial challenges in the wake of the COVID-19 pandemic and high inflation.[11] Mount Isa City Council, the Queensland Government and local community have rallied around the culturally and economically significant event, and are preparing for its future.

The Mount Isa Rodeo is an iconic event, drawing thousands of people to the region each year. Source: Mount Isa City Council.

Mount Isa is also home to a range of natural attractions. Lake Moondarra is a hotspot for biodiversity and recreation, attracting diverse and migratory bird species and enabling boating, fishing and water skiing just outside of the city. The Boodjamulla National Park and Riversleigh fossil site are within a four-hour drive of Mount Isa, though road accessibility and the quality of facilities vary.

The tourism sector in remote outback locations like Mount Isa is particularly vulnerable to the impacts of climate change. Mount Isa's peak season for visitors is between May and September, when prevailing conditions are dry and warm. Mount Isa can record significant rainfall during the off-peak summer months, which poses flooding risks, while temperatures can soar over 40°C. In this environment, extreme weather events can damage critical infrastructure, closing access between Mount Isa and other towns during road and rail closures, and impeding the provision of utilities like power and water. Increasing average and extreme temperatures also negatively impact the appeal of tourism destinations.[12]

Why tourism matters in Mount Isa

Mount Isa has many iconic characteristics, including a vibrant and distinctive outback environment, Kalkadoon Traditional Owner stories and culture, and a dynamic recent history of defence and mining industry development. These characteristics have underpinned successive tourism campaigns in Mount Isa, and outback Queensland more broadly, and will continue to be leveraged to build and strengthen Mount Isa's profile with a wide range of potential domestic and international visitors.

A thriving visitor economy supports two key objectives of a future ready Mount Isa: economic diversification and social wellbeing. A range of tourism attractions and events also attract different types of visitors and economic input throughout the year, ranging from flagship events like the Mount Isa Rodeo to the permanent fossil museum at Outback at Isa. As the Mount Isa region looks to diversify its regional economy, tourism offers further opportunities for a range of new local enterprises, including First Nations owned and operated businesses.

The visitor economy also supports social wellbeing. Accessible community infrastructure—such as shaded parks, public bathrooms and well-maintained public and active transport routes—supports a positive visitor experience during all seasons and serves the local community. Place-making initiatives, such as community art or gardening projects, showcase the unique stories, history, and character of Mount Isa while enabling community members to contribute to safe and vibrant shared spaces. Regional circuit and flagship events also provide opportunities for the community to connect and build a shared sense of place and culture.

Tourism pathways, strategies and actions

A future ready tourism sector in Mount Isa supports economic diversification and social wellbeing within the region. Investment in public amenities, cultural events and recreational sites creates a positive experience for visitors and residents.

The tourism sector is comprised of diverse local businesses, including SMEs, social enterprises, and those owned by First Nations people, which fosters economic resilience and opportunities to unlock new value through circular design.

Four key pathways for a future ready tourism sector

To achieve future readiness for Mount Isa's tourism sector, **four key pathways** have been identified:

1. Strengthen the foundations of the local tourism industry
2. Support the development of iconic experiences in Mount Isa
3. Expand First Nations-led visitor experiences
4. Develop and share a compelling narrative about Mount Isa's unique attractions and offering

Each pathway contains **strategies** and **potential actions** as outlined in this chapter. A table summary of strategies and all potential actions for the energy sector is presented in **Appendix B**.

The pathways, strategies and potential actions are a synthesis of information identified through desktop research, consultant analysis and stakeholder engagement activities undertaken by The Next Economy, Climate-KIC and Mount Isa City Council. Further stakeholder engagement is proposed to review, prioritise and further develop strategies and potential actions.

Consistent application of the **Future Ready Economy Framework Principles**, detailed in Chapter 1, to development undertaken in the tourism sector will unlock additional benefits for the region.

Pathway 1: Strengthen the foundations of the local tourism industry

Mount Isa has the potential to strengthen its tourism industry catering to the diverse interests of visitors and contributing to local culture and wellbeing. The strategies in this section are informed by recommendations included in the Mount Isa Tourism Development Strategy, which were recently reaffirmed through analysis conducted for Mount Isa City Council by TRC Tourism.

These strategies focus on steps that can be taken to strengthen the foundations of the local industry and its resilience to emerging trends, including through collaboration, strategic planning, and investment in shared infrastructure.

Four strategies have been identified to support Pathway 1: Strengthen the foundations of the local tourism industry.

Strategy 1: Invest in strategic planning and coordination

Mount Isa City Council and local peak bodies, such as the Mount Isa Tourism Association (MITA), play an important planning and coordination role that underpins effective industry development. These organisations can collect and share insights about emerging consumer and environmental trends with local tourism operators, liaise with other tourism development bodies to identify or create integrated tourism opportunities, drive investment in shared visitor infrastructure and iconic regional events, and facilitate the development of strategic plans, such as the Mount Isa Tourism Development Strategy.

The Mount Isa Tourism Development Strategy, which has provided a five-year vision and priorities for strengthening the local industry, is due for renewal in 2025. Mount Isa City Council could work in partnership with local operators to update the Tourism Development Strategy with a focus on the key dimensions of a future ready tourism sector. Council could convene working groups comprised of tourism operators, relevant experts and community representatives to investigate and recommend options, opportunities for collaboration, roles and responsibilities across each future ready dimension.

Potential **actions** to be considered by local tourism working groups include:

Decarbonisation	Options to decarbonise tourism in Mount Isa will vary depending on the location and nature of different operations and facilities. Some operators will be able to make individual decisions to switch to rooftop solar, heat pumps, and/or an electric vehicle (EV) fleet in the near term. Other operators may rely on the decarbonisation of the North West Power System (or eventually the National Electricity Market) and installation of other enabling infrastructure, such as an EV charging network throughout the North West Region. Common user infrastructure upgrades such as these would enable a larger number of operators to decarbonise faster.
Circular design	Integrating circular design into the design of tourism products and operations can reduce the financial and environmental costs associated with waste, create new value in local supply chains, and uncover new offerings that are unique to the Mount Isa region. For example, there may be an opportunity to explore redclaw crayfish aquaculture that provides ‘outback seafood’ to local restaurants, which in turn divert food scraps for compost to local gardens or farms.
Climate adaptation	The Queensland Government produces high resolution data about climate impacts in regions across the state. Regular information sharing (for example, via a website or newsletter) based on the latest climate data could ensure that local tourism offerings and new infrastructure developments are designed with projected climate impacts in mind.
Social wellbeing	Community projects and traditions like street festivals, kerbside gardens, community food forests, and mural projects delivered in collaboration with local schools and groups could contribute to greater social cohesion and a shared sense of safety, place and pride. These projects provide attractions for visitors to see and enjoy Mount Isa’s unique culture, assets and history.
Environmental regeneration	Environmental regeneration activities include removing invasive species, improving water quality, restoring soil health, and revegetation in degraded environments. Benefits include improved biodiversity, resilience to climate impacts, community health, and new tourism opportunities in Mount Isa. The Mount Isa Environmental Management Plan, which sits alongside other plans such as the Tourism Development Strategy, details how Mount Isa City Council and key stakeholders works towards environmental outcomes in the municipality. The plan is due for renewal in 2025, providing an opportunity for Council and the tourism sector to collaboratively update environmental management priorities and responsibilities within the sector for the next five-year horizon.

Strategy 2: Invest in shared infrastructure to improve access and enjoyment for locals and visitors

Identifying and prioritising public infrastructure upgrades and new developments can improve both local and visitor access to, and enjoyment of, experiences around Mount Isa.

By making it easier for people to get to and enjoy attractions during all seasons, infrastructure upgrades can extend the visitor season and encourage longer stays, support community wellbeing, and support the viability of tourism operations during off-peak periods by encouraging local participation.

Potential **actions** include:

- Upgrade or installing public amenities.
- Develop shaded bike lanes and public EV charging stations.
- Offer free or subsidised transport to connect Mount Isa to nearby recreational sites like Lake Moondarra.
- Invest in more passive cooling infrastructure (for example, mature tree coverage or shade cloths) to ensure public spaces are accessible during hot days.

Strategy 3: Support tourism operators to strengthen their business models

Industry resilience can be strengthened by working with existing tourism operators to respond to changing consumer preferences and operating environments, including economic and environmental shocks such as COVID-19, climate disasters, or high inflation.

Potential **actions** to support this aim include:

- Host workshops to share new information about future ready dimensions, industry best practice, and emerging visitor trends and opportunities in Mount Isa. This would offer an opportunity for businesses to continuously acquire new insights, networks and skills development.
- In some cases, there will be a need for local or state governments to make financial and other support available to protect the viability of key tourism offerings, such as the Mount Isa Rodeo or Outback at Isa.
- There may be opportunities for Council-led planning and development to make it easier for tourism facilities to connect to local renewable energy supply and environmentally responsible water and waste systems, which reduce operating costs and local environmental impacts.

Strategy 4: Support tourism operators to expand their offerings in alignment with the Future Ready Economy Framework

Visitor trends should be regularly reviewed alongside periodic experience gap analyses of tourism in Mount Isa and Outback Queensland more broadly. This analysis and business development support can be made available to local tourism operators to support the expansion of local offerings and market access. New developments should be consistent with Mount Isa's aspirations to be a future ready region, with a focus on the region's unique cultural and environmental characteristics.

New business opportunities could be catalysed to support a growth in the visitor economy.
Source: Mount Isa City Council.

Pathway 2: Support the development of iconic experiences

Mount Isa is an iconic outback town, with a range of interesting environmental, cultural and historical characteristics that attract a range of visitors. Campaigns like "Meet Mount Isa" and calls to "celebrate the other side of Queensland" draw on this unique positioning. Mount Isa's unique characteristics can be further leveraged to develop new and iconic visitor experiences, with a focus on multi-day offerings.

Two strategies have been identified for Pathway 2: Support the development of iconic experiences.

Strategy 1: Encourage new entrants in the Mount Isa tourism sector

Mount Isa's natural environment and emerging industries mean the region is well positioned to foster new, multi-day visitor experiences. Gaps in the local tourism hospitality market and workforce could also be identified and addressed. New business opportunities, for example, innovative accommodation options, could be catalysed to support a growth in visitor numbers.

Potential **actions** to foster new operators for tourism and visitor experiences include:

- Build on previous assessments of commercial opportunities at Lake Moondarra. A master plan could be collaboratively developed to guide coordinated, diverse and resilient developments at the lake. Developments could include bird watching, low-impact water sports and eco-friendly accommodation.
- Design educational products for universities, companies and professional associations. These products could bring students and professionals in the mining, critical minerals and renewable energy sectors to Mount Isa for multi-day study tours of leading practice and innovation.
- Develop visitor experiences based on environmental regeneration projects. These experiences could offer opportunities for visitors and locals to learn about iconic local ecosystems, culture and history.
- Conduct a local tourism and hospitality workforce gap assessment to inform a workforce development plan. This plan should be developed in partnership with local education providers.

Strategy 2: Foster collaboration to deliver unique, multi-day visitor experiences

One of the strengths of the Mount Isa visitor economy is being well positioned in Outback Queensland as the gateway to the North West. Mount Isa's location offers opportunities for collaboration between local and regional tourism operators to engage visitors who are moving through outback Queensland.

Potential **actions** to foster new collaboration include:

- Explore 'farm to table' and cultural heritage and ecotourism partnerships within Mount Isa.
- Explore opportunities to expand or initiate regional circuit events across central and North West Queensland, such as a regional golf circuit or side-events to compliment Top End fishing competitions, which could promote more multi-day and off-peak visitors.

Pathway 3: Expand First Nations-led visitor experiences

First Nations people are key stakeholders in the development and management of Mount Isa's tourism industry and landscape. The Kalkadoon people as the Traditional Owners, as well as other First Nations tourism operators, have central roles to play in the development of strategic plans, governance structures and visitor experiences across the Mount isa region.

Five strategies have been identified for Pathway 3: Expand First Nations-led visitor experiences.

Strategy 1: Support the voice of Kalkadoon people in tourism development

Kalkadoon Traditional Owners and other First Nations people and businesses based in Mount Isa are key stakeholders in Mount Isa's tourism sector.

Potential actions to elevate the aspirations and voice of Traditional Owners and other First Nations people in the development of Mount Isa's local tourism sector include:

- Invest in processes to articulate and build awareness of the overall aspirations of Traditional Owners and other First Nations people in the region, including possible pathways to support those aspirations. These aspirations and pathways may inform the expansion or development of First Nations owned, led and operated visitor experiences.
- Ensure Traditional Owners are key stakeholders in the evolution of the governance structure and decision-making processes for tourism in Mount Isa, including through future updates to the Mount Isa Tourism Development Strategy.
- Ensure Traditional Owners are engaged in multi-stakeholder tourism initiatives, such as the development and implementation of the Lake Moondarra Master Plan.
- Strengthen relationships and collaborations between all tourism stakeholders as the basis for coordinated and strategic support.

Strategy 2: Support the aspirations of Kalkadoon people to develop a Cultural Centre

The Kalkadoon PBC is exploring the development of a Cultural Centre to improve community wellbeing and act as a hub for family-owned visitor experiences, including traditional art, artists in residence, a café with local food, tourism bookings, and local artifacts.

Potential **actions** to support these aspirations include:

- Resource the Kalkadoon PBC to progress development of a Cultural Centre with Kalkadoon community members, ensuring that the Centre meets the community's needs.
- Include the Cultural Centre concept in strategic plans and campaigns intended to support the development of the local tourism sector.

Strategy 3: Strengthen capacity for First Nations-led visitor experiences

Tourism business development support in Mount Isa helps to incubate new visitor experiences. For example, the Outback at Isa Centre acts as an informal incubator for new First Nations tourism offers. This has enabled First Nations-led experiences to thrive, including the Bush Tucker Experience, which utilises Outback at Isa's native Botanical Garden to share aspects of Kalkadoon and other First Nations groups' culture and history with visitors.[13]

Potential actions to enhance support for First Nations-led visitor experiences include:

- Promote and support broader participation in existing business development and training support delivered in Mount Isa.
- Support and strengthen the business development support role undertaken by Outback at Isa.
- Deliver an expanded range of skills development workshops and resources in the Mount Isa region. These initiatives can support First Nations business leaders to strengthen business models and expand their offerings in alignment with the future ready framework.
- Provide tailored business resources and support to people working in First Nations tourism businesses to address key considerations for a future ready economy.
- Strengthen connections and participation opportunities for First Nations business leaders in regional and national business programs, including accelerators, pitch events and networking opportunities to access expertise, mentoring, resources and peer support.
- Create and support new opportunities for collaboration and partnerships between First Nations tourism operators and a diverse range of local and regional organisations (including tourism, education, training and government agencies) to enable the development of new visitor experiences, strengthen organisational capacity, and improve access to resources.

Mount Isa is well positioned to foster new multi-day visitor experiences around its natural environment, lifestyle, culture, and emerging industries. Source: Mount Isa City Council.

Strategy 4: Encourage and support increased First Nations participation in the Mount Isa tourism sector

First Nations businesses face the same challenges as other operators in the tourism sector, including seasonal fluctuations in visitor numbers, business governance and leadership, staff attraction, training and retention, product visibility and market access.

Potential **actions** to strengthen First Nations tourism businesses include:

- Offer support for First Nations people and organisations to create and realise new experiences showcasing the region's unique history and culture.
- Tailor tourism workforce training, recruitment and retention initiatives for the specific needs and opportunities of First Nations people and businesses.
- Support First Nations businesses to address common challenges facing tourism in Mount Isa.

Strategy 5: Improve access to funding, finance and investment for First Nations-led tourism initiatives

First Nations led visitor experiences, like other tourism operators, may benefit from support to access a greater range of appropriate funding and investment opportunities.

Potential **actions** to improve access to funding and investment include:

- Support First Nations-led businesses to access seed funding opportunities to enable development and testing of new visitor experiences, feasibility studies and business case development, and resourcing the start-up phase of new enterprises.
- Strengthen access to investment to grow tourism opportunities from demonstration phase to established/mature organisations, including finance for capacity building, organisation facilities and infrastructure, governance development and product/experience development.

First Nations people offer a range of visitor experiences in Mount Isa, drawing on the region's history and culture.
Source: Mount Isa City Council.

Pathway 4: Develop and share a compelling narrative about Mount Isa's unique attractions and offerings

Destination marketing is a key component of tourism development, as it allows potential visitors to recognise and connect with the distinctive and attractive aspects of an area.

One strategy has been identified Pathway 4: Develop and share a compelling narrative about Mount Isa's unique attractions and offerings.

Strategy 1: Commit to a distinctive and attractive campaign to drive awareness about Mount Isa's unique attractions

The Mount Isa tourism industry has access to brand recognition and marketing collateral developed through previous campaigns—such as "Meet Mount Isa" and "celebrate the other side of Queensland"—which have showcased the region's unique attractions.

Potential **actions** to expand and strengthen these campaigns over time include:

- Periodically review local tourism marketing campaigns to ensure they capture and leverage new developments, including visitor attractions created by business developments, such as the Kalkadoon Cultural Centre, and multi-day experiences associated with new industries, such as study or work tours of critical minerals mining and processing operations.
- Collaborate with other regional, state and national tourism bodies to improve the market reach and impact of Mount Isa marketing campaigns.
- Support local tourism operators to explore a range of traditional and social media options to increase audience engagement and awareness of Mount Isa's unique attractions.

Value adding opportunities in tourism

There are many ideas for value adding services and experiences based on unique local history, culture and products for tourists in Mount Isa. These ideas could increase visitor enjoyment, time and money spent in the city and region. Examples include:

- Aboriginal culture experiences, based at a new Kalkadoon Cultural Centre and appropriate outdoor sites around Mount Isa city and surrounds.
- Hosting art classes and art sales at a First Nations gallery space.
- Connecting local produce, such as wild game, red claw or camel milk products, with local hospitality suppliers to create "farm-to-table" experiences.
- Encouraging new or expanded regional tourist circuits and packages, connecting Mount Isa to other key attractions and towns in central and North West Queensland.

Future ready tourism sector – Outcomes

The following outcomes are illustrative of a future ready tourism sector in Mount Isa.

Table 12: Future ready tourism outcomes for Mount Isa

Framework dimension	Potential outcomes
Strong and resilient economy	• Local tourism operators have access to reliable information about emerging economic, social and environmental trends that could affect the sector. • Local tourism operators have access to business development support to meet future opportunities and emerging risks.
Decarbonisation	• Local tourism operators have access to the information and funding they need to decarbonise their operations, including through electrification and fuel switching. • Mount Isa generates its own renewable energy, which is accessible to tourism operators.
Climate adaptation	• Local tourism operations and infrastructure are designed or retrofitted to be resilient to current and future climate impacts in the Mount Isa region, including extreme heat and flooding.
Circular design	• Tourism products and waste in Mount Isa are successfully integrated into the regional circular economy, reducing landfill and unlocking new value for local enterprises.
Environmental impact and regeneration	• Priority areas are regenerated, improving biodiversity, resilience to the impacts of climate change, and overall environmental health across the Mount Isa region. • New infrastructure developments minimise their environmental impact by sourcing renewable energy and using environmentally-sound water and waste systems.
Liveability and social wellbeing	• Local tourism attractions and events are accessible to residents, enhancing local recreational and educational opportunities. • Community projects produce new public art, gardens and other installations that create visitor attractions while supporting community connection and a shared sense of identity and place.

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Conclusion

Mount Isa's economy and community are at a crossroads, facing two vastly different scenarios. Despite a rich asset base and a history of innovation and prosperity, multiple significant challenges now threaten the city's economic foundations. They include job losses and population decline, the decarbonisation of economic sectors, infrastructure gaps, a changing climate, and the high cost of doing business. At the same time, a range of issues are impacting community health, wellbeing and liveability in Mount Isa.

A slow or limited response from the state and federal governments to Mount Isa's immediate economic challenges could see a cascade of negative impacts leading to depopulation and a significant decline in business and community viability.

Current economic activity in Mount Isa provides the critical mass required to sustain business, services and the Mount Isa community more broadly. Major losses could threaten the collective future of industry in the region, the viability of the community, and ultimately, the ability of the NWMP to deliver the resources Queensland and Australia need to meet the demands of the energy transition. A slow response to challenges facing the region could result in a huge cost for the region and for Queensland and Australia's economy. The scale of change facing Mount Isa right now necessitates a rapid, strategic, locally led and specialised response.

Mount Isa is positioned to realise new and significant opportunities, and with the right kind of support, could set the region on a new trajectory characterised by a strong and resilient future ready economy, and a healthy, thriving community.

A place-based response is underway. However, a new level of coordination and investment are now required, on a scale commensurate to the challenges it is facing, and the size of unique opportunity Mount Isa is positioned to realise.

Support from all levels of government, together with private sector investment and strong local leadership could deliver a transformative outcome for the region, that sets a new precedent for economic development that backs the aspirations of the region and is future ready. This approach could see Mount Isa continue to be a thriving community that's delivering wealth for the nation, by meeting the global demand for the minerals critical to the renewable energy transition.

Key opportunities and priorities for Mount Isa

Building a future ready economy for Mount Isa will require action across all economic sectors, and investment into the foundations for a thriving community:

- Significant opportunities exist for the Mount Isa region to contribute to **renewable energy generation and storage** locally, and potentially at a state level, through development of new projects. The timely completion of CopperString 2032 will be key to existing and diversified industries in Mount Isa. However, interim measures will be necessary to ensure ongoing economic returns and employment opportunities prior to scheduled completion in 2029.
- Mount Isa has a strategic opportunity to **supply the minerals and metals the world needs** to decarbonise. To harness this opportunity, Mount Isa requires enabling policy, coordination and investment - to unlock mining and minerals processing projects, develop common user infrastructure and facilitate innovation and research.
- Securing **sulphuric acid supply** will be critical to fertiliser production, battery development and growth in mining and minerals processing. Mount Isa City Council is proactively pursuing local solutions to acid supply through new technology collaborations.
- Access to sufficient, **reliable and accessible transport and logistics infrastructure** has been a limiting element in the development and diversification of Mount Isa for years, causing barriers to new business viability and ongoing operations. A future ready transport sector in Mount Isa meets demand and provides common access to affordable freight and mobility services that are decarbonised and resilient to wet weather and periods of extreme heat.
- There are opportunities for innovation in the existing beef cattle industry in Mount Isa, as well as **potential to diversify and expand the agricultural sector** into areas such as cropping, native botanicals and food production. Access to reliable and sustainable water, research and development expertise and renewable energy for intensive activities will be critical factors in leveraging this potential.
- Mount Isa's unique characteristics already support a strong tourism sector. They can be further leveraged to **develop new and iconic visitor experiences**, with a focus on multi-day offerings to retain greater value in the region. The tourism sector in remote outback locations like Mount Isa is particularly vulnerable to the impacts of climate change. A range of strategies can support the tourism sector to adapt to a changing climate, whilst taking action that strengthens the sector.

Priority Projects for Mount Isa

For immediate action, Mount Isa City Council has identified flagship projects that present significant opportunity to build a future ready economy in Mount Isa:

1. Critical Minerals and Rare Earths Research Centre
2. Battery Anode Material (BAM) Project
3. Acid production from pyrite in mine tailings
4. Fertiliser and Battery Acid Plant
5. Green Gravity
6. Flying Whales
7. Truck Amenities and Fuel Depot
8. Correctional facility

Council is currently working with project proponents on feasibility, planning and investment to realise these opportunities.

The value of the Roadmap

The Mount Isa Future Ready Economy Roadmap presents pathways, strategies and possible actions to support the development of Mount Isa's key economic sectors and the community as a whole. The Roadmap is just one part of the Council's ongoing work to support the Mount Isa community to navigate the transformation of the economy so it can survive and thrive into the future.

Now, the Roadmap can be used by Mount Isa City Council and regional stakeholders as a tool to build common understanding of pathways to build future readiness, and to take action. It does this by:

- Communicating a clear vision for the region that extends well beyond the immediate challenges facing the Mount Isa economy.
- Articulating Mount Isa's value proposition to Australia and the world, and what it will take to be able to realise its potential.
- Providing a framework to inform planning efforts to transform and diversify economy, with an integrated focus on decarbonisation, climate adaptation, circular design, environmental impact, liveability and social wellbeing.
- Catalysing funding and investment from both the public and private sectors.
- Supporting those with the responsibility to manage the impacts of the transition on the community and region in order to capture economic benefits for the long term.

Next Steps

Successful delivery of the Future Ready Economy Roadmap requires key stakeholders to commit to:

1. Develop their own implementation plans to operationalise the actions identified in the Roadmap.
2. Establish a new governance structure for coordination and resourcing implementation of the Roadmap.
3. Engage with private and public investors to secure the investment and resources to enable the change required.
4. Build a deeper understanding of the Roadmap with regional stakeholders and the Mount Isa community.

Approaches to enable delivery of the Roadmap are articulated below.

1. Develop implementation plans to operationalise the Roadmap

Realisation of the Roadmap will require regional coordination, leadership, planning and action by numerous stakeholders across government, industry, civil society and the community. Implementation planning is an important next step for all Mount Isa stakeholders. For Mount Isa City Council, this could include to:

- Develop a Mount Isa City Council Implementation Plan, specific to Council's role in delivering on the Roadmap. Council's role will vary depending on the type of action and the work required. In some cases, Council may provide leadership for example attracting new, innovative businesses to Mount Isa. In other cases, they may undertake a coordination or advocacy role, such as sharing key industry messages with the Australian Government.
- Identify the resources and support required by Mount Isa City Council to deliver their Implementation Plan.
- Design Council's governance structure for oversight of the Implementation Plan's delivery.
- Develop a monitoring, review and reporting schedule, including feedback processes from Mount Isa stakeholders.
- Convene a meeting with relevant stakeholder groups to identify roles, priority actions and timeframes to deliver the Roadmap.
- Develop a communications strategy to share Roadmap progress and outcomes with Mount Isa stakeholders and the broader community.

Mount Isa industry, business and community leaders are also encouraged to develop implementation plans, and to publicly communicate their commitment to the Roadmap.

2. Establish a new governance structure to coordinate and resource the Roadmap

The economic transformation of Mount Isa requires a governance structure that enables decision making processes inclusive of key stakeholders on the ground, as well as the relevant state and federal government representatives and others with a stake in what happens in Mount Isa (whether they operate at a regional, state, national or global level).

There are many leaders across the region already working hard to support Mount Isa. A new level of engagement is now necessary for coordination, strategy and action over the medium to long term.

Mount Isa City Council is seeking greater commitment from the Queensland and Australian Governments to strategic coordination and investment into the region.

Council proposes tailored **strategic coordination** to maximise local development efforts in the form of a taskforce or regional transition body to:

- Oversee the strategic delivery of major work programs for economic development.
- Coordinate leadership and expertise across local, state and federal government departments.
- Connect with additional state and federal government delivery agencies.
- Leverage private sector expertise.

Alignment and consistency between all levels of government will be critical to enable development in the Mount Isa region at the pace required. This includes alignment on economic strategy and investment priorities, regular and effective communication, transparent reporting and collaborative action on emerging opportunities, risks and barriers to development.

3. Engage with private and public investors to secure the investment and resources required for change

The transformation of Mount Isa's economy will require significant investment from the State and Australian Governments and industry. Priority investment areas include:

- **Mount Isa City Council's capacity** to provide strong leadership throughout the economic transformation process, including leadership, coordination, advocacy and promotional work, program and project delivery, stakeholder engagement and communications.

- **Regional stakeholder capacity** to progress work enabling the transformation and diversification of Mount Isa's economic sectors, with an integrated approach to decarbonisation, climate adaptation, circular design, environmental impact and regeneration, and improvements in liveability and social wellbeing.
- **Priority projects identified** by Mount Isa City Council and regional stakeholders with an immediate focus on job creation and economic diversification.
- **Priority strategies and actions** identified in the Roadmap for future ready economic and community development.

It is time for the Australian and Queensland Governments to play a catalytic role in Mount Isa, securing the future of the community, for the benefit of the region and the country.

Mount Isa City Council proposes the establishment a multi-billion-dollar fund for Mount Isa to invest in the foundations of competitive new industries, innovation, and a thriving community.*

This level of public commitment could be leveraged to attract the scale of private investment needed to position Mount Isa on a new trajectory - towards a strong and resilient economy that contributes significantly to the world, and a thriving community that underpins the North West region.

4. Deepen understanding of the Roadmap

Further engagement with regional stakeholders and the Mount Isa community is recommended to build a strong foundation of awareness and support for the Roadmap, including active participation and ownership of specific actions. This will start with the launch of the Roadmap in February 2025.

Other opportunities to share the Roadmap with the Mount Isa community could include sharing components of the Roadmap through local news channels such as radio and the North West Weekly, publishing a summary document and/or community information sheet, and sharing the Roadmap through community events. Local champions of the Roadmap could assist in sharing key messages and encouraging discussion, collaboration and aligned action.

With strong coordination and investment, Mount Isa can overcome the immediate economic challenges the region faces to build a stronger, future ready economy that supports critical government priorities and sustains the North West region. Building on strong foundations, a proud history and the commitment of local leaders, this is a future well within reach.

* For context, the resource sector's estimated economic contribution to the Mount Isa economy in 2019 to 2020 was $1.4 billion (gross regional product) – A $2-3 billion fund represents a strong return on investment." Source: Queensland Resources Council, 2020, What are resources worth to Mount Isa?, Available at: https://www.qrc.org.au/wp-content/uploads/2024/04/2020_MountIsa_LGA.pdf

Appendix A. Engagement Activity Summary

This appendix provides a summary of The Next Economy's (TNE) engagement activities during the preparation of the Mount Isa Future Ready Economy Roadmap. Engagements were held with over 100 people and 70 organisations. These total engagement estimates exclude repeat engagement with the same individuals and organisations.

Activity	Approach	Date	People	Stakeholder organisations	
Council Working Group	TNE and Mount Isa City Council staff formed a Roadmap Working Group to monitor project progress, facilitate knowledge sharing and enable frequent feedback.	January - August 2024 (monthly)	5	1	Mount Isa City Council Staff.
		September 2024 - February 2025 (fortnightly)	6	1	Mount Isa City Council Staff and Mayor.
Mount Isa & Region Futures Advisory Committee stakeholder workshop	TNE participated in the MIRFAC workshop, which allowed multiple introductory conversations. *Note: This workshop is excluded from TNE's engagement estimate.*	24 January 2024	80+	30	Industry, State Government, Business and community leaders.
Consultant Meetings - Group	TNE participated in regular meetings with consultancies engaged to analyse opportunities to diversify Mount Isa's economy.	16 January - 28 May 2024	14	5	Mott MacDonald, Scyne, Urban Economics, DeltaPearl Partners, McKell Institute.
Consultant Meetings - Individual	TNE met with each consultancy to understand the scope of their work, then share findings during the analysis and report drafting phases. Note: TNE did not meet with TRC Tourism.	16 January - 28 May 2024	12	5	
Council staff and Councillors	TNE facilitated two in-person workshops with Council staff and Councillors. Workshop 1 focused on project design and key inputs. Workshop 2 focus on the Roadmap's purpose and influence pathways.	8 February 2024	6	1	Mount Isa City Council staff and Councillors.
		3 October 2024	14	1	Mount Isa City Council staff and Councillors.
Introductory Phone Calls and In-Person Meetings	TNE undertook a series of introductory calls and meetings to provide an overview of the project scope and invite participation.	8 - 9 February 2024	4	4	Commerce North West, Southern Gulf NRM, Kalkadoon PBC, Outback at Isa.
Industry Meetings - With Consultant Group	TNE participated in facilitated meetings between the consultant group and key industry stakeholders.	March 2024	14	3	Glencore, Incitec Pivot, North West Phosphate.

Activity	Approach	Date	People	Stakeholder organisations	
TNE Meetings - Queensland Government	TNE provided updates on project delivery with representatives from the Queensland Government.	18 April 2024 2 May 2024	4	2	Department of State Development & Infrastructure, Department of Premier and Cabinet.
TNE In-person Workshops	TNE facilitated a series of small group, in-person workshops and meetings to understand the perspectives of key stakeholders including workers, community and business leaders, members of the community.	16 July 2024	10	1	Council staff and Councillors.
		16 July 2024	20	20	Local workers.
		17 July 2024			Community members.
		18 July 2024			Community and business leaders.
		19 July 2024			Agricultural sector.
TNE Online Industry Workshop	TNE facilitated a workshop to explore opportunities and barriers for managing the dimensions of the Future Ready Framework.	19 August 2024	11	11	Industry representatives (energy, transport, mining, and minerals and manufacturing).
TNE Stakeholder Meetings	TNE met with a diverse range of Mount Isa stakeholders through one-on-one meetings both in-person and online.	17 - 19 September 2024 (in-person) July - November 2024 (Teams/phone)	17	11	Glencore, Queensland Dept. of Treaty, Aboriginal and Torres Strait Islander Partnerships, Communities and the Arts (DATSIP), Kalkadoon PBC, YPA & Elders Group, Injilini Child and Youth Services, Outback at Isa, Queensland Dept. Education, North West Queensland Indigenous Catholic Social Services (NWQICSS), Queensland Police Service.
Roadmap Briefing & Feedback - Online Workshops	TNE facilitated two online workshops to share an overview of the Roadmap and seek feedback on key messages, pathways and strategies for priority economic sectors.	20 January 2025	23	12	Energy, mining and minerals, transport, and manufacturing stakeholders.
		21 January 2025	8	5	Agriculture, tourism and community services stakeholders.

Development of the Mount Isa City Council Economic Diversification and Transformation Strategy and Mount Isa Future Ready Roadmap was informed by the following expert consultant reports.

Sector	Consultant Report	Consultancy	Date
Transition Framework	Mount Isa Transition Framework Part 1 - Closure Framework	McKell Institute	Apr-24
	Mount Isa Transition Framework Part 2 - Understand the Regional Context Labour Market Analysis	McKell Institute	Apr-24
	Mount Isa Transition Framework Part 3 - Map the Threat Impact Analysis	McKell Institute	Apr-24
	Mount Isa Transition Framework Part 4 - Identify the Opportunity Diversification Analysis	McKell Institute	Apr-24
SMEs	Diversification and Transformation of the Mount Isa Economy - Small and Medium Business Strategic Plan & Deliverables	Urban Economics	May-24
Critical Infrastructure	Transformation of Economy Strategy - Critical Infrastructure	Scyne Advisory	May-24
Resources	The Diversification and Transformation of the Mount Isa Economy – Resources Pillar – Summary Final Report	DeltaPearl Partners	Jun-24
Agriculture	Mount Isa Transformation of Economy - Agriculture Pillar Recommendation Report	Scyne Advisory	Jun-24
Energy	Diversification and Transformation of the Mount Isa Economy - Energy	Mott MacDonald	Jul-24
Tourism	Mount Isa Economic Transformation - Tourism - Final Report	TRC Tourism	Jul-24

Appendix B. Economic Sectors – Strategy and Action tables

This Roadmap explores Future Ready Pathways for the foundations of community wellbeing and key economic sectors in Mount Isa. Strategies and potential actions have been identified for each pathway.

Tables detailing pathways, strategies and potential actions are available for download as a complementary resource to this Roadmap, accessible from the Mount Isa Future Ready Economy Roadmap website.

The pathways, strategies and potential actions are a synthesis of information identified through desktop research, consultant analysis and stakeholder engagement activities directly undertaken by The Next Economy, Climate-KIC and Mount Isa City Council. Further stakeholder engagement is proposed to review, prioritise and further develop the strategies and potential actions. This process will include the identification of key stakeholders and an organisation accountable for the delivery of agreed actions.

MOUNT ISA CITY COUNCIL

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