



queensland
exploration
council

ADVANCING QUEENSLAND EXPLORATION

*FIVE KEY INITIATIVES FOR EXPLORATION
INDUSTRY DEVELOPMENT*

2022-23 QEC Exploration
Industry Submission to the
Queensland Government

ABN 59 050 486 952
Level 13 133 Mary St Brisbane Queensland 4000
T 07 3295 9560
E info@queenslandexploration.com.au
W www.queenslandexploration.com.au

Table of Contents

INTRODUCTION 3

 ABOUT THE QEC 3

 THE ROLE OF EXPLORATION 3

 OPPORTUNITY FOR QUEENSLAND..... 4

ABOUT THIS SUBMISSION..... 5

THE FIVE KEY INITIATIVES FOR EXPLORATION INDUSTRY DEVELOPMENT 7

 1. CHAMPIONING QUEENSLAND EXPLORATION 7

 A. TRANSFORMING THE QUREX GATEWAY TO THE NEW-AND-IMPROVED QUEENSLAND
EXPLORATION CONNECT (QE-CONNECT) WEBSITE 7

 B. CELEBRATING SUCCESS WITH NEW QUEENSLAND EXPLORER AWARDS 8

 C. DEVELOPMENT OF AN ESG FRAMEWORK FOR EXPLORERS..... 9

 2. FUNDAMENTAL INITIATIVES TO DISCOVERY 9

 A. INCREASED FUNDING TOWARDS QUEENSLAND'S WORLD-LEADING COLLABORATIVE
EXPLORATION INITIATIVE 9

 B. DATA-DRIVEN GEOLOGICAL SURVEY 11

 C. FACILITATING A SHARED VISION TOWARDS RESEARCH AND DEVELOPMENT 12

 3. SUSTAINABLE RESEARCH FOR A GAS-LED RECOVERY 13

 4. ONE VISION FOR THE NORTH WEST MINERALS PROVINCE 15

 5. QEC EXPLORING FOR THE FUTURE MINERALS UNLOCK CHALLENGE 17

Introduction

ABOUT THE QEC

The Queensland Exploration Council (QEC) is an initiative of the peak representative body for Queensland's minerals and energy developers – the Queensland Resources Council (QRC).

The QEC was formed by QRC in 2010 after the Global Financial Crisis when it was near impossible for an explorer to access the capital required to get their projects off the ground. With endorsement from the Queensland Government, minerals and energy explorers, service providers, business and academic research communities, the QEC aims to:

- attract more exploration investment to Queensland; and
- promote the role of the exploration industry, and in particular, its importance to regional, state and national economies.

In 2021 the QEC updated its strategic plan under a new vision:

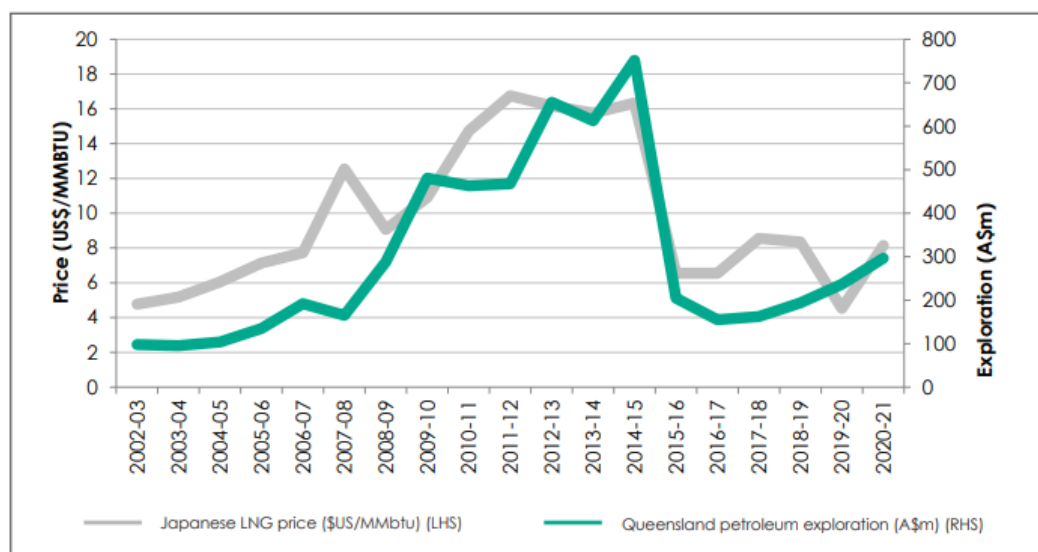
The Queensland Exploration Council supports explorers on their pathway to production.

Today the not-for-profit QEC has 98 members and three proactive Working Groups reflecting the diversity of the exploration community in Queensland.

THE ROLE OF EXPLORATION

Typically, exploration activity is a leading indicator of the outlook for the broader resources sector. For analysts the exploration is a bellwether industry because when the broader economic outlook is positive, exploration activity flourishes. A good example of this is set out in the [QEC's Annual Exploration Scorecard](#) publication, where Chart 1 (page 16 of Scorecard document) below illustrates the relationships between the global average benchmark LNG prices and Queensland's petroleum exploration spend.

Chart 1: Global average benchmark LNG prices and Qld Petroleum Exploration Spend 2002-03 to 2020-21



Source: METI; JOGMEC; ABS 8412.0

Note: Petroleum exploration expenditure includes appraisal activities, but excludes developmental and production activities.

For Queensland, exploration sustains a pipeline of new resource developments, and in turn the jobs, economic activity and royalty streams that underpin the state's economy. Resources royalties alone contributed \$2.5 billion in revenues for the 2020-21 Queensland State Budget. In the most recent [Queensland Budget 2021-22 Mid Year Fiscal and Economic Review](#), revenue from royalties and land rents was estimated to total \$6.255 billion in 2021-22, \$3.593 billion higher than in 2020-21 and \$2.914 billion higher than estimated in the 2021-22 Queensland Budget.

Currently, Queensland exploration activity remains well below the peak achieved in 2011-12, however recent results are very encouraging. In the 12 months to December 2021, Queensland copper exploration expenditure increased by a staggering 56%, petroleum exploration expenditure was up by 9%, gold exploration expenditure lifted by 6% and coal exploration expenditure decreased by 17%.¹

OPPORTUNITY FOR QUEENSLAND

Global energy security is becoming critically important with many countries re-assessing their options for secure, reliable and affordable energy supply chains. Queensland's coal, gas, minerals and energy resources will play an essential role more than ever, now and into the future with its strategic partners in Europe, Asia and the United States of America. The QEC acknowledges the Queensland Government is already working towards this, with the Minister for Resources, The Honourable Scott Stewart MP, outlining his role in the growth and diversification of Queensland's mineral customers, saying:

*"The International Energy Agency estimates demand for new economy minerals will triple by 2050 under current climate change commitments, and potentially six times more if the world steps up its emissions reduction measures. Queensland isn't the only source of these critical minerals, but importantly we are one of the most environmentally and socially sustainable potential suppliers. We need to highlight our competitive advantages to capture more investment and strengthen our ties to major markets. The resources sector is central to our economic plan for recovery and the Palaszczuk Government is working hard to ensure an ongoing pipeline of resources projects and jobs."*²

- Hon Scott Stewart MP, Minister for Resources, 20 November 2021

Minister Stewart's statement coincided with the release by the President of the United States of America, Joe Biden's plan for securing America's critical supply chains with critical minerals front and centre:

*"Critical minerals are an essential part of defence, high-tech, and other products. From rare earths in our electric motors and generators to the carbon fibre used for airplanes—the United States needs to ensure we are not dependent upon foreign sources or single points of failure in times of national emergency."*³

- Joe Biden, USA President, 22 February 2022

¹ABS Data - Mineral and Petroleum Exploration, Dec 2021 <https://www.abs.gov.au/statistics/industry/mining/mineral-and-petroleum-exploration-australia/latest-release#release-notes>

² Queensland Government Media Statements (20 November 2021) "Maroon push seeks backers for new economy minerals." Accessed at <https://statements.qld.gov.au/statements/93848>

³ The White House (22 February 2022) '[Fact Sheet: Securing a Made in America Supply Chain for Critical Minerals](#)'

About this submission

This budget submission titled, *Advancing Queensland Exploration - Five key initiatives for exploration industry development*, is a Queensland Exploration Industry submission developed by the QEC which advocates for the growth and development of Queensland exploration to ensure the long-term success of Queensland's resources sector.

It outlines five key initiatives for exploration industry development which QEC believes require financial support and action from the Queensland Government in partnership with membership groups such as the QEC.

The QEC seeks to bring these initiatives to the attention of the Department of Resources and urges the Queensland Government to consider each of the five initiatives in its upcoming budgetary decisions for the 2022-23 financial year and beyond.

The QEC estimates that the five key initiatives for exploration industry development require total Queensland Government funding of \$127.03 million, over various terms.

The anticipated return on this investment is significant, translating into:

- ❖ **more job creation in the North West Minerals Province and across Queensland;**
- ❖ **increased State revenue from royalties and land rent as a result of successful exploration;**
- ❖ **life extension for existing projects and infrastructure; and**
- ❖ **a global focus on resolving some outstanding challenges associated with the North West Minerals Province.**

The *Advancing Queensland Exploration - Five key initiatives for exploration industry development*, aligns with the key delivery priorities for the Minister for Resources, Scott Stewart MP, as outlined in his [Charter Letter](#) and more recently in the key focus area actions outlined in the [Queensland Resources Industry Development Plan draft for consultation](#).

At a glance, the five key initiatives of this QEC budget submission are summarised in Table 1 which outlines the relevance of each initiative to key Queensland Government priorities, whether it is a new or existing initiative and the recommended funding amount per initiative.

Table 1: QEC Budget Submission at a glance

QEC submission:	Minister Stewart Charter Letter:	Queensland Resources Industry Development Plan:	Is this a new initiative or ongoing industry support?	Funding and term, recommended by QEC
Advancing Queensland Exploration	Portfolio Key Delivery Priorities	Key Focus Area Actions		
1) Championing Queensland exploration	Continue to support the development of the resources sector including coal, gas and new economy minerals	<ul style="list-style-type: none"> - Investigate promotion strategies for Queensland's new economy minerals - Refresh Queensland's approach to innovation - Investigate support required for industry to build ESG capability 	A: QUREX Website update - Ongoing industry support	\$50k in 2021-22 to create a new exploration industry promotion website called QE-Connect. \$50K for maintenance of QE Connect in 2022-23. Total \$100k over 2 years
			B: Queensland Explorer Awards - New initiative	\$50k over 2 years to promote and run the Queensland Explorer Awards event each year.
			C: ESG deliverable for Explorers - New initiative	\$30k in 2022-23 towards publishing & promoting QEC's ESG framework and toolbox
2) Fundamental initiatives to discovery		<ul style="list-style-type: none"> - Deliver Queensland's Collaborative Exploration Initiative - Develop a Queensland Battery Industry Strategy - Refresh Queensland's approach to innovation - Facilitate and investigate common user infrastructure - Complete the Bowen Basin pipeline concept study - Investigate innovative options to support junior and mid-level companies to decarbonise operations - Investigate research and development support options, particularly for mineral traceability technology 	Ongoing industry support	A: Increased CEI Funding – \$40M over four years, including \$200k quarantined towards investigating supply chain solutions B: Data-Driven GSQ – \$80M in GSQ base funding over four years. C: 'Research and Development Priorities for Minerals in Queensland' - \$500k for ongoing work over two years.
3) Sustainable research for gas, transition and energy security	Maximise Queensland's opportunities from the Commonwealth's gas-led COVID recovery	<ul style="list-style-type: none"> - Refresh Queensland's approach to innovation 	Ongoing industry support	\$2M over four years towards the UQ Centre for Natural Gas.
4) One vision for the North West Minerals Province	Provide clear pathways for investment in new economy minerals exploration and production	<ul style="list-style-type: none"> - Develop a Queensland Battery Industry Strategy - Investigate promotion strategies for Queensland's new economy minerals - Review of rent for new economy minerals projects - Facilitate and investigate common user infrastructure 	Ongoing industry support	\$1M in 2022-23 towards a Deputy Coordinator-General position and establishing a small support team.
5) QEC Exploring for the Future Minerals Unlock Challenge		<ul style="list-style-type: none"> - Investigate promotion strategies for Queensland's new economy minerals - Refresh Queensland's approach to innovation 	New initiative	\$3.3M in new funding over three years, towards total prize pool
QEC and Queensland Government Corporate partnership. Current contribution from QG is \$25K and the new ask given the addition operational responsibilities for this program is \$50k. (an additional \$25K to manage the extended program of work)				\$50k in 2022-23
TOTAL				\$127.03M

The five key initiatives for exploration industry development

1. CHAMPIONING QUEENSLAND EXPLORATION

The Queensland Government is one of the QEC's largest partners. Over the next few years, QEC has an ambitious program to champion Queensland's exploration sector and to sustain this ambition, increased funding and support is needed.

The QEC is seeking increased funding from the Queensland Government totalling \$130,000. This funding will be used on two key initiatives:

A. TRANSFORMING THE QUREX GATEWAY TO QE-CONNECT

In 2017, the Queensland Exploration Council (QEC) together with the Queensland Government's then Department of Natural Resources, Mines & Energy (DNRME) and Trade & Investment Queensland (TIQ) collaborated to create a one-stop-shop "gateway" website for hard-to-find yet existing information, for all things exploration, investment and doing business in the Queensland resources sector.

The Queensland Resources and Exploration Gateway QUREX webpage has been a successful medium to channel users through to government sites for the latest maps, research as well as Queensland's only exploration website that lists all resource industry functions and events on the one resource sector events calendar.

In 2019, QEC introduced a new function to QUREX creating the QUREX Gateway Library to keep visitors updated with latest news, industry research and data, thought leadership articles, opinion pieces and explorer success stories. This initially increased visitors, however the site is now too large, with some outdated content, including policy information, grants and incentives and company lists. This is due to the time the site demands in keeping content current, as well as limited resources at the QEC, which manages the QUREX website internally with a single part-time resource.

Visitors are landing to a QUREX webpage organically via search engine when looking for information, but the site's bounce rate is high at 80%, meaning that many visitors leave the site almost immediately without navigating to any other pages. The webpages with the most visits are the maps pages and the events calendar.

QEC believe a site update is required, focused on attracting site visitors looking for the maps and event info found on the popular pages, while keeping them engaged to potentially visit additional pages with new content unavailable elsewhere.

The QEC believes there is a unique opportunity for QUREX to be updated, rebranded and renamed to *Queensland Exploration Connect* or *QE-Connect* and to align its content with key focus areas of the QRIDP that are relevant to exploration, including:

- Collaborative Exploration Initiative
- Promotion of Queensland's new economy minerals
- Build ESG industry capability
- Minerals' traceability
- Land access and coexistence
- Safe and resilient future workforce
- Land release process

QEC is enthusiastic to launch QE-Connect - a new and improved exploration industry promotion portal to bring together best practice industry examples that showcase how the

exploration industry is implementing actions from the QRIDP. See attached – Rebranding the QUREX Gateway Website Update Proposal.

RECOMMENDATION:

Update and rebrand of qurex.com.au to the new website qe-connect.com.au

COST:

The QEC is seeking investment from the Queensland Government of \$50,000 in 2021-22 towards the website update, plus an additional \$50,000 towards ongoing website maintenance costs.

OUTCOME:

This will result in a new website called QE-Connect being launched when the Queensland Resources Industry Development Plan is released, to complement and support the exploration related focus areas of the QRIDP, promoting the exploration investment potential of Queensland's resources sector.

QRIDP Actions –

- ✓ Investigate promotion strategies for Queensland's new economy minerals

B. CELEBRATING SUCCESS WITH NEW QUEENSLAND EXPLORER AWARDS

QEC believes the establishment of the Queensland Explorer Awards is an excellent way to provide recognition where there has been significant discovery in Queensland, as well as best practice in areas of operation such as ESG and innovation.

This new initiative would be developed in partnership by the QEC and Queensland Government, working together to identify award categories, criteria and judging to develop the awards. It would be promoted via the new QE-Connect website and presented at the annual launch of the Queensland Exploration Scorecard in December. It is strategic to bringing exploration investment to Queensland.

RECOMMENDATION:

A new partnership between QEC and the Queensland Government introducing the Queensland Explorer Awards initiative.

COST:

The QEC is seeking investment over two years from the Queensland Government totalling \$50,000, to be used towards resourcing and annual event running costs.

OUTCOME:

A Queensland-first initiative for the exploration industry which will celebrate, promote and encourage best practice across industry in multiple action areas of the QRIDP such as ESG, safety, diversity and innovation. The awards would raise the profile of explorers in Queensland and attract investment in innovation and technology.

QRIDP Actions –

- ✓ Investigate promotion strategies for Queensland's new economy minerals
- ✓ Refresh Queensland's approach to innovation

C. PROMOTING QEC'S ESG FRAMEWORK & TOOLBOX FOR EXPLORERS

Across the resources sector there is increasing stakeholder demand for sustainability in the exploration and production of resources. Investors, shareholders, insurers and lenders include a broad range of non-financial ESG metrics in their assessment of a company and the expectations placed on the exploration industry to understand stakeholder concerns around climate change, community relations and transparency is increasing.

In light of this, QEC has recently established an ESG Working group to provide advice on current and emerging ESG issues and frameworks relevant to explorers. The working group will identify practical tools that explorers can use to guide them through ESG risks and opportunities, and potential strategies and practices that can be implemented to improve their ESG capabilities and performance.

The working group outcomes will assist the exploration industry to gain capacity and capability to adequately demonstrate how they are responding to and managing material ESG issues. The working group outcomes will be available in late 2022 and will be complementary to the Queensland Government's ESG working group.

RECOMMENDATION:

The QEC is seeking new funding support from the Queensland Government for publishing and promoting its ESG framework and toolbox, which is currently being developed by the QEC's new ESG Working Group.

COST:

The QEC is seeking investment of \$30,000 in 2022-23 towards associated costs to promoting the ESG framework and toolbox, such as design, publishing, and/or printing costs.

OUTCOME:

Publication and promotion of the ESG framework and toolbox via the new QE-Connect website.

QRIDP Actions –

- ✓ Investigate support required for industry to build ESG capability

2. FUNDAMENTAL INITIATIVES TO DISCOVERY

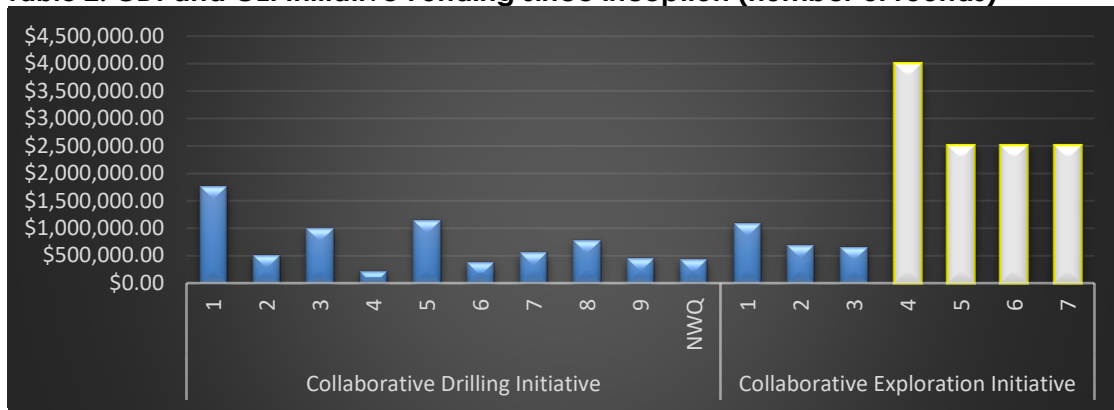
A. INCREASED FUNDING TOWARDS QUEENSLAND'S WORLD-LEADING COLLABORATIVE EXPLORATION INITIATIVE

The Queensland Government Collaborative Exploration Initiative (CEI) is one of the most successful grants of its kind in Australia. It has three key objectives:

- encourage exploration, particularly in frontier/greenfield areas
- support innovative exploration techniques, including machine learning
- promote the discovery and development of 'new economy' minerals – new economy minerals include a range of metals and minerals in high demand for use in renewable energy and advanced technological applications.

The CEI, previously called the Collaborative Drilling Initiative or 'CDI', was established more than 15 years ago. Since then, the initiative has resulted in numerous discoveries with an approximate 65 percent technical success rate. Table 2 below was presented to attendees at QEC's Technical Forum event in February 2021 and displays the level of funding received per round since the initiative began.

Table 2: CDI and CEI Initiative Funding since inception (number of rounds)



Source: Queensland Government, GSQ Presentation at QEC Technical Forum on 19 February 2021.

QEC is highly supportive of the record level of funding the CEI received since the COVID-19 pandemic began with \$2.5 million per round in 2020 and a commitment then of \$10million over 4 years until 2023/2024.

One of the missing pieces of the exploration puzzle is the access to infrastructure once the discovery has been made. Some explorers may be forced to halt operations if they cannot connect into supply chain opportunities such as processing, manufacturing or common user infrastructure to develop the resource ready for market. QEC would like to see research into solutions for explorers in the area of supply chains from pit to port, so that new industries and opportunities can be created from new economy minerals.

RECOMMENDATION:

QEC recommends an increase in ongoing industry support from Queensland Government, through increased funding to the CEI, as well as new funding towards exploring supply chain solutions for successful discoveries that are missing the infrastructure and supply chain capability.

COST:

An increase in funding and ongoing support for the exploration industry, increasing from \$2.5M to \$10M per year, at a total cost of \$40m over the next 4 years, towards the CEI. The total amount includes \$200k to be quarantined towards investigating potential supply chain solutions for remote exploration operations that have made a significant discovery but are missing the pit to port infrastructure.

OUTCOME:

This will result in an expanded CEI program and would mean approximately 80 projects could be funded per year, with the ability for some companies to access multi-year grants and successfully transform to production and export through better access to infrastructure and supply chains.

QRIDP Actions –

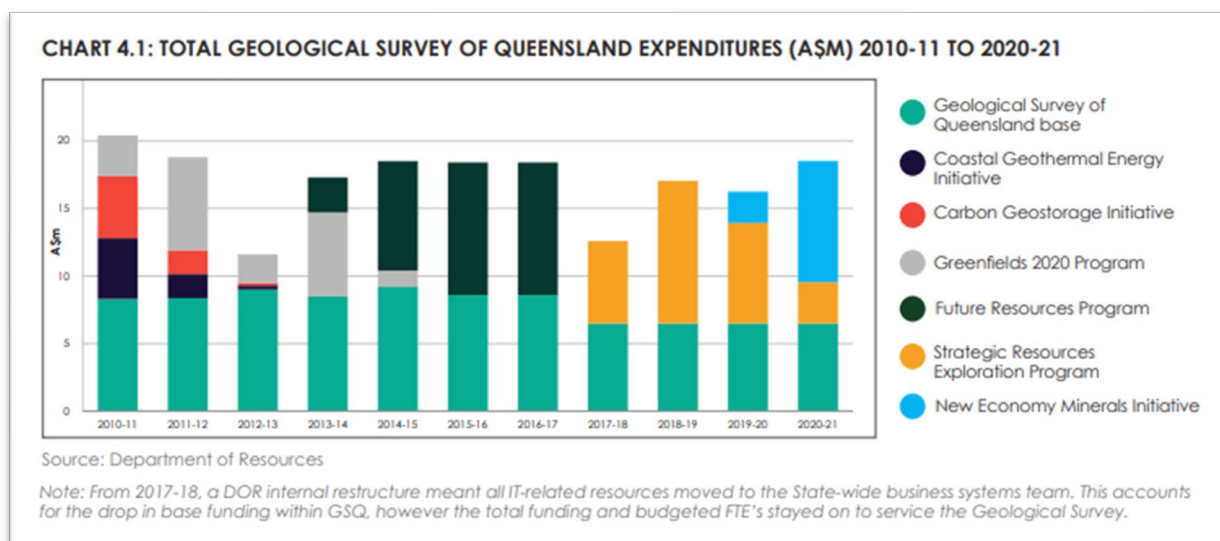
- ✓ Deliver Queensland's Collaborative Exploration Initiative

B. DATA-DRIVEN GEOLOGICAL SURVEY

In 2019-2020, the Queensland Government committed to major advances towards enabling data-driven exploration in Queensland, particularly through the Geological Survey of Queensland's (GSQ) initiative the Geoscience Data Modernisation Project (GDMP).

The open data portal is a first step towards ensuring one of the State's largest resources – geological data – is managed well and accessible for both decision makers and future explorers. Essential to the success of the GDMP is the contributions made by resource companies to the portal data collection process. The QEC supports the Department in its quest to ensure the fair use of the portal with accurate data and will assist by hosting a QEC member briefing.

As demonstrated in the below chart from the QEC's [2021 Queensland Exploration Scorecard](#) released in December 2021, a clear need for boosted GSQ base funding as well as funding to keep key initiatives such as the GDMP moving forward was identified.



RECOMMENDATION:

QEC seeks an increase in ongoing support of the exploration industry and recommends an increase to GSQ base funding.

COST:

An increase in GSQ base funding from \$18M to \$20M per year, at a total cost of \$80M over the next four years.

OUTCOME:

Increased ability for the Department of Resources to continuously improve the rollout of the GDMP through engaging companies, encouraging fair use and the upload of quality reporting data. The funding would also support relevant QRIDP Actions, and any increased resourcing required.

QRIDP Actions –

- ✓ Deliver Queensland's Collaborative Exploration Initiative
- ✓ Develop a Queensland Battery Industry Strategy
- ✓ Refresh Queensland's approach to innovation
- ✓ Complete the Bowen Basin pipeline concept study

C. FACILITATING A SHARED VISION TOWARDS RESEARCH AND DEVELOPMENT

In 2020, the Department of Resources, QEC, QRC and the University of Queensland released the publication '[Research and Development Priorities for Minerals in Queensland.](#)'

The publication is a key piece of work that highlighted six (6) key themes/challenges and recommendations for researchers to take on board to ensure their work is practical and reflects commercial drivers.

This joint publication was a first step in understanding the industry's research priorities, yet there are further steps in this work that deserve follow through – where do these priorities fit with existing research programs and how can this be promoted? Where does industry, academia and government go from here? The QEC would like to see a continuation of this work, led by the Department of Resources.

The QEC is pleased to see numerous opportunities presented in the Queensland Resources Industry Development Plan that could address these remaining questions. There are a number of key focus area actions within the QRIDP which expand on the research and development priorities in the 2020 Report. These include:

- Develop a Queensland Battery Industry Strategy
- Refresh Queensland's approach to innovation
- Facilitate and investigate common user infrastructure
- Complete the Bowen Basin pipeline concept study
- Investigate innovative options to support junior and mid-level companies to decarbonise operations
- Investigate research and development support options, particularly for mineral traceability technology

RECOMMENDATION:

QEC seeks an increase in ongoing support through the Department of Resources continuation of partnerships to build upon the research & development priorities identified in the 2020 report.

COST:

QEC estimates the cost of continuing this important work would be \$250k per year, at a total cost of \$500k over two years, with the majority towards resourcing (consultants) and any identified university funding needed over the next two years.

OUTCOME:

Investigate the delivery of the priorities identified in the 2020 report and align these priorities to the QRIDP outcomes and achievements.

QRIDP Actions –

- ✓ Investigate innovative options to support junior and mid-level companies to decarbonise operations
- ✓ Investigate research and development support options, particularly for mineral traceability technology
- ✓ Refresh Queensland's approach to innovation
- ✓ Facilitate and investigate common user infrastructure

3. SUSTAINABLE RESEARCH FOR GAS, TRANSITION & ENERGY SECURITY

Ensuring Queensland effectively contributes to secure gas supply and longer-term energy transition and decarbonisation goals is reliant on research to improve the abundance, affordability, and acceptability of the State's natural gas resources. There is an opportunity for Queensland's gas sector to be best in class in sustainability and support global energy security.

The University of Queensland's [Centre for Natural Gas](#) is funded by the University, and industry members Australia Pacific LNG, Arrow Energy and Santos. The Centre's multi-disciplinary research program and policy advice service deliver significant benefits to the industry and the State. Importantly, maintaining a world-class research establishment in Queensland ensures the availability and retention of expertise which can be drawn on by the State when needed. For example, currently, the Centre's experts support the Gasfields Commission (e.g. Subsidence, Co-existence), Department of Environment and Science (e.g. Salt & Brine, CCUS), OGIA (e.g. Groundwater Research) and the Department of Resources (e.g. Plugging Legacy Coal Bores, Bowen Basin Pipeline Studies, GHG Tenement evaluation, ESG Working Groups, Resource Industry Development Plan etc.). Recently, the Centre director's efforts attracted \$17m of Commonwealth funds to the State for Galilee and Bowen Basin technology trials.

The work of the Centre for Natural Gas is based on its three key inter-linked objectives:

Abundance/Security will ensure there is sufficient gas support to meet domestic demand (e.g. so that natural gas can support rapid transition of the electricity sector) and changing international demand (substantial contractual obligations, essential contribution to UN Sustainable Development Goals and reducing emissions in our neighbouring countries). Queensland is an exemplar of dependable LNG supply for our region and beyond.

A key focus of the Centre's research has been the continual improvement of modelling techniques, which give industry and the resource owners (the State) greater predictive confidence and better exploitation from existing assets. Queensland-led, advanced modelling guides exploration and impact assessment activities in relation to gas reservoir assessment and production estimation, and groundwater and gas flows in heterogeneous media.

Affordability requires development of new technology tailored to Australian geology to reduce unit costs and enable marginal supply to be brought to market.

The Centre has a substantial body of technical research focused on improved management of depleted fields and development of new technologies to extract gas from low permeability reservoirs. This research also aims to drive down cost while increasing supply from known fields. Work has also been undertaken on final decommissioning and, while seemingly a long way in the future, the time is ripe for this research focus to grow so that it is ready when needed.

Acceptability relates to community views of Australia's future domestic energy production and energy export opportunities in the context of energy transition and security. New strategies are needed to deal with the different stakeholder groups and issues emerging e.g. fugitive emissions, institutional investment strategies, and groundwater demands of new energy systems. It is also time for an early view on maximizing the legacy value that the industry can leave to regional economies when it finally decommissions.

The social performance research has produced instructive insights regarding the complexities of both industry and government engagement with communities from the earliest stages of the development phase, and the lessons can be applied to future exploration and appraisal initiatives. The Centre's experts are now applying lessons from Queensland's CSG developments to the roll out of new energy technologies such as wind, solar and hydrogen. Emerging issues with a direct bearing on the success of future exploration programs include growing activism potentially affecting industry's access to investment funding, and increasing community expectations regarding environmental, social and corporate governance (ESG) aspects.

The Centre undertakes research aimed at supporting Queensland to be recognised as the world's preferred gas/LNG supplier in terms of emissions intensity, environmental footprint, supply assurance and social license.

- Queensland gas to be best-in-class for GHG emissions intensity. The Centre will undertake a suite of decarbonisation research which contributes to Queensland being recognised as best-in-class on emissions.
- More supply, Queensland gas recovery to be most efficient. The Centre will undertake research into complex modelling to maximise the recovery of the State's resource from known accumulations.
- World-leading Queensland science to address key community concerns around subsidence in CSG producing areas. The Centre will undertake world-leading research (in support of OGIA) to develop new, improved and transparent ways of predictive modelling for these complex phenomena.

In addition to the important work of the Centre for Natural Gas, QEC acknowledges the Queensland Government's work on the Bowen Basin Pipeline Study and is supportive of the proposed new gas pipeline in the Bowen Basin. QEC is supportive of new infrastructure to support explorers, which could also help reduce industry emissions, boost the state's gas supplies and create more regional jobs. QEC would like to see more support for explorers in other neighbouring basins.

RECOMMENDATION:

The QEC seeks an increase in ongoing support for the UQ Centre for Natural Gas through increased funding from the Queensland Government.

COST:

\$500k per year over four years, at a total cost of \$2M, towards the UQ Centre for Natural Gas.

OUTCOMES:

- Queensland gas to be best-in-class for GHG emissions intensity
- Increased gas supply
- Queensland gas recovery to be more efficient
- World-leading Queensland science to address key community concerns around subsidence in CSG producing areas.

QRIDP Actions –

- ✓ **Complete the Bowen Basin pipeline concept study**
- ✓ **Refresh Queensland's approach to innovation**

4. ONE VISION FOR THE NORTH WEST MINERALS PROVINCE

The North West Minerals Province (NWMP), centred on Mount Isa, is a major focus for the QEC and its members, just as it has been for successive governments and generations of Australians since John Campbell Miles' discovery in 1923 that led to creation of the iconic Mount Isa Mines Limited.

Successive Queensland Governments have undertaken reviews and assigned industry taskforces to help unlock a self-sustaining cycle of prosperity for the North West Minerals Province.

However, since 2007 copious analysis has not translated into significant outcomes for the exploration industry or potential investors. The lineage of NWMP inquiries includes:

- 2007-2012 Northern Economic Triangle
<http://www.dlgrma.qld.gov.au/resources/plan/cg/net-infrastructure-plan-full-version.pdf>
- 2008-2009 Blueprint for Powering the North-West
<http://statements.qld.gov.au/Statement/Id/65982>
- 2009 North West Queensland Mineral and Energy Province Study
<https://www.business.qld.gov.au/industries/mining-energy-water/resources/geoscience-information/geoscience-projects/mineral-energy>
- 2015 MITEZ NWQ Strategic Development Study
http://www.mitez.com.au/cpt_projects/nwq-strategic-development-study/
- 2015 North West Minerals Province Taskforce report
<https://statedevelopment.qld.gov.au/resources/plan/nwmp/nwmp-strategic-blueprint.pdf>
- 2017 A Strategic Blueprint for Queensland's North West Minerals Province Queensland Department of State Development, Manufacturing, Infrastructure and Planning. <https://statedevelopment.qld.gov.au/resources/plan/nwmp/nwmp-strategic-blueprint.pdf>
- 2017-2021 (Geoscience Australia): Exploring for the Future Four-year study focusing on Tenant Creek to Mount Isa making it the best mapped section of the Earth's crust. <https://www.ga.gov.au/efft/minerals/fis/tenant-creek-mt-isa>
- 2019 North West Economic Diversification Strategy Queensland Department of State Development, Manufacturing, Infrastructure and Planning. <https://www.statedevelopment.qld.gov.au/resources/plan/nw-qld-economic-diversification-strategy.pdf>
- 2019 Queensland Minerals Research Barriers and Priorities Neuchatel Report (unpublished)
- 2019 Australia's Critical Minerals Strategy Australian Department of Industry, Innovation and Science. <https://www.industry.gov.au/sites/default/files/2019-03/australias-critical-minerals-strategy-2019.pdf>

- 2020 Australia's Critical Minerals Investment Opportunities, Association of Mining and Exploration Companies (AMEC)
<https://secureservercdn.net/198.71.233.51/0h5.0cf.myftpupload.com/wp-content/uploads/2020/10/Australias-Critical-Minerals-Opportunities.pdf?time=1612917088>
- 2020 Research and Development Roadmap for Queensland Minerals
Queensland Department of Resources
https://www.dnrme.qld.gov.au/_data/assets/pdf_file/0011/1475498/rd-priorities-qld.pdf
- North West Minerals Province Investment Prospectus, Queensland Department of Resources
https://www.statedevelopment.qld.gov.au/_data/assets/pdf_file/0023/32918/nwmp-investment-prospectus.pdf

In published reviews, the consistent conclusion is the region's future is critically dependent on exploration success. Despite generating billions of dollars in revenues over the past century, the region's complex geology is still not well understood – QEC acknowledges the great work currently being done through the GSQ and the Department of State Development to further our understanding of the region including collaboration with universities on some abandoned sites secondary prospectivity.

Given the complexity and multiplicity of issues covered by these reviews and the recurring recommendations arising from them, a coordinated and overarching strategic response is needed to address the North West Minerals Province's unique challenges which include gaps in the supply chain, infrastructure and transport systems, as well as the potential of local content potential in METS and new and expanded export terminal planning.

RECOMMENDATION:

QEC recommends the Queensland Government urgently establishes a dedicated role responsible for the overall coordination of the North West, including projects, energy and infrastructure. QEC seeks an Assistant Coordinator-General be appointed to focus on a coordinated response to major constraints identified in reviews into future development of the North West Minerals Province, including supply chain solutions, common user infrastructure METS and export opportunities.

COST:

Approximately \$1M in the first year towards an Assistant Coordinator-General position and establishing a small support team.

OUTCOME:

The responsibilities of this new role and team would involve auditing and updating previous inquiry, report and taskforce recommendations with the objective of defining a clear pathway for resource exploration and development. The Assistant Coordinator-General and team would develop a North West Strategy including a line of sight on energy issues and transport opportunities via the Ports of Karumba and Townsville.

QRIDP Actions –

- ✓ **Develop a Queensland Battery Industry Strategy**
- ✓ **Investigate promotion strategies for Queensland's new economy minerals**
- ✓ **Review of rent for new economy minerals projects**
- ✓ **Facilitate and investigate common user infrastructure**

5. QEC EXPLORING FOR THE FUTURE MINERALS UNLOCK CHALLENGE

Both at the national and state level there is a broad strategy to further enhance our capability in resources technology and critical minerals processing. The Australian Government released its [Modern Manufacturing Strategy](#) in late 2020 which outlines its plan to build the countries critical mineral supply and processing capability. As part of the Strategy, \$107.2 million was announced to work closely with industry to better understand supply chains, identify gaps and take action to address them, including critical minerals. In 2021, Austrade with support from Geoscience Australia released the [Australian Critical Minerals Prospectus](#) detailing the country's potential for critical minerals mining projects and investment.

Queensland has an opportunity to play a significant role in this national shift in manufacturing policy through our minerals endowment and existing commitment to developing a new economy minerals industry. As the Queensland Government [New Economy Minerals – Investment in Queensland Minerals Provinces](#) 2020 report identified, there are gaps in our processing capability which are most likely overcome through a combined effort - a tripartite approach for a Queensland advantage -

Queensland's Minerals Provinces are endowed with an abundant supply of valuable resources. This, combined with a culture of innovation and collaboration between government, academia and industry, gives investors a global advantage in meeting the growing demand for new economy minerals.⁴

The Prospectus outlines a number of key areas for development and investment opportunity with reprocessing with the development of advanced technology and further development in downstream processing capability (e.g. aluminium smelting, nickel refining, and battery manufacture proposals). Queensland has a unique opportunity to become a world leader in this space with already the fundamentals in place such as a supportive government, world class researchers and an industry that has the drive and appetite to work through the challenges for the reward.

QEC understands one of the key areas our new economy mineral members seek a bold new approach is in unlocking the processing challenges - how do we pull down intellectual property barriers to foster accelerated collaboration between industry, academia and government? This is an issue not unique to new economy minerals as industry strives to innovate advanced processing techniques, yet bulk commodity processing structures and supply chains (such as copper and zinc) are well understood. Critical minerals (many of which are new economy minerals) face numerous challenges from geological through to processing and supply chain.

The QEC Exploring for the Future Minerals Unlock Challenge aim is for the industry to open its doors to what we know already so we can advance together and sooner. The idea is not new, with precedent for this type of challenge already done overseas and in Australia with making geological data open to the public. BHP have recently adapted this concept for processing data in South America – See the [Expand BHP tailings Challenge](#). The South American challenge received over 150 applications from 19 countries and entries from across industries. Previous challenge applicants have adapted learnings from other industries, such as aviation and medicine, that have been highly valuable in solving the challenges the resources industry also face.

⁴ [North West Minerals Province Investment Prospectus](#) (November 2020), page 5

QEC proposes to use a mix of the 2018 [Unearthed Challenge](#) and the Expanded BHP Tailings Challenge as a template (crowdsourcing to solve the problem) for a Queensland new economy minerals processing challenge called *Exploring for the Future Minerals Unlock Challenge*.

QEC's vision for this initiative is a collaborative one, with matched industry, sponsor and government (both federal and State) funding for the *QEC Exploring for the Future Minerals Unlock Challenge*. This funding would be pooled to fund a series of processing challenges. Before the pandemic started in early 2020, the QEC Leadership Team developed this idea, as a series of challenges to complement the Queensland Government's existing CEI grants focused on fundamental exploration activity.

RECOMMENDATION:

QEC seeks funding towards a new initiative and partnership with the Queensland Government through the Department of Resources. Based on other challenge prize pools, QEC is targeting a total funding pool of \$10 million.

COST:

QEC seeks funding of \$1.1M per year over the next three years from the Department of Resources, to the total amount of \$3.3M.

There is also the option of an alternative pilot program: a one-year partnership with Queensland Government funding of \$1M for the first year to develop the *Exploring for the Future Minerals Unlock Challenge*.

OUTCOME:

Rollout of the *Exploring for the Future Minerals Unlock Challenge*, with a prize pool of approximately \$10M total over three years from the three levels of partnership. The three levels of partnership would be: Queensland Government partnership, corporate sponsorship and industry partnership. Each partnership level would contribute a total of \$3.3M towards the challenge prize pool over 3 years. The Challenge would lead to positive outcomes for the exploration industry including investment to Queensland, increased innovation, thought leadership and importantly, new discoveries for Queensland.

The datasets for the challenge would be available via the Queensland Government's recently introduced GSQ Open Data Portal and presents an opportunity to showcase the portal as a cutting-edge tool for accessing large amounts of new data.

A global explorer challenge that is about unlocking processing challenges within the critical minerals sector will deliver significant benefits to Queensland's new economy minerals commitment to sustain and further develop North West Queensland. QEC's vision for the series of challenges is to target specific new economy minerals, such as vanadium, copper for copper sulphide, gold tailings reprocessing and other critical minerals.

QRIDP Actions –

- ✓ Investigate promotion strategies for Queensland's new economy minerals
- ✓ Refresh Queensland's approach to innovation