

FUTURE FOCUSSED: INITIATIVES TO SUPPORT THE FUTURE MINERALS INDUSTRY WORKFORCE

LUCY McCLEAN

Chair, AWIMAR
Director, Forelight Advisory

SMEDG
24 April 2025



AWIMAR
AUSTRALIAN WOMEN IN MINING AND RESOURCES

INTRODUCING AWIMAR

- **Australian Women in Mining and Resources (AWIMAR)** was formed by leaders around Australia to unite and connect women in the minerals and resources industry nationwide.
- AWIMAR was founded because we **need to do something different** - address the strategic and structural issues to shift the dial to support gender equity and inclusion and deliver the workforce that our industry needs.

UNITE – CONNECT - AMPLIFY - EMPOWER



Further information on AWIMAR at
awimar.org.au





Our full-service firm offers research, consultation and advisory services across:

- Strategy, policy and planning
- Program development and delivery
- Stakeholder engagement, advocacy, advice and representation
- Innovation scoping and roadmap development
- Industry, supply chain and ecosystem strategy
- Education and resources
- Governance frameworks
- International market development
- Funding and incentive approaches.

Unlock the future of resources and energy - www.forelight.com.au



Clare Larkin-Sykes and Lucy McClean, Forelight Managing Directors

FUTURE FOCUS PRESENTATION

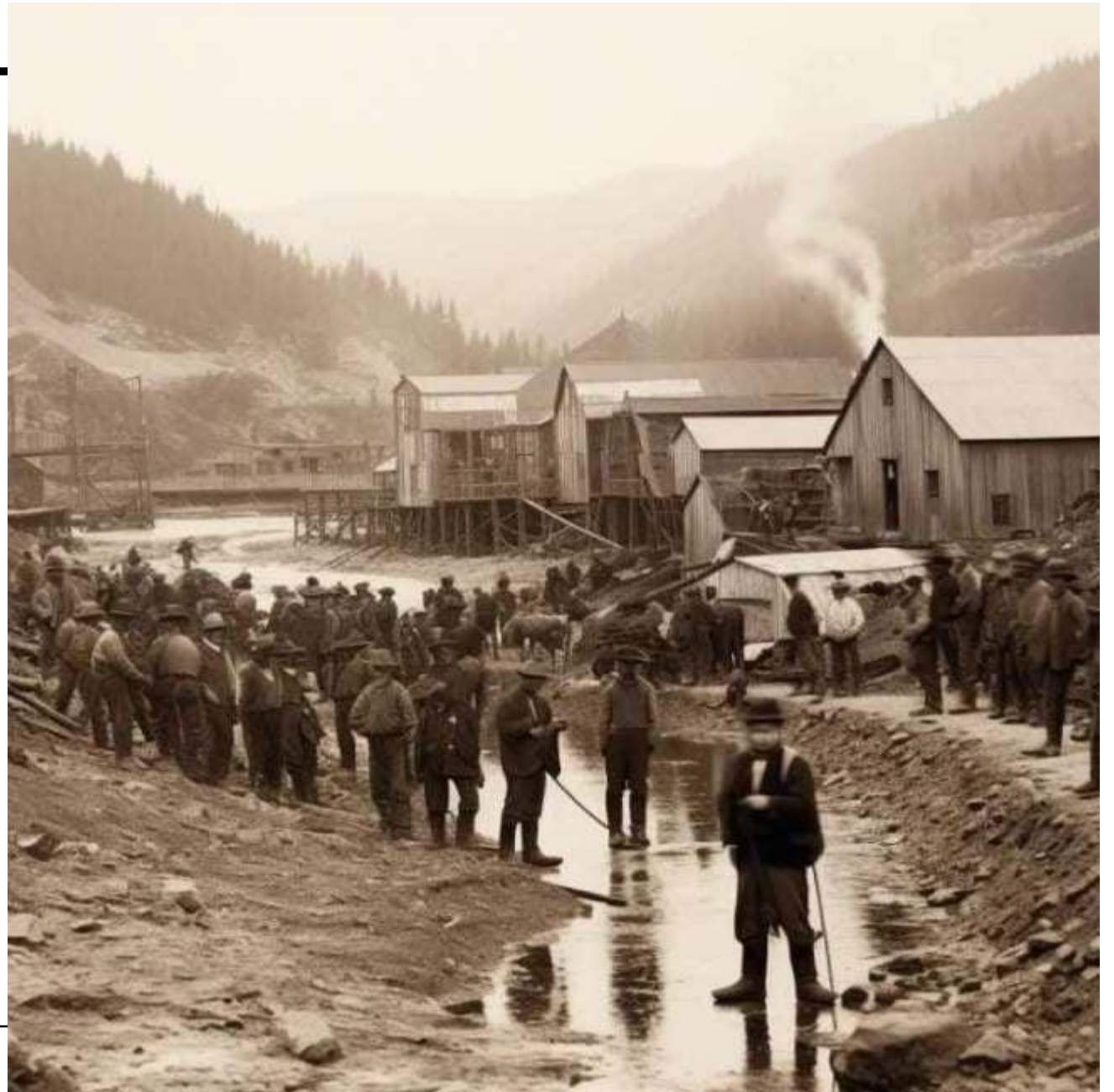
1. Mining today and tomorrow
2. Mining workforce, challenges and diversity, equity and inclusion (DEI)
3. Initiatives to support future workforce
4. Priorities for future workforce.



MINING TODAY AND TOMORROW



MINING IN THE PAST



MINING TODAY



FOCUS ON ‘CRITICAL MINERALS’

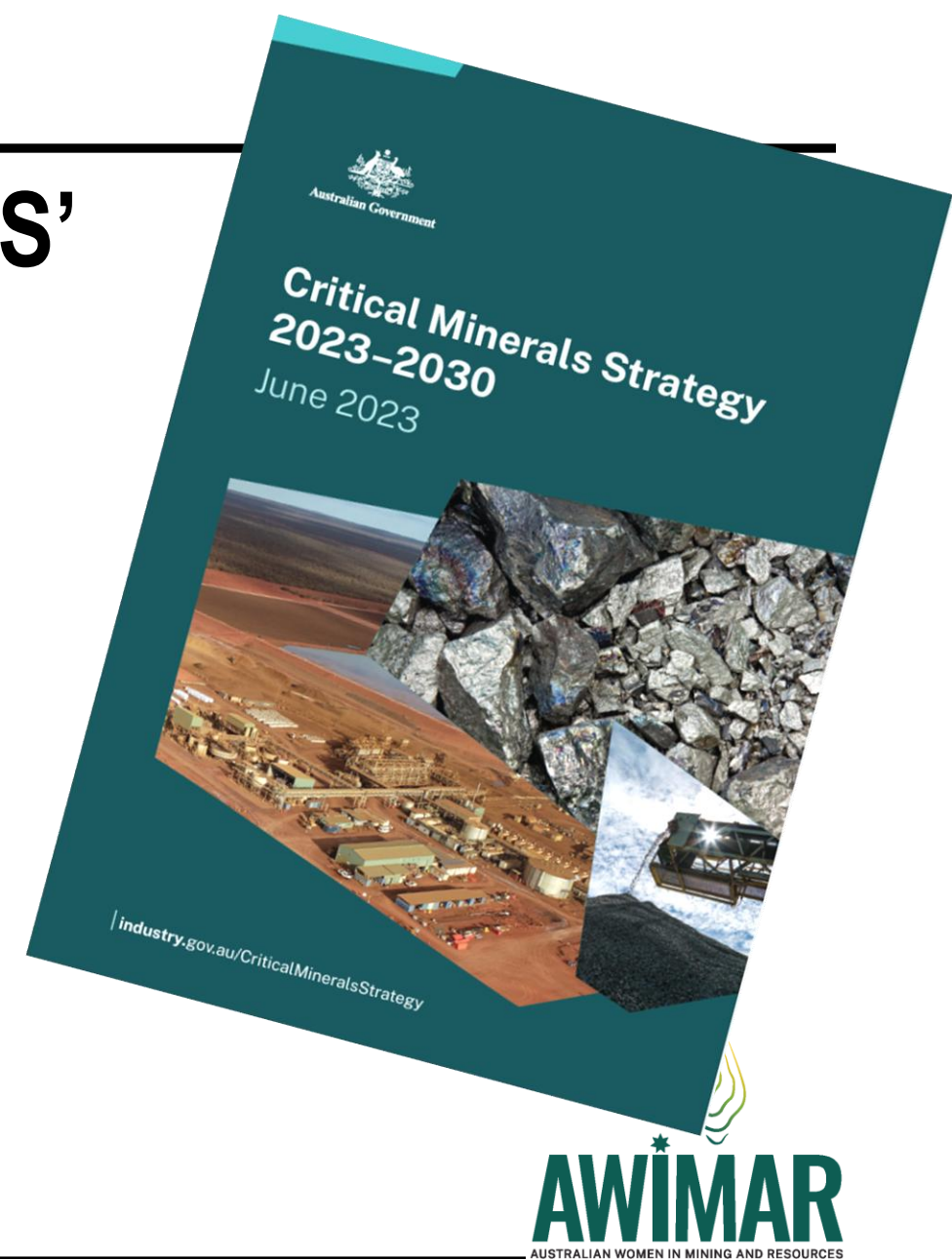
*“With our **rich geological endowment** and track record as a **reliable exporter of energy and resources**, Australia can play a pivotal role in delivering the processed minerals the world needs for a clean energy future.*

*We are the **world’s largest producer of lithium, the third largest producer of cobalt and fourth largest producer of rare earths**. Like the gold, iron ore and gas industries did before it, the critical minerals sector can deliver significant benefits to Australia.*

*We also produce **significant amounts of energy transition metals** such as aluminium, nickel and copper – which in combination with our critical minerals are essential inputs into the technologies that will drive the energy transformation.*

While our potential is great, so too are the challenges. And global competition is fierce.”

- Madeleine King, Australian Minister for Resources



FUTURE OF MINING



- 'New' critical/strategic minerals
- New areas/deeper
- New stakeholders and communities
- New technologies, innovation and AI
- New skills and talent
- Increasing importance of sustainability and ESG.

ESG – ENVIRONMENT, SOCIAL, GOVERNANCE



ESG – EXPECTATIONS, STANDARDS, LEGISLATIVE CHANGE

General	Minerals Industry-Specific
UN Global Compact	International Council for Mining and Metals (ICMM) Principles
UN Sustainable Development Goals (SDGs)	Towards Sustainable Mining (TSM)
Global Reporting Initiative (GRI)	Initiative for Responsible Mining Assurance (IRMA)
International Sustainability Standards Board (ISSB)	Responsible Mining Foundation (RMF)
Task Force on Climate-Related Financial Disclosures (TCFD)	<i>The Copper Mark</i>
Sustainability Accounting Standards Board (SASB)	Global Reporting Initiative (GRI) 14: Mining Sector Standard
Taskforce on Nature-Related Financial Disclosures (TNFD)	
World Economic Forum (WEF)	
Stakeholder Capitalism Metrics (WEF-SCM)	
International Organization for Standardization (ISO 14000, 2600 etc)	

Exploration-Specific
IRMA – developing exploration-specific standards
JORC – proposal to extend the code to ESG modifying factors



SOCIAL LICENCE TO OPERATE



POWERED BY PEOPLE



Attraction + Inclusion

➡ **Retention**

*“Diversity is who we are,
Inclusion is what we do.”*

MINING WORKFORCE, CHALLENGES AND DIVERSITY, EQUITY AND INCLUSION (DEI)



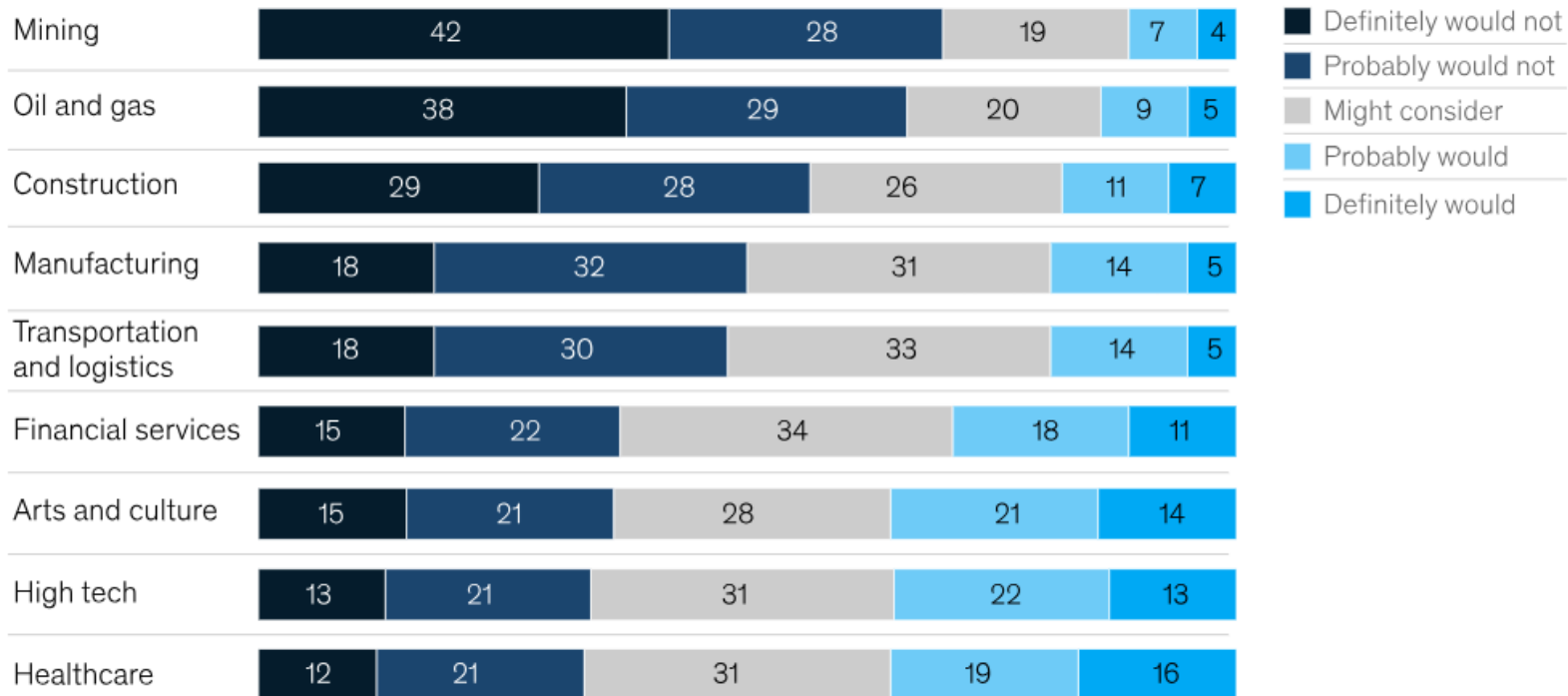
MINERS TODAY



OUR WORKFORCE

Mining is not attractive to young talent.

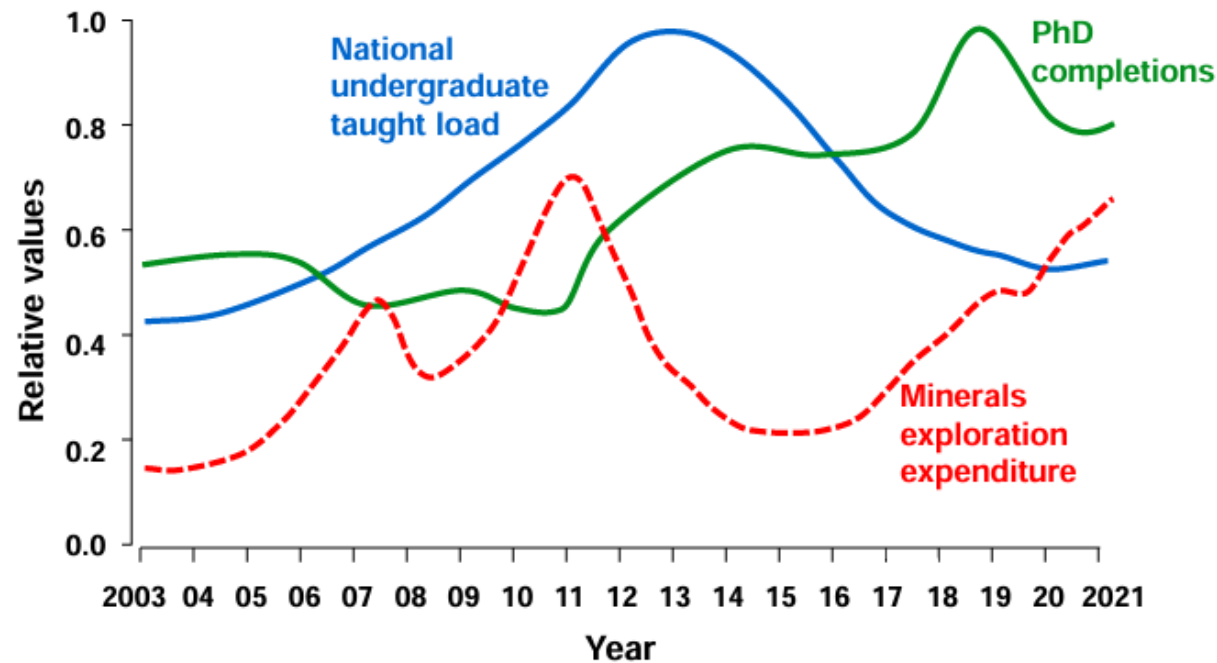
Share of respondents, ages 15 to 30, who would consider working in the following sectors, %



“There is a disconnect in knowledge about what the resources sector is doing and what role they have to play in a sustainable future environment.”



AUSTRALIAN GEOSCIENCE IN 'CRISIS'

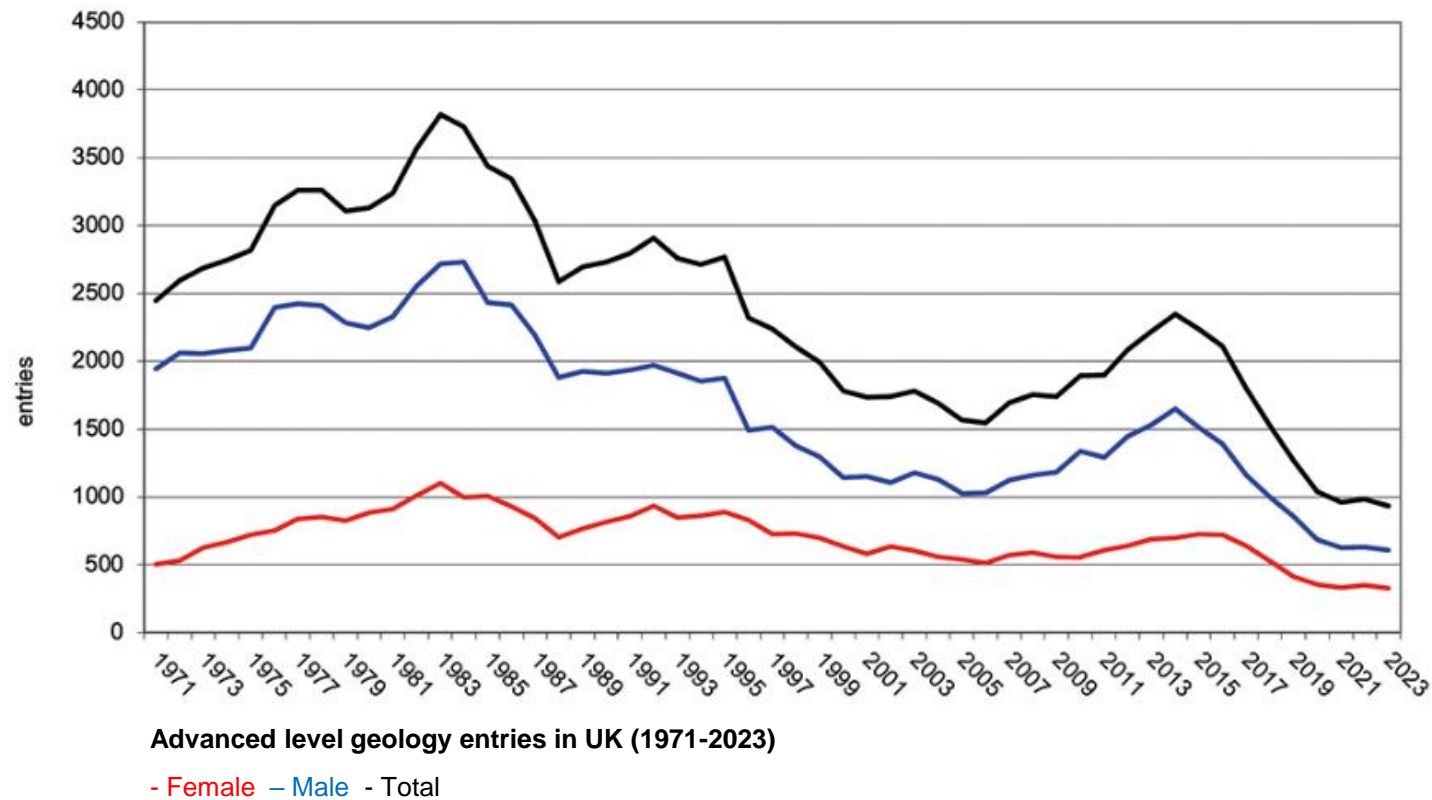


- As of 2021, less than half of Australia's 42 universities offered undergraduate or postgraduate degrees in geoscience.
- Australia's geoscience enrolments declined by 43% between 2013-2020, with further geoscience courses recently ceased – 'crisis'.

“Industry experts have found that many of these decisions are driven by financial concerns, rather than the societal importance of these disciplines.”



INTERNATIONALLY



- Reduction in students choosing geology in UK, US, Canada, Australia.
- But, not worldwide – growth in Latin America.

PERCEPTIONS



Mining Environmental Issues Fri 14 Feb
Approval for forest mine expansion leaves environmentalists 'devastated'
The federal government has approved the South32 Worsley Alumina mine expansion in WA, but environmental groups question the cost.



PERCEPTIONS



Explainer Mon 24 Feb

Trump is demanding half of Ukraine's rare earth minerals and China may be why

Donald Trump continues to push Ukraine to provide the US with minerals to repay Washington for wartime US wants a share.



Timeline Sun 23 Feb

Administrators, shutdowns and hope: A quick history of Whyalla's steelworks

Whyalla's steelworks has gone into administration for the second time in under a decade. Here is a look at how events have unfolded in the city in recent



Courts Wed 5 Mar

Massive Australian mine fined for illegally working on Aboriginal sacred site

The company operating the Northern Territory's McArthur River Mine, one of the world's largest lead and zinc mines, has been convicted of unlawful works on a sacred site spanning 13 years.



Mining and Metals Industry Fri 28 Feb

Gold mine expansion given federal go-ahead

The federal government has given the go-ahead to a major expansion of a gold mine in Western Australia.

Mining and Metals Industry Thu 20 Feb

PM says copper region will drive Australia, yet multiple mines stalling

The impact of several recent small mine closures is being felt in north-west Queensland, still laden with some of the largest critical mineral deposits in the country. The region is expected to produce 1.6 million ounces of gold.



Steel Fri 28 Feb

Coal Tue 18 Feb

Farmers demand answers from silent Korean mining company

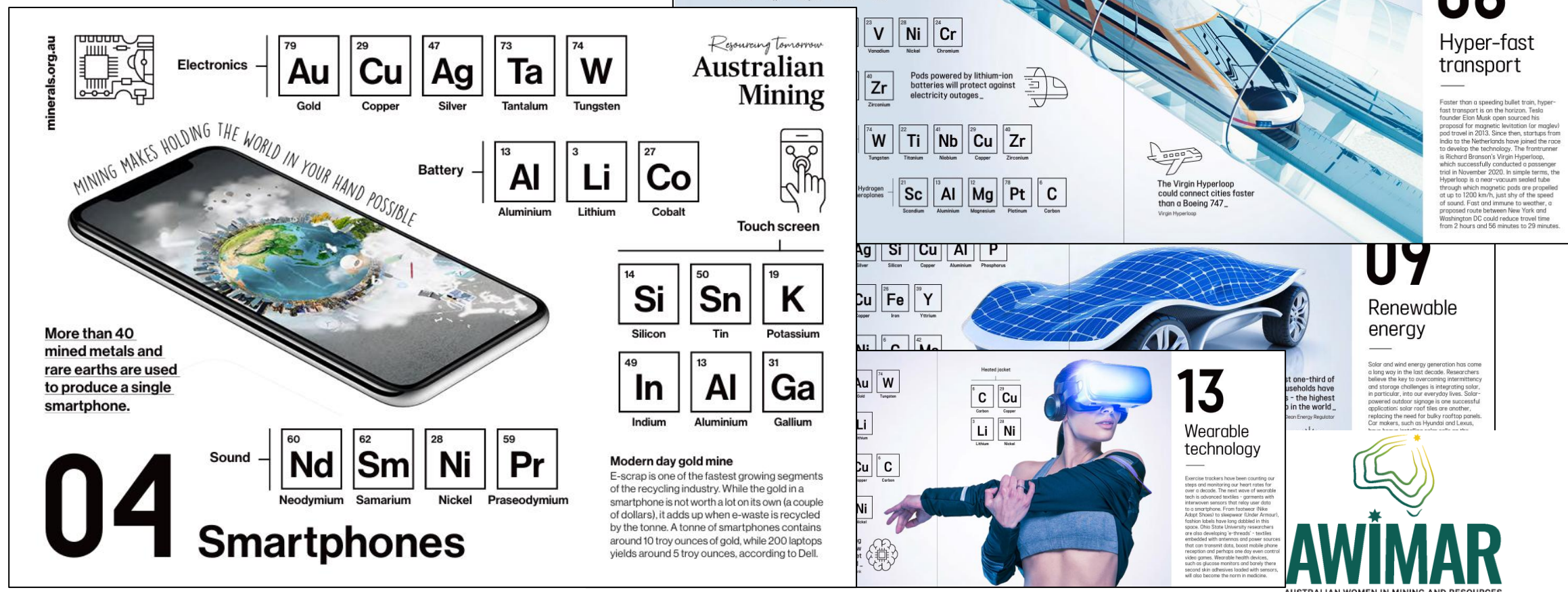
Kepeco bought up large swathes of the New South Wales Bylong Valley with plans to build a coal mine. The mine was knocked back years ago, but the company still isn't saying what comes next.



PROMOTING MINING (AND DEFENCE)



'IF IT DOES NOT FLOW AND DID NOT GROW, IT WAS MINED'



CHALLENGES TODAY



- Perception of industry
- Nature of industry
- Workplace culture
- Bias
- Inclusion issues
- ‘Leaky pipeline’
- Reduction in geoscience.

Future workforce ...

“Australia has projected the workforce it will require for the minerals industry by 2030, but at the current rate it will have about 50% of the graduates that will be needed.”



GENDER DIVERSITY IN MINING IN AUSTRALIA

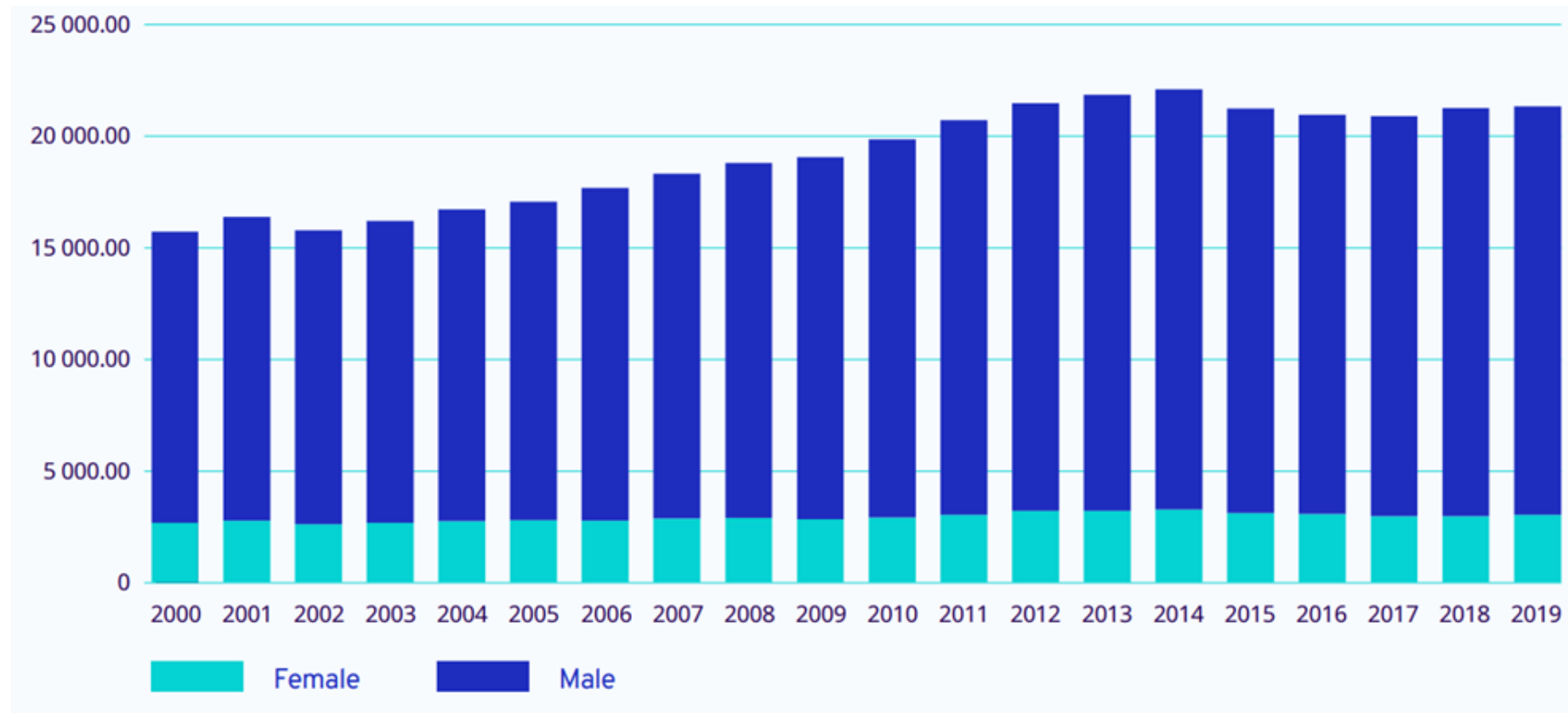


Mining and construction are the least gender diverse industries in Australia

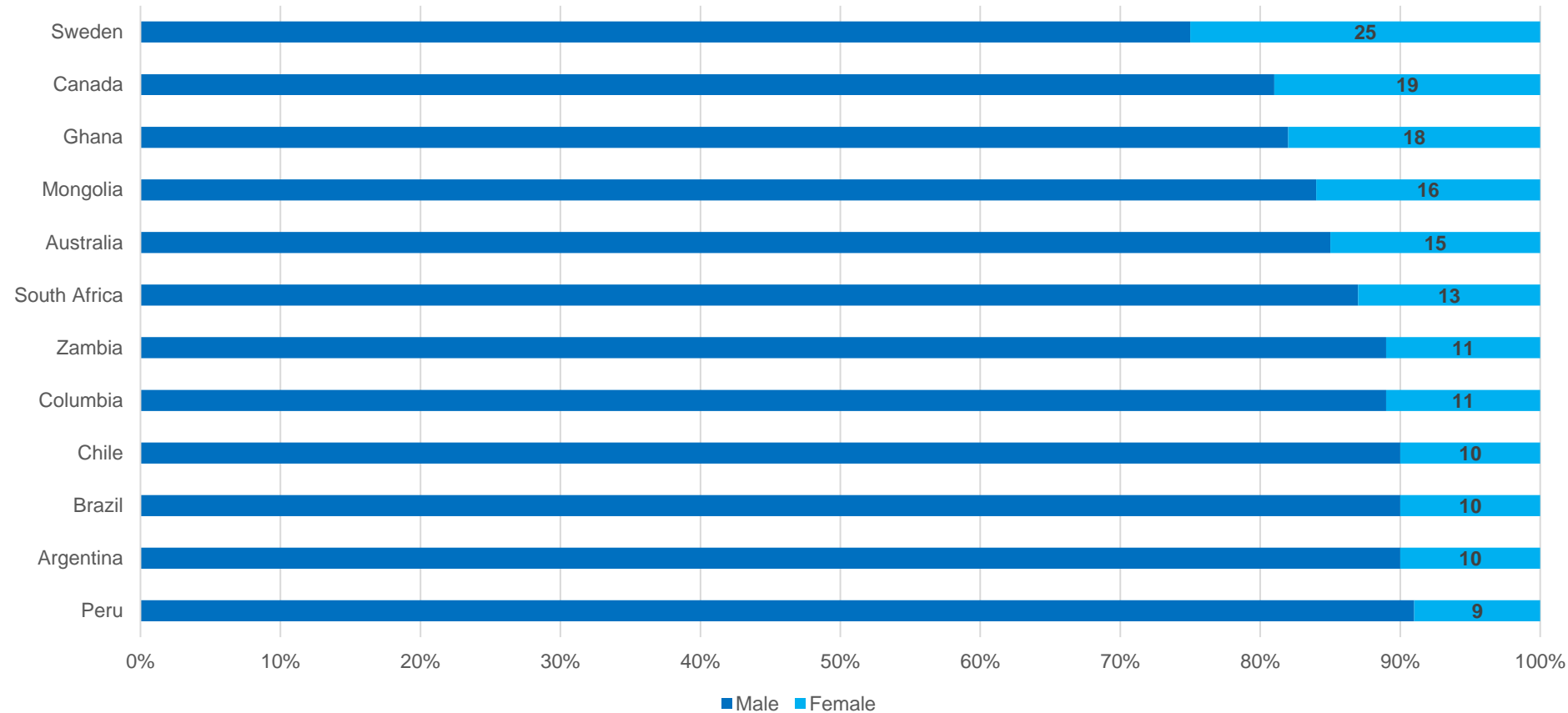
- 22% workforce is female
- 20% gender pay gap
- 8% CEOs are female
- 20% Boards have no female members
- No citations for *Employers of Choice for Gender Equality*.



INTERNATIONAL WORKFORCE



LEADING JURISDICTIONS FOR DIVERSITY



HOW FAR WE HAVE COME IN AUSTRALIA...

- Workforce participation increased 30% in WWII
- Married women permitted to work in 1966
- Equal pay for men and women granted in 1969
- Women could legally work underground in 1980s.



But, in the last 2 years...

- 39% women experienced gender inequality (50% witnessed)
- 33% women experienced bullying
- 16% women experienced sexual harassment.

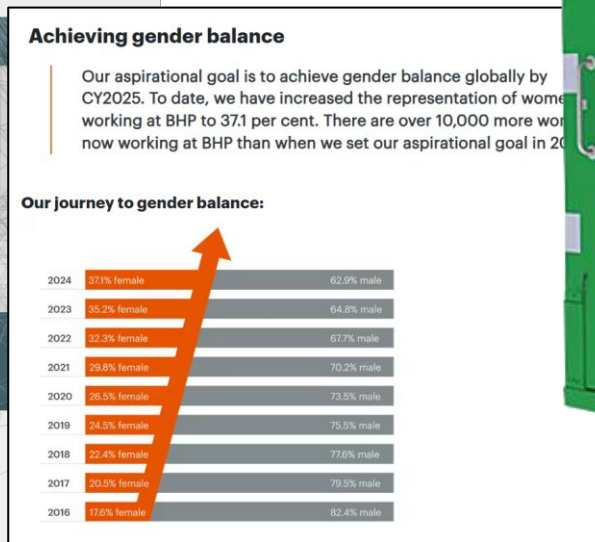
INITIATIVES TO SUPPORT FUTURE WORKFORCE



COMPANY INITIATIVES



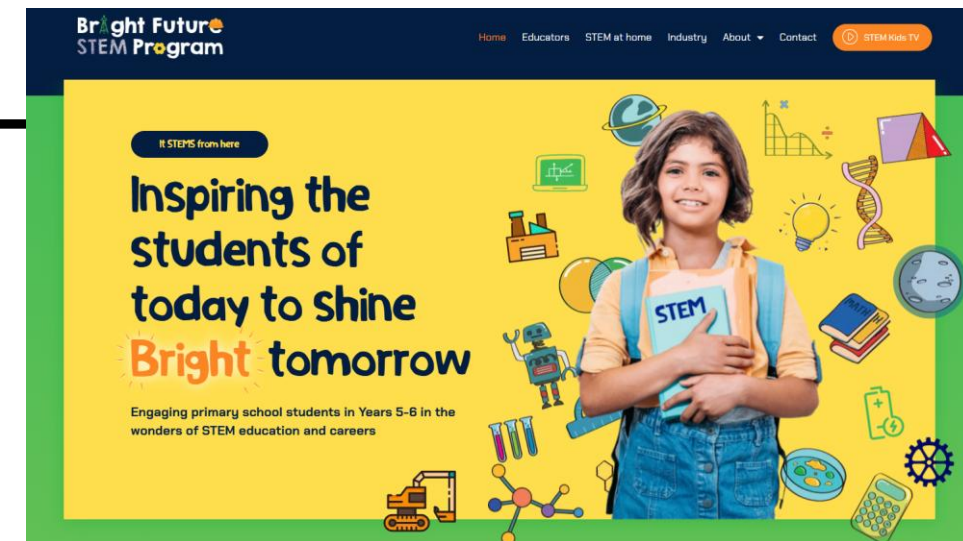
- Strategic issue
- Address key issues – internally and externally
- Invest in future workforce.



‘CANNOT BE WHAT YOU CANNOT SEE’



SCHOOL STUDENTS



- Support teachers and students with geoscience courses
- Connect with school student groups
- Careers dinners
- Mentoring
- Site visits.



Source: AusEarthEd, available at <https://ausearthed.com.au/#>, TESEP, available at <https://www.tesep.org.au/>, Bright Future STEM, available at <https://www.brightfuturestem.com.au/>

SCHOOL STUDENTS

Light move
whitehavencoal.com.au



Whitehaven's Gunnedah mine closure team and right, Olivia Hulbert.

Senior Mine Geologist
Name: Melissa Giddens
Company: Murrin Murrin, Glencore
Qualification: Bachelor of Science (Geology)

... **on my career:** "What attracted me to Murrin Murrin was that it was a nickel commodity. I've come from a gold background so nickel was exciting and a new commodity to learn. Across any mining operation there's lots of work opportunities. You can be an operator on a dump truck or a dozer digger to being a surveyor, geologist or an engineer. It's a great industry in which to build a career."

... **on working FIFO:** "I work an 8/6 roster so eight days on six days off. I enjoy that roster because you're home every second weekend. Murrin Murrin is a great place to work and I'd recommend it to anyone. The people are great - they're already nice here. It feels like a family and the work is pretty fun, too."

Learn more: glencore.com.au

Getting a head start on mine
Team work and community engagement are key job for ultra-marathon runner Olivia Hulbert.

Environmental Advisor Olivia Hulbert is part of the mine closure unit at Whitehaven Coal in Gunnedah, NSW. The unit is responsible for planting and monitoring native trees and grasses to restore diverse ecosystems to strict regulatory standards.

"I have always been passionate about the environment but it wasn't until university that I realised the significant opportunities within mining to support environmental management," she said. "In mine rehabilitation, we work to a strict criterion. This includes the types of vegetation seeded and planted. We source seed and tube stock that has a local provenance and the species that are selected are based on a specific plant community type."

Olivia joined Whitehaven earning a Bachelor of Science and Manage the University of New South Wales. Her environmental monitoring awareness aimed at towards closure. A He engaging with the community. "Showcasing the work team does is really to provide opportunities to get involved in roles such as tree planting. When not restoring mine Olivia is training for ultra-marathon races."

Learn more: newmont.com


Mining offers diverse, rewarding careers that allow young people to build practical skills and solve real-world challenges using cutting-edge technology.

Learn more: newmont.com

Mark Rodgers
Newmont, Managing Director Asia Pacific

The best approach you can take for your career is to give everything a go.

Max
Dyso Nobel



Drill and Blast Engineer
Name: Max Galway
Company: Dyno Nobel
Qualification: Bachelor of Engineering (Mining)


... **on choosing mining:** "In a last-minute decision, I swapped from primary school education to engineering as I wasn't completely sure, and engineering offered more flexibility in the first year of uni. Within six months I was solid and entered the mining major to study and work with explosives. After finishing my degree, I started a graduate program at Dyno Nobel in the DynoConsult team."

... **on my career:** "My advice is to always look for opportunities. Dyno Nobel gave me the chance to see other departments like explosive manufacturing, research and development. Now I am working onsite as a drill and blast engineer, deciding what product to load and how best to detonate the blast. No two days are the same - you're always growing problem solving skills."

... **on the lifestyle:** "I'm currently working a hybrid role, sometimes on FIFO for months, in Brisbane or on the road. Each has its pros and cons, but I love the work fresh and exciting. Naturally, FIFO can be tough being away from friends and family, but it makes the time at home more memorable and breaks up the Monday to Friday routine. As a student, the best approach you can take for your career is to give everything a go."

Learn more: dynonobel.com

Charlie
Graduate Process Engineer



Graduate Process Engineer Charlie Stanwix completed ANSTO's Year in Industry Program in 2022 while earning her Bachelor of Chemical Engineering and Commerce.

NUCLEAR TECHNOLOGIES

New skills for the next frontier
As industrial applications for nuclear science and technology grow, training nuclear professionals is increasingly important.

ANSTO (Australia's Nuclear Science and Technology Organisation) is driving Australia's nuclear expertise, and with advancing industrial nuclear applications and the AUKUS submarine program, the call for nuclear science professionals is growing.

ANSTO's Graduate and Year in Industry programs offer STEM students the chance to contribute to Australia's future nuclear workforce and resources sector.

Charlie Stanwix is a Graduate Process Engineer at ANSTO, working in the Minerals group. She completed the Year in Industry Program in 2022 while earning her Bachelor of Chemical Engineering and Commerce from UNSW. Charlie works with rare earth elements, a crucial element in renewables and electrification technologies like wind turbines and electric vehicles.

"Take on every opportunity, especially if it's out of your comfort zone," Charlie advises new graduates.

"I've grown so much professionally and personally during my time at ANSTO."

Charlie
ANSTO

ANSTO is proud to support the next generation of resource sector professionals.

In addition to Graduate and Year in Industry programs, ANSTO offers a range of cadetships, internships, apprenticeships and scholarships.

Learn more: ansto.gov.au/careers

Where to study
Top mining universities

Australia has more top tier universities offering mining-related degrees than almost anywhere in the world.

- Curtin University (curtin.edu.au) WA
- University of Western Australia (uwa.edu.au) WA
- University of Queensland (uq.edu.au) QLD
- Central Queensland University (cqu.edu.au) QLD
- James Cook University (jcu.edu.au) QLD
- University of New South Wales (unsw.edu.au) NSW
- University of Wollongong (uow.edu.au) NSW
- University of Newcastle (newcastle.edu.au) NSW
- University of Sydney (sydney.edu.au) NSW
- University of Adelaide (adelaide.edu.au) SA
- Charles Darwin University (cd.edu.au) NT
- Monash University (monash.edu.au) VIC
- University of Melbourne (unimelb.edu.au) VIC
- Federation University (federation.edu.au) VIC
- Australian National University (anu.edu.au) ACT
- University of Tasmania (utas.edu.au) TAS

What next?
With so many options, choosing the right career or the right course can be overwhelming. Fortunately there are some great resources.

- Careers Directory**
minerals.org.au/careers
- Good Universities Guide**
gooduniversitiesguide.com.au
- Your Career**
yourcareer.gov.au

Vacation programs
Vacation and internship programs are for people undertaking an undergraduate degree. Students gain hands-on experience and apply skills and knowledge learned at university to real-life projects. These programs vary in length and frequency and can include opportunities to work in both office-based roles or in remote locations. Completing a vacation or internship program can help participants secure a graduate program position.

Some examples

- BHP Internship Program
- IGO Vacation Program
- Roy Hill Vacation Program
- Technique Vacation Program
- Thiess Vacation Program

Cadetships
Similar to apprenticeships and traineeships in that they involve earning and learning, cadetships are geared towards people studying at university or high school students planning on commencing a university degree. Cadetships allow the cadet to complete tertiary studies while being employed and gaining professional experience, and can provide a pathway to permanent employment. Companies may also help pay for study costs.

Some examples

- Yancoal Mining Engineering Cadetship
- Whitehaven Cadetship Program
- ANSTO Cadetship Program

CONSIDERING UNIVERSITY?

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Australian Mining
prospect.
CAREERS GUIDE

Mine life stickers
Inside



Mining. Reimagined.
From traditional to digital, the future of mining is digital.

Make your career matter
Whether it's flexible roles, innovation or team collaboration, you've got what it takes to make a difference. Start your career search here.

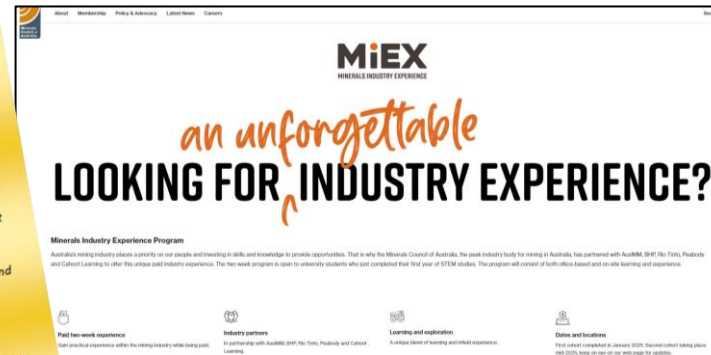
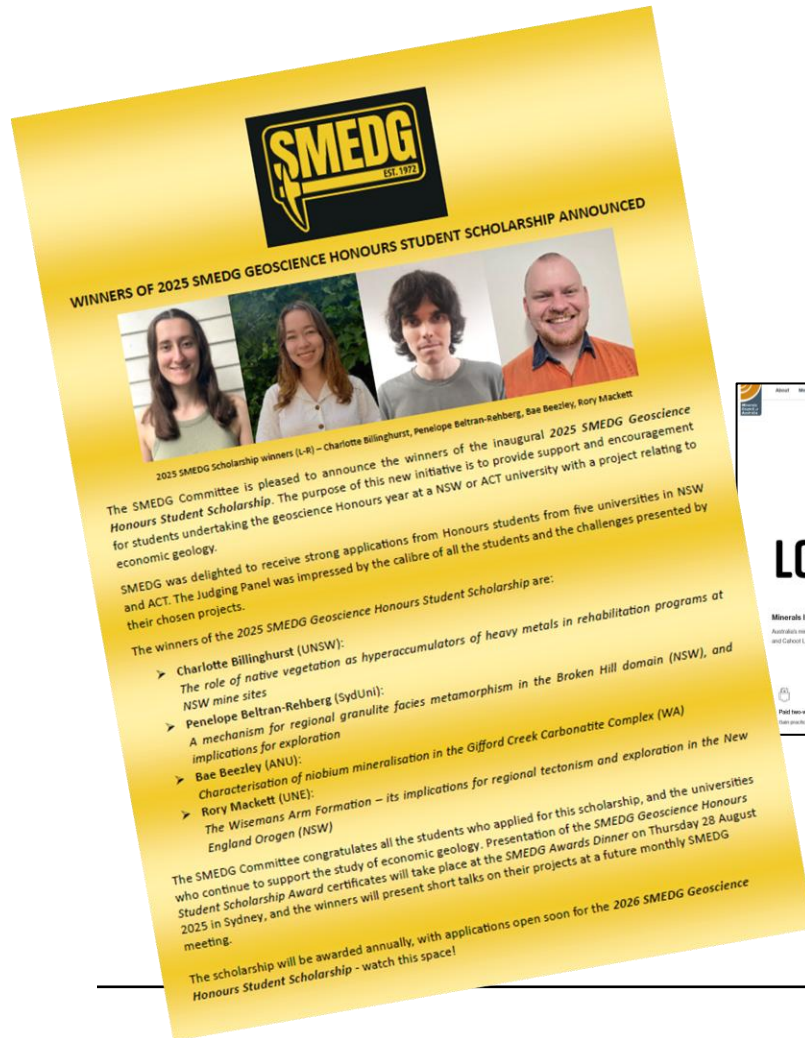
See yourself in mining
The face of mining has changed and everyday is tomorrow. Start your career search here.

The Periodic Table of Mining Careers ►►► How to Get an Apprenticeship ►►► Living the FIFO Life ►►►

AWIMAR
AUSTRALIAN WOMEN IN MINING AND RESOURCES



TERTIARY STUDENTS



- Connect with university and trades student groups
- Careers events, experiences
- Scholarships
- Mentoring
- Site visits.



GENDER BASED VIOLENCE (GBV) PROGRAMS

Getting to grips with GBV

Sexual harassment and gender-based violence (GBV) is widespread in South Africa and other patriarchal societies, with women being disproportionately affected. We believe we have a duty to take action to reduce and eliminate GBV perpetrated against our employees.

Anglo American Platinum's GBV response and prevention plan is aimed at addressing the systemic root causes of GBV in the company and crafting a response and prevention strategy in our culture in action roadmap. This plan was launched at our leadership summit in July 2022, where discussions highlighted the urgent need to prioritise GBV prevention.

One of the proposals at the summit was for the formation of various additional governance structures, such as the GBV advisory panel, which serves as an advisor and sounding board. Advisory panel comprises Senior Managers and convenes quarterly. The purpose is to provide thought leadership, guide and support GBV work and take ownership of the GBV work. Going further, GBV reference groups were created at our sites. The members of these groups will play a key role in ensuring that the solutions devised are implemented and sustained. Reference groups comprised individuals at various levels in the organisation from various disciplines also representing varying minority groups ie LGBT+.

Our GBV prevention work is anchored in co-creation and collaboration to ensure ownership and shared accountability. Our partnership with the Living with Dignity hub has elevated our case management response. The hub enables survivors to report GBV incidents safely and obtain the help they need.

A critical element of addressing and eradicating GBV is to build psychological safety, which will enable our employees to challenge and report unacceptable behaviour. AAP's I&D strategy is rooted in creating an enabling environment that promotes psychological safety. Various channels of reporting unacceptable behaviour for employees are made available. Consideration has been given to how working conditions

of females can render them vulnerable as victims of GBV thus ensuring that suitable PPE and female facilities are available is important.

We recognise that fear has been the leading reason for under-reporting GBV incidents. However, through our work, we are seeing an increase in reporting. This year, 57 cases of GBV were

reported to and investigated through the hub. Investigations are underway for 33 of these, with 21 concluded and closed. Three cases are currently unconfirmed. The outcomes of the investigations vary and can range from a recommendation for disciplinary action or other avenues such as mediation and facilitation, depending on the particulars of the case and the approach chosen by the victim.

GBV Advisory Panel comprising of diverse senior leaders formulated to provide thought leadership on response and prevention work



GBV advisory panel

- Led by executive
- School student + site programs
- 2023-4 'Real Men' program by Anglo-American with silent protest placard signs.

MENTORING



WIMnet NSW Mentoring Program 2025
APPLICATIONS NOW OPEN FOR MENTEES & MENTORS

MAKE 2025 YOUR YEAR!
*Are you looking for career guidance and direction?
Would you like to develop goals with someone who has been where you are now?*

Women in Mining NSW award-winning mentoring program pairs women seeking guidance and support with more experienced practitioners who are willing to commit their time to the mentee's professional development.

To find out more information or to register please scan the QR code or visit:
ausimm.aomapps.au/wimnet-nsw-mentoring-program-2025

Applications close 23 February 2025



Ausimm Network | Women in Mining NSW



IWRMP 2024

FEEDBACK FROM PARTICIPANTS



of participants would recommend IWRMP



of mentees feel that they have progressed in ways that they wouldn't have without the programme



of mentors felt like they 'got something from the process too'



said they had a quality relationship with their mentor or mentee



of mentees felt that IWRMP has had a positive impact on their career so far.

- Programs vary in Australia and internationally
- Mentee/mentor matching
- Cost for mentees, voluntary mentors
- Events – Launch, Midway, Celebration.

“Life changing program!”



AWIMAR
AUSTRALIAN WOMEN IN MINING AND RESOURCES

AWARDS, CELEBRATIONS



- State and National awards
- International Women's Day and International WIM Day events
- Sponsorship and support.

PROFESSIONAL DEVELOPMENT



- Lunch and learns
- Workshops
- Seminars, conferences
- Leadership days
- Site visits.

In person, hybrid, virtual

FIXING THE 'LEAKY PIPELINE'



The screenshot shows the METISPHERE website header with navigation links: About, Our Expertise, and Get in Touch. The main heading is "Executive Women in Resources Leadership Mentoring Program" in yellow. Below it is the tagline "Fulfill your potential as a C-Suite resources leader." The bottom section features a woman in a yellow hard hat and the text "Are You Ready to Break the Glass Ceiling?"

METISPHERE
Organisational Psychology

About ▾ Our Expertise ▾ Get in Touch

Executive Women in Resources Leadership Mentoring Program

Fulfill your potential as a C-Suite resources leader.

Are You Ready to Break the Glass Ceiling?

- Percentage of female Australian Institute of Geoscientists (AIG) members:
 - ✓ 34% student grade
 - ✓ 29% of graduate grade
 - ✓ 12% member/fellow grade
- Executive programs – internal and external.



NETWORKING



- Capital cities and regional centres
- Generally aligned to professional development
- May include structured activities
- Important!

PRIORITIES FOR WORKFORCE DIVERSITY, EQUITY AND INCLUSION (DEI)



FUTURE FOR DEI

- Anti DEI activism and political changes
- Societal issues
- Pink washing.

Forces of change...

- #MeToo movement
- ESG and reporting
- Legislative change
- Future workforce needs.



PRIORITIES TO SUPPORT FUTURE WORKFORCE



- Leadership
- Collaboration
- Address core issues
- Support and acknowledge progress
- Act now!

*“The mining industry has made significant improvements in health
and safety.*

*Now is the time for the minerals industry to do the same for gender
diversity, equity and inclusion so take some giant leaps for
womankind.*

*With the current awareness and
understanding, legal, moral and business
imperatives,*

this is the time.

*The time for the minerals industry to
act and lead.”*



THANK YOU!



LUCY McCLEAN

Chair, AWIMAR

Director, Forelight Advisory

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info@awimir.org.au



AWIMAR

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