



# MINERALS COUNCIL OF AUSTRALIA

## SUBMISSION TO THE INQUIRY ON THE PERCEPTIONS AND STATUS OF VOCATIONAL EDUCATION AND TRAINING

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## TABLE OF CONTENTS

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1.	EXECUTIVE SUMMARY.....	3
2.	INFORMATION AVAILABLE TO STUDENTS ABOUT VET QUALIFICATIONS AND RELATED CAREER PATHWAYS .....	5
3.	PERCEPTIONS AND STATUS OF THE VET SECTOR .....	8
4.	SUCCESSFUL PARTNERSHIPS BETWEEN VET PROVIDERS AND EMPLOYERS .....	10
5.	COMMONWEALTH PROGRAMS .....	12

## 1. EXECUTIVE SUMMARY

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Australia's mining sector and the Minerals Council of Australia place a priority on our people and investing in skills and knowledge to provide opportunities in the workforce of the future.

With global demand for energy and infrastructure rising to meet an ever-growing world population, society is consuming more minerals and metals than ever before. The Australian mining industry is rapidly undergoing a digital transformation that is upskilling existing occupations and creating new ones. Success relies on access to an increasingly higher-skilled workforce.

Quality and responsive training and workforce development are crucial to ensure a supply of skilled workers enter and remain in the industry. Vocational (VET) provides a stable source of talent for the mining industry through apprentices and trainees, who currently make up 4.7 per cent of the workforce.<sup>1</sup> It also provides opportunities for existing workers to upskill, re-skill, cross-skill and supports transitions from adjacent industries.

Over the last 10 years, the mining industry has been one of the strongest users of the VET system to skill and train its workforce. With an average of 60 per cent of employers using the system to meet their workforce needs, the industry was among the top five users nationally.<sup>2</sup>

During the same period, an average of 46.8 per cent of mining employers had jobs requiring vocational qualifications, higher than the all-industry average of 36.3 per cent.<sup>3</sup> Mining was the second greatest user of nationally recognised training, after construction (48.5 per cent).<sup>4</sup>

There is a clear opportunity to increase the uptake of VET pathways for learners and employers through targeted actions aligned to the terms of reference of this inquiry.

### Recommendations

1. That the workforce analysis and planning functions of Jobs and Skills Australia are activated to develop a comprehensive workforce plan that:
  - Captures skills in immediate and growing demand, and where job opportunities lie (inclusive of existing and emerging sectors)
  - Enables career pathways platforms to connect into and/or draw on, to promote national consistency.
2. That government, industry and training providers work together to provide key influencers—parents, teachers and friends with the relevant information, resources and tools to confidently support students' decision-making about career pathways.
3. That government, industry and training providers deliver collaborative campaigns to improve perceptions of the VET sector through increased awareness and understanding of VET offerings and establishing a stronger narrative on the value of VET as an equally valid tertiary pathway
4. That government policy and funding frameworks support the VET sector to deliver a mix of modern, accessible skills pathways, developed in collaboration with industry:
  - Including accelerated apprenticeships, micro-credentials and bridging/stackable, short-burst courses (for upskilling, re-skilling or skills top-up)
  - Using best practice models with demonstrated success, such as BHPs FutureFit Academy, Rio Tinto's partnership with South Metropolitan TAFE, Western Australia, and Queensland's Future Skills partnership.

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<sup>1</sup>National Centre for Vocational Education Research, [Apprentice and trainees 2022 June quarter](#), released 20 December 2022.

<sup>2</sup>NCVER, [Employers' use and views of the VET system: 2021: data tables](#), table 3, MCA calculations 10-year average: 2011-21.

<sup>3</sup>ibid.

<sup>4</sup>ibid.

5. That government provides pilot funding for employer and VET provider partnerships that test innovative programs (e.g. BHP's FutureFit Academy) linked to career pathways.
6. Leverage the synergies across broader Commonwealth reviews and reform activity currently underway, in particular the Skills Reform agenda, Universities Accord and Employment White Paper to:
  - a. Establish consistent policy frameworks
  - b. Support implementation of priority recommendations
  - c. Deliver a coordinated and improved skills and training system.

## 2. INFORMATION AVAILABLE TO STUDENTS ABOUT VET QUALIFICATIONS AND RELATED CAREER PATHWAYS

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Both the Commonwealth and State governments provide investment into a variety of platforms that offer information, resources, tools and support on career pathways, including skills profiling, study options and pathways mapping. Examples include:

- Commonwealth initiatives: Your Career and MySkills<sup>5</sup>
- State initiatives: myfuture, Jobs and Skills WA, Victorian Skills Gateway, Jobs Queensland and Career and pathway guidance<sup>6</sup>
- Industry specific initiatives: Australian Mining Careers and HotRubble<sup>7</sup>
- Other initiatives: Careers with STEM.<sup>8</sup>

Despite this investment, some of the challenges for students, parents and workers exploring career pathways through these platforms include:

- Confidence in the information: quality, consistency and currency of information across platforms is reliant on continuous resourcing and revision
- Functionality of the tools: the ability for users to navigate the tools, and level of prior knowledge required to explore options – e.g. specific course names, occupations or fields of study
- Awareness: exposure to the different platforms is reliant on the level of promotion to the relevant cohorts – e.g. students, teachers and careers advisers
- Consistency: despite cross-over and referencing between some platforms, overall consistency is variable – e.g. where contemporary information from industry has not been included, sourced and/or provided
- Opportunity: consistent information on immediate and expected skills in demand, with direct links to the tangible job opportunities.

Along with the provision of suitable information, these services need to target the entire diverse market of learners to lead them into the VET sector, to build their understanding of the value that VET pathways provide to meaningful and long-term skills development and career options.

For young people, it is also important to acknowledge parents, teachers and friends as the key influencers of their decision-making, particularly as it relates to study transition and career choices.<sup>9</sup> This influence is based on trust in the information received and relevance of those people knowing the student best.<sup>10</sup>

As such, it is critical that these key influencers are equipped with the relevant information, resources and tools to confidently support students' decision-making about career pathways, in particular teachers and careers advisers, who are often required to balance competing responsibilities and supports for students.

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<sup>5</sup> National Careers Institute, [Your Career](#), website, Commonwealth Government; and National Careers Institute, [MySkills](#), website, Commonwealth Government

<sup>6</sup> Education Services Australia, [myfuture](#), website, March 2023 – funded by all state governments; Department of Training and Workforce Development, [Jobs and Skills WA](#), website, Government of Western Australia; Victorian Skills Authority, [Victorian Skills Gateway](#), website, Government of Victoria; Department of Small Business and Training, [Jobs Queensland](#), website, Queensland Government; and South Australian Skills Commission, [Career and pathway guidance](#), website, Government of South Australia.

<sup>7</sup> Minerals Council of Australia, [Australian Mining Careers](#), website, 2023; Resources and Engineering Skills Alliance, [HotRubble](#), website, 2019.

<sup>8</sup> Refraction Media, [Careers with STEM](#), website – sponsored by Google, the Commonwealth Bank and ANSTO.

<sup>9</sup> S. Choy, D. Dymock, L. Le and S. Billett, [Understanding student decision-making about VET as a pathway: an Australian study](#), p. 2; J Hargreaves and K Osborne, [National Centre for Vocational Education Research](#), p. 5.

<sup>10</sup> Student Edge, *Student perceptions of a career in mining*, 2019, presentation at the MCA Minerals Industry Education Summit, Melbourne, 17 May 2018.

## Opportunities in Australian mining

Since 2011, 67,000 jobs have been added to the mining workforce and projections of continued strong growth indicate an additional 16,000 jobs to be added by November 2026.<sup>11</sup>

This substantial growth in workforce size, combined with tightening of the labour market has seen the mining industry experience acute skills shortages. In addition to professional roles such as mining engineers, metallurgists and geologists, some of the critical skills required for mining include:

- Technicians
  - Earth Sciences Technician
  - Electrical Engineering Technician
  - Metallurgical or Materials Technician
- Trade workers
  - Electricians
  - Diesel Fitters
  - Diesel Motor Mechanics
  - Automotive Electrician
- Machine operators:
  - Drillers
  - Miners
  - Shot firers
  - Train drivers.<sup>12</sup>

With more than 100 careers across the mining industry, opportunities exist on mine sites, in high-tech remote mining centres, in science as well as computer laboratories – or any mix of locations. To promote these opportunities and ensure students, parents and teachers (including careers advisers) have contemporary and accurate information on careers in mining; the MCA developed a *Make your career in mining guide*.<sup>13</sup> This guide is distributed during careers' days and targeted events. It is also available online and upon request through the MCA and State Chambers.

## The skills needed across Australia

Evidence-based resources and information related to the immediate and expected skills in demand across Australia would be an asset for parents, teachers and careers advisers in supporting students' decision-making about career pathways.

Jobs and Skills Australia (JSA) has a vital role to play in the development and provision of such resources.

In addition to existing publications and data such as Nowcast of Employment by Region and Occupation, Internet Vacancy Index, Labour Market Updates and the Skills Priority List, the more targeted and independent workforce planning function of JSA is an opportunity to provide greater clarity of the skills needed across Australia's workforce into the future.<sup>14</sup>

The research, data and analysis activity of JSA are highly valuable for planning the pipeline of skilled workers needed across Australia's workforce. For example, JSA is currently undertaking a Clean energy capacity study to understand the Australian workforce needed to transition to a clean energy

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<sup>11</sup> ABS, [Labour Force, Australia, Detailed, Quarterly: November 2022](#), 22 December 2022, table 6; and National Skills Commission, [Employment Outlook – Industry and occupation trends for the five years to November 2026](#), 2022, p. 7.

<sup>12</sup> Minerals Council of Australia, *Submission to the Jobs and Skills Australia 2023 National Skills Priority List Survey*, 31 January 2023, p. 2.

<sup>13</sup> Minerals Council of Australia, [Make your career in mining](#), second edition 2022, Canberra.

<sup>14</sup> Jobs and Skills Australia, [Welcome to Jobs and Skills Australia](#), website, 2023.

economy.<sup>15</sup> The study will build on existing research and deepen understanding of the [emerging] clean energy sector, the skills of existing workforces, levels of skills transferability across industries and jobs, as well as forecasts of future supply and demand for clean energy-related roles.<sup>16</sup>

The MCA notes this approach will enable the clean energy workforce to be considered across the full supply chain of clean energy production – from mining of raw materials, through to any waste management requirements – to ensure all workforce constraints are considered.

It would be beneficial for JSA to accelerate workforce analysis and planning activity to build a more comprehensive picture of the Australia's workforce needs across both existing and emerging sectors, including the Clean Energy Sector.

### **Recommendations**

1. That the workforce analysis and planning functions of Jobs and Skills Australia are accelerated to develop a comprehensive workforce plan that:
  - Captures skills in immediate and growing demand, and where job opportunities lie (inclusive of existing and emerging sectors)
  - Enables all career pathways platforms to connect into and/or draw on, to promote national consistency.

This approach will align skills with industry needs and drive demand to the right courses to improve post training job outcomes.

2. That government, industry and training providers work together to provide key influencers with the relevant information, resources and tools to confidently support students' decision-making about career pathways.

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<sup>15</sup>Jobs and Skills Australia, [Clean Energy Capacity Study: Terms of Reference](#), webpage, 2023.

<sup>16</sup> Jobs and Skills Australia, [Clean Energy Capacity Study: Terms of Reference](#), webpage, 2023.

### 3. PERCEPTIONS AND STATUS OF THE VET SECTOR

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VET offers an important pathway for industry to gain workers with the right skills through obtaining a full qualification, or by encouraging students and current employees to upskill, re-skill and develop expertise in a particular area by a new skill set, or a few units of competency.<sup>17</sup>

Despite this, broad public perceptions often describe VET as a pathway of ‘last-resort’ or the ‘failed pathway’ – perpetuating misinformed views that diminish its perceived value and importance. In a 2017 study, students revealed that choosing a VET pathway meant a student had in some way not performed ‘well enough,’ with some students relegating VET as a place for lower academic achievers.<sup>18</sup>

While there is clear awareness of VET, a lack of targeted communication to the broader community in regard to the value of opportunities associated with VET has created a disconnect between perception and opportunity – directly impacting on the uptake of VET pathways and limiting the profile of learners that access the system.

This is exacerbated by a public history of fluctuating quality assurance across training providers as well as assessment and evaluation outcomes.<sup>19</sup> Improving sector integrity and stability is an important foundation for improving perceptions and increasing participation.

Technology is transforming mining skills, with traditional mining trades increasingly incorporating elements of computing, and new career paths such as mechatronics and virtual reality, creating new capabilities for Australia. The future minerals workforce will be more diverse, geographically distributed and digitally connected. It will require broad ranging skills and competencies, using both accredited and non-accredited training.

This will require a VET system that is accessible, responsive and functional – including a mix of modern, accessible pathways, accelerated options for training, support for transition (e.g. from VET in School to apprenticeships or from VET to higher education), and a workforce supported to deliver quality training.

Since 1995, the National Centre for Vocational Education Research has maintained a time series of key aspects of employer’s use and views. This includes reasons for dissatisfaction with vocational qualifications as a job requirement.

Over the last 10 years, employers reported the top three reasons for dissatisfaction as:

- Relevant skills are not taught
- Training is of a poor quality or low standard
- Not enough focus on practical skills.<sup>20</sup>

Quality training courses focused on contemporary and future skills to produce job-ready graduates are essential. An industry-led education and training system is vital to aligning needs with outcomes. Misalignment of offerings and lack of quality directly affects perceptions, participation and status.

Partnering with industry is the most effective way for public and private training providers to identify skills shortages, reconfigure roles and careers, and anticipate future workforce requirements.<sup>21</sup>

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<sup>17</sup> Minerals Council of Australia, *Submission to the expert review on Australia’s VET system*, 2019, Canberra, p. 10.

<sup>18</sup> J Hargreaves and K Osborne, [National Centre for Vocational education Research](#), Adelaide, p. 5.

<sup>19</sup> op. cit. Minerals Council of Australia, 2019.

<sup>20</sup> National Centre for Vocational Education and Training, [Employers’ use and views of the VET system: 2021: data tables](#), Adelaide, table 3, 2011 – 2021; NB: the top three reasons in 2013 did not include ‘not enough focus on practical skills,’ with ‘training is too general and not specific enough’ being the third most common response.

<sup>21</sup> Minerals Council of Australia, [Submission to Productivity Commission inquiry into Australia’s productivity performance](#), 29 March 2022, p. 18.



### **Recommendations**

3. That government, industry and training providers deliver collaborative campaigns to improve perceptions of the VET sector through increased awareness and understanding of VET offerings and establishing a stronger narrative on the value of VET as an equally valid tertiary pathway
4. That government policy and funding frameworks support the VET sector to deliver a mix of modern, accessible skills pathways, developed in collaboration with industry:
  - Including accelerated apprenticeships, micro-credentials and bridging/stackable, short-burst courses (for upskilling, re-skilling or skills top-up)
  - Using best practice models with demonstrated success, such as BHPs FutureFit Academy, Rio Tinto's partnership with South Metropolitan TAFE, Western Australia, and Queensland's Future Skills partnership.

## 4. SUCCESSFUL PARTNERSHIPS BETWEEN VET PROVIDERS AND EMPLOYERS

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Preparing the current and future minerals workforce will require innovative approaches across the education and training landscape. This will require the provision of more timely and affordable skills, training and development options and pathways for both existing and pipeline workforce.<sup>22</sup>

Industry commitments to investing in skills and training have been substantial – from school education programs to internships, apprenticeships and scholarships, through to collaborative initiatives targeting niche areas of development, regional growth opportunities and technology transformation.

There are numerous examples of successful partnerships between the mining industry and VET providers, which demonstrate career pathways and secure employment opportunities.

### Box 1: BHP's FutureFit Academy

This program was launched in 2020 as part of a national training program designed to bolster Australia's skills base and create new career pathways into the mining sector. Fit-for-purpose maintenance training programs are run in two dedicated learning centres in Perth, Western Australia, and Mackay in Queensland.

To date, the Academy has deployed 338 graduates to jobs across BHP's Australian operations.<sup>23</sup> Demand for future intakes is estimated at 2,500 in the next five years.<sup>24</sup>

Through the Academy, students earn a salary while they are studying. The purpose-built learning centres feature the latest immersive virtual reality technology combined with workshop learning designed to provide students with the training they need to competently and safely carry out their work in field.

The Academy offers two training options with nationally-recognised certification:

- Maintenance traineeship – a 12-month Certificate II in Engineering – Production Technology, focused on preventative maintenance
- Trade apprenticeship – a two-year program offering a full-trade qualification and the skills to perform preventative maintenance, diagnostics and repairs

Academy programs are nationally accredited, and supported by BHP's partnerships with North Metropolitan TAFE, Western Australia and Central Queensland University.

BHP's FutureFit Academy is a strong example of a successful VET provider-employer partnership, demonstrating career pathways leading directly to employment outcomes.

Key elements of success in this partnership included flexibility, responsiveness and ongoing development to ensure the program continues to complement operational requirements and opportunities.

The agility and speed of the State system in the development and accreditation processes of the automation education solutions was crucial – their rapid response to industry needs, networks and relationships were pivotal for the success of the WA VET collaboration.

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<sup>22</sup> Minerals Council of Australia, *Submission to the expert review of Australia's Vet System*, 25 January 2019, p. 10.

<sup>23</sup> BHP, [2021 Annual Report](#), p. 30; and BHP, [2022 Annual Report](#), p. 28.

<sup>24</sup> Laura Tyler, [Speech: Melbourne Mining Club](#), 1 December 2022.

### Box 2: Rio Tinto automation qualifications

Rio Tinto launched Australia's first accredited automation qualification in partnership with South Metropolitan TAFE and the WA Government in 2019.

Originally accredited in Western Australia, Rio Tinto worked with AUSMESA (the Australian Government's Mining and Automotive Jobs and Skills Council) to include these qualifications in the nationally recognised Resources and Infrastructure Industry Training Package. The following courses were released in October 2022:

- [RII21222](#): Certificate II in Autonomous Workplace Operations – Data driven processes in an autonomous workplace and the human-machine interface
- [RII41522](#): Certificate IV in Autonomous Control and Remote Operations – Control centre operations and navigating complex control systems for automated operations, fixed and mobile plant and equipment.

These nationally recognised courses bring stronger focus on the range of skills that automation and technology require and contribute to improved employability and skills portability for workers.

### Box 3: Queensland Future Skills Partnership

The Queensland Future Skills Partnership Pilot Program is a partnership between Advance Queensland BHP Mitsubishi Alliance (BMA), TAFE Queensland and Central Queensland University.<sup>25</sup> The program enables existing workers, particularly in regional locations, to acquire new skills in new technologies, such as cyber security, data management, Supervisory Control and Data Acquisition (SCADA).

Targeted at the resources sector, skills are transferable to other sectors such as defence and agriculture.

Training includes 12 accredited skill sets or a non-accredited program covering 10 micro-credentials.

The Queensland Future Skills Partnership Pilot Program equips workers with the skills to thrive in the modern workplace, where new technologies are changing the work practices and skills requirements. The program also contributes to improved employability and skills portability for learners and workers.

### Recommendation

5. That government provides pilot funding for employer and VET provider partnerships that test innovative programs linked to career pathways.

<sup>25</sup> Advance Queensland, [Queensland Future Skills Partnership](https://advance.qld.gov.au/industry/queensland-future-skills-partnership), program web page, Queensland Government, 22 July 2022, viewed 25 November 2022, <https://advance.qld.gov.au/industry/queensland-future-skills-partnership>.

## 5. COMMONWEALTH PROGRAMS

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At present, there is broad portfolio of policy review and reform across government that is relevant to this inquiry. These include:

- The Skills Reform agenda: as it relates to the required changes to the VET system so that Australians can access high quality and relevant training and skills linked to the jobs that emerge through the next decade and beyond:<sup>26</sup>
  - Immediate focus on quality and relevance includes qualifications, industry occupation clusters, Australian Qualifications Framework, industry engagement arrangements, quality standards, provider capability and capacity and VET workforce quality
  - Future focus to develop a new National Skills Agreement includes new funding models, foundation skills, integrated tertiary education, modern offerings, promoting employment-based training
- The Universities Accord: as it relates to the broader tertiary education landscape, improved articulation, collaboration and pathways:<sup>27</sup>
  - The terms of reference include the connection between the VET and higher education system, in particular how to bring the two systems into closer alignment and lifelong learning
- The Employment White Paper: as it relates issues, frameworks and policy approaches for full employment and the future of Australia's labour market:<sup>28</sup>
  - To be released in September 2024 and will provide broad strategic guidance through a roadmap
  - Skills, education and training, upskilling and reskilling, were part of the terms of reference, particularly as they relate to labour force participation, labour supply and improved employment outcomes.

Given the range of reviews and reform activity underway, it is essential that the government leverage synergies between the various processes in order to deliver policy consistency, support implementation and improve outcomes.

Key points of focus should include:

- The Skills Reform agenda
  - Simplified and streamlined VET qualifications
  - Harmonising and modernising apprenticeships
  - Strengthening the role of industry and employers in the VET system.<sup>29</sup>
- The Universities Accord
  - A cohesive and connected tertiary education system
  - Greater engagement and alignment between the VET and higher education
  - Improving the student experience in navigating these systems.<sup>30</sup>

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<sup>26</sup> Department of Employment and Workplace Relations, [Skills Reform agenda](#), website, 15 December 2022, Australian Government.

<sup>27</sup> Department of Education, [Review of Australia's Higher Education System – Terms of Reference](#), website, 24 February 2023 Australian Government..

<sup>28</sup> The Treasury, [Employment White Paper](#), website, 2022, Australian Government.

<sup>29</sup> Department of Employment and Workplace Relations, [Skills Reform overview](#), website, 16 December 2022, Australian Government.

<sup>30</sup> Department of Education, [Review of Australia's Higher Education System – Terms of Reference](#), website, 24 February 2023 Australian Government..

- Employment White Paper
  - The frameworks, policy settings and mechanisms to support skills and training
  - Integrating training with employment pathways.<sup>31</sup>

**Recommendation**

6. Leverage the synergies across broader Commonwealth reviews and reform activity currently underway, in particular the Skills Reform agenda, Universities Accord and Employment White Paper to:
  - a. Establish consistent policy frameworks
  - b. Support implementation of priority recommendations
  - c. Deliver a coordinated and improved skills and training system.

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<sup>31</sup> The Treasury, [Employment White Paper](#), website, 2022, Australian Government.