HANGA-ARO-RAU
Manufacturing, Engineering and Logistics
Workforce Development Council

ADVICE TO THE TERTIARY EDUCATION COMMISSION FOR 2024

The industries Hanga-Aro-Rau serves

Our role is to amplify industry voice to ensure our sectors lead and influence the vocational education system and its transformation. Our sectors are described in section 7(d) of our Order in Council.

Manufacturing

Alcohol Manufacturing (Excluding Wine)
Aluminium Joinery
Apparel
Automotive Parts and Wholesaling
Baking
Binding and Finishing
Boat Building and Maintenance
Chemical Manufacturing
Dairy Processing
Direct Mail Production
Energy and Chemical Plant Operations
Fibreboard and Paper Packaging
Food and Beverage Manufacturing
Furniture Manufacturing
General Manufacturing
Glass Processing
Industrial Textiles
Kitchen Joinery
Marine Technology
Meat Processing
Metal Manufacturing
Motor Vehicle Manufacturing (Coachbuilding)
Non-Metallic Mineral Manufacturing
Offsite Manufacturing
Petroleum and Coal Manufacturing
Pharmaceutical and Medicinal Product Manufacturing
Plastics, Polymer and Rubber Product Manufacturing
Primary Processing Support
Print
Protective Coatings
Pulp and Paper
Retail Meat/Butchery
Signmaking
Solid Wood Manufacturing
Textiles
Tissue Converting
Wood Panel and Plywood Manufacturing

Engineering

Automotive Engineering
Automotive Reglazing
Collision Repair
Composites Technology
Dairy Systems Engineering
Engineering Design and Consulting Services
Engineering Fabrication
Extractives
Extractives - Blasting
Extractives - Drilling
Fire Protection
Irrigation
Locksmithing
Maintenance Engineering
Mechanical Building Services
Mechanical Engineering
Motorcycle Engineering
Outdoor Power Equipment
Refrigeration and Airconditioning
Welding

Logistics

Air and Space Transport
Commercial Road Transport
Customs and Freight Support Services
Digital Infrastructure
Driving Skills
Forklift
Maritime and Marina Operations
Postal and Courier Services
Rail Transport
Resource Recovery and Efficiency
Road Passenger Services
Stevedoring and Ports
Supply Chain
Warehousing and Storage
Water Freight and Passenger Transport

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E aro e! E aro e!
Nei mātou o Hanga-Aro-Rau te aro nei
ki ngā mānuka takoto ā Ngāi Ahumahi –
kawea ake rā!
Kimihia, rangahaua, whāia
te ao mātauranga ahumahi nei
hei oranga mahi, hei oranga hapori,
hei oranga whānau
E te hunga whatiwhati kō, e te iwi ihupuku
Kia manawanui, kia manawaroa,
kia manawa piharau ki tō huarahi
Mā wai te huarahi e hora nei?
Mā ngā ahumahi e!

Take interest! Take notice!
Here we are Hanga-Aro-Rau focused
On the difficulties faced by our industries –
rising to the challenge!
Seeking, searching, in pursuit of
vocational education
For employment, community
and whānau wellbeing
To the hard workers and novices
Be committed, resilient,
with stamina on your path
Who will pave the way forward?
Industry will!

1 Ngā Kōrero Matua | Executive summary

Since we became operational in October 2021, we have sought to understand the priorities, challenges, and opportunities for the industries we serve and the people and communities they serve. Our extensive research, engagement and testing identifies key challenges that our industries face and want resolved by the vocational education ecosystem.

They are:

1. **Strengthening attraction to manufacturing, engineering and logistics industries** to address skills and labour shortages and, perhaps more critically, retention of people in the industries. Acknowledging immigration settings are important, while balancing the need to develop a sustainable and diverse pipeline from our domestic base

2. **A work readiness focus** for those not yet in work that includes core transferable skills: work ethic, team mindedness, an understanding of productivity, industry and how businesses work, and foundation literacy and numeracy, including digital literacy and adaptability

3. **More support to increase inclusivity and equity** through recognising the changing demographics and underutilised population groups in Aotearoa by:

    a. Providing better support to Māori and Pacific peoples in our sectors, as well as developing clear career and education pathways for these younger population groups that promote thriving and sustainable careers

    b. Providing greater support to enable our sectors to be more accessible and inclusive to women

    c. Providing greater support to enable our sectors to be more accessible and inclusive to those with disabilities.

4. **Providing greater support to older workers** to enable them to remain connected to their industry/ workplace, transfer knowledge to help upskill new generations and enable employers to develop succession plans that allow their business to adapt to the changing nature of work and industry. More accessible upskilling training opportunities through micro-credentials, to support upskilling of the existing workforce, transitioning of career changers, providing entry pathways, learning specialist technologies and increasing digital literacy. Promote lifelong learning to ensure adaptability and sustained participation, social mobility, and prosperity.

5. **More work-based and on-site training,** requiring better equipped trainers and assessors.

Hanga-Aro-Rau has identified opportunities to address the challenges industry face. We will support the vocational education ecosystem to improve workforce capability and capacity for the manufacturing, engineering and logistics industries.

Accordingly, we expect the Tertiary Education Commission (TEC) **to give effect** to investing in provision that:

- Meaningfully incorporates and embeds te ao Māori, te reo Māori, tikanga Māori and mātauranga Māori into every aspect of their delivery
- Works with Māori industry (industry as defined in the Hanga-Aro-Rau Order in Council [OiC]) to embed a tikanga Māori based framework into employment, education and training policies, and develop tools to implement the framework
- Accelerates and increases iwi, hapū and Māori relationships with meaningful engagement from the outset, enabling equitable outcomes for Māori
- Increases access and opportunities by Māori for Māori, to increase skill development and help address identified labour and skills shortages
- Invests and enhances regional delivery of Māori pastoral care initiatives and organisations, to provide more effective support for Māori participating in the vocational education system.

We recommend that TEC **gives effect** to an increase in investment in delivery that supports learner success and, in particular, improving equitable outcomes for those that are traditionally underserved.

To that end, Hanga-Aro-Rau would expect TEC to **give effect** to investment in programmes that:

- Actively engage in and support the normalisation of mātauranga Māori
- Engage in genuine consultation, collaboration, and partnership that meets the needs of iwi and hapū alongside industry
- Incorporate culturally appropriate and engaging pedagogies and curricula to enhance learning opportunities for all learners, including whānau, of the many cultures that engage in learning (Māori, Pacific peoples and other ethnicities).

Current and revised programmes

Hanga-Aro-Rau is committed to its role of advocating for industry to ensure relevant qualifications are available to the manufacturing, engineering and logistics industries. Over time, through the development of our functions, we will be able to determine which offerings are better meeting the needs of industries and which may be reduced because they are no longer required or have been replaced. At this point we are not in a position to recommend reductions and therefore we recommend TEC:

- Continues to fund current programmes leading to Hanga-Aro-Rau qualifications listed in Appendix 1, and at the current levels
- Fund new or refreshed qualifications as listed in Appendix 2
- Through the TEC Strategic Fund contestable application process, fund providers to enable a redesign or refresh of their programmes so they can effectively meet industry needs.

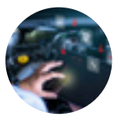
Vocational Pathways

We recommend that TEC **gives effect** to investment that increases delivery of secondary-to-tertiary transition programmes to improve access for learners into employment. TEC must consider good practice models of industry engagement with vocational education that promote equitable outcomes for ākonga at all levels. TEC will increase funding to providers around employer education to help better on-board workers to support greater employee learning success.

New product delivery

The following products are recommended for investment and while not yet developed and available on the New Zealand Qualifications Authority (NZQA) Framework, they are expected to be developed late 2023 or early 2024. We acknowledge that TEC is bound by investment for qualifications that currently exist on the framework: however if investment is not able to occur until 2025, the vocational education system will not be meeting one of its key reform requirements of being responsive to industry.

Through discussions with industry, we recommend TEC **gives effect** to investment in the following new vocational education products and acknowledge this may be dependent on available funding:

	New Product	Solution	Need
	Computer numerical control (CNC)	New qualification	CNC is now a pan-industry technology that requires specific learning to meet multiple industrial applications
	Robotics (Welding)	To be determined (possibly micro-credential)	As robotic welding has become more commonplace, the development of the skills to set up and monitor machines has been identified
	Digital skills	Microcredential/s	Following the success of the digital skills in manufacturing micro-credential, the manufacturing sector has requested the next step on the pathway be developed
	Primary product and food processing	New unit standards	Existing unit standards do not lead to industry being supplied with fit-for-purpose skills. A unit standard review has been scheduled by Hanga-Aro-Rau to fill the gaps in the programme. This review will be complete by 2024 and the programme will be released in 2024
	Sewing machinist/ Apparel manufacturing	To be determined (possibly micro-credential)	This qualification aims to meet the industry need for more machinists
	Fluid power systems	New qualification	Traditionally this area is serviced by engineers and mechanics. Industry bodies have recognised specific skills required for the industry that are not being met by engineers or mechanics and have asked for a specific qualification to meet their needs
	Passenger ropeways	New qualification	This qualification aims to meet the maintenance needs of many tourism and difficult access areas in New Zealand
	**Transport engineering**	To be determined (possibly new qualification)	Transport engineers traditionally come from multiple trades backgrounds but have common skill sets. The industry has now asked for a formal recognition of those combined skill sets
	Trades assistant	To be determined (possibly micro-credential)	With the development of large capital works in construction and engineering in New Zealand, the trades assistant project is an opportunity to develop a pathway for those that have not had or don't recognise the opportunity for a career. The trades assistant project will pathway people into trades qualifications and onto worksites to meet labour shortages and develop skills

2 He kōrero nā te poari | Foreword from our Council

On behalf of the governing Council, we endorse the immense mahi and insights pulled together by the Hanga-Aro-Rau Workforce Development Council in this investment advice to the Tertiary Education Commission.

As our Polynesian tūpuna prepared kete of supplies for their long wayfinding voyage to discover Aotearoa, so too have our rangatira and kaimahi prepared a basket of provisions for you for the year ahead.

The weave of the kete is crafted by experienced hands, with the many strands pulled together to create something stronger than its individual parts – something transformational. Those who joined us to create this weave across the manufacturing, engineering and logistics sectors in Aotearoa include Māori industry, iwi, hapū, employers, learners, unions, associations and providers, across more than 70 sectors.

Nestled within the basket are the rich skills and experience of our people, and the knowledge and feedback we have collected from across our industries that will fuel our mahi. It is full of what industry have said they need to see from us in the short term, to help address the challenges they face, and build towards the true system-wide transformation we seek. We take our mandate to be the voice of industry to heart, and we lay down the expectation that TEC will listen to and action the investment guidance we have given here, to give effect to and have regard for sections, to support the sectors we serve.

This kete carries the knowledge that sustains us as we sail on the waka formed by our Statement of Strategic Direction, on the course navigated by our Order in Council, our operational plans and our letter of expectation.

Mā whero mā pango ka oti ai te mahi.
By black and red together it is done.

Please join us in taking from this kete of robust advice and come with us on our haerenga (journey) of transformation.

Ngā manaakitanga

Dr Troy Coyle and Renata Hakiwai (Ngāti Kahungunu, Rongomaiwahine, Tūwharetoa, Waikato-Tainui)
Hanga-Aro-Rau Workforce Development Council Co-chairs

3 He kōrero nā ngā tumu whakarae o Hanga-Aro-Rau | Foreword from our leaders

It is with pride we present the advice to the Tertiary Education Commission (TEC) for 2024.

Our organisation has evolved significantly since our establishment on 4 October 2021. With this has come a deepened understanding of our role and purpose, and the impact our mahi has. You will see this growth here in our investment advice, in which we clearly set out the specific priorities we see for TEC in the next year, as related to the manufacturing, engineering and logistics industries we serve. They are to:

- Maintain investment levels in the current qualifications and industry standards across our industries
- Continue to invest in our essential vocational pathways mahi, creating sustainable workforce pipelines and pathways that serve both learners and employers well
- Provide new investment for the creation of nine vocational education solutions that industry tells us are clearly needed.

We have connected widely with a diverse audience to bring this advice to fruition and fully embraced the whakataukī:

Ehara taku toa i te toa takitahi, engari he toa takitini.
The strength is not mine alone, but the success of the collective.

The recommendations in this document are the result of thousands of hours of deep kōrero and collaboration with those who join us on our haerenga (journey) to transform vocational education in Aotearoa. Ngā mihi nui to all those who have generously shared their knowledge and expertise with us, including employers, industry associations, pakihi Māori (Māori business), iwi, hapū, Regional Skills Leadership Groups, unions, education providers and more.

We have also used an evidence-based approach, conducting detailed research and reviews to ensure the requirements of industry are robustly backed by qualitative and quantitative data.

This advice is one of a suite of documents that influence our mahi. It can be read alongside our visionary Statement of Strategic Direction, our Skills and Workforce Leadership Plan, and the Hanga-Aro-Rau Operational Plan 2023–24. Together, these documents show the full breadth of our transformative vision for vocational education in our sectors and the initial passages in our voyage to achieve it.

He rau ringa e oti ai ngā mahi.
Many hands make light work.

This has been a true cross-organisational project, and we extend our gratitude to all rangatira and kaimahi who have contributed.

We are also profoundly grateful for the support of the voices that guide us: our Co-chairs and Council members, and our Industry Stakeholder Group. This strong connection to industry gives us the confidence to know the mahi we do, including the recommendations included in this advice, are endorsed by the sectors we serve. We will continue to bolster these supportive voices with the formation of our National Industry Advisory Groups in the coming months and we look forward to rich input from them.

We relish the opportunity to partner with TEC and tertiary education providers to bring this advice to life for the betterment of learners and their whānau, industry employers and Aotearoa as a whole.

Mauri ora!

Phil Alexander-Crawford, **Hanga-Aro-Rau Chief Executive** (Ngāti Hine, Ngāti Rēhia, Ngāpuhi)
Samantha McNaughton, **Hanga-Aro-Rau Deputy Chief Executive**

4 Kupu Arataki | An introduction

Our purpose is to provide industry with a strong voice in making Aotearoa New Zealand's workforce fit for today and the future, and to contribute to an education system that honours Te Tiriti o Waitangi and supports Māori–Crown relations. As vocational education has a direct impact on improving social, economic and sustainability outcomes, we continue to work on its transformation, making it more accessible to all New Zealanders.

This advice is formed through extensive engagement with industry and employers, conducting research on the barriers those in our sector workforces are experiencing.

We acknowledge this advice may not meet the test of 'give effect' that the TEC is bound by. Through developing this advice we have sought to amplify the voice of industry. Therefore, where TEC are limited by their ability to give effect to the advice, we encourage vocational education programme delivery providers to consider how their offerings have considered this advice.

We have sought to include a regional focus where appropriate, to highlight where our advice aligns with the Regional Skills Leadership Groups' (RSLGs) Regional Workforce Plans (RWP). RSLGs in turn have indicated their support to a number of areas of our advice.

We have engaged with tertiary education organisations (TEOs) throughout the evidence gathering phase of the development of this advice. We encourage a collaborative approach between Hanga-Aro-Rau, TEC and TEOs to support the operationalisation of this advice.

We acknowledge that this advice will shape the Supplementary Plan Guidance to TEOs which informs their investment plans for 2024.

5 Ngā pou | Strategic pillars

Hanga-Aro-Rau has aligned its duties under four pou or strategic pillars. These four pou provide strong foundations upon which Hanga-Aro-Rau can advocate for industry and those currently underserved by the vocational education system, alongside the communities we serve. Advice provided under these pou should be read with the same importance as the advice provided in the 'Give effect' section of this document.

Ahumahi

Strong industry voice

Reflect and prioritise industry voice, advocate for our industries in the education ecosystem to create a sustainable, globally engaged, and adaptive New Zealand

Te Tiriti o Waitangi

Honour Te Tiriti o Waitangi

Supports Māori-Crown relationships. Our Te Tiriti o Waitangi partners inform how vocational education is improved by Māori for Māori

Ka Tika

Equitable outcomes

Embed equitable outcomes in all functions and ways of working to support improvement in equitable outcomes for all

Te Taiao

Hardwire sustainability

Develop skills through the vocational education system to meet the Living Standards Framework and Sustainability Development Goals

5.1 Ahumahi | Strong industry voice

Engineering, manufacturing and logistics industry voices and those of Māori employers influence improved vocational education outcomes.

Industry voice is central to our mahi. We partner with industry to understand the challenges they face and the skills they need to address, then develop qualifications for providers to deliver.

Our industries face a shortage of unskilled and skilled labour that threatens the sustainability of their workforce. Irregular connection between industry and education contributes to this. There has been scattered guidance for employers on how to engage in this space, but many small-to-medium-sized enterprises lack the time and resources. The education-to-employment ecosystem plays a role in brokering connections with employers to support career education for learners.

Nested micro-credentials will be a stronger feature of qualifications going forward, which allows flexibility and transferability. Industry recognises the potential of this development for businesses, as it will support agile decision-making and resilience in a challenging economy.

Flexible and nimble delivery of niche programmes will broaden opportunities for learners and improve access for small-to-medium-sized enterprises that want to upskill employees. This will build industry confidence in vocational education that looks to industry to inform skills development.

5.2 Te Tiriti o Waitangi | Honour Te Tiriti o Waitangi

The need for the reformed vocational education system has come from clear expectations from Māori that the Crown needs to do much more to realise, understand, know and work in partnership with Māori to support wellbeing.

The vision of our vocational education reforms includes supporting an education system that both honours Te Tiriti o Waitangi and supports Māori–Crown relations. Workforce Development Councils were formed for various needs, including to better support Māori industry and business. The task for us is to support Māori industry, and to act as stewards for change within non-Māori businesses to raise their capability to remove barriers to Māori becoming more skilled, securing higher paid positions and being in positions of management and ownership. Our Statement of Strategic Direction explains our approach to supporting this duty and function (see Appendix V Statement of Strategic Direction). It is based on:

a. Establishing effective consultation by reviewing existing Māori voice to listen to what we have already been told before we ask again
b. Incorporating new workforce development-based consultation with Māori-owned businesses
c. Developing options and testing them through a consultation process
d. Utilising our Industry Stakeholder Group to test progress
e. Engaging and consulting to develop a continuous improvement and iterative approach that supports steering the collective vocational education waka towards a true partnering approach.

As the demographics of our potential workforce changes, it is essential that we assist our industries to understand why we have this obligation and how it supports industry. In practice, this means encouraging more Māori into our sectors.

To work with our industries and their workforce on this part of the journey, we put forward advice that we believe will support the following:

- Encouraging social mobility within industry for Māori
- Skills and behavioural challenges for Māori entering the workforce
- Fostering an equitable working environment through te ao Māori holistic and whānau-centred training
- Supporting a vocational education system that is more connected with Māori.

Accordingly, we expect TEC **to give effect** to investing in provision that:

- Meaningfully incorporates and embeds te ao Māori, te reo Māori, tikanga Māori and mātauranga Māori into every aspect of their delivery
- Works with Māori industry (as defined in Hanga-Aro-Rau Order in Council) to embed a tikanga Māori based framework into employment, education and training policies, and develop tools to implement the framework
- Accelerates and increases iwi, hapū and Māori relationships with meaningful engagement from the outset, enabling equitable outcomes for Māori
- Increases access and opportunities by Māori for Māori, to increase skill development and help address identified labour and skills shortages
- Invests and enhances regional delivery of Māori pastoral care initiatives and organisations to provide more effective support for Māori participating in the vocational education system.

We know that strategic investment toward building industry cultural competency, capability strategies and implementation will help industries that are grappling to embed Te Tiriti o Waitangi[1] (see Deloitte, 2022, p.34). Using a te ao Māori approach will help attract and retain more Māori into our sectors, as well as increase workforce capacity and capability by improving equitable opportunities and outcomes.

1 *Hanga-Aro-Rau Post COVID-19 workforce development needs in New Zealand's manufacturing and engineering sectors*, Deloitte, 2022. (p.34)

As we stated in our Whakatakotoranga whakaaro 2023 ki Te Amorangi Mātauranga Matua (29 April 2022 Investment Advice), we see the benefit of having a defined and deliberate focus on Māori workforce development. Since then, we have supported progressing this across both Workforce Development Councils (WDCs) and the wider ecosystem. We see this as a kaupapa and Crown responsibility, shared across the wider vocational and Crown system. We are grateful for the seats we have had at the Design Authority and are encouraged by their support for this and other work pieces.

Included in the vocational education ecosystem are the Regional Skills Leadership Groups (RSLGs). Many RSLGs have identified Māori development as a priority for Māori workforce/rangatahi.

For example:
- Canterbury (support for Māori rangatahi action; manufacturing workforce diversity action)
- Marlborough (enabling equitable outcomes for Māori through education and work)
- Nelson (national recommendation – establishment of Te Tiriti training for organisations interacting with Māori and 'Mā Māori, mō Māori, ki a Māori' solutions to workforce and skills issues)
- Otago (boosting labour market participation for Māori action)
- Waikato (te ao Māori – partnering with Māori entities and businesses)
- Tairāwhiti (within the context of forestry and construction)
- Taranaki (not Hanga-Aro-Rau industry, but action around embedding te ao Māori in agrikids programme and environmental practices)
- Wellington (Māori and iwi + Māori – mana whenua and mātāwaka)
- Southland–Murihiku (aspiration – equitable outcomes for Māori).

5.3 Ka tika | Equitable outcomes

Attracting and retaining staff is one of the leading issues our industries face. Deloitte estimates that there is a significant workforce capability and capacity gap of up to 17,000 manufacturing roles and 12,000 engineering roles. The size of this gap is likely to increase if current trends and policy settings persist[2].

More Māori, Pacific peoples, women, those with disabilities and older workers will be attracted into, or better supported by, our industries if our workplace cultures change. This will be achieved by:

- Building the leadership and management capabilities of employers around diversity, equity and inclusion
- Improving opportunities for people to move into higher skilled work
- Challenging the maintenance of the status quo that frames the concept of an ideal employee, which drives equal but not equitable treatment
- Challenging the norms of working conditions such as the full-time work week of 40 hours plus.

Equitable outcomes[3] are achieved by ensuring the industry understands the opportunity that exists to taking a more equitable approach to workforce development, where workplaces recognise and value diversity, embrace it and grow it for the betterment of those within the industry and served by the industry.

An example of this is supporting Pacific peoples to achieve equity within the industry and the workforce. Looking at the workplace environment as the foundation of work experience, Hanga-Aro-Rau is examining the aspects that affect Pacific peoples' experiences at work and which of these elements can be retained or improved. By addressing these aspects, the expectation is that the parts of the education system that improve the industry experience of Pacific learners could be tailored towards the attraction, retention and progression of Pacific people into manufacturing, engineering and logistics. This same approach is critical to supporting Māori, women, those with disabilities and others who are traditionally underserved yet could become the emerging workforce of the future for our industries.

2 Ibid. (p.13)
3 Equity in its most basic form is about justice, fairness and impartiality, and is not to be confused with equality, which has connotations of sameness or equal distribution (Ahuriri-Driscoll, Williams, Vakalalabure-Wragg et al., 2022; McCowan, 2016; McDermott, Mahanty & Schreckenberg, 2013; Manatū Hauora Ministry of Health, 2018; New Zealand Human Rights Commission, 2022c; New Zealand Productivity Commission, 2022).

The functions of Hanga-Aro-Rau are key to supporting equity for those who have been traditionally underserved by our education system. We continue to look at how these functions can embed ways of working that support equitable outcomes through our skills and workforce leadership, qualification systems, programme endorsement, moderation activities, and brokerage and investment advice.

Hanga-Aro-Rau is directed to contribute to the creation of a sustainable, globally engaged and adaptive New Zealand. The term sustainable here describes a system consisting of the three E's: environment, economy and equity. A thriving society depends on maintaining a balance between each of these elements[4]. Equity in this context refers to people; in the vocational education ecosystem this includes ākonga/learners and kaimahi/workers.

The Tertiary Education Strategy (TES) and the Statement of National Education and Learning Priorities (NELP), set out the Government's priorities for education and provide guidance. These statutory documents, issued under the Education and Training Act 2020, set out five objectives to define the long-term strategic direction for tertiary education. Objective 2, barrier-free access, and the actions which sit under it, focus on reducing barriers to education for all, including for Māori and Pacific learners/ākonga, disabled learners/ākonga and those with learning support needs. In addition to these traditionally underserved learners, women workers, older workers and potentially other groups are being given focus as our workplan develops and our connections grow.

We recommend that TEC **gives effect** to an increase in delivery investment that supports learner success and, in particular, improves equitable outcomes for those who are traditionally underserved.

Mō te ākonga te take | Learners as the workforce of the future

Hanga-Aro-Rau is committed to supporting opportunities for all people, including those who have been traditionally underserved by the education system. The following points identified by the Tertiary Education Strategy and Ka Hikitia – Ka Hāpaitia are critical for learner success.

A te ao Māori approach, one that is inclusive of mātauranga, te reo and tikanga Māori (Māori knowledge, language and customs), provides a more holistic view of the vocational education system. It is not limited to the mental, physical and spiritual wellbeing of learners but also includes social, financial, whānau and cultural wellbeing as key contributing factors to learner success.

To that end, Hanga-Aro-Rau would expect TEC to **give effect** to investment in programmes that:

- Actively engage in and support the normalisation of mātauranga Māori
- Engage in genuine consultation, collaboration, and partnership that meets the needs of iwi and hapū alongside industry
- Incorporate culturally appropriate and engaging pedagogies and curricula to enhance learning opportunities for all learners, including whānau of the many cultures that engage in learning (Māori, Pacific Peoples and other ethnicities).

4 UCLA. (2021, April 14). *What is sustainability?* [video]. YouTube. https://youtu.be/zx04Kl8y4dE

Te Hono o Te Kahurangi[5]

Te Hono o Te Kahurangi is a whare ako framework and methodology NZQA uses for quality assurance in the non-university tertiary sector. With the introduction of skill standards and incorporation of Te Hono o Te Kahurangi, we see this approach as the standard TEOs should strive for to support learner success.

Hanga-Aro-Rau encourages providers to engage with kaupapa Māori principles, such as those identified by Te Hono o Te Kahurangi, and embed mātauranga Māori practices and values into the teaching and delivery of their programmes.

With many of our providers embarking on this journey into te ao Māori, we acknowledge providers who already implement what could be considered Māori approaches but may not be aware of it. Part of our role will be to validate and reaffirm good practice, and provide support and encouragement where required through our qualification review, programme endorsement and moderation review functions.

Alongside the embedding of mātauranga Māori and kaupapa Māori into programmes, the development and review of educational products (qualifications, micro-credentials and skill standards) are central to the transformation of the vocational education landscape by ensuring they are fit-for-purpose and provide equitable opportunities for all learners to succeed, including those traditionally underserved by the education system.

5.4 Te Taiao | Hardwire sustainability

Engineering, manufacturing and logistics industries and Hanga-Aro-Rau develop skills through the vocational education system to meet the Living Standards Framework and Sustainability Development Goals. A holistic approach to sustainability is necessary for industry to build a sustainable workforce.

The development of skills through the vocational education system to deliver intergenerational wellbeing as indicated by the Living Standards Framework and Sustainability Development Goals will:

- Promote and advocate the values of kaitiakitanga through the transition to a low-emission and climate-resilient New Zealand
- Prepare our industries for circularity, i.e. the circular economy. The circular economy contributes to the broader goal of global sustainability and is a condition for sustainability. In defining circular economy, recurring themes in the literature focus on minimising waste in production and keeping processed materials in use as long as possible, benefiting the environment and people.

A sustainable workforce that is connected, supported and able to thrive is a key focus.

5 NZQA. (2018) (p.5-6). *Guidelines for Te Hono o Te Kahurangi Evaluative Quality Assurance*. Guidelines for Te Hono o Te Kahurangi evaluative quality assurance (nzqa.govt.nz)

A sustainable workforce that is connected, supported and able to thrive is a key focus.

6 Whakamanahia | Give effect

6.1 Ngā hua e puāwai ana | Give effect to programmes currently delivered

Our industry engagements and qualification review process have confirmed that the currently funded programmes leading to Hanga-Aro-Rau qualifications and/or using our unit standards should, at a minimum, be retained. Hanga-Aro-Rau has not received any feedback or other evidence that this should not continue. A full list is provided as an attachment to this document and noted as Appendix 1.

Some qualifications have been reviewed and refreshed. We expect that the provider network will likely respond with requests to upgrade their programmes as a consequence of the changes. These qualifications are listed in Appendix 2.
Hanga-Aro-Rau would like TEC to fund applications that include a programme refresh and/or redesign in the qualification suites listed in Appendix 2.

During the redevelopment of unit standards, which may be completed outside of a qualification review cycle, significant changes to programme designs may need to be made to meet industry needs. Hanga-Aro-Rau expects that TEC funds redevelopment of programmes as a result of significant changes brought about by unit standard review and redesign in the qualification suites identified in Appendix 2. This will ensure that relevant, industry endorsed programmes are made available in a timely manner.

Summary of investment advice that TEC must give effect to:

1. Continue to fund current programmes leading to Hanga-Aro-Rau qualifications listed in Appendix 1
2. Fund new or refreshed qualifications as listed in Appendix 2
3. Fund providers, through the strategic fund contestable application process, to enable a redesign or refresh of their programmes in a timely manner to ensure they can effectively meet industry needs.

6.2 He tupuranga hou | New products

Alongside the review and refresh of qualifications, we have the following new products that will require new programmes to be written and resourced over the next two years. Hanga-Aro-Rau expects to see the provider network respond to the new product and asks TEC to fund development activities in this area.

Each new product is reviewed against the Tertiary Education Strategy priorities.

6.2.1 Computer numerical control (CNC)

The issue

New Zealand manufacturing and engineering businesses require skilled computer numerical control (CNC) machining workers to remain productive and competitive. However, current responses are not producing the skills required and are not fit-for-purpose.

In response, some businesses now:

1. Look to hire from overseas, where possible
2. Develop their own in-house programmes, leading to multiple companies training students to different levels and creating skills discrepancies throughout the sectors.

Intended end state

A standardised, formalised pathway to develop the CNC skills of New Zealand workers is viewed as a strong way to attract, retain and develop CNC operators. This ultimately leads to improved business productivity.

The development of a standardised skill set, delivered to workplaces nationally, will allow employers to hire with more certainty and provide workers with more mobility, should they require it.

This pathway will develop skills in CNC. Any outcomes will integrate with pathways for both the manufacturing and engineering industries.

Hanga-Aro-Rau has approved the development of a formalised skills response (either a qualification or micro-credential).

Scale of importance

The scale of importance of this issue is **equal** to other initiatives put forward by Hanga-Aro-Rau in the 2024 Advice to the Tertiary Education Commission.

Source of information

This initiative connects to the following strategies:

Advanced Manufacturing Industry Transformation Plan

Priority 2: Developing and attracting a diverse high-skilled high-wage workforce.

- **Improving workforce and skills planning** (will contribute to, and enhance, any skills system mapping and long-term workforce plan)
- **Upskilling the workforce across all levels** (will create valued and sought-after steps on an employee's future career pathway, with potential to provide a pathway into leadership roles)
- **Improving digital and foundational skills** (the introduction of advanced technologies and processes needs to be complemented with on-the-job training of existing staff to ensure they are adequately upskilled, particularly for jobs that are shifting away from manual labour).

Hanga-Aro-Rau Skills and Workforce Leadership Plan 2022 – 23

During industry consultation for the Hanga-Aro-Rau Skills and Workforce Leadership Plan 2022 – 23 (SWLP), the majority of employers interviewed and 80 per cent of survey respondents said that graduates they employed from vocational education frequently did not meet their expectations of skills required.

Gaps included new technologies, digital skills, employability skills, literacy and numeracy, and general work readiness.

In engineering specifically, employers noted pervasive talent shortages, especially in next-generation digital technologies and specialist roles.

As the industry creates new digitally orientated roles, filling the skills gap may require upskilling the existing workforce and widening qualifications that feed into engineering recruitment and staffing.

In the Hanga-Aro-Rau SWLP survey, 81 per cent of the engineering employers who responded identified 'recruiting labour for the skills I need' as their biggest labour market issue.

Regional Skills Leadership Group alignment

The following RSLGs have shown specific support for engineering and/or manufacturing priorities or actions in their respective Regional Work Plans (RWPs)s: Bay of Plenty, Canterbury, Otago, Southland-Murihiku, Tairāwhiti, Tāmaki Makaurau, Te Tai Poutini-West Coast, Waikato, Wellington, and Hawke's Bay.

The following RSLGs have shown specific support for investment and skills development across digital and/or technology in their respective RWPs: Te Pūrunga ki Te Raki – Taitokerau, Tāmaki Makaurau, Waikato, Bay of Plenty, Tairāwhiti, Hawke's Bay, Taranaki, Wellington, Marlborough, Nelson Tasman, Te Tai Poutini-West Coast, Canterbury, and Otago. While CNC was not referenced specifically in RWP's digital and technology priorities or actions, it aligns broadly with those outcomes through the use of technology and skills development.

In addition, this advice has been supported by the Southland Murihiku, Bay of Plenty, Waikato and Tairāwhiti CARE RSLGs.

Qualitative and quantitative information gathered

Qualitative information:

- Multiple in-person engagements by Hanga-Aro-Rau industry managers on-site with engineering and manufacturing businesses throughout New Zealand
- Multiple virtual engagements by Hanga-Aro-Rau industry managers with engineering and manufacturing businesses throughout New Zealand
- Multiple engagements by Hanga-Aro-Rau industry managers with associations and peak bodies representing manufacturing and engineering businesses throughout New Zealand
- Engagement with RSLGs through a dedicated Hanga-Aro-Rau RSLG liaison
- Group workshops to validate findings across industry
- Engagement with TEOs.

Quantitative information (national, regional and industry data sources):

- Scarlatti insights and workforce research
- Infometrics economic intelligence and forecasting services
- TEC Ngā Kete data
- RSLG regional workforce plans.

Vocational education and training issue

A vocational education and training solution will:

- Provide and develop CNC skills throughout the Aotearoa engineering and manufacturing sectors. There is no current industry recognised formal training and accreditation in this area.
- Standardise skills nationally. Presently, skills are ad hoc and not standardised.
- Contribute to the development of strong careers pathways, resulting in equitable outcomes for all New Zealanders. The development of these pathways will create opportunities for workers to move into higher skilled work, and for businesses to increase productivity.

Investment recommendation

Hanga-Aro-Rau recommends the Tertiary Education Commision (TEC) invests in programmes (nationwide) leading to:

The as-yet unnamed formalised skills response to the CNC needs of the New Zealand engineering and manufacturing industries.

The delivery method has not yet been confirmed.

We anticipate the programme will be delivered predominantly through a work-based mode, or provider based where necessary, after agreement between employer and provider.

Gaps in provision

No current existing formalised skills response.

Forecast timeline to address the gap

Twelve months.

Role of WDCs/RSLGs

Hanga-Aro-Rau will continue to maintain and develop its relationships with the 15 RSLGs throughout New Zealand, specifically those with a highlighted engineering and manufacturing focus, on behalf of industry.

Hanga-Aro-Rau will continue to engage with industry (both workplaces and associations) to ascertain the needs of businesses throughout New Zealand, and to publicise development of the formalised skills response.

Hanga-Aro-Rau will continue to develop and promote vocational education pathways on behalf of, and in conjunction, with industry, as a result of both ongoing regular engagement and mandated qualification reviews.

Hanga-Aro-Rau will continue to work with its TEO network to support the delivery of programmes linked to the qualification products developed. This will include, but is not limited to, support through the programme endorsement process to ensure all programmes are fit-for-purpose, as required by New Zealand workplaces, and deliver equitable outcomes for all learners.

Support from TEOs

Apprenticeship Training New Zealand (ATNZ)

ATNZ has indicated it is open to running a CNC block course programme. It will utilise virtual technology to train students in a classroom setting, should a formalised skills response be created. Further discussion is required.

Te Pūkenga Work Based Learning subsidiary

Te Pūkenga Work Based Learning subsidiary has expressed interest in creating and delivering an on-the-job programme. Further discussion is required.

iCNC - CNC Machining Academy

iCNC is currently investigating registering as a private training establishment (PTE). It has expressed an interest in delivering block courses, should a formalised skills response be created. Further discussion is required.

Please note: Further discussion and clarification will be required with each of these providers if any formalised skills response progresses.

No constraints or barriers to operationalise advice has been identified.

6.2.2 Robotics

The issue

To remain productive and competitive, New Zealand manufacturing and engineering businesses require workers skilled with robotics, particularly robotic welding operators.

These skilled workers are critical to improving the capability of the manufacturing and engineering sector. Industry feedback is that current responses (existing unit standards) are not producing the skills required and are not fit-for-purpose. Businesses are forced to recruit from overseas where possible. However, sourcing robotic welding skills internationally is time-consuming and costly – and not always successful.

Businesses require certainty that fit-for-purpose skills development exists. In response, some businesses are looking to develop their own in-house programmes or rely on vendor training. This leads to the possibility of multiple companies training students to different levels, and potentially creating skills discrepancies throughout the sectors.

Intended end state

A standardised, formalised pathway to develop the robotic welding skills of New Zealand workers is viewed as a strong way to attract, retain and develop manufacturing and engineering workers, ultimately leading to improved business productivity.

The development of a standardised skill set, delivered to workplaces nationally, will allow employers to hire with more certainty and provide workers with more mobility, should they require it.

This pathway will develop skills in the following areas:

- Entry-level general robotics skills
- Robotic welding.

Any outcome will consider the potential for integration of future robotics specialisations as part of a pathway.

Any outcome will integrate with pathways for both the manufacturing and engineering industries.

Hanga-Aro-Rau has approved the development of a formalised skills response (either a qualification or micro-credential).

Scale of importance

The scale of importance of this issue is **equal** to other initiatives put forward by Hanga-Aro-Rau in the 2024 Advice to the Tertiary Education Commission.

Source of information

This initiative connects to the following strategies:

Advanced Manufacturing Industry Transformation Plan

Priority 2: Developing and attracting a diverse high-skilled high-wage workforce.

- **Improving workforce and skills planning** (will contribute to, and enhance, any skills system mapping and long-term workforce plan)
- **Upskilling the workforce across all levels** (will create valued and sought-after steps on an employee's future career pathway, with potential to provide a pathway into leadership roles)
- Focus on **Māori and Pacific workforces** and increase opportunities for **people with disabilities**
- Contribute to the **circular economy**
- **Improving digital and foundational skills** (the introduction of advanced technologies and processes needs to be complemented with on-the-job training of existing staff to ensure they are adequately upskilled, particularly for jobs that are shifting away from manual labour).

Hanga-Aro-Rau Skills and Workforce Leadership Plan 2022 – 23

During industry consultation for our Skills and Workforce Leadership Plan 2022 – 23, the majority of employers interviewed and 80 per cent of survey respondents said that graduates they employed from vocational education frequently did not meet their expectations of skills required.

Gaps included new technologies, digital skills, employability skills, literacy and numeracy, and general work readiness.

In engineering specifically, employers noted pervasive talent shortages, especially in next-generation digital technologies and specialist roles.

As the industry creates new digitally orientated roles, filling the skills gap may require upskilling the existing workforce and widening qualifications that feed into engineering recruitment and staffing.

In the Hanga-Aro-Rau SWLP survey, 81 per cent of the engineering employers who responded identified 'recruiting labour for the skills I need' as their biggest labour market issue.

Regional Skills Leadership Group alignment

The following RSLGs have shown specific support for engineering and/or manufacturing priorities or actions in their respective RWPs: Bay of Plenty, Canterbury, Otago, Southland-Murihiku, Tairāwhiti, Tāmaki Makaurau, Te Tai Poutini-West Coast, Waikato, Wellington and Hawkes Bay.

The following RSLGs have shown specific support for investment and skills development across digital and/or technology in their respective RWPs: Te Pūrunga ki Te Raki – Taitokerau, Tāmaki Makaurau, Waikato, Bay of Plenty, Tairāwhiti, Hawke's Bay, Taranaki, Wellington, Marlborough, Nelson Tasman, Te Tai Poutini-West Coast, Canterbury and Otago. While robotics was not referenced specifically in RWP's digital and technology priorities or actions, it aligns broadly with those outcomes through use of technology and skills development.

In addition, this advice has been supported by the Bay of Plenty and Waikato RSLGs.

Qualitative and quantitative information gathered

Qualitative information:

- Multiple in-person engagements by Hanga-Aro-Rau industry managers on-site with engineering and manufacturing businesses throughout New Zealand
- Multiple virtual engagements by Hanga-Aro-Rau industry managers with engineering and manufacturing businesses throughout New Zealand
- Multiple engagements by Hanga-Aro-Rau industry managers with associations and peak bodies representing manufacturing and engineering businesses throughout New Zealand
- Engagement with RSLGs through a dedicated Hanga-Aro-Rau RSLG liaison
- Group workshops to validate findings across industry
- Engagement with TEOs.

Quantitative information (national, regional and industry data sources):

- Scarlatti insights and workforce research
- Infometrics economic intelligence and forecasting services
- TEC Ngā Kete data
- RSLG regional workforce plans.

Vocational education and training issue

A vocational education and training solution will:

- Provide and develop robotics skills throughout Aotearoa New Zealand's engineering and manufacturing sectors. There is no current industry recognised formal training and accreditation in this area
- Standardise skills nationally. Presently, skills are ad hoc and not standardised
- Contribute to the development of strong careers pathways, resulting in equitable outcomes for all New Zealanders. The development of these pathways will create opportunities for workers to move into higher skilled work, and for businesses to increase productivity.

Investment recommendation

Hanga-Aro-Rau recommends TEC invests in nationwide programmes, leading to the as-yet unnamed formalised skills response to the robotics needs of the New Zealand engineering and manufacturing industries.

The delivery method has not yet been confirmed.

We anticipate the programme will be delivered predominantly through a work-based mode, or provider based where necessary, after agreement between employer and provider.

Gaps in provision

No current existing formalised skills response.

Forecast timeline to address the gap

Twelve months.

Role of WDCs/RSLGs

Hanga-Aro-Rau will continue to maintain and develop its relationships with the 15 RSLGs throughout New Zealand, specifically those with a highlighted engineering and manufacturing focus, on behalf of industry.

Hanga-Aro-Rau will continue to engage with industry (both workplaces and associations) to ascertain the needs of businesses throughout New Zealand, and to publicise development of the formalised skills response.

Hanga-Aro-Rau will continue to develop and promote vocational education pathways on behalf of, and in conjunction, with industry, as a result of both ongoing regular engagement and mandated qualification reviews.

Hanga-Aro-Rau will continue to work with its TEO network to support the delivery of programmes linked to the qualification products developed. This will include, but is not limited to, support through the programme endorsement process to ensure all programmes are fit-for-purpose, as required by New Zealand workplaces, and deliver equitable outcomes for all learners.

Support from TEOs

Apprenticeship Training NZ (ATNZ)

ATNZ has indicated it is open to running a robotics block course programme. It will utilise virtual technology to train students in a classroom setting, should a formalised skills response be created. Further discussion is required.

Te Pūkenga Work Based Learning subsidiary

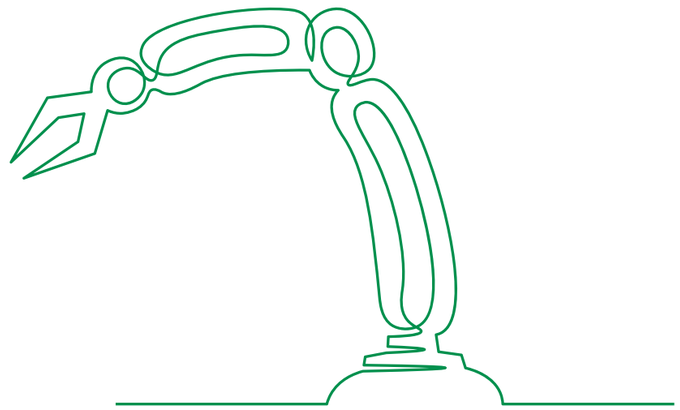
Te Pūkenga Work Based Learning subsidiary has expressed interest in creating and delivering a work-based programme. Further discussion is required.

Autoline

Autoline plans to provide its own work-based programme for robotic welding, using the equipment that it supplies as on-the-job training (and also augmented reality technology).

Toi Ohomai

Toi Ohomai has expressed interest in creating and delivering a work-based programme. Further discussion is required. No constraints or barriers to operationalise advice have been identified.



6.2.3 Digital skills

The issue

New Zealand's manufacturing and engineering industries are adopting Industry 4.0 technologies.

These technologies, alongside others such as automation, leverage the integration of digital systems and data collection in the workplace to improve productivity and customer offerings.

New Zealand's manufacturing and engineering sectors face challenges in accessing talent and training programmes to improve the capability and confidence of existing workforces to adapt to this digitalisation of processes.

These challenges include literacy and foundational levels, up to more advanced skills and knowledge, that can support adoption of technology and enable staff to continuously improve.

Reports by global organisations [e.g. OECD, WEF and EC], by our industry sectors and our engagement with employers show that workers increasingly need to have digital skills. Industry 4.0 will only grow this need as investments in new technologies are made. The prerequisite for competency in specific and high-level digital skills is for all learners and workers to have digital literacy. This imperative is applicable to all current occupations within manufacturing, engineering and logistics, including those not specific to our industries such as managers, administrators and receptionists. This is important as the pipeline into our industries will include workers from other industries.

The current manufacturing, engineering and logistics workforce is 609,832 (according to Infometrics). Deloitte COVID-19 research has indicated a labour shortage of 17,000 in manufacturing and 12,000 in engineering. (The number of logistics shortage is not yet available). Infometrics forecasts increases in employment of 7,100 for manufacturing, 8,600 for engineering and 11,200 for logistics between 2022 and 2028. This implies a high current and future demand for training to ensure a digitally literate workforce, noting all industries will have a similar need (the total employment in Aotearoa is 2.7 million). This is essential to enable businesses to take advantage of technological advancements. Digital literacy is fundamental for workers, along with literacy and numeracy.

Intended end state

New Zealand manufacturers gain access to formal, fit-for-purpose training and education in digital skills for manufacturing, suitable for their frontline leaders and other operational staff wanting further development.

Access to this training will see improvements in quality and productivity for manufacturing businesses using more advanced technology.

Industry, as well as some RSLG RWPs, have indicated the importance of right-sized training for upskilling in a manufacturing environment. For this reason, the development described in this advice is targeted at a micro-credential.

This training will be delivered through work-based and, potentially, blended models, to ensure a strong connection to the workplace and practical application of learnings.

Hanga-Aro-Rau has approved the development of a formalised skills response (micro-credential).

Hanga-Aro-Rau has been working with an industry-led project group in the development of a new micro-credential, targeted at the digital upskilling of team leaders in manufacturing (exact content/title, size and scope to be determined).

This will pathway from an existing digital skills in manufacturing micro-credential, developed through the same project group and currently delivered through Te Pūkenga.

Scale of importance

The scale of importance of this issue is **equal** to other initiatives put forward by Hanga-Aro-Rau in the 2024 Advice to the Tertiary Education Commission.

Source of information

This initiative connects to the following strategies:

Advanced Manufacturing Industry Transformation Plan

Priority 2: Developing and attracting a diverse high-skilled high-wage workforce.

- **Improving workforce and skills planning** (will contribute to, and enhance, any skills system mapping and long-term workforce plan)
- **Upskilling the workforce across all levels** (will create valued and sought-after steps on an employee's future career pathway, with potential to provide a pathway into leadership roles)
- **Improving digital and foundational skills** (the introduction of advanced technologies and processes needs to be complemented with on-the-job-training of existing staff to ensure they are adequately upskilled, particularly for jobs that are shifting away from manual labour).

Initiative 13: Improve digital and foundational skills, as this initiative states – 'Increase the skills of workers to ensure they are suitably trained to transition and utilise new technology implemented at their workplace.'

Hanga-Aro-Rau Skills and Workforce Leadership Plan (SWLP) 2022 – 23

During industry consultation for the Hanga-Aro-Rau Skills and Workforce Leadership Plan 2022 – 23, the majority of employers interviewed and 80 per cent of survey respondents said that graduates they employed from vocational education frequently did not meet their skills expectations.

Gaps included new technologies, digital skills, employability skills, literacy and numeracy, and general work readiness.

In engineering specifically, employers noted pervasive talent shortages, especially in next-generation digital technologies and specialist roles.

As the industry creates new digitally orientated roles, filling the skills gap may require upskilling the existing workforce and widening qualifications that feed into engineering recruitment and staffing.

In the Hanga-Aro-Rau SWLP survey, 81 per cent of the engineering employers who responded identified 'recruiting labour for the skills I need' as their biggest labour market issue.

Post-COVID-19 workforce development needs in New Zealand's manufacturing and engineering sectors – TEC-funded research

Digital skills also featured in the TEC-funded research by Hanga-Aro-Rau. Some examples include:

- COVID-19 has intensified the need for digital technologies
- A focus on non-technical skills will be increasingly important to support Industry 4.0
- Many businesses do not have the capacity or capability to keep up or upskill their staff in this space, especially for SMEs and Māori and Pacific businesses
- Pacific employees may lack confidence in digital tools
- Enable flexible upskilling through micro-credentials.

Regional Skills Leadership Group alignment

The following RSLGs have shown specific support for investment and skills development across digital and technological priorities in their respective RWPs: Te Pūrunga ki Te Raki – Taitokerau, Tāmaki Makaurau, Waikato, Bay of Plenty, Tairāwhiti, Hawke's Bay, Taranaki, Wellington, Marlborough, Nelson-Tasman, Te Tai Poutini-West Coast, Canterbury and Otago. Those not specifically mentioning digital literacy or digital skills are still focused on equipping the workforce for technological change.

The following RSLGs have shown specific support for engineering and manufacturing priorities or actions in their respective RWPs: Bay of Plenty, Canterbury, Otago, Southland-Murihiku, Tairāwhiti, Tāmaki Makaurau, Te Tai Poutini-West Coast, Waikato, Wellington and Hawke's Bay.

In addition, this advice has been supported by the Taranaki, Hawke's Bay, Bay of Plenty, Waikato and Tairāwhiti CARE RSLGs.

Toi Mai owns the IT–computing qualifications which range from the New Zealand Certificate in Computing (Foundation User) level 2 to multiple level 6 certificates and diplomas, including New Zealand diplomas in IT infrastructure, software development, cybersecurity and software testing. All higher level qualifications will require a pipeline of workers that starts with a foundation in digital literacy.

Qualitative and quantitative information gathered

Qualitative information:

- Multiple in-person engagements by Hanga-Aro-Rau industry managers on-site with engineering and manufacturing businesses throughout New Zealand
- Multiple virtual engagements by Hanga-Aro-Rau industry managers with engineering and manufacturing businesses throughout New Zealand
- Multiple engagements by Hanga-Aro-Rau industry managers with associations and peak bodies representing manufacturing and engineering businesses throughout New Zealand
- Engagement with RSLGs through a dedicated Hanga-Aro-Rau RSLG liaison
- Group workshops to validate findings across industry
- Engagement with TEOs.

Quantitative information (national, regional and industry data sources):

- Scarlatti insights and workforce research
- Infometrics economic intelligence and forecasting services
- TEC Ngā Kete data
- RSLG regional workforce plans.

Vocational education and training issue

A vocational education and training solution will:

- Enable team leaders and operational workers in manufacturing to effectively and confidently engage with digital systems at a more advanced level and have a broader understanding of the opportunities within Industry 4.0. This will allow workplaces to support continuous improvement and engagement of their respective team members
- Standardise skills nationally. Presently, skills are ad hoc and not standardised
- Contribute to the development of strong careers pathways, resulting in equitable outcomes for all New Zealanders. The development of these pathways will create opportunities for workers to move into higher skilled work, and for businesses to increase productivity.

Investment recommendation

Hanga-Aro-Rau recommends the TEC invests in nationwide programmes leading to:
Digital skills in manufacturing (including engineering).

It is critical that any funded programmes support options for work-based and work-integrated learning. They should be suitable for new entrants as well as existing employees in manufacturing and engineering.

It is also critical that any programmes offer short, work-based or blended delivery options that allow new and existing employees to engage in a way that limits negative impacts on production.

Hanga-Aro-Rau recommends that the existing digital skills in manufacturing micro-credential should continue to be funded at rates that support effective work-based delivery. Consideration should be given to the additional cost required to deliver such training through work-based and work-integrated methods, and the need to provide devices to allow training in some manufacturing workplaces.

In addition, Hanga-Aro-Rau advises that programmes leading to the future micro-credential resulting from this project should be funded, as well as other programmes targeting digital upskilling in manufacturing.

Micro-credentials to build digital literacy should also be funded, as these will provide for those who need upskilling but don't need or wish to study for a qualification. This advice supports the current digital skills for manufacturing micro-credential (Ref 4341), and our advice to fund the digital skills in manufacturing for team leaders micro-credential (to be confirmed).

Digital skills micro-credentials will also strengthen the foundation for the implementation of technologies in manufacturing operations, such as enterprise resource planning (ERP) and manufacturing execution system (MES). A project to explore emerging technologies in manufacturing, engineering and logistics in other selected countries will be undertaken in 2023, so advice on digital skills related to emerging technologies in New Zealand will be included in next year's advice.

Gaps in provision

No current existing formalised skills response.

Forecast timeline to address the gap

It is likely that programmes leading to a newly developed micro-credential would be available for funding in 2024.

The first digital skills in manufacturing micro-credential is already available through Te Pūkenga.

Role of WDCs/RSLGs

Hanga-Aro-Rau will continue to maintain and develop its relationships with the 15 RSLGs throughout New Zealand (specifically those with a highlighted engineering and manufacturing focus) on behalf of industry.

Hanga-Aro-Rau will continue to engage with industry (both workplaces and associations) to ascertain the needs of businesses throughout New Zealand, and to publicise the development of the formalised skills response.

Hanga-Aro-Rau will continue to develop and promote vocational education pathways on behalf of, and in conjunction with, industry – as a result of both ongoing regular engagement and mandated qualification reviews.

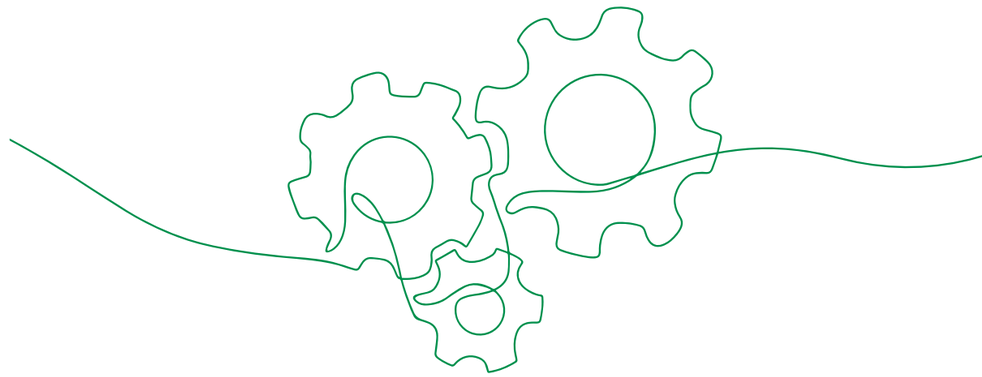
Hanga-Aro-Rau will continue to work with its TEO network to support the delivery of programmes linked to the qualification products developed. This will include, but is not limited to, support through the programme endorsement process to ensure all programmes are fit-for-purpose, as required by New Zealand workplaces, and deliver equitable outcomes for all learners.

Support from TEOs

Providers have been engaged in this project since it began:
- Te Pūkenga
- The Learning Wave (PTE).

Additional providers have shown interest. They will have the opportunity to provide feedback during formal development consultation of any resulting standard and qualification or micro-credential.

No constraints or barriers to operationalise advice have been identified.



6.2.4 Primary products and food processing

The issue

The primary products food processing industry requires competent entry-level employees with the skills and knowledge to work in a laboratory, environmental or product quality role, in a primary products food processing operation.

The current qualification New Zealand Certificate in Primary Products Food Processing (level 3) is designed to meet these skills needs.

However, when Primary (Te Pūkenga) designed a programme to meet the qualification, it was discovered that existing unit standards do not lead to the industry being supplied with fit-for-purpose skills.

A unit standard review has been scheduled by Hanga-Aro-Rau to fill the gaps in the programme. This review will be complete by 2024 and the programme will be released in 2024.

Intended end state

Employers and industry to have access to entry-level technically skilled staff. The programme will provide a pathway to achievement of the primary products food processing qualifications, with options to pathway into higher level study in food processing industries and/or manufacturing and leadership qualifications.

Scale of importance

The scale of importance of this issue is **equal** to other initiatives put forward by Hanga-Aro-Rau in the 2024 Advice to the Tertiary Education Commission.

Source of information

This initiative connects to the following strategies:

Advanced Manufacturing Industry Transformation Plan

Priority 2: Developing and attracting a diverse high-skilled high-wage workforce.

- **Improving workforce and skills planning** (will contribute to, and enhance, any skills system mapping and long-term workforce plan)
- **Upskilling the workforce across all levels** (will create valued and sought-after steps on an employee's career pathway, with the potential to provide a pathway into leadership roles).

Food and Beverage Industry Transformation Plan

Proposed action: Transformation 3: Building capability to innovate, commercialise and improve productive capacity. 11: Grow and support programmes that build future food and beverage capability needs.

Outcome: programmes and courses that build key future food and beverage capability needs are more accessible and available to the workforce.

Initiative: MPI, industry and Māori grow and support programmes that seek to build capabilities in areas of key need for the food and beverage sector's future.

Delivery timeframe: 2023–24, identify and begin growing informal development programmes; 2024 onward, explore how identified skills can be better integrated into the formal education and training programmes.

Hanga-Aro-Rau Skills and Workforce Leadership Plan 2022 – 23

During industry consultation for the Hanga-Aro-Rau Skills and Workforce Leadership Plan 2022 – 23, the majority of employers interviewed and 80 per cent of survey respondents said that graduates they employed from vocational education frequently did not meet their expectations of skills required.

Gaps included new technologies, digital skills, employability skills, literacy and numeracy, and general work readiness.

Post-COVID-19 workforce development needs in New Zealand's manufacturing and engineering sectors – TEC-funded research

Food and beverage skills also featured in the TEC-funded research by Hanga-Aro-Rau.

Some examples include:

- Cognitive-based technical skills are considered more important for the food and beverage industry when compared with others
- 100 per cent of respondents in food and beverage had a score of 4 or 5 (highest) regarding the importance of transferable skills in manufacturing (with particular reference to teamwork)
- Technical skills, such as those required to work with manufacturing tools and techniques, are generally hard to come by
- COVID-19 has posed more challenges for the manufacturing and the food and beverage sectors.

Regional Skills Leadership Group alignment

The following RSLGs have shown specific support for engineering and manufacturing priorities or actions in their respective RWPs: Bay of Plenty, Canterbury, Otago, Southland-Murihiku, Tairāwhiti, Tāmaki Makaurau, Te Tai Poutini-West Coast, Waikato, Wellington and Hawke's Bay.

The following RSLGs have identified food and fibre and/or primary products as areas of priority or action in their respective RWPs: Taranaki, Hawke's Bay, Bay of Plenty, Te Purunga ki Te Raki – Taitokerau, Tāmaki Makaurau, Otago, Waikato, Wellington and Southland-Murihiku. While primary products and food processing is not explicitly mentioned across all the above RWP, this advice supports the broader food and fibre sector priorities through skills development in the processing component parts of the industry.

In addition, this advice has been explicitly supported by the Taranaki, Hawke's Bay, Bay of Plenty, Waikato, and Manawatū – Whanganui RSLGs.

Qualitative and quantitative information gathered

Qualitative information:

- Engagement with RSLGs through dedicated Hanga-Aro-Rau RSLG liaison
- Engagement with TEOs
- Written submission from employers.

Quantitative information (national, regional and industry data sources):

- Infometrics economic intelligence and forecasting services
- TEC Ngā Kete data
- RSLG regional workforce plans.

Vocational education and training issue

A vocational education and training solution will:

- Provide the primary products food processing industry with competent entry-level employees who have the skills and knowledge to work in a laboratory, environmental or product quality role, in a primary products food processing operation
- Contribute to the development of strong careers pathways, resulting in equitable outcomes for all New Zealanders. The development of these pathways will create opportunities for workers to move into higher-skilled work, and for businesses to increase productivity.

Investment recommendation

Hanga-Aro-Rau recommends TEC invests in nationwide programmes that lead to the New Zealand Certificate in Primary Products Food Processing (level 3).

Any programmes funded should support options for work-based and work-integrated learning. They must be suitable for new entrants, as well as existing employees, in food and beverage manufacturing.

Programmes should offer short, work-based or blended delivery options that allow new and existing employees to engage in a way that limits negative impacts on production.

Gaps in provision

Existing formalised skills response is not currently fit-for-purpose.

Forecast timeline to address the gap

It is likely that programmes leading from the newly developed unit standards would be available for funding in 2024.

Role of WDCs/RSLGs

Hanga-Aro-Rau will continue to maintain and develop its relationships with the 15 RSLGs throughout New Zealand, specifically those with a highlighted manufacturing focus, on behalf of industry.

Hanga-Aro-Rau will continue to engage with industry (both workplaces and associations) to ascertain the needs of businesses throughout New Zealand, and to publicise the development of the formalised skills response.

Hanga-Aro-Rau will continue to develop and promote vocational education pathways on behalf of, and in conjunction with, industry – as a result of both ongoing regular engagement and mandated qualification reviews.

Hanga-Aro-Rau will continue to work with its TEO network to support the delivery of programmes linked to the qualification products developed. This will include, but is not limited to, support through the programme endorsement process to ensure all programmes are fit-for-purpose, as required by New Zealand workplaces, and deliver equitable outcomes for all learners.

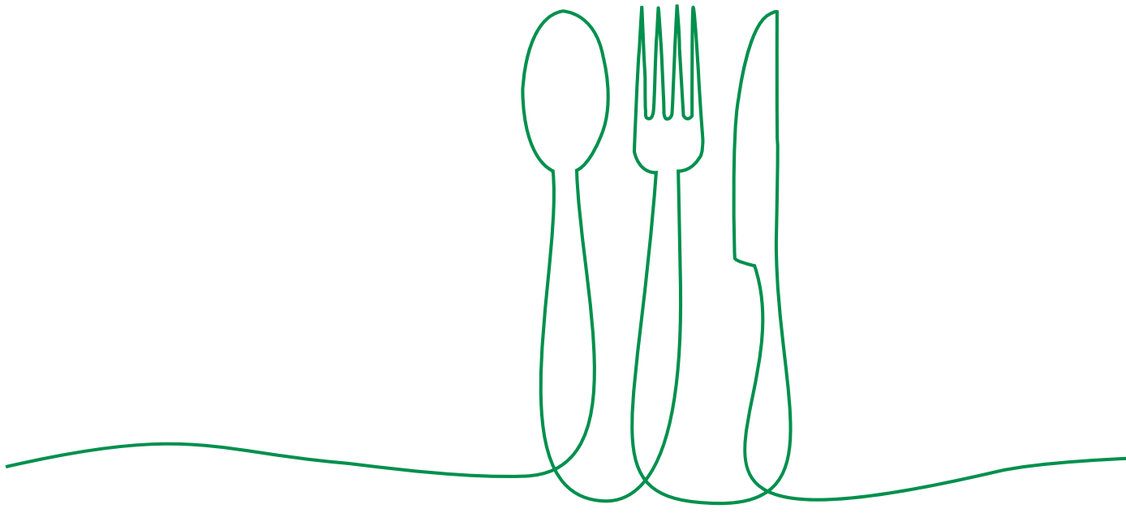
Support from TEOs

Providers have been engaged in this project since inception:

- Te Pūkenga Work Based Learning subsidiary.

Additional providers have shown interest. They will have the opportunity to provide feedback during formal development consultation of any resulting standard and qualification or micro-credential.

No constraints or barriers to operationalise advice have been identified.



6.2.5 Sewing machinists and apparel manufacturing

The issue

New Zealand has a significant shortage of sewing machinists with the right technical skills to support domestic production in the following sectors: apparel manufacturing, fashion, furniture manufacturing, curtain making, industrial textiles and screen industry.

Without this pipeline and educational pathways into work, these industries will continue to struggle to keep up with current production demand, exacerbated by an ageing workforce and the need to replace skilled people who will be exiting the workforce.

Consultation and research for this advice was initially led by the apparel manufacturing industry, due to significant shortages and interest from industry in engaging further with the vocational education and training system. During this process, it was agreed by stakeholders, providers and industry to expand the view to include other sectors that also employ sewing machinists and improve outcomes for a broader pool of industry, learners and providers. This was tested with representatives from the fashion, furniture manufacturing, curtain making, industrial textiles and screen industries.

The key challenges are:

- A lack of workplace-based training or work-integrated solutions suitable for companies and learners
- A lack of foundational training, suitable across industries listed above that can act as a pathway into work
- Current qualifications provide insufficient depth in technical skills development at the right size and scope for people who may be interested in sewing machinist work
- Programmes generally targeted towards the creative sector of the industry, such as designers, and pathways into further education in fashion (target market-driven)
- No way to recognise the skills of existing experienced staff (the majority are women in the technical production area)
- The apparel manufacturing industry specifically has also highlighted other shortages in technical skill areas, such as cutting, patternmaking and digital (including CAD) skills.

Intended end state

Industry has improved access to foundational training and education targeted at technical skills required for production; most critically, sewing machinist skill sets.

It is intended that any provision in this space should support delivery options suitable for a range of learners and business, particularly work-based, blended and campus-based models. These should also provide pathway options into further education and training.

Scale of importance

The scale of importance of this issue is **equal** to other initiatives put forward by Hanga-Aro-Rau in the 2024 Advice to the Tertiary Education Commission.

Source of information

This initiative connects to the following strategies:

Hanga-Aro-Rau Skills and Workforce Leadership Plan 2022 – 23

The needs of the Apparel Manufacturing industry were featured in the Hanga-Aro-Rau 2022 – 23 Skills and Workforce Leadership Plan.

This highlighted the following key trends:

- A marked increase in support for New Zealand brands and demand for New Zealand manufacturing in recent years, leveraging New Zealand's values-based, innovative reputation
- A shift towards a low-carbon circular economy which will require skills to be utilised in inter-disciplinary and collaborative ways.

The following key challenge was also identified:

- A critical shortage of skilled machinists, along with other technical skills required for manufacturing: cutting, pattern making, knitting and a good understanding of garment construction. There is also increasing demand for digital and computer-aided design (CAD) skills.

Regional Skills Leadership Group alignment

While sewing machinists have not been singled out specifically by any RSLG, this aligns broadly with RSLGs who have highlighted manufacturing as a whole as a priority sector or area of action within their regional workforce plans.

The following RSLGS have shown specific support for manufacturing in their regional workforce development plans: Bay of Plenty, Canterbury, Otago, Southland-Murihiku, Tairāwhiti, Tāmaki Makaurau, Waikato, Wellington and Hawke's Bay.

Qualitative and quantitative information gathered

Qualitative information:

- Multiple in-person engagements by Hanga-Aro-Rau industry managers with businesses employing sewing machinists throughout New Zealand
- Multiple virtual engagements by Hanga-Aro-Rau industry managers with businesses employing sewing machinists throughout New Zealand
- Multiple engagements by Hanga-Aro-Rau industry managers with associations and peak bodies representing businesses employing sewing machinists throughout New Zealand
- Group workshops to validate findings across industry and providers
- Engagement with TEOs.

Quantitative information (national, regional and industry data sources):

- Infometrics economic intelligence and forecasting services
- TEC Ngā Kete data.

Vocational education and training issue

A vocational education and training solution will:

- Provide and develop sewing machinist skills throughout Aotearoa New Zealand. There is no current industry-recognised formal training and accreditation in this area suitable across industry
- Standardise skills nationally and improve transferability across sectors. Presently, skills are ad hoc and not standardised
- Contribute to the development of strong careers pathways, resulting in equitable outcomes for all New Zealanders. The development of these pathways will create opportunities for workers to move into higher-skilled work, and for businesses to increase productivity.

Investment recommendation

Hanga-Aro-Rau recommends TEC invests in nationwide programmes that will lead to the as-yet unnamed formalised skills response to the sewing machinist needs of the New Zealand apparel industries. Hanga-Aro-Rau is continuing to work with industry and providers to make any required adjustments or developments to qualifications.

The delivery method has not yet been confirmed.

It is anticipated these programmes will be delivered predominantly through a work-based or blended mode, or provider-based where necessary, after agreement between employer and provider.

Gaps in provision

No current existing formalised skills response.

Forecast timeline to address the gap

Hanga-Aro-Rau is scheduled to start formal consultation to make any required qualification and standards changes in Q4 2023 as part of the apparel and fashion technology review. It is likely new programmes will be available in 2024.

Role of WDCs/RSLGs

Hanga-Aro-Rau will continue to maintain and develop its relationships with the 15 RSLGs throughout New Zealand (specifically those with a highlighted manufacturing focus) on behalf of industry.

Hanga-Aro-Rau will continue to engage with industry (both workplaces and associations) to ascertain the needs of businesses throughout New Zealand, and to publicise the development of the formalised skills response.

Hanga-Aro-Rau will continue to develop and promote vocational education pathways on behalf of, and in conjunction with, industry, through ongoing regular engagement and mandated qualification reviews.

Hanga-Aro-Rau will continue to work with its TEO network to support the delivery of programmes linked to the qualification products developed. This will include, but is not limited to, support through the programme endorsement process to ensure all programmes are fit-for-purpose, as required by New Zealand workplaces, and deliver equitable outcomes for all learners.

Support from TEOs

Since RoVE, Hanga-Aro-Rau has engaged with the apparel industry around the industry's needs related to the technical skills needed for production, most critically sewing machining skills.

This has been primarily led by industry association Mindful Fashion, which has been active in advocating for the skills needs of the industry to be met, before and after RoVE.

Mindful Fashion has been in discussions with providers regarding meeting this need, advocating for increasing work-placed delivery, such as an apprenticeship, or foundational training focused on sewing machinists.

These discussions were unable to result in provision, largely due to capacity, outside what is already offered through campus-based delivery of the apparel and fashion technology qualifications.

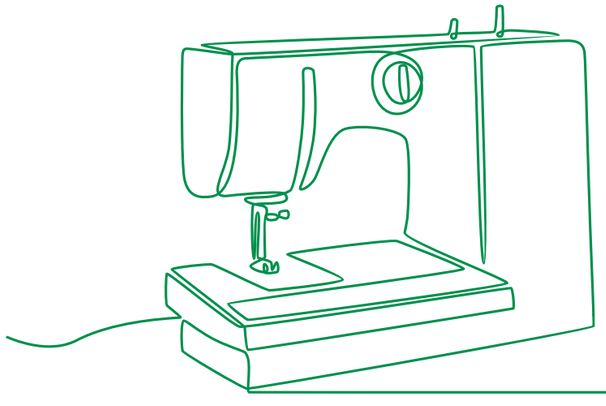
Hanga-Aro-Rau has continued to work with all parties to find a solution that can meet industry needs while being deliverable by providers. This process is continuing but has culminated in the advice above.

Providers involved have shown interest in the direction of a cross-sector sewing machinist-focused solution. However, capacity, and potential delivery cost remain a barrier without additional support.

In addition, the size and scope of existing apparel and fashion technology qualifications may not fit the need of a foundational technical training course to enable pathways into work. Hanga-Aro-Rau is likely to address this in an upcoming review.

Providers involved in this consultation:

- Te Pūkenga Work Based Learning subsidiary
- Te Pūkenga (Ara)
- Whitecliffe College
- Education Unlimited
- MAST Academy
- The Design School
- Massey High School
- New Zealand Academy of Creative Fashion Design.



6.2.6 Fluid power systems

The issue

New Zealand engineering businesses need skilled fluid power system workers to remain productive and competitive.

However, current responses are not producing the skills required and are not fit-for-purpose.

In response, some businesses now:

1. Look to hire from overseas, where possible
2. Develop their own in-house programmes, leading to multiple companies training students to different levels and creating skills discrepancies throughout the sector.

Intended end state

Hanga-Aro-Rau has completed development of a qualification and associated unit standards to meet the needs (outlined above) of this industry sector.

The New Zealand Certificate in Fluid Power Engineering Fundamentals level 3 (95 credits) provides a standardised, formalised pathway to develop the fluid power systems skills of New Zealand workers. This is viewed as a strong way to attract, retain and develop fluid power system operators, ultimately leading to improved business productivity.

This will allow employers to hire with more certainty and provide workers with more mobility, should they require it.

This pathway will develop skills in fluid power systems. It will also help the fluid power sector to be recognised as an industry in its own right, with specific skill sets. It will also help promote safety through knowledge and understanding.

Any outcomes will integrate with pathways for the wider engineering industries.

Scale of importance

The scale of importance of this issue is **equal** to other initiatives put forward by Hanga-Aro-Rau in the 2024 Advice to the Tertiary Education Commission.

Source of information

This initiative connects to the following strategies:

Hanga-Aro-Rau Skills and Workforce Leadership Plan 2022 – 23

During industry consultation for the Hanga-Aro-Rau Skills and Workforce Leadership Plan 2022 – 23, the majority of employers interviewed and 80 per cent of survey respondents said that graduates they employed from vocational education frequently did not meet their expectations of skills required.

Gaps included new technologies, digital skills, employability skills, literacy and numeracy, and general work readiness.

In engineering specifically, employers noted pervasive talent shortages, especially in next-generation digital technologies and specialist roles.

As the industry creates new digitally orientated roles, filling the skills gap may require upskilling the existing workforce, and widening qualifications that feed into engineering recruitment and staffing.

In the Hanga-Aro-Rau SWLP survey, 81 per cent of the engineering employers who responded identified ‘recruiting labour for the skills I need’ as their biggest labour market issue.

Regional Skills Leadership Group alignment

This initiative was initially driven by conversations between Hanga-Aro-Rau and the Tairāwhiti CARE RSLG, who continue to support it.

The following RSLGs have shown specific support for engineering and manufacturing priorities or actions in their respective RWPs: Bay of Plenty, Canterbury, Otago, Southland-Murihiku, Tairāwhiti, Tāmaki Makaurau, Te Tai Poutini-West Coast, Waikato, Wellington and Hawke’s Bay.

Qualitative and quantitative information gathered

Qualitative information:

- Multiple in-person engagements by Hanga-Aro-Rau industry managers with engineering and manufacturing businesses throughout New Zealand
- Multiple virtual engagements by Hanga-Aro-Rau industry managers with engineering and manufacturing businesses throughout New Zealand
- Multiple engagements by Hanga-Aro-Rau industry managers with associations and peak bodies representing manufacturing and engineering businesses throughout New Zealand
- Engagement with RSLGs through a dedicated Hanga-Aro-Rau RSLG liaison
- Group workshops to validate findings across industry
- Engagement with TEOs.

Quantitative information (national, regional and industry data sources):

- Scarlatti insights and workforce research
- Infometrics economic intelligence and forecasting services
- TEC Ngā Kete data
- RSLG regional workforce plans.

Vocational education and training issue

A vocational education and training solution will:

- Provide and develop fluid power skills throughout Aotearoa New Zealand's engineering sectors. Previously, there was no industry-recognised formal training and accreditation in this area
- Standardise skills nationally. Presently, skills are ad hoc and not standardised
- Contribute to the development of strong careers pathways, resulting in equitable outcomes for all New Zealanders. The development of these pathways will create opportunities for workers to move into higher-skilled work, and for businesses to increase productivity.

Investment recommendation

Hanga-Aro-Rau recommends TEC invests in nationwide programmes that lead to the New Zealand Certificate in Fluid Power Engineering Fundamentals level 3 (95 credits).

The delivery method has not yet been confirmed.

It is anticipated the programme will be delivered predominantly through a work-based mode, or provider based where necessary, after agreement between employer and provider.

Gaps in provision

No current existing formalised skills response.

Forecast timeline to address the gap

Twelve months.

Role of WDCs/RSLGs

Hanga-Aro-Rau will continue to maintain and develop its relationships with the 15 RSLGs throughout New Zealand (specifically those with a highlighted engineering and manufacturing focus) on behalf of industry.

Hanga-Aro-Rau will continue to engage with industry (both workplaces and associations) to ascertain the needs of businesses throughout New Zealand, and to publicise the development of the formalised skills response.

Hanga-Aro-Rau will continue to develop and promote vocational education pathways on behalf of, and in conjunction with, industry. This is a result of ongoing regular engagement and mandated qualification reviews.

Hanga-Aro-Rau will continue to work with its TEO network to support the delivery of programmes linked to the qualification products developed. This will include, but is not limited to, support through the programme endorsement process to ensure all programmes are fit-for-purpose, as required by New Zealand workplaces, and deliver equitable outcomes for all learners.

Support from TEOs

Apprenticeship Training New Zealand (ATNZ)

ATNZ has expressed interest in running a programme related to the developed qualification. Further discussion is required.

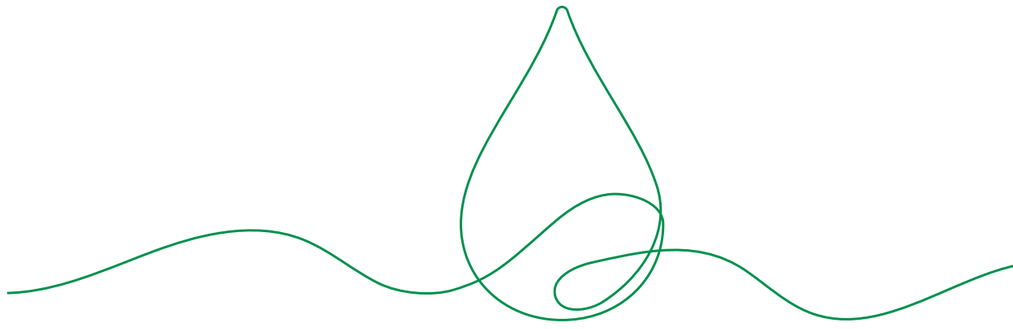
Te Pūkenga Work Based Learning subsidiary

Te Pūkenga Work Based Learning subsidiary has expressed interest in creating and delivering an on-the-job programme. Further discussion is required.

The New Zealand Fluid Power Association

This association was developed as the result of hui for the development of the fluid power qualification. Discussions were held around the possibility of requesting PTE status. The association's aim is to establish a programme and train their own staff for their industry.

No constraints or barriers to operationalise advice have been identified.



6.2.7 Passenger ropeways

The issue

New Zealand passenger ropeways businesses require skilled workers to remain productive and competitive, and to ensure safety practices are followed.

More than 60 per cent of maintenance workers in the ropeways sector are less than five years from retirement.

However, current responses are not producing the skills required and are not fit-for-purpose.

In response, some businesses now:

1. Look to hire from overseas, where possible

2. Develop their own in-house programmes, leading to multiple companies training students to different levels and creating skills discrepancies throughout the sectors.

Intended end state

A standardised, formalised pathway to develop the passenger ropeways skills of New Zealand workers is seen as a strong way to attract, retain and develop passenger ropeways mechanics and engineers. This will ultimately lead to improved business productivity and improved safety outcomes.

This pathway will allow employers to hire with more certainty and provide workers with more mobility, should they require it.

This pathway will develop skills in passenger ropeways mechanics and engineers.

Any outcomes will integrate with pathways for the wider engineering industries.

Scale of importance

The scale of importance of this issue is **equal** to other initiatives put forward by Hanga-Aro-Rau in the 2024 Advice to the Tertiary Education Commission.

Source of information

This initiative connects to the following strategies:

Hanga-Aro-Rau Skills and Workforce Leadership Plan 2022 – 23

During industry consultation for the Hanga-Aro-Rau Skills and Workforce Leadership Plan 2022 – 23, the majority of employers interviewed and 80 per cent of survey respondents said that graduates they employed from vocational education frequently did not meet their skills expectations.

Gaps included new technologies, digital skills, employability skills, literacy and numeracy, and general work readiness.

In engineering specifically, employers noted pervasive talent shortages, especially in next-generation digital technologies and specialist roles.

As the industry creates new digitally orientated roles, filling the skills gap may require upskilling the existing workforce and widening qualifications that feed into engineering recruitment and staffing.

In the Hanga-Aro-Rau SWLP survey, 81 per cent of the engineering employers who responded identified ‘recruiting labour for the skills I need’ as their biggest labour market issue.

Regional Skills Leadership Group alignment

The following RSLGs have shown specific support for engineering and manufacturing priorities or actions in their respective RWPs: Bay of Plenty, Canterbury, Otago, Tairāwhiti, Tāmaki Makaurau, Waikato, and Hawke’s Bay.

In addition, this advice has been supported by the Manawatū–Whanganui RSLG.

Qualitative and quantitative information gathered

Qualitative information:

- Multiple in-person engagements by Hanga-Aro-Rau industry managers with engineering and manufacturing businesses throughout New Zealand
- Multiple virtual engagements by Hanga-Aro-Rau industry managers with engineering and manufacturing businesses throughout New Zealand
- Multiple engagements by Hanga-Aro-Rau industry managers with associations and peak bodies representing manufacturing and engineering businesses throughout New Zealand
- Engagement with RSLGs through a dedicated Hanga-Aro-Rau RSLG liaison
- Group workshops to validate findings across industry
- Engagement with TEOs.

Quantitative information (national, regional and industry data sources):

- Scarlatti insights and workforce research
- Infometrics economic intelligence and forecasting services
- TEC Ngā Kete data
- RSLG regional workforce plans.

Hanga-Aro-Rau consulted with Ruapehu Alpine Lifts and Skyline Enterprises. As part of their charter, both companies are required to consult with Ngāti Tūwharetoa (relating to activities on Mt Ruapehu, specifically as they have a stake in Ruapehu Alpine Lifts) and Ngā Pōtiki (relating to activities within the Bay of Plenty, particularly Rotorua).

Both iwi have indicated (via the connections Hanga-Aro-Rau has with the above industry groups) that the qualification development will result in more of their people gaining recognised trade qualifications and increased employment opportunities, both nationally and internationally.

As part of the qualification product development process, Hanga-Aro-Rau will continue to consult with iwi in all areas associated with the qualification development.

Vocational education and training issue

A vocational education and training solution will:

- Provide and develop the skills of passenger ropeways mechanics throughout Aotearoa New Zealand's engineering sectors. Previously, there was no current industry-recognised formal training and accreditation in this area
- Standardise skills nationally. Skills are currently ad hoc and not standardised
- Contribute to the development of strong careers pathways, resulting in equitable outcomes for all New Zealanders. The development of these pathways will create opportunities for workers to move into higher-skilled work, and for businesses to increase productivity.

Investment recommendation

Hanga-Aro-Rau recommends TEC invests in nationwide programmes, leading to the as-yet unnamed formalised skills response to the passenger ropeways mechanic and engineer needs of the New Zealand engineering industries.

The delivery method has not yet been confirmed.

It is anticipated the programme will be delivered predominantly through a work-based mode, or provider based where necessary, after agreement between employer and provider.

Gaps in provision

No current existing formalised skills response.

Forecast timeline to address the gap

Twelve months.

Role of WDCs/RSLGs

Hanga-Aro-Rau will continue to maintain and develop its relationships with the 15 RSLGs throughout New Zealand (specifically those with a highlighted engineering and manufacturing focus) on behalf of industry.

Hanga-Aro-Rau will continue to engage with industry (both workplaces and associations) to ascertain the needs of businesses throughout New Zealand, and to publicise the development of the formalised skills response.

Hanga-Aro-Rau will continue to develop and promote vocational education pathways on behalf of, and in conjunction with, industry – as a result of both ongoing regular engagement and mandated qualification reviews.

Hanga-Aro-Rau will continue to work with its TEO network to support the delivery of programmes linked to the qualification products developed. This will include, but is not limited to, support through the programme endorsement process to ensure all programmes are fit-for-purpose, as required by New Zealand workplaces, and deliver equitable outcomes for all learners.

Support from TEOs

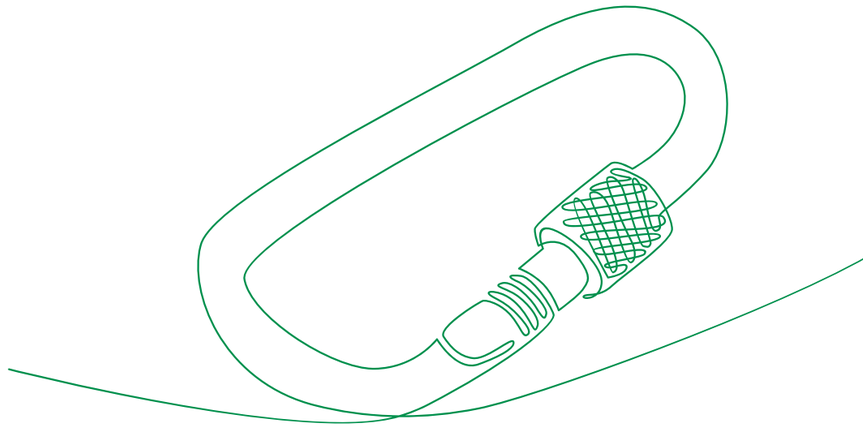
Apprenticeship Training New Zealand (ATNZ)

ATNZ has expressed interest in running a programme related to the developed qualification. Further discussion is required.

Te Pūkenga Work Based Learning subsidiary

Te Pūkenga Work Based Learning subsidiary has expressed interest in creating and delivering an on-the-job programme. Further discussion is required.

No constraints or barriers to operationalise advice have been identified.



6.2.8 Transport engineering

The issue

New Zealand transport engineering firms require skilled transport engineer workers to remain productive and competitive.

The need for skilled transport engineers has been an ongoing issue for engineering companies working on large projects.

Current responses, where attempted, have not produced the skills required or employees who are fit-for-purpose.

The industry has indicated that the development of a pathway leading to highly skilled transport engineers is their work-based learning goal.

The top priority is a formalised skills response that would enable transport engineers to fully understand truck or trailer chassis.

Intended end state

The aim is to establish a clear, concise, industry-respected skills development pathway for transport engineers.

The pathway will recognise the following key skill sets:

- Transport engineering product (level 4 on framework)
- Advanced pathways in specific sectors: airlines and plumbing, painting, hydraulics and pneumatics, and auto electrical
- Advanced pathway to become a certification engineer.

Any outcome should consider the potential for integration of future transport engineering products in this pathway.

The proposed outcomes will fit into pathways for both engineering and manufacturing and have multiple applications across the wider engineering industry in particular.

A transport engineering pathway will be made up of:

- Engineering pre-trade courses
- Pathways from school (potentially via the proposed trade assistant product being worked on with Business South)
- Levels 3 and 4 welding qualifications (newly instigated onto the NZQA framework)
- Transport engineering solutions discussed in this advice.

There is a proposal for a pathway into becoming a certified transport engineer, post-transport engineering qualification. Hanga-Aro-Rau is discussing this with Waka Kotahi and the Motor Trade Association.

In any development, consideration should be given to the skills needed for success when entering the transport engineering pathway, such as those required by school leavers, industry new entrants and existing employees.

Scale of importance

The scale of importance of this issue is **equal** to other initiatives put forward by Hanga-Aro-Rau in the 2024 Advice to the Tertiary Education Commission.

Source of information

This initiative connects to the following strategies:

Hanga-Aro-Rau Skills and Workforce Leadership Plan 2022 – 23

During industry consultation for the Hanga-Aro-Rau Skills and Workforce Leadership Plan 2022 – 23, the majority of employers interviewed and 80 per cent of survey respondents said that graduates they employed from vocational education frequently did not meet their skills expectations.

Gaps included new technologies, digital skills, employability skills, literacy and numeracy, and general work readiness.

In engineering specifically, employers noted pervasive talent shortages, especially in next-generation digital technologies and specialist roles.

In the Hanga-Aro-Rau SWLP survey, 81 per cent of the engineering employers who responded identified ‘recruiting labour for the skills I need’ as their biggest labour market issue.

Regional Skills Leadership Group alignment

The following RSLGs have shown specific support for engineering and manufacturing priorities or actions in their respective RWPs: Bay of Plenty, Canterbury, Otago, Southland-Murihiku, Tairāwhiti, Tāmaki Makaurau, Te Tai Poutini-West Coast, Waikato, Wellington and Hawke’s Bay.

In addition, this advice has been supported by the Manawatū–Whanganui and Waikato RSLGs.

Qualitative and quantitative information gathered

Qualitative information:

- Multiple in-person engagements by Hanga-Aro-Rau industry managers with engineering and manufacturing businesses throughout New Zealand
- Multiple virtual engagements by Hanga-Aro-Rau industry managers with engineering and manufacturing businesses throughout New Zealand
- Multiple engagements by Hanga-Aro-Rau industry managers with associations and peak bodies representing manufacturing and engineering businesses throughout New Zealand
- Engagement with RSLGs through a dedicated Hanga-Aro-Rau RSLG liaison
- Group workshops to validate findings across industry
- Engagement with TEOs.

Quantitative information (national, regional and industry data sources):

- Scarlatti insights and workforce research
- Infometrics economic intelligence and forecasting services
- TEC Ngā Kete data
- RSLG regional workforce plans.

Vocational education and training issue

A vocational education and training solution will:

- Provide and develop transport engineering skills throughout Aotearoa New Zealand's engineering sectors. Previously, there was no fit-for-purpose, industry-recognised formal training and accreditation in this area
- Standardise skills nationally. Skills are currently ad hoc and not standardised
- Contribute to the development of strong careers pathways, resulting in equitable outcomes for all New Zealanders. The development of these pathways will create opportunities for workers to move into higher-skilled work, and for businesses to increase productivity.

Investment recommendation

Hanga-Aro-Rau recommends TEC invests in nationwide programmes. This will lead to the as-yet unnamed formalised skills response for the transport engineering needs of the New Zealand engineering and manufacturing industries.

The delivery method has not yet been confirmed.

This is envisaged to be a combination of classroom theory and on-the-job or work-based training.

Gaps in provision

No current existing formalised skills response.

Forecast timeline to address the gap

Twelve months.

Role of WDCs/RSLGs

Hanga-Aro-Rau will continue to maintain and develop its relationships with the 15 RSLGs throughout New Zealand (specifically those with a highlighted engineering and manufacturing focus) on behalf of industry.

Hanga-Aro-Rau will continue to engage with industry (both workplaces and associations) to ascertain the needs of businesses throughout New Zealand and publicise the development of the formalised skills response.

Hanga-Aro-Rau will continue to develop and promote vocational education pathways on behalf of, and in conjunction with, industry, through ongoing regular engagement and mandated qualification reviews.

Hanga-Aro-Rau will continue to work with its TEO network to support delivery programmes linked to the qualification products developed. This will include, but is not limited to, support through the programme endorsement process to ensure all programmes are fit-for-purpose, as required by New Zealand workplaces, and deliver equitable outcomes for all learners.

Support from TEOs

Apprenticeship Training New Zealand (ATNZ)

ATNZ has expressed interest in creating a programme for transport engineering, including a potential partnership with MITO. Further discussion is required.

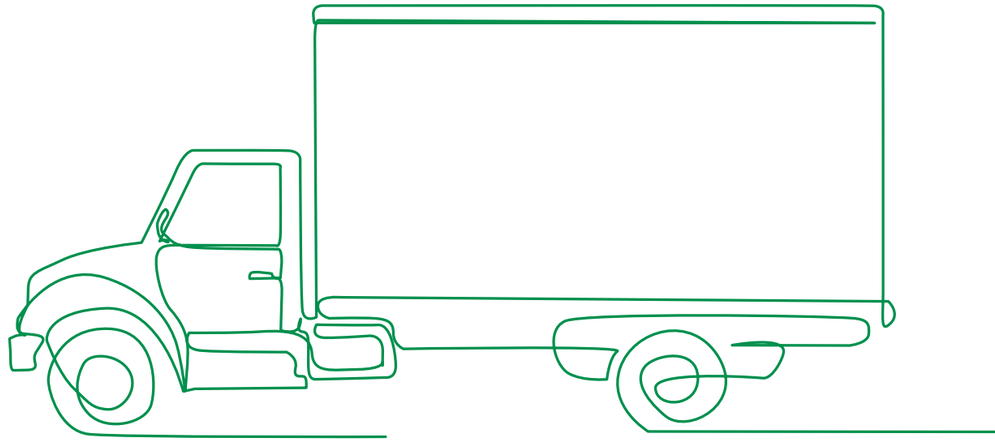
MITO

MITO has expressed interest in creating and delivering a work-based programme. Further discussion is required.

UNITEC Auckland

UNITEC has expressed interest in creating and delivering a programme. Further discussion is required.

No constraints or barriers to operationalise advice have been identified.



6.2.9 Trades assistant

The issue

New Zealand engineering firms require skilled trades assistant workers to remain productive and competitive.

The need for skilled trades assistants has been an ongoing issue for engineering companies working on large projects.

However, this shortage has recently been highlighted by a series of planned projects in the lower South Island, including the Dunedin Hospital rebuild.

Current responses, where attempted, have not produced the skills required and are not fit-for-purpose.

Intended end state

The aim is to establish a formalised skills response to:

- Develop the skills of people working in the engineering sector as trades assistants, in line with industry requirements
- Formally recognise those skills at a standardised and nationally recognised level.

This outcome could be piloted in the Otago region during the Dunedin Hospital rebuild, before being rolled out nationally.

This response would be aimed at those entering the engineering workforce from either school or another part of the workforce.

Any outcomes will integrate with pathways for the wider engineering industries.

Scale of importance

The scale of importance of this issue is **equal** to other initiatives put forward by Hanga-Aro-Rau in the 2024 Advice to the Tertiary Education Commission.

Source of information

This initiative connects to the following strategies:

Hanga-Aro-Rau Skills and Workforce Leadership Plan 2022 – 23

During industry consultation for the Hanga-Aro-Rau Skills and Workforce Leadership Plan 2022 – 23, the majority of employers interviewed and 80 per cent of survey respondents said that graduates they employed from vocational education frequently did not meet their skills expectations.

Gaps included new technologies, digital skills, employability skills, literacy and numeracy, and general work readiness.

In engineering specifically, employers noted pervasive talent shortages, especially in next-generation digital technologies and specialist roles.

As the industry creates new digitally orientated roles, filling the skills gap may require upskilling the existing workforce and widening qualifications that feed into engineering recruitment and staffing.

In the Hanga-Aro-Rau SWLP survey, 81 per cent of the engineering employers who responded identified ‘recruiting labour for the skills I need’ as their biggest labour market issue.

Regional Skills Leadership Group alignment

This initiative has featured ongoing engagement and support from both the Otago and the Southland-Murihiku Regional Skills Leadership Groups. A number of other RSLGs have also expressed interest in relation to their own significant capital projects. This will be developed through future engagement.

The following RSLGs have shown specific support for engineering and manufacturing priorities or actions in their respective RWPs: Bay of Plenty, Canterbury, Otago, Southland-Murihiku, Tairāwhiti, Tāmaki Makaurau, Te Tai Poutini-West Coast, Waikato, Wellington and Hawke’s Bay.

In addition, this advice has been supported by the Tairāwhiti CARE RSLG.

Qualitative and quantitative information gathered

Qualitative information:

- Multiple in-person engagements by Hanga-Aro-Rau industry managers with engineering and manufacturing businesses throughout New Zealand
- Multiple virtual engagements by Hanga-Aro-Rau industry managers with engineering and manufacturing businesses throughout New Zealand
- Multiple engagements by Hanga-Aro-Rau industry managers with associations and peak bodies representing manufacturing and engineering businesses throughout New Zealand
- Engagement with RSLGs through a dedicated Hanga-Aro-Rau RSLG liaison
- Group workshops to validate findings across industry
- Engagement with TEOs.

Quantitative information (national, regional and industry data sources):

- Scarlatti insights and workforce research
- Infometrics economic intelligence and forecasting services
- TEC Ngā Kete data
- RSLG regional workforce plans.

Vocational education and training issue

A vocational education and training solution will:

- Provide and develop trades assistant skills throughout Aotearoa New Zealand's engineering sectors. Previously, there was no industry-recognised formal training and accreditation in this area
- Standardise skills nationally. Skills are currently ad hoc and not standardised
- Contribute to the development of strong careers pathways, resulting in equitable outcomes for all New Zealanders. The development of these pathways will create opportunities for workers to move into higher-skilled work, and for businesses to increase productivity.

Investment recommendation

Hanga-Aro-Rau recommends TEC invests in nationwide programmes, leading to the as-yet unnamed formalised skills response for the trades assistant needs of the New Zealand engineering and manufacturing industries.

The delivery method has not yet been confirmed.

This is likely to be a combination of classroom theory, via either Otago Polytechnic or PTE Skillsec in Dunedin (for the initial part of the programme), alongside on-the-job and work-based training.

The classroom-based component would cover any human-centred skills.

The work-based component would cover the technical skill-based requirements.

The Hanga-Aro-Rau focus group noted any skills response should consider recognising the skills and development of workers already in similar roles who have built up credibility and experience in the industry.

Gaps in provision

No current existing formalised skills response.

Forecast timeline to address the gap

Twelve months.

Role of WDCs/RSLGs

While this initiative is being led by Hanga-Aro-Rau, strong support, involvement and collaboration from Waihanga Ara Rau has been received.

There is also the opportunity for parts of the construction sector to be served by the proposed trades assistant skills response.

The two workforce development councils have presented a united front to industry and other local stakeholders in Otago and Southland and are committed to working collaboratively in future.

This initiative has featured ongoing engagement and support from both the Otago and the Southland-Mirihiku Regional Skills Leadership Groups.

Hanga-Aro-Rau will continue to maintain and develop its relationships with the 15 RSLGs throughout New Zealand (specifically those with a highlighted engineering and manufacturing focus) on behalf of industry.

Hanga-Aro-Rau will continue to engage with industry (both workplaces and associations) to ascertain the needs of businesses throughout New Zealand and to publicise the development of the formalised skills response.

Hanga-Aro-Rau will continue to develop and promote vocational education pathways on behalf of, and in conjunction with, industry, through ongoing regular engagement and mandated qualification reviews.

Hanga-Aro-Rau will continue to work with its TEO network to support the delivery of programmes linked to the qualification products developed. This will include, but is not limited to, support through the programme endorsement process to ensure all programmes are fit-for-purpose, as required by New Zealand workplaces, and deliver equitable outcomes for all learners.

Support from TEOs

The following providers have expressed positivity about this proposal for a skills response that develops trades assistants:

- Otago Polytechnic
- SIT (Invercargill)
- Ara (Timaru)
- EIT (Hawke's Bay)
- Unitec (Auckland)
- Potential partnership with STEAM
- Toloa partnership
- Murihiku Regeneration
- SkillSec Dunedin (Māori-owned and operated PTE).

No constraints or barriers to operationalise advice have been identified.

Mā wai te huarahi e hora? Mā ngā ahumahi!

Who will pave the pathway forward? Industry will!

7 Whakaarohia | Have regard

7.1 E raka te mauī, e raka te katau | Flexibility and transferability of programme delivery to align with industry needs

Nested micro-credentials will be a strong feature of qualifications in the future, allowing for industry flexibility and transferability. Industry recognises the potential of this development as it will support businesses in agile decision-making and resilience in a challenging economy.

Flexible and nimble delivery of niche programmes will broaden opportunities for learners. This will build industry confidence in RoVE that looks to industry to inform skills development.

7.2 Ngā ara ako ā-rehe | Vocational pathways

During 2022 – 23 our vocational pathways advisors developed a strategic plan (linked to our Statement of Direction and the broader Reform of Vocational Education [RoVE] outcomes) to support sustainable workforce pipelines and pathways and equitable outcomes for Māori, Pacific peoples, women, older workers and tāngata whaikaha.

There are currently irregular connections between industry and the education ecosystem, so our tīma have sharpened their focus to address the following:

1. Employers need quality workers and are struggling to attract and retain employees through the education to employment ecosystem
2. Pathways into and progression within our industries are not visible or are deemed inaccessible – people cannot be what they cannot see
3. The status quo of employee progression and experience in our industries is inequitable.

The above problem statements have formed two core workstreams for 2023-24:

Objective	Activity	Known barriers to address
Brokerage and advisory services to employers with the knowledge of how to engage with the education ecosystem, providing advice on good practice to create fruitful partnerships (2023–25).	Identify and scale good practice models of industry engagement with vocational education that promote equitable outcomes for ākonga at all levels (funding to providers around employer education to help better onboard workers).	• Removing the maintenance of an inequitable status quo to ensure equitable outcomes • Address the current management and capability gaps by creating strong cross-agency partnerships.

Brokerage and advisory workstream

Good Practice Models	E2E Ecosystem Map for Priority Regions	Build and Maintain Relationships with E2E Stakeholders	Broker Connections	Promote Models and Case Studies
Identify good practice models of industry engagement with education that achieve equitable outcomes for Māori, Pacific, women and disabled learners	Map the E2E ecosystem for each region to provide access to relevant E2E organisations for employers	Maintain knowledge of the priorities and role of key stakeholders to identify opportunities for collaboration	Connect industry with E2E organisations, and provide appropriate good practice resources/advice	Promote trialled models and case studies to wider industry to illustrate effective practice (learnings and successes)

Employer Education

Implement collaborative agency and industry initiatives to educate employers on the experiences of youth and career changers (focus on Pacific, Māori and disabled peoples), within the changing nature of the world of work; to encourage safe, inclusive and welcoming workplaces in our industries.

Key Partners: Employers, secondary and tertiary education institutions, Ministry of Social Development (including funded initiatives), Ministry of Education, Ministry of Business, Innovation and Employment, economic development agencies, Regional Skills Leadership Groups, Mayors Taskforce for Jobs, community organisations.

Empower ākonga by equipping relevant agencies and associations with career pathway information, fostering a seamless connection between industry and the education ecosystem	Create relationships with the education to employment ecosystem to collate and disseminate insights that will impactfully influence career decisions	• Ensuring pathways into our industries are clear and understood • Create seamless information flows between career practitioners and other members of the education to employment ecosystem.

Inform the careers system workstream

Tertiary Education Commission and Ministry of Education	Identify insights	Collate and share	Review
Establish relationships with TEC and MoE and set up parameters for collaboration on career education	In discussion with each agency, identify the kinds of industry insights they need	Collate and share insights through an agreed process that includes frequence and format	Review utility of insights on a regular basis. Ensure agencies are incorporating insights into their programs and products

Key Partners: Ministry of Education, Tertiary Education Commission (Tahatū and Inspiring the Future), Careers and Transition Education Association New Zealand, Career Development Association New Zealand industry associations and employers.

We recommend that **TEC gives effect to** investment that combines good practice models of industry engagement with vocational education to promote equitable outcomes for ākonga at all levels (funding to providers around employer education to help better onboard workers).

7.3 He mana tautōhito | Older learners bring prior learning and skills as workforce gets older

The workforce is ageing in the sectors Hanga-Aro-Rau serves. This is evident in the manufacturing, engineering and logistics industries, which have a higher proportion of workers aged 50+ (35.3 per cent) compared to other Aotearoa New Zealand industries (33.2 per cent). Older workers are a heterogeneous group, and these differences are compounded by the impacts of age bias and the social and economic inequalities that affect opportunities throughout life.

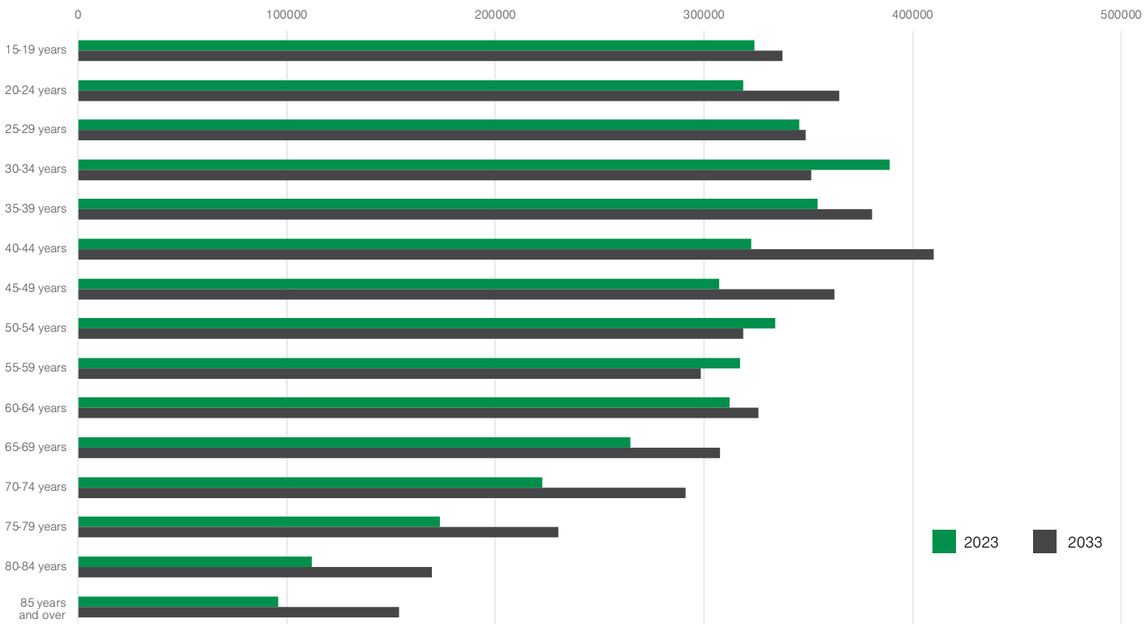
We suggest TEC fund bespoke support to recognise this critical section of the workforce as a priority.

The implication of this issue requires workforce planning and development to manage potential skill shortages, to maintain and increase productivity, and to preserve industry-specific skills and knowledge. The objective is to have productive sectors where skills needs are met with a well-functioning VET system and where older workers (45+ for Māori and 50+ for non-Māori) are recruited, retained and recognised. As a result, employers' skill needs will be met, industry can thrive and grow, and older learners are supported to develop and grow until they decide to retire.

This issue is significant, given current and projected workforce demography. It has been recognised at a central government[6] level and by Hanga-Aro-Rau. Our Deloitte research on the issue is included across our strategic planning documents. Research is currently being scoped to support manufacturing, engineering and logistics sectors to prepare and manage this demographic transition, given that the literature on this kaupapa suggests that organisations in Aotearoa and elsewhere are failing to adequately prepare for, and benefit from, population ageing.

6 Central government strategies and plans
Our Employment Strategy: Everyone Working to Deliver a Productive, Sustainable and Inclusive New Zealand. https://www.mbie.govt.nz/dmsdocument/6614-our-employment-strategy-everyone-working-to-deliver-a-productive-sustainable-and-inclusive-new-zealand
Better later life He oranga kaumātua 2019 to 2034: A strategy for making the future better for New Zealanders as we age. https://officeforseniors.govt.nz/assets/documents/our-work/better-later-life/Better-Later-Life-Strategy/Better-Later-Life-He-Oranga-Kaumatua-2019-to-2034.pdf
Better later life He oranga kaumātua action plan 2021 to 2024 He Mahere Hohenga 2021 ki 2024. https://officeforseniors.govt.nz/assets/documents/our-work/better-later-life/Action-Plan/Better-Later-Life-Action-Plan-2021-to-2024.pdf
Older Workers Employment Action Plan He Mahere Mahi Whakawhiwhi Mahi mō te Hunga Pakeke. Office for Seniors. https://officeforseniors.govt.nz/assets/Uploads/Older-Workers-Action-Plan-FINAL.pdf

Projected Working Age Population 2023 - 2033



Source: StatisticsNZ/NZ.Stat/National population projections by age and sex, 2022 (base)-2073

Vocational education and training solutions

We align our definitions of older people and older workers with those used by the Office for Seniors. ‘Older people’ refers to those aged 65 and over, and the phrase ‘older workers’ refers to people aged 50 and over who are working or seeking work. Damaging stereotypes about older workers, including that you can’t teach an old dog new tricks, and that training older workers is a lost investment, contribute to older workers’ relatively low participation in training. There is extensive evidence that older workers are capable of both learning and applying new knowledge in the workplace, although they may require different learning environments and may take longer to develop specific skills.

Evidence also suggests that lifelong investment in training is widely recognised as key to increasing the productivity of older workers, and that training is beneficial for older workers themselves, in terms of both wages and ongoing employment. Because of the commitments Hanga-Aro-Rau has made to equity and underserved groups, it is important to note that training is also considered critical to addressing the strong connection between low skill level and low productivity.

Investment in training for older workers, including in basic and digital skills, is critical to workforce development as well as to individual older workers, particularly those who are also members of underserved groups such as Māori, Pacific peoples, workers with disabilities, women and neurodiverse. VET has a vital role to play in the promotion and provision of quality upskilling for older workers, particularly in the digital skills (see digital literacy theme), basic skills (such as literacy and numeracy) and mentoring/coaching areas.

A focus on these skills will enable older workers to transition to more skilled, better paying roles, and provide them with the skills necessary to mentor their younger colleagues if they wish. This training is critical, whether older workers are returning to the workforce, re-skilling after redundancy or returning to the workforce from retirement. It should be flexible in its delivery to enable older workers to fulfil caring and other responsibilities, and it should accommodate the particular learning needs of this cohort.

RSLG

The following RSLGs have shown specific support for addressing the older worker aspects of workforce planning and development: Wellington Regional Workforce Plan; Bay of Plenty Workforce Plan; Tāmaki Makaurau: Building the Workforce for Better Jobs; Labour and Skills for Te Tai Poutini-West Coast; Te Mahere Ohumahi ā-Rohe o Te Tauihu o Te Waka-a-Māui Nelson–Tasman Regional Workforce Plan; Te Mahere Ahumahi ā-Rohe o Te Tauihu o Te Waka-a-Māui: Marlborough Regional Workforce Plan; Waikato Regional Workforce Plan.

7.4 Mana tika mō ngā iwi ā-Kiwa | Equity for Pacific peoples in mainstream organisations

In Aotearoa New Zealand, Māori and Pacific workers have experienced pay gaps that are long-standing, substantial and persistent. These pay gaps have not changed significantly in more than 10 years (New Zealand Human Rights Commission, 2022a).

Pay Gap in Aotearoa New Zealand. Source: Pacific Pay Gap Inquiry, 2022. Calculated based on median hourly earnings from main job in 2021 from Stats NZ Household Labour Force Survey data.

We recommend investment in delivery that supports employers to reduce barriers to Pacific peoples' experience in mainstream organisations, including communication gaps, attitude matters, business leader assistance, acknowledging work is a place to learn and work, hidden skills and organisational culture.

Vocational education and training solutions

While in VET, Pacific learners can be equipped with the skills to overcome barriers at work. This could be interactive in-person classes, or a combination of classwork and hands-on curriculum that understands the importance of building relationships to gain trust and to inspire the learner's interest and commitment.

Integration of Pacific values is an important element to a Pacific learner's ability to engage with material and create a supportive and welcoming space. The ability to bring a Pacific learner's authentic self to the learning environment will enhance their experience and increase the likelihood of longevity in the industry. Pacific peoples are rooted in relationships – within family, community, village – and they thrive in relation to their surroundings and people. Therefore, to be successful in vocational education and training, there needs to be an element of this in their experience. Pacific study groups, drop-in times and monitored online discussion boards are methods that potentially open up the education experience and provide portals to engage.

Next steps in development

Hanga-Aro-Rau, together with Ohu Ahumahi, is developing the following:

- Hanga-Aro-Rau Pacific Workforce Development Strategy and Plan
- Pacific Outcomes Framework (Ohu Ahumahi initiative).

RSLG

The Tāmaki Makaurau RSLG have said:

"The region's future focus on manufacturing and its importance for the Pacific peoples' workforce in Tāmaki Makaurau has been identified as an area where the RSLG and Workforce Development Council agree to collaborate."

"The RSLG supports skills development for manufacturing sector workers. This includes support to Hanga-Aro-Rau WDC with its TEC COVID-19 Response Fund research project, and support of upskilling initiatives such as Project Ikuna. This provides the Pacific workforce with support for literacy and numeracy skills to allow students to succeed in the upcoming digitally enabled manufacturing workforce."

7.5 Te mana o te wahine | Providers prepare women for the workplace

Employers in manufacturing, engineering and logistics have indicated a need for more employees in their workforce. As women in the labour market were more heavily impacted than men during Aotearoa New Zealand's response to the COVID-19 pandemic, they are a pool of underutilised labour that could be recruited and trained to support the need of our industries.

In the report Women and Advanced Manufacturing, there are eight recommended actions to address the issue of how to attract and retain more women in advanced manufacturing. Research has shown that women working in the Hanga-Aro-Rau and Waihanga Ara Rau sectors tend to experience a lack of pay equity, access to promotion, advancement and senior roles, and professional development and training opportunities (p. 12). Action number 3 from the report recommends creating a framework of initiatives to support policies around formal harassment, sexual harassment and bullying. Many workplaces have formal policies around harassment, sexual harassment and bullying. However, research consistently shows that policy alone is not effective unless it is part of a suite of measures to address workplace sexual harassment (p. 24).

Vocational education and training solutions

Among best practice principles and strategies for preventing sexual harassment in the workplace, the Ministry for Women (2019, p. 5) listed two which can be supported by VET:

- Invoke education, communication and other strategies known to create change – use effective teaching methods and be long and intense enough to produce change
- Undertake a comprehensive process of impact evaluation that is integrated into programme development.

Vocational education and training (VET) takes place at the start of a career or at a significant intermediate point in a career, with a provider outside, or in addition to, a workplace. Providers are well placed to demonstrate to learners what equity and inclusiveness look like in their leadership, culture, policy and behaviours. Educational communities often take the lead to show that harassment will not be tolerated. These communities provide guidance on remedy and action for allies and those who experience it, such as women, LGBTQI+, disabled, neurodiverse, Māori, Pacific peoples, ethnic minorities, etc. Providers should be part of a multi-pronged approach with government legislation and industry actions, aiming for equitable outcomes by changing attitudes and behaviours and promoting respectful relationships.

Representation in VET programme delivery matters, and providers should show what diversity and inclusion looks like in their organisation. A diverse provider workforce enables strong connection with non-mainstream groups, sets high expectations for all learners and reduces implicit bias. Women (and other non-mainstream groups) who are educators and administrators in VET are important as role models to all learners, as this will normalise gender equity to the emerging workforce.

7.6 Ōhanga āmiomio | Circular economy

Sustainability is the balanced integration of economic performance, social inclusiveness and environmental resilience, to the benefit of current and future generations. Meeting climate targets will require tackling the 45% of emissions associated with making products. Maintaining, rather than depleting, resources is core to a circular economy and to sustainability.

Vocational education and training solutions

In skills development, skills standards, social inclusion and workforce wellbeing are necessary to support a circular business model. The workforce must be equipped to have the right skills to design, plan, support and work in a circular economy business model.

Equitable Transitions Strategy, led by MBIE, is being developed for the industry. The draft for consultation is planned for June 2023. One of the objectives in the strategy is a responsive education system with equitable access for a low-emissions future, supporting workers' transition to low-emissions sectors and supporting business viability while reducing emissions.
The Tertiary Education Strategy prioritises vocational education and training to be responsive to employers and industry efforts towards being carbon neutral.

There will be further development of this work to identify skills requirement for sectors which have an urgent imperative to reduce carbon emissions.

RSLG

Tāmaki Makaurau RSLG

Green skills and jobs for a circular economy workforce | Ministry of Business, Innovation & Employment (mbie.govt.nz)

Green skills and jobs actions:

- The RSLG supports the workforce to identify the critical green skills required for Tāmaki Makaurau to develop a sustainable and circular economy model. It will also work with The Southern Initiative to support workforce capability for the circular economy in South Auckland and West Auckland, especially for the Māori and Pacific workforce.
- The RSLG supports a large-scale endeavour like the Eco Park to create green economy workforce opportunities in South Auckland, especially for the Māori and Pacific workforce.
- The RSLG advocates working with industry to support workforce upskilling for green skills and prepare the workforce for the green transition.
- The RSLG promotes a worker-enabling and responsive public transport system where workers across Tāmaki Makaurau can reach their workplace efficiently using public transport.

Bay of Plenty RSLG

Climate change | Ministry of Business, Innovation & Employment (mbie.govt.nz)

Climate change action statements - Educate and train industry and student leaders in climate change impacts and identify opportunities where immediate actions can be taken to reduce climate impacts, accelerate current circular economy initiatives and begin to adapt the Bay of Plenty workforce. The following sub-actions will be needed:

- Support training for climate change adaptation and workforce impacts
- Facilitate climate adaptation and workforce resilience discussions between iwi, community and industry to identify actions they can take now
- Undertake industry and region-specific scans to identify medium-to-long-term circular economy opportunities in Bay of Plenty.

7.7 Tūwhita mahi | People at risk of job displacement

We recommend investment in development of career transitions.

New Zealand experienced several natural disasters in early 2023. We acknowledge a regional approach to remediation is required, including taking a regional response to workforce development and prioritisation for those regions most impacted.

Since the arrival of COVID-19, New Zealand industries have been experiencing negative economic consequences. There has been:

- a reversal of the trend of positive net migration, highlighting New Zealand's traditional reliance on skilled workers from overseas;
- shortages in skilled and unskilled labour, evidenced through low unemployment rates;
- mental wellbeing impacts – education institutions and employers have observed increased learner stress and the need for additional pastoral support;
- exacerbated labour shortages which puts extra pressure on staff and business owners, leaving fewer resources for tuakana-teina (on-the-job) training; and
- disproportionate effects on populations, in particular Māori, Pacific peoples and women.

Vocational education and training solutions

Hanga-Aro-Rau expect TEC **to have regard for** people at risk of job displacement from major economic shocks by:

- Improving people's readiness for and access to employment by investing into work confidence initiatives and programmes to support career changers with basic transition and pre-employment skills into new industries
- Investing into industry entry level and soft skills training programmes to help people gain industry-specific skills
- Enhancing and expanding initiatives, encouraging industry to take on new apprentices and allowing apprentices to earn while training toward their qualifications.

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Tāpiritanga tahi | Appendix 1

List of qualifications Hanga-Aro-Rau requests investment is maintained is available as a separate document upon request at **info@hangaarorau.nz**

Tāpiritanga rua | Appendix 2

Hanga-Aro-Rau would like TEC to consider funding applications that include programme refresh and redesign in the qualification suites listed below.

Qualification Completed

Automotive (10)

- NZ Cert in Automotive Engineering (L3)
- NZ Cert in Heavy Automotive Engineering (L4) with strands in Road Transport Plant and Equipment Agricultural Equipment and Materials Handling)
- NZ Cert in Heavy Automotive Engineering (L 5)
- NZ Cert in Motorcycle Engineering (L4)
- NZ Cert in Motorcycle Engineering (L4)
- NZ Cert in Light Automotive Engineering (L4)
- NZ Cert in Light Automotive Engineering (L5)
- NZ Cert in Automotive Electrical Engineering (L4)
- NZ Cert in Electrical Engineering (L5)
- NZ Cert in Electric Vehicle Automotive Engineering (L5)

Welding (2)

- NZ Cert in Welding (L3)
- NZ Cert in Welding (L4)

Dairy Processing (3)

- NZ Cert in Dairy Processing (L3) with optional strands in Automated Cleaning, and Heat Treatment
- NZ Cert in Dairy Processing (L4) with optional strands in Automated Cleaning, and Heat Treatment
- NZ Cert in Dairy Processing (L5) with strands in Operational Leadership and Dairy Technology

Passenger Services (1)

- NZ Cert in Passenger Service (L3) with stands in School, Bus, Urban Bus, and Long-Distance Bus)

Binding and Finishing (2)

- NZ Cert in Binding and Finishing (L3)
- NZ Cert in Binding and Finishing (L4)

Signmaking (1)

- NZ Cert in Signmaking (L4) with optional strands in Traditional Signwriting Three-Dimensional Sign Fabrication and Digital Signage

Engineering / Mechanical Engineering (1)

- NZ Cert in Fluid Power Fundamentals (L3)

HANGA-ARO-RAU
Manufacturing, Engineering and Logistics
Workforce Development Council

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