

QUEENSLAND
JOBS FUND

QUEENSLAND ADVANCED MANUFACTURING

10-Year Roadmap and Action Plan

Edition 3 | October 2022



Queensland
Government

Acknowledgement of Country

The Department of Regional Development, Manufacturing and Water (DRDMW) acknowledges the Country and people of Queensland's First Nations. We pay our respect to Elders past, present and emerging.

We acknowledge the continuous living culture of First Nations Queenslanders – their diverse languages, customs and traditions, knowledges and systems. We acknowledge the deep relationship, connection and responsibility to land, sea, sky and Country as an integral element of First Nations identity and culture.

This Country is sacred. Everything on the land has meaning and all people are one with it. We acknowledge First Nations peoples' sacred connection as central to culture and being.

We acknowledge the stories, traditions and living cultures of First Nations peoples and commit to shaping our state's future together. DRDMW recognises the contribution of First Nations peoples and communities to the State of Queensland and how this continues to enrich our society more broadly.

Department of Regional Development, Manufacturing and Water

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Minister's Foreword

The Palaszczuk Government delivers on the things that matter to the people in our regions: good jobs, better services and a great lifestyle.



The Honourable Glenn Butcher MP

Minister for Regional Development and Manufacturing and Minister for Water

The manufacturing industry in this great state is experiencing substantial growth and the Queensland Government is committed to arming local businesses with the tools, skills and funding to ensure that we are not only competitive in the global market but leading the international pack.

Around the state approximately 180,000 people are employed in manufacturing businesses.

The sector is especially vital in Queensland's regions, with more than 40,000 people employed by regional manufacturing firms.

Manufacturing has consistently contributed more than \$20 billion per annum to the state economy over the past decade, and that number continues to grow.

The global pandemic showed us that we can no longer rely on overseas supply chains and I'm proud of the Queensland businesses that pivoted to re-shore manufacturing locally, as well as enter new markets to fill gaps in supply chains.

In the coming decades, new challenges mean the manufacturing industry will continue to diversify.

Decarbonisation targets will reshape manufacturing as the governments around the world seek to limit the impact of climate change, while major events like the 2032 Olympic and Paralympic Games will

be transformative for Queensland and provide huge opportunities for local manufacturers.

The recently released Queensland Energy & Jobs Plan sets out a path to transform the power system by 2035 that will require more than \$62 billion of estimated capital projects that will deliver clean, reliable and affordable energy across the state.

This commitment will bring significant opportunities for Queensland manufacturers and we will work closely with industry to position them to supply critical components for renewable energy projects locally, nationally and internationally.

Together with industry, we will continue to deliver tailored services and grant programs that will support Queensland manufacturers on the journey to advanced manufacturing.

The revised Action plan for the Queensland Advanced Manufacturing 10-Year Roadmap and Action Plan will support the state's manufacturing sector to drive economic growth and job creation.

This development is particularly important to growing and diversifying Queensland's regional economy and creating the jobs of the future.

We aim to achieve this through a number of strategies, including:

- Driving advanced manufacturing in Queensland
- Supporting manufacturers to grow in a carbon neutral future
- Supporting manufacturers to take advantage of large scale and emerging industry and procurement opportunities
- Increasing the participation of women in manufacturing
- Marketing Queensland manufacturing

The Queensland Government is committed to supporting Queensland's manufacturing industry to build an even stronger, more diverse Queensland economy.





The manufacturing industry is one of Queensland's major employers and contributes more than \$20 billion to the state's economy each year.

Advanced Manufacturing Roadmap achievements

In December 2016, the Queensland Government launched the Advanced Manufacturing 10-Year Roadmap and Action Plan, with a second edition of the Roadmap published in November 2018.

Since 2016, the Queensland Government has implemented a range of tailored workshops, and specific programs to increase the adoption of leading-edge design, innovation, and technologies to increase the capability of Queensland's manufacturers.

What we have done

Strategy 1

Increasing the adoption of leading-edge design, innovation, technologies, processes and practices

Actions

- › The **Industry 4.0 initiative** was launched in September 2018 with 69 events delivered to-date, assisting nearly 1225 manufacturers.
- › The **Made in Queensland grant program (MIQ)** has delivered significant economic stimulus across Queensland, with 105 projects approved to receive grants totalling \$57.2 million. The 105 projects are expected to create more than 1,700 jobs over the next five years and leverage more than \$140 million in private sector investment.
- › The **Advanced Manufacturing Benchmarking program** was launched in 2017 and has assisted 388 businesses measure their operational performance.
- › The **Journey to Advanced Manufacturing Initiative** — The Technology in Manufacturing series was held in 2019 with 219 attendees from industry, the maker community and education sector.
- › The **Design in Manufacturing Program** has delivered 16 workshops since May 2017, engaging with more than 250 participants.
- › **Digital Connectivity** — The Advanced Robotics for Manufacturing (ARM) Hub opened in March 2020. Since opening, 287 companies have used the ARM Hub's industry services to develop their innovative ideas.

- › The **Digital Transformation webinar series** was held in March 2022 with 135 attendees from industry.

Strategy 2

Driving the ongoing development of a highly skilled workforce

Actions

- › The **Advanced Manufacturing Skills Implementation Plan** was released in December 2019 to support manufacturers in their transition to advanced manufacturing and create highly skilled workforces.
- › The **\$450,000 Queensland Hackerspaces Grants program** was announced in June 2017. 15 hackerspaces across Queensland were supported to either establish or expand operations.
- › The **Assistive Devices Hackathon** series was undertaken in Mackay, Toowoomba, Townsville, and Bundaberg in 2017, enabling makers to upskill by using advanced manufacturing techniques to develop prototypes for people with a disability.
- › \$16.5 million was committed over three years under Making it in Queensland: Building a Stronger Manufacturing Sector to establish **Manufacturing Skills Queensland (MSQ)** to grow and develop the skills base of the Queensland manufacturing industry.



Strategy 3

Showcasing the opportunities and achievements of Queensland's advanced manufacturing industry

Actions

- › **Showcasing to the world** — Queensland was internationally recognised as a World Economic Forum Advanced Manufacturing Hub in April 2020, after Queensland showcased its capability to international officials.
- › **Showcasing to industry** — Inside Advanced Manufacturing Week events have been held in 2019, 2021 and 2022. Across the events, 58 advanced manufacturers opened their doors to over 870 manufacturers and supply chain partners to promote Industry 4.0 and connect with supply chain opportunities and education providers.
- › **#MakingItForQueensland** social media campaign was initiated in March 2020 to showcase the resilience of Queensland manufacturers during the early impacts of the COVID-19 pandemic.
- › **Showcasing to new entrants** — The **Women in Manufacturing** event series commenced in March 2018, to promote women in manufacturing with 32 events attended by almost 2,000 attendees to date.

Strategy 4

Supporting regional manufacturers and manufacturing growth sectors across Queensland

Actions

- › **The Manufacturing Ministerial Council (MMC)** was established in June 2018 to provide industry advice on increased global competitiveness in the industry.
- › **Regional Manufacturing Hubs** have been established in Cairns, Townsville, Mackay, Rockhampton, Gladstone and on the Gold Coast to support regional manufacturers to adopt advanced technology techniques, grow their businesses and create jobs.
- › **The Manufacturing Hubs Grant Program** has delivered substantial economic stimulus across regional Queensland, with 37 projects approved to receive grants totalling \$10.9 million. The 37 projects are anticipated to create more than 214 jobs, support approximately 1,100 existing jobs, and leverage more than \$18.5 million in private sector investment.
- › **Strategic sector development** — The Queensland Craft Brewing Strategy launched in November 2018 with \$1.1 million invested into Queensland Brew lab in April 2020. A TAFE course in brewing commenced in July 2020 with 32 graduates now employed in Queensland breweries.
- › The **Rail Manufacturing Strategy** was released in June 2021 to strengthen rail manufacturing in Queensland. The Rail Manufacturing Leaders Advisory Group is currently being established to guide the strategy.
- › **Facilitate reshoring** — MIQ Round 4 facilitated reshoring activities through 21 grants issued to projects designed to reshore manufacturing to Queensland through advanced manufacturing.

A plan for the future: Advanced Manufacturing Roadmap and Action Plan 2022–2026

Queensland's manufacturers will be market leaders in advanced manufacturing process and products, creating the jobs of the future and boosting business growth across the state.

As the Roadmap is now at its halfway point, and as our manufacturers continue to respond to the pandemic by diversifying into new markets, it is timely to use our expertise and knowledge to build new strengths across a range of emerging industries and new opportunities.

The revised Advanced Manufacturing Roadmap and Action Plan 2022–2026 identifies emerging sectors and home-grown opportunities facing our manufacturers over the next decade.

As a key contributor to the economy and the creation of jobs the manufacturing industry matters to Queensland and, as the globe opens up, the Queensland Government is continuing to support manufacturers in their technological transformation to improve productivity and global competitiveness.

The Advanced Manufacturing Roadmap and Action Plan 2022–2026 will support Queensland's manufacturing industries to adopt leading-edge design, technologies and processes that create sustainable jobs, contribute to the government's clean energy and decarbonisation agenda, and drive international competitiveness.

The revised Plan will also support Queensland manufacturers to gain the maximum benefit from supply chain opportunities delivered by the Queensland Energy & Jobs Plan through battery manufacturing, and the construction of large-scale renewable energy generation projects and transmission grids across the state.

In addition, manufacturers will be supported to reduce energy costs and operations emissions by adopting energy efficiency measures.

To ensure we have the manufacturing capabilities in Queensland we are undertaking a Market Sounding to identify manufacturing opportunities and the level of commitment of manufacturers to growing and establishing in Queensland.





By embracing advanced manufacturing processes and technologies, Queensland manufacturing can grow, attract interstate and international business and create more jobs.

Trends facing the manufacturing industry

The Department of Regional Development, Manufacturing and Water guided by the expert assistance of the Manufacturing Ministerial Council, has developed a range of new strategies and actions that will be implemented over the next five years to align with key trends and new opportunities facing our manufacturing industry.

These trends and opportunities mean that our manufacturers will need to become even more agile and responsive and rise to challenges by diversifying into new markets.

Key identified trends and opportunities



Building manufacturing excellence through Advanced Manufacturing systems including automation and digitisation to transform Queensland's value chains.



Showcasing Queensland's world-class manufacturing capability to local, interstate and global stakeholders to establish opportunities for participation in global value chains.



Carbon neutrality and sustainability targets will reshape manufacturing as the world limits the impact of climate change.



Building the capability of our manufacturers will help Queensland companies benefit from large scale opportunities such as the 2032 Olympic and Paralympic Games.



Encouraging and retaining women in manufacturing. Women are under-represented in Queensland's manufacturing sector and especially under-represented in technician and trades roles (11% of the workforce are women) and in machinery operators and drivers' roles (13%) but over-represented in Clerical and Administrative roles (77%) and Community and Personal Service (67%) roles.



Strategy 1: Drive advanced manufacturing in Queensland		2022–2023	2023–2024	2024–2025	2025–2026
Actions	Outcome				
1. Deliver an extra \$40 million under the Made in Queensland Grant Program and an extra \$10 million under the Manufacturing Hubs Grants Program	<ul style="list-style-type: none"> Increased adoption of Industry 4.0 and 5.0 across the manufacturing sector to increase global competitiveness Increased investment in technology and skills to enable the adoption of automation, digitisation and robotics Local manufacturers are competitive and sustainable 	✓	✓		
2. Ensure ongoing capability and service delivery is provided to Queensland’s regional manufacturers through permanent establishment of the regional manufacturing hubs	<ul style="list-style-type: none"> Queensland’s regional manufacturers continue to receive the services offered by the hubs, remain nationally and internationally competitive, and take advantage of growth opportunities 	✓	✓	✓	✓
3. Target manufacturing services to support manufacturers in adopting key advanced manufacturing processes: including Lean Manufacturing and Industry 4.0 and 5.0 programs and workshops	<ul style="list-style-type: none"> Increase the digital literacy of manufacturers resulting in an increase in the adoption of advanced manufacturing, automation and digitisation Queensland’s manufacturing workforce is upskilled to support business and employment growth 	✓	✓	✓	✓
4. Through Manufacturing Skills Queensland and the Manufacturing Hubs, identify and deliver the future key skills required for manufacturers	<ul style="list-style-type: none"> The Queensland manufacturing industry provides diverse and technology-rich careers 	✓	✓	✓	✓

Strategy 2: Support manufacturers to grow in a carbon neutral future		2022–2023	2023–2024	2024–2025	2025–2026
Actions	Outcome				
1. Deliver a Battery Manufacturing Framework to support the delivery of the Queensland Battery Industry Strategy	<ul style="list-style-type: none"> Development of a local battery manufacturing supply chain to support commercial-scale domestically built batteries Establish Queensland as the preferred location for battery manufacturing 	✓	✓		
2. Develop and deliver Queensland’s Zero Emission Vehicle Industry Roadmap for manufacturing and supply chains	<ul style="list-style-type: none"> Local manufacturing of products to support Queensland’s Zero Emission Vehicle Strategy 2021–2031 	✓	✓		
3. Build capability and capacity for manufacturers to participate in supply chains to manufacture renewable energy technologies (including components for wind, solar and battery technologies, network infrastructure and hydrogen)	<ul style="list-style-type: none"> Increased local manufacturing of products to address carbon neutrality and enhance sustainability 	✓	✓	✓	✓
4. Deliver training and support programs that assist manufacturers to move to carbon neutrality and environmental sustainability	<ul style="list-style-type: none"> Manufacturers increasingly adopt carbon neutral and sustainable manufacturing systems and practices Manufacturers minimise the carbon footprint in the manufacturing process 	✓	✓	✓	✓





Strategy 3: Support manufacturers to take advantage of large-scale and emerging industry and procurement opportunities		2022–2023	2023–2024	2024–2025	2025–2026
Actions	Outcome				
1. Drive local manufacturing opportunities through the forward procurement pipeline for the 2032 Olympics and Paralympics	<ul style="list-style-type: none"> Determine opportunities for locally manufactured products to be supplied to the 2032 Olympics and Paralympics Provide advice about procurement opportunities to local manufacturers to enable them to participate in major procurements 	✓	✓	✓	✓
2. Increase the participation rate of local manufacturers in government procurement	<ul style="list-style-type: none"> Adoption of a commitment statement for manufacturing in the updated Queensland Procurement Policy (QPP) Prioritisation of key manufacturing sectors to maximise local manufacturing opportunities Increased Queensland government procurement of locally manufactured products 	✓	✓		
3. Identify and support targeted sectors of specialisation and build manufacturing capabilities in these sectors. Targeted sectors include renewables, rail manufacturing, metal fabrication and other identified emerging sectors	<ul style="list-style-type: none"> Increase Queensland manufacturing capabilities in the targeted sectors 	✓	✓	✓	✓
4. Use mechanisms such as the Industry Capability Network to connect suppliers — especially in regional Queensland — to major projects	<ul style="list-style-type: none"> Local manufacturers are connected in the early stages as suppliers to major projects Increased participation rate of local manufacturers awarded tenders of major projects and promotion of these opportunities 	✓	✓	✓	✓

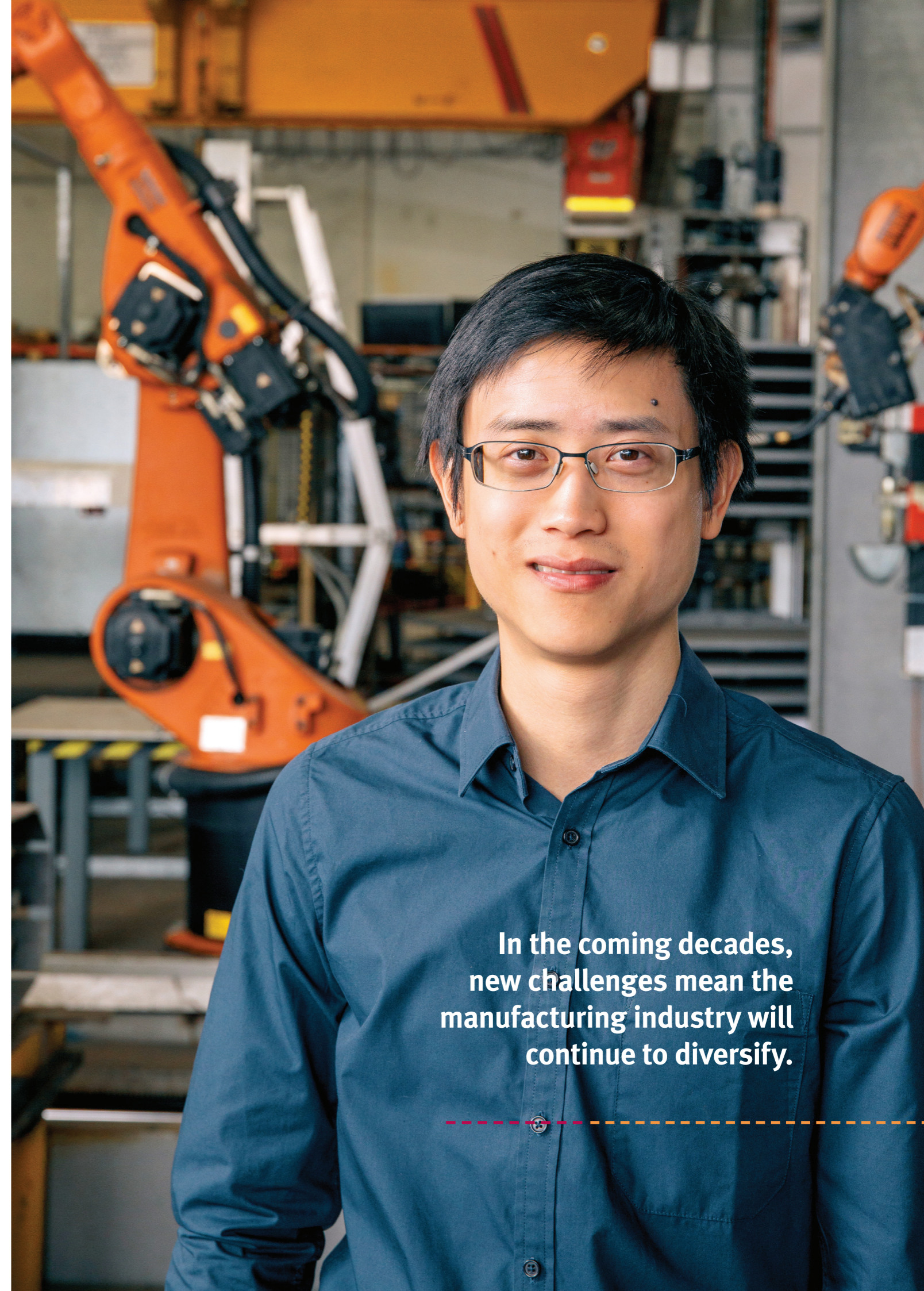
Strategy 4: Increase the participation of women in manufacturing		2022–2023	2023–2024	2024–2025	2025–2026
Actions	Outcome				
1. Develop the Women in Manufacturing Strategy to attract, assist and retain women entering the manufacturing industry, including training, networking and a range of events to support women in achieving their career aspirations	<ul style="list-style-type: none"> Increased number of women in manufacturing jobs throughout Queensland to increase diversity, innovation and equality in the sector Increased number of women in manufacturing supporting roles (ie. technicians and trade workers, and machinery operators) 	✓			
2. Continue the Women in Manufacturing seminar series and expand the program throughout regional areas	<ul style="list-style-type: none"> Develop future women leaders throughout the sector, promoting manufacturing as a viable and attractive career path for women 	✓	✓	✓	✓
3. Support mentoring programs across the state to connect women in the industry with key role models and leaders across the globe	<ul style="list-style-type: none"> Develop future women leaders throughout the sector, promoting manufacturing as a viable and attractive career path for women 		✓	✓	✓
4. Promote manufacturing-related training and educational opportunities to women, including STEM initiatives (science, technology, engineering and maths), as essential skills for women to follow a career in manufacturing	<ul style="list-style-type: none"> Increased employability of women in manufacturing through better skilling of women 		✓	✓	✓



Strategy 5: Marketing Queensland manufacturing		2022–2023	2023–2024	2024–2025	2025–2026
Actions	Outcome				
1. Develop and implement a positioning strategy to cement Queensland’s recognition as a global Advanced Manufacturing Hub by the World Economic Forum	<ul style="list-style-type: none"> Increased local, national and international profile of Queensland as a global Advanced Manufacturing Hub to grow investment Increased understanding and confidence in Queensland manufacturing, including the capability of Queensland manufacturers to participate in diverse supply chains Increased awareness in the broader Queensland community of the wide range of products manufactured in Queensland, the value of manufacturing to Queensland’s economy and the benefits of “buying Queensland” 	✓	✓		
2. Showcase manufacturing through linkages to education to target audiences as an exciting and diverse career path to raise participation in the sector	<ul style="list-style-type: none"> Growth in employment in manufacturing 	✓	✓	✓	✓
3. Leverage the World Economic Forum to drive Queensland’s position as an innovative, futuristic manufacturing hub with diverse capability	<ul style="list-style-type: none"> Queensland is increasingly recognised as an advanced manufacturing hub and a destination for companies to establish themselves, expand and utilise the state’s manufacturing expertise 	✓	✓	✓	✓

Note: The Battery Manufacturing Framework, Queensland’s Zero Emission Vehicles Industry Roadmap, the Women in Manufacturing Program, and the Positioning Strategy will be developed in the initial 2022–23 year.

Subsequent actions will be delivered in the outyears.



In the coming decades, new challenges mean the manufacturing industry will continue to diversify.



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