

Working towards a globally competitive manufacturing sector

Tasmanian Advanced Manufacturing Action Plan



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Message from the Minister for State Growth

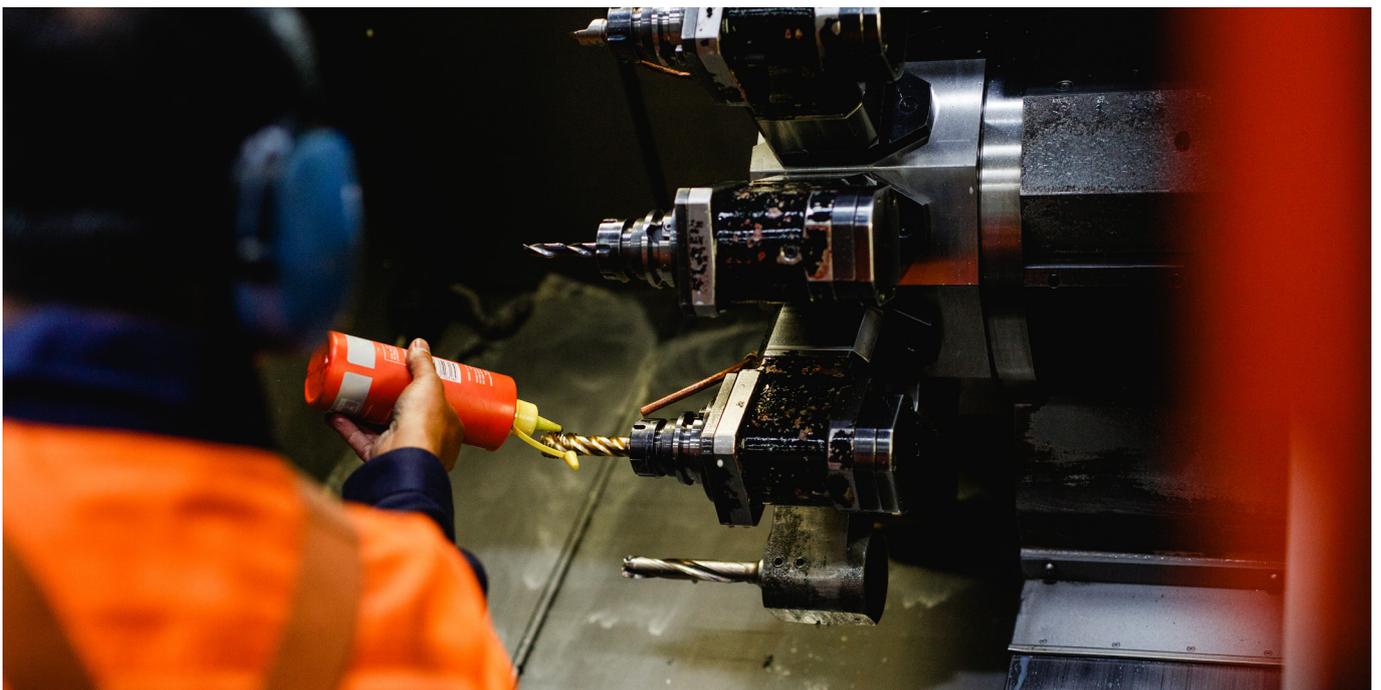


Tasmania proudly supports manufacturing and our state has a long history of manufacturing innovation and achievement.

The Tasmanian Government recognises the significance of the sector in the Tasmanian economy, and its future potential, and in May 2015 I hosted the first statewide Advanced Manufacturing Summit.

While the sector has faced challenges, I have found through my engagement with firms operating in the sector that it is resilient and there are many reasons to be optimistic. Many of our manufacturing enterprises are exploring and securing new opportunities and markets, seeking growth in an ever-changing, globally competitive sector.

The Advanced Manufacturing Summit attracted over 160 industry representatives and stakeholders, and presented an opportunity for industry and the Government to progress the shared goal of securing a strong, sustainable and globally competitive future for advanced manufacturing in Tasmania.



At the Summit the Government committed to developing an action plan to support the sector. Since that date the Government has undertaken extensive engagement with the sector to develop an industry led *Tasmanian Advanced Manufacturing Action Plan*.

The message from businesses has been clear. They want greater collaboration, representation and support through a single, statewide industry association; they want better promotion of Tasmania's design and manufacturing capabilities; they seek to improve research and technological capabilities within the sector and - with the ever increasing role that science and technology plays in manufacturing - the need to access a skilled workforce is ever-growing in importance.

In response to broad consultation, the Government and industry has developed a five-year Tasmanian Advanced Manufacturing Action Plan outlining 15 key actions against five key initiatives. The broad objective of the plan is to help facilitate growth and transition the sector to being more globally competitive.

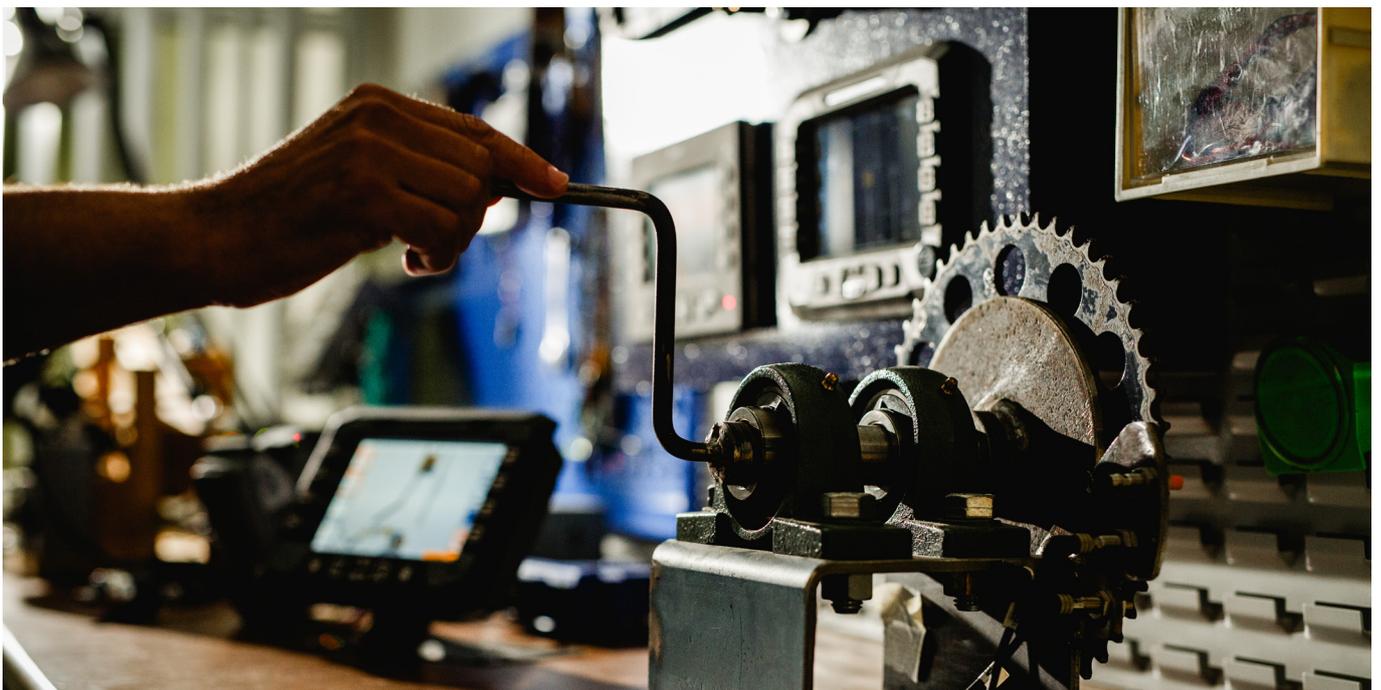
While this Action Plan identifies a pathway in which the Government can support the sector, it is the sector itself that is ultimately the master of its own destiny and that pursues opportunities that will enable it to survive and grow.

I am committed to working with the advanced manufacturing sector to achieve its full potential and believe that there is a bright future for advanced manufacturing in Tasmania.



Matthew Groom

Minister for State Growth



Executive summary

The five year Tasmanian Advanced Manufacturing Action Plan provides a pathway to enable growth in the advanced manufacturing sector and will deliver initiatives across five key areas to support that growth.

- Support innovation and continuous improvement.
- Support greater collaboration within and outside Tasmania.
- Develop industry required education and skills.
- Support market access activities.
- Raise the profile and create a brand for the Tasmanian advanced manufacturing industry and the firms within it.

The Action Plan was developed after extensive consultation with businesses and stakeholders and is committed to:

- creating a brand and raising the sector's profile
- opening up new market opportunities
- delivering an education system and skills training that will be focused on better servicing the sector.

Ultimately, the sector itself will undertake those activities and pursue those opportunities that enable it to survive and grow. Government plays an important role in assisting that growth by:

- encouraging a framework and environment that is conducive to supporting manufacturing enterprises
- providing targeted assistance to tackle identified issues and encourage behaviours and knowledge acquisition to accelerate growth and
- seeking new opportunities for the sector in export markets and through investment attraction.

Advanced manufacturing for the purposes of this Action Plan is defined as:

Those manufacturing businesses that utilise continuous improvement, enhanced skills, new technologies, and design and systems integration in order to drive innovation and growth throughout the value chain. Advanced manufacturers ensure that customers receive the best quality, cost and delivery (QCD) in products and services. Small to medium advanced manufacturers aim to deliver high value, niche and customised premium products and services in low to medium volume supply chains.



Facts

Worldwide, manufacturing is growing, not shrinking, including in many first world, high-wage countries.

Manufactured goods account for two-thirds of merchandise in world trade, worth \$12 trillion in 2015. *World Trade Organisation, International Trade statistics 2015, Table 11.1*

Australian manufactured products accounted for \$100 billion in export sales in 2015, or 40% of total Australian exports. *ABS catalogue 5368.0*

The supporting supply chain purchases totalled \$250 billion in 2012-13. *ABS catalogue 5209.0.55.001* — calculated by Jim Stanford in *Manufacturing (Still) Matters*.

Manufacturing is the biggest spender on applied research and innovation at \$4.8 billion in 2013-14 and is the key driver of productivity improvement, with significant spill-over effects into the rest of the economy.

The number of Tasmanian manufacturing businesses reported by ABS in 2013 was 1 649.

In 2014-15 manufacturing represented 7.4% of Tasmania's Gross Value Added and in 2016 represents 7.7% of total employment.

Manufacturing's share of total employment in Tasmania's north-west is 12.2%, followed by the north at 10.1%, south east at 7.9% and Hobart at 6.4%.

Actions to achieve a globally competitive manufacturing sector

Global structural change has impacted the Tasmanian economy over the past 10 years and this was widely discussed at the 2015 Tasmanian Advanced Manufacturing Summit. However, it was clear at the Summit that there is an eagerness to forge forward and adapt, strengthen and grow the Tasmanian sector. The enthusiasm to refocus and improve products, processes and services is evident in all sector engagement.

Many within the sector believe there is an abundance of opportunities. The issue is how to capitalise on them. It is not always a single-firm opportunity and there needs to be a mechanism which allows the sector to engage and collaborate. The Tasmanian Government is currently encouraging real opportunities for the Tasmanian industry as a collective.

Examples include actively supporting Tasmanian firms to pursue opportunities in the Defence sector through manufacture and supply, as highlighted in *Our Fair Share of Defence* and through supporting the Metro Bus Infrastructure Capital initiative.

The Advanced Manufacturing Action Plan and the recently released *Our Fair Share of Defence Strategy* are intentionally closely linked with each other. Advanced manufacturing is a crucial sector in defence participation.

Some key activities under the Defence Strategy include establishing an industry support service within the Department of State Growth to support Tasmanian business participation in defence procurement; supporting the development of the specialist skills and training required for defence; supporting Tasmanian businesses to attend defence trade events; encouraging relationships between Defence Primes and Tasmanian businesses; and appointing a defence consultant to assist the development of Tasmanian bids under defence procurement processes and to develop appropriate networks between businesses involved in those bids.

It is anticipated that this assistance will be utilised by businesses within the Advanced Manufacturing sector.

Tasmania's advanced manufacturing sector is expected to keenly participate in the manufacturing tenders for this initiative, the single biggest public transport investment in Tasmania's history, the accelerated replacement program for a fleet of 100 new Metro Tasmania buses.

The Tasmanian Government has allocated \$4.5 million a year over the next four years to Metro Tasmania to implement this Initiative. The new buses manufactured are expected to be technologically advanced, with improvements in environmental emissions and fuel economy and ensure that the entire Metro bus fleet is compliant under the Disability Discrimination Act.

Metro Tasmania will advertise soon for Expressions of Interest, providing an opportunity for the advanced manufacturing sector in Tasmania to bid for the fabrication and building of new buses, likely in conjunction with an industry leading national bus supplier.

Initiative I: support innovation and continuous improvement within the sector

Key focus areas:

- improving understanding of advanced manufacturing and its requirements
- a strong need for greater collaboration both within the sector and with other stakeholders
- greater assistance and incentives to assist businesses to transition to become advanced manufacturers
- strong desire for knowledge about how to innovate, processes and systems to ensure innovative practices
- offering suitable quality training as required by the sector.

Manufacturing is the most important source of innovation in the economy. It supports higher-than-average productivity growth and good jobs. It contributes disproportionately to overall Tasmanian exports. It supports supply chains reaching throughout regional areas of Tasmania and underpins thousands of jobs in other sectors, including services. The benefits of a strong advanced manufacturing sector are intrinsic to the health of the Tasmanian economy.

As a sector, advanced manufacturing is recognised as the most innovation-intensive part of our economy. No other sector utilises as much innovation, technology, robotics and other advanced knowledge.

In the most recent national statistics (2013-14) the Australian manufacturing sector spent \$4.8 billion on research and development, with almost five percent of manufacturing GDP put back into innovation: four times the economy-wide average and even higher than innovation-intensive professional and scientific services.¹

Tasmanian Government will support the growth of the advanced manufacturing sector through continuing to encourage and support innovation activities through the following actions.

Action 1	Deliver an Innovation and Growth Voucher system to support industry in undertaking continuous improvement and innovation.
Action 2	Deliver and support specialised manufacturing events focused on areas of continuous improvement including, but not limited to, Lean tools, visual management, theory of constraints, design integration, technology demonstration and diffusion.
Action 3	Promote and develop Tasmania's manufacturing capacity and capability through hosting Insights into Excellence Programs - visiting exemplar local, national and international firms to view best practice examples of products, processes and procedures and research and innovation institutes that demonstrate latest technology and innovation in the sector.

The Department of State Growth has commenced early stage discussions with key stakeholders to explore the development of a Tasmanian manufacturing hub based in Burnie focused on excellence and innovation.

The Government is also working to improve collaboration with Australia's key science and research stakeholders, Cooperative Research Centres, research and development corporations, universities and other publicly funded research agencies.

1. Business R&D Spending by Sector Australian Bureau of Statistics 8104.0 and 5206.0 as cited by Manufacturing (Still) Matters: Why the Decline of Australian Manufacturing is NOT Inevitable, and What Government Can Do About It By Jim Stanford, Centre for Future Work at the Australia Institute, June 2016 Briefing Paper

By way of example the Department of State Growth, CSIRO, University of Tasmania and local manufacturing representatives are collaborating to foster greater engagement and support for the sector.

In 2015 the University of Tasmania Cradle Coast Campus established the Collab Lab, which is a student facility established on the new West Park campus to experience 'hands-on' an array of new design technologies.

In August 2015, a round table discussion was held between stakeholders to work towards greater involvement between Tasmanian advanced manufacturers and CSIRO resources, including greater cooperation with manufacturing flagship activities such as Lab22 and the Queensland Centre for Advanced Technologies (QCAT).

In March 2016 a second round table provided opportunity for more extensive sector engagement. This coincided with the Industrial Manufacturing and Technology Showcase which had in excess of 160 representatives in attendance from the sector, key stakeholders, and government agencies.

In June 2016 an Insights into Manufacturing Excellence tour was conducted in Victoria, involving a 35-person delegation representing 13 major Tasmanian manufacturing firms and several key support industry stakeholders. The tour offered the opportunity to visit exemplar businesses and consortia, along with research and development facilities.

Initiative 2: support greater representation, collaboration and support

Key focus areas:

- a state-wide peak body to represent and support the sector
- a strong desire to increase collaboration amongst industry and manufacturing stakeholders
- identify opportunities to collaborate , for example cost effective logistics
- shared opportunities for growth, and for knowledge acquisition and transfer.

There has been no common association in Tasmania to represent the sector and assist it to collaborate.

The sector expressed a strong need to have its own association to support and represent it.

Government cannot simply create clusters but it can facilitate their emergence through initiatives like public-private networks and institutes, support for sector-wide research and skills development, and measures to better connect public research assets like the University of Tasmania (UTAS) and CSIRO with industrial applications.²

The Tasmanian Government is committed in this Action Plan to three major actions under this initiative.

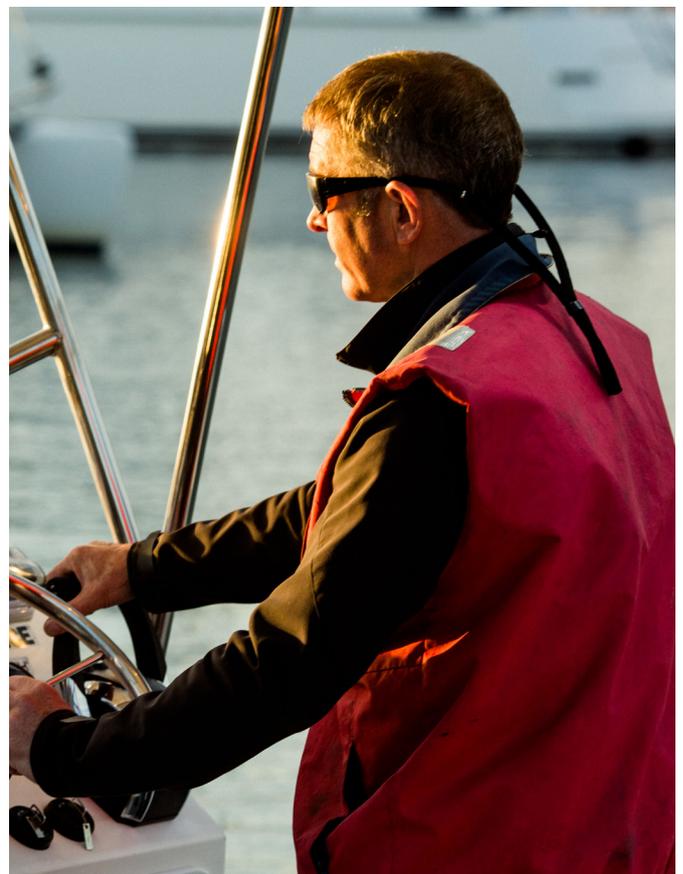
Action 4	Seed funding for two years to support the establishment of a single, statewide industry-led association. This association will help link businesses through new opportunities and diversification, as well as a focus on enhancing the capability that already exists and maximising the existing capacity within the sector to advance the needs of all manufacturers.
Action 5	Establish an industry hub based at Burnie - the Tasmanian Manufacturing Centre for Excellence.
Action 6	Support the Metro Upgrade and Modernisation Program. An opportunity to manufacture and supply 100 metro buses for Tasmania with a view to having the buses assembled or manufactured in Tasmania, and provide opportunities for local businesses to supply customisation and fit-out work.

2. Manufacturing (Still) Matters: Why the Decline of Australian Manufacturing is NOT Inevitable, and What Government Can Do About It By Jim Stanford, Centre for Future Work at the Australia Institute, June 2016 Briefing Paper

The intention of the hub is to develop a collaborative space that would provide both a virtual and a physical facility for SMEs that:

- provides a platform for establishing a Tasmanian manufacturing network that supports industry cohesion and collaboration (supporting Initiative 1)
- supports the creation of new business models, supports clusters, improves business processes and reduces costs and risks (supporting Initiative 1)
- provides a platform for a manufacturing futures think tank that supports ideas for continuous business improvement (supporting Initiative 1)
- provides a platform for those firms seeking to develop opportunities into Defence as individual firms or as a collective
- supports the development of industry supply chains into new product manufacturing like the Metro upgrade and modernisation program, an opportunity to manufacture and supply 100 metro buses in Tasmania for Tasmania.
- provides access and strengthens collaboration between research organisations, education providers, businesses and government - with national and global reach
- links to national research institutes including CSIRO's Lab22 and the Queensland Centre for Advanced Technologies
- links the Tasmanian sector with the Advanced Manufacturing Growth Centre and the Cooperative Research Centre and/or other future Australian Government initiatives.

The Government will commit support for three years by providing space at the former TasTAFE facility in South Burnie to house the hub in the centre of the regional manufacturing precinct. The Department of State Growth and Department of Education will work together to support the initiative.



Initiative 3: develop industry required education and skills

Key focus areas:

- developing a skilled workforce - availability and training: adequacy, cost and relevance
- improving the general standard of literacy and numeracy amongst school leavers
- develop awareness and skills in Lean and STEM into all levels and grades of education
- improved opportunities for quality trade training, incorporating modern skills required by advanced manufacturing, for example design
- strong need for sector-led education and training.

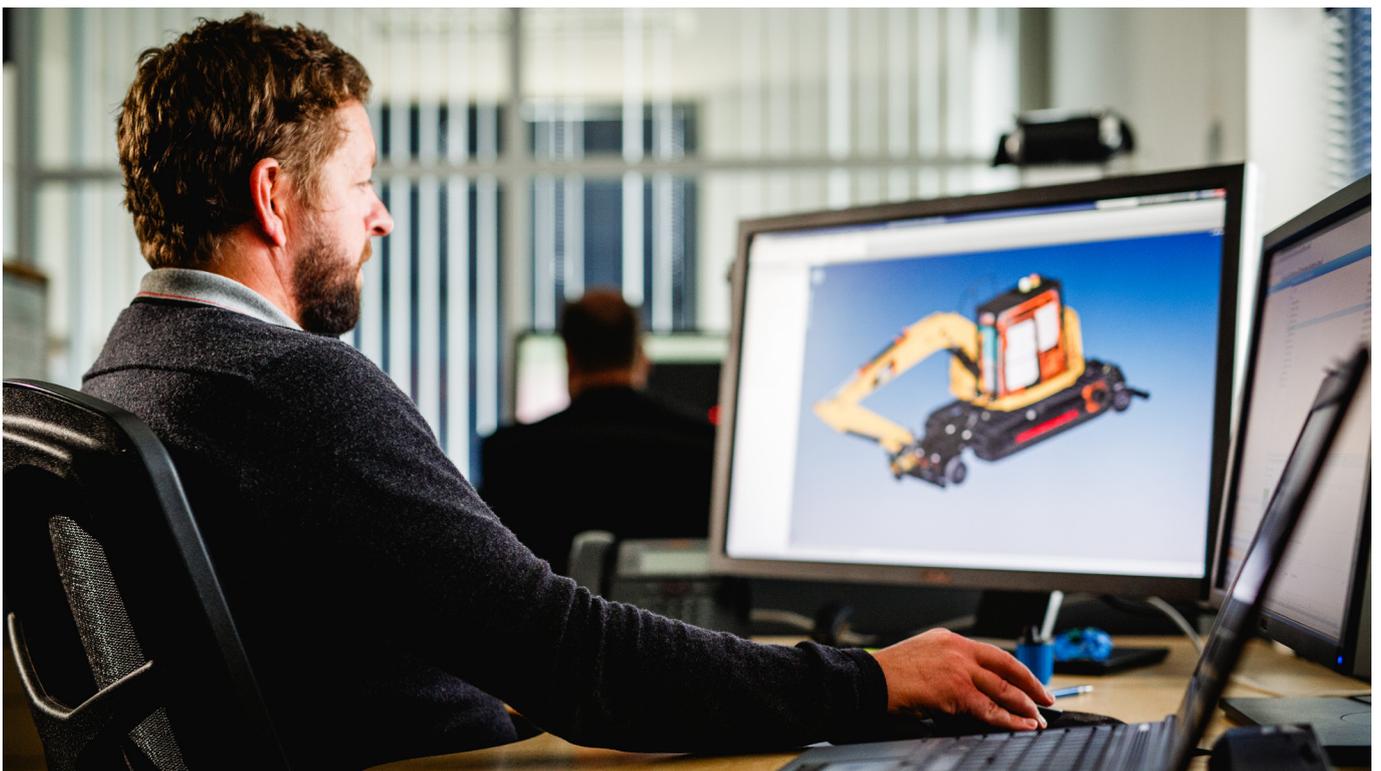
The importance of skills training will only increase as more firms transition to advanced manufacturing operations.

There are a number of highly regarded examples of Tasmanian programs for improving skills within the workforce, including the Skills Tasmania Business Action Learning Tasmania (BALT) program, the UTAS Lean Learning Pathway program, the Cradle Coast Campus' Collab Lab and potential TasTAFE/UTAS industry aligned Associate Diplomas.

It is acknowledged that training workers does not create the jobs to use those skills. However, in advanced manufacturing, enhancing future skills and capabilities of workers is key to supporting future sector strategies.

The Government can provide support to the sector by ensuring;

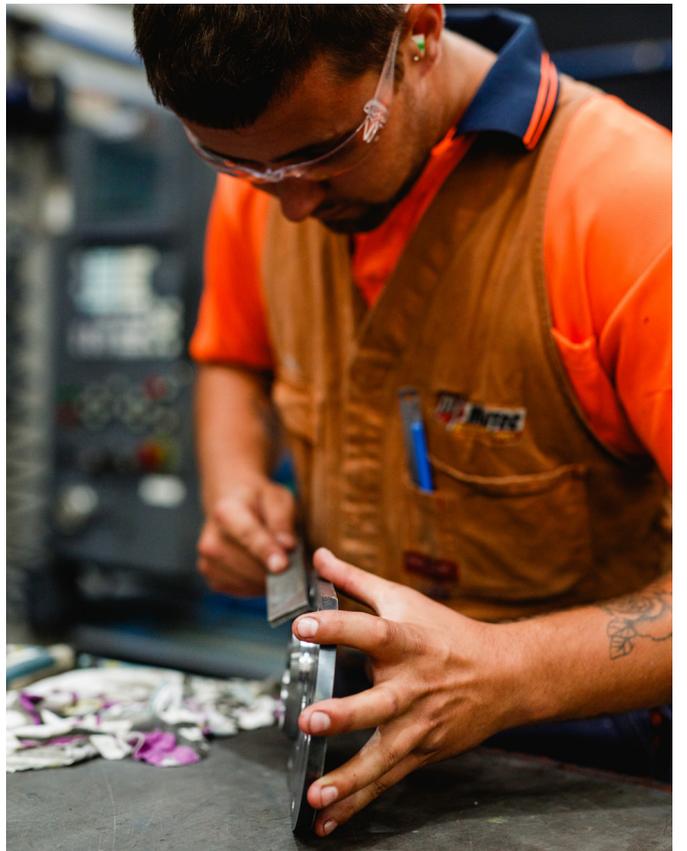
- consistent funding for skills training at all levels including STEM and technical skills in schools, stable and accessible vocational training programs, and support for lifelong learning; and
- through Skills Tasmania, the Government is focusing effort on developing and linking workforce development plans to supply of relevant training programs.





Sector-specific skills and training development support by the Government for growth of the advanced manufacturing sector will be delivered through the following actions.

<p>Action 7</p>	<p>The Skills Tasmania Advanced Manufacturing Skills Initiative.</p> <p>The initiative provided \$250 000 in 2015-16 for the advanced manufacturing sector to allow relevant and appropriate workforce development, skills and training.</p> <p>The initiative supported Registered Training Organisations, in partnership with advanced manufacturing businesses, to deliver accredited training to enable innovation, competitiveness and growth. Skill priorities were:</p> <ul style="list-style-type: none"> • continuous improvement • leadership and management • competitive (Lean) systems and practices • information technology and business system integration • development of new business opportunities.
<p>Action 8</p>	<p>A tailored program in Business/Design and Technology: creating options for a Pathway to an Associate Degree at the UTAS Cradle Coast Campus for students who currently would not have access to training outside their region of employment.</p>
<p>Action 9</p>	<p>Career development pathways through Skills Tasmania that will support the development of a more diverse skills base and will better align with the needs of businesses competing in global and niche advanced manufacturing markets.</p>



Initiative 4: support market access activities

Key focus areas:

- market access assistance required – new markets, tenders, etc
- support product development, for example offer industrial design
- freight logistics appropriate to access global markets.

Many Tasmanian manufacturers are interested in exploring new markets outside Tasmania. The need to expand markets has been intensified by the contraction of Caterpillar's Burnie operations. Market penetration activities can be time consuming and expensive. However, they are imperative to ensure customer diversification and enable businesses to survive and grow.

Austrade promotes Australian exports. However the Tasmanian Government can play a role in supporting local businesses in market access activities both nationally and internationally and leverage Tasmanian participation in global supply chains.

The Tasmanian Government will assist businesses to develop new markets through the following actions.

Action 10	<p>Deliver a Manufacturing Market Expansion Program aimed at enabling more Tasmanian manufacturers to undertake market development activities to establish new interstate and international markets.</p> <p>This action complements Action 3, offering opportunities to meet new customers and suppliers through Industry Insights into Excellence tours and coordinating international industry trade missions to promote Tasmania's manufacturing capacity and capability.</p>
Action 11	<p>Provide ongoing client management support to enterprises funded under the \$2 million Advanced Manufacturing Transition Fund and the Australian and Tasmanian Government's \$24 million Tasmanian Jobs and Investment Fund, to ensure new product developments capitalise on growth opportunities in new markets outside Tasmania.</p> <p>The Advanced Manufacturing Transition Fund was delivered under Caterpillar Transition Taskforce funding and is expected to create 116 manufacturing jobs in the north and north west regions of Tasmania.</p>

Initiative 5: raise the profile and create a brand for the Tasmanian advanced manufacturing industry and the firms within it

Key focus areas:

- understand and promote existing industry capacity and capability
- a strong desire to lift the profile and brand for the Tasmanian advanced manufacturing industry both within and outside Tasmania
- greater access to brand and marketing information and resources
- celebrate successes and tell the stories.

The Government will develop a targeted communication plan and marketing campaign to promote Tasmania's manufacturing capacity and capability.

These actions complement the Manufacturing Market Expansion Program outlined in Action 10.

<p>Action 12</p>	<p>Undertake an industry audit to gather, collate and understand the capability and capacity of the Tasmanian manufacturing sector</p> <p>The audit will also feed into Austrade's Changing Environment for Australian Advanced Manufacturing initiative, which is a national approach at Commonwealth and State levels to develop an inventory of Australian manufacturing capability to respond to disruptive changes taking place in global manufacturing and the need for the Australian advanced manufacturing sector to be able to adjust and respond (supporting Initiative 4).</p>
<p>Action 13</p>	<p>Develop an online presence utilising the data gathered from the industry audit to create a dedicated online presence designed for, and owned by, the sector. This web portal would provide a channel to improve communication; encourage collaboration; raise awareness of assistance, services, facilities and activities; and showcase major projects and successes for the sector (supporting Initiative 4).</p>
<p>Action 14</p>	<p>Produce a Tasmanian advanced manufacturing sector promotional video for use by the sector and government to promote Tasmania's manufacturing capacity and capability (supporting Initiative 4).</p>
<p>Action 15</p>	<p>Develop and host relevant interstate and international trade missions and support or represent at key strategic tradeshows with the intent to access new and grow existing markets (supporting Initiatives 1,2, and 4).</p>



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