

Process Manufacturing, Recreational Vehicle and Laboratory Industry Reference Committee

Skills Forecast and Proposed Schedule of Work 2019–2023



Administrative Information

Name of Industry Reference Committee (IRC):

Process Manufacturing, Recreational Vehicle and Laboratory (PMRVL)

Name of Skills Service Organisation (SSO):

Innovation and Business Skills Australia (IBSA Manufacturing)

About the Industry Reference Committee

The **Process Manufacturing, Recreational Vehicle and Laboratory Industry Reference Committee** comprises nine members and was constituted in April 2017.

The 2019 Industry Skills Forecast and Proposed Schedule of Work was reviewed and approved by the membership below:

Mr Keith Monaghan (Chair)

Mr Ian Curry

Mr Stuart Lamont

Ms Leah Simmons

Ms Julie Warren

Mr Nigel Haywood

Mr Han Michel

Mr Grahame Aston

About the Skills Forecast

The Industry Reference Committee (IRC) Skills Forecast and Proposed Schedule of Work identifies priorities for training package development work to meet the needs of industry. This document is based on research, analysis and consultations with IRC members and industry stakeholders and provides evidence of current and emerging industry skills needs within the Plastics, Rubber and Cablemaking industry.

Industry Reference Committee Signoff

This 2019 return of the Process Manufacturing, Recreational Vehicle and Laboratory IRC Skills Forecast and Proposed Schedule of Work for the PMB Plastics, Rubber and Cablemaking Training Package was agreed as the result of a properly constituted IRC decision and was approved by:

IRC Chair: Keith Monaghan

Date: April 2019

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This IRC Skills Forecast and Proposed Schedule of Work has been prepared on behalf of the PMRVL Industry Reference Committee for submission to the Australian Industry and Skills Committee (AISC).

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Executive Summary

Plastic, rubber and cabling manufacturers in Australia typically make one of two different types of products:

- high volume, lower cost, standardised products (typically for the building industry, medical industry and in the production of items like plastic packaging, e.g. plastic bottles and recyclable plastic bags)
- low volume, higher cost, niche products with a high degree of technical specificity and often supplying to the electrical and mining sectors.

The majority of businesses in the plastics, rubber and cabling industry are plastics manufacturers, comprising nine out of every ten businesses.

Training enrolments have declined dramatically since 2014; however, industry stakeholders are confident that with a new PMB Plastics, Rubber and Cabling Training Package, new skills will enhance workers' capabilities and the industry will benefit from training that is work-appropriate.¹

As IBSA Manufacturing undertakes the review of the PMB Plastics, Rubber and Cabling Training Package, there are no priorities for 2019–2023 or any specific Case for Change to put forward in this Skills Forecast and Proposed Schedule of Work.

Training Package Priorities

Due to the work underway on the *Skills for the Polymer Industry* project, which involves the redevelopment of all qualifications and units in the PMB Plastics, Rubber and Cabling Training Package, the Process Manufacturing, Recreational Vehicle and Laboratory IRC has agreed that a Proposed Schedule of Work not be submitted for this return of the Industry Skills Forecast.

¹ In November 2017, the Process Manufacturing Recreational Vehicle and Laboratory Industry Reference Committee (IRC) signed off on the PMB Plastics, Rubber and Cabling Training Package: Case for Change, to review five polymer qualifications and 178 related units of competency. It is also known as the Skills for the Polymer Industry project.

Sector Overview

The Plastics, Rubber and Cablemaking (PRC) industry in Australia is increasingly focused on polymer product (plastic) manufacturing. Collectively, rubber and cablemaking manufacturers comprise only one in every 10 businesses in the sector.

The most significant sub-sector within the industry is plastics, which comprises almost nine out of every ten businesses in the sector. Due to the versatility, durability and low cost of plastic products compared to products from alternative materials,² there are many sub-sectors that manufacture plastics, including:

- Key items manufactured using polymer films and sheets, including plastic packaging such as plastic bags, thin plastic films, food wrapping, garbage bags and bubble wrap packaging.
- Polymer filler products, which are used to fill wall cavities, insulate walls and ceilings,³ and cushion swimming pools and spas.⁴
- Fibreglass products used in boat building and repair, swimming pools and (until recently in Australia) motor vehicle assembly.⁵

In the cablemaking sector, companies manufacture fibre optic cables rather than, or in addition to, electric or telephone cable, wire or strip. Fibre optic is now the preferred method for network communication. As well as being used for internet and telephone transmission, a range of other industries such as medical surgery, dentistry, lighting decorations and illuminations have all benefitted from the technology.

Looking across the sector, businesses are under significant threat from lower cost imports, for those involved in higher volume production. In addition, many businesses are being impacted by technological change and are looking to introduce new technologies to deal with competition. Electricity costs are a significant cost driver.

The PRC industry is diverse with a broad range of business sizes and people employed.

² World Economic Forum, Ellen MacArthur Foundation and McKinsey & Company, The New Plastics Economy – Rethinking the future of plastics (2016, <http://www.ellenmacarthurfoundation.org/publications>), p 24.

³ Hayley Munro-Smith, 'Floored: The rapid decline of motor vehicle manufacturing has hindered revenue growth' (IBISWorld Industry Report C1919a, January 2018), p 11.

⁴ James Mullaly, 'Uninsulated: Rising input prices and declining industry revenue have increased competition' (IBISWorld Industry Report C1913, September 2016), p 2.

⁵ James Mullaly, 'Stalling: The demise of Australian motor vehicle manufacturers is constraining industry demand' (IBISWorld Industry Report C1919b, January 2017), pp 11–12.

Contribution to the Australian Economy by the PRC Industry



54,500

People employed in 2018

Source: ABS 6291.0.55.003 Labour Force, Australia, May 2018.



3,454

Number of businesses

Source: ABS 8165.0 Counts of Australian Businesses, including Entries and Exits.



Business locations

NSW	1,057	SA	227
VIC	1,199	TAS	53
QLD	710	ACT	14
WA	367	NT	17

Source: ABS 8165.0 Counts of Australian Businesses, including Entries and Exits.

A key driver, therefore, in commencing work on the *Skills for the Polymer Industry* project is the decline in rubber manufacturing and cabling in Australia since 2010 (albeit, employment figures have rebounded in the cabling sector in the last 12 months).

Notwithstanding these changes, the PRC industry remains important within the context of the broader Australian manufacturing sector.⁶



\$72.358 Billion Sales and Service Income

The PMB Plastics, Rubber and Cabling Training Package covers the following segments of the manufacturing industry:

- Basic Polymer Manufacturing
- Polymer Product Manufacturing
- Natural Rubber Product Manufacturing
- Electric Cable and Wire Manufacturing.

⁶ Australian Bureau of Statistics, 2018, 8155.0 – Australian Industry, 2016–2017 (released 25 May 2018) – Manufacturing industry dataset.

There are five qualifications in the PMB Plastics, Rubber and Cablemaking Training Package, ranging from Certificate II to Advanced Diploma.

Further details on enrolments in these qualifications are provided in the [Training Snapshot](#) section of this report.

There are a number of roles in the plastics, rubber and cablemaking industry. Work is currently being undertaken as part of the Skills for the Polymer industry training package development project to align skill needs and job roles in the industry.

A list of PRC occupations within the four-digit Australian and New Zealand Standard Classification of Occupations (ANZSCO) level framework is available at [Appendix A](#). It should be noted that industry stakeholders have provided feedback that not all PRC process workers are defined within the ANZSCO four-digit analysis.

Despite the following limitations, the data can be useful in highlighting recent trends and when supplemented with qualitative advice from industry, this data helps to develop a useful picture of current and prospective industry conditions.

- There are inherent difficulties in identifying industry and occupational data relevant to each Training Package. This report provides selected data from the Australian Bureau of Statistics (ABS), including counts of Australian businesses and labour force information. This data is based on two hierarchical classification systems – the Australian and New Zealand Standard Industrial Classification⁷ (ANZSIC) and ANZSCO.⁸ A list of ANZSIC and ANZSCO codes that have been identified by key industry stakeholders as relevant to the PMB Plastics, Rubber and Cablemaking Training Package are provided at [Appendix A](#) and [Appendix B](#).
- Furthermore, the ANZSIC and ANZSCO classification systems were introduced in 2006, with minor revisions incorporated into the ANZSCO structure in 2009 and 2013. Industry has noted that some ANZSIC and ANZSCO codes are now outdated and do not represent some emerging industries or occupations. In addition, the classification systems may not be sensitive to localised specialisations.

7 ABS Cat.no.1292.0.55.002 Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 – Codes and Titles.

8 ABS Cat.no.1220.0 ANZSCO – Australian and New Zealand Standard Classification of Occupations, 2013, Version 1.2.

Critical Workforce Challenges and Opportunities

Technological advances in the PRC industry have been rapid. The industry has identified that changes are needed to current Vocational Education Training (VET) qualifications and units so that learners have the skills required by industry. Stakeholders have also acknowledged that there continues to be a need for language, literacy and numeracy (LLN) skills within their current and future workforces.

In addition, while some in the industry claim the training needs of the cabling industry need to be re-thought, as it has now transitioned to an almost exclusively offshore industry,⁹ there is evidence of some re-emergence of the industry, including in Western Australia. This is supported by current employment figures.

In October 2018, the European Union agreed to ban the ten most prevalent 'single use' plastic items such as plastic straws, cotton swabs, disposable plastic plates and cutlery by 2021, and agreement was also reached that 90% of plastic bottles would be recycled by 2025.¹⁰ While these changes still need to be enacted by individual parliaments and there have been no similar moves yet in Australia, it is clear that the plastics industry will need a clear and ongoing focus on environmental issues.

Industry Snapshot

The PRC industry has struggled in recent years due to competition from cheaper imported products. Increasingly, overseas production is done on a scale not typically undertaken by Australian companies. As a result, local businesses struggle to achieve viable profit margins.

The plastics industry in Australia is seen to be divided predominantly into two areas:

- High volume – dominated by large organisations with high volume production supplying the medical industry, building and construction, and packaging (which produces plastic bottles and containers).
- Low volume – consisting of smaller organisations supplying niche products that require high levels of technical specificity. These manufacturers cater to a wide range of industries, and manufacture electrical and mining items and pipes, and other general items.

Almost two-thirds of plastic consumption in Australia is from imported finished and semi-finished goods.¹¹ While the recycling of household kerbside plastics had previously been mainly exported to China, recent regulatory changes in China have prohibited this and put pressure on Australian recyclers.¹² Some local companies have seen an opportunity to manufacture recycled plastic offerings, but this remains a niche market at present.

The number of smaller local enterprises has declined in recent years.

9 Plastics Industry Manufacturers of Australia (PIMA) Training Advisory Committee feedback, September 2018.

10 <https://www.news.com.au/world/breaking-news/eu-moves-to-ban-10-single-use-plastics/news-story/5593f64cad77eb4c94999b3bbb78767c>, accessed 21 October 2018.

11 Kyle O'Farrell, 2016–2017 Australian Plastics Recycling Survey (Victoria: Envisage Works, May 2018) p. 4.

12 B. Spragg, 'China's recycling 'ban' throws Australia into a very messy waste crisis', The Conversation, available from <https://theconversation.com/chinas-recycling-ban-throws-australia-into-a-very-messy-waste-crisis-95522>, accessed on 21 October 2018.

Business Landscape

The PRC industry in Australia is coded within the ANZSIC in Division C Manufacturing. The IRC has selected 11 ANZSIC classes and these are listed at [Appendix B](#).

The number of businesses within the PRC industry, based on the ANZSIC four-digit industry class, are shown in Table 1 below.¹³ The ANZSIC codes focus on polymer *production* classes. An increasing sector of businesses work in plastics converters, or plastics *processing*.¹⁴ Given the breadth of industries plastics converters are working across, workers may no longer be defined in the PRC industry, but are employed outside manufacturing within a polymer-specific role of another industry classification. e.g. Professional, Scientific, Technical Services.

Table 1 – PRC Industry: Number of businesses by largest state and employee type

Industry Sub-sector	Number of businesses at 30 June 2017	% Change from 30 June 2015	Largest states by businesses	Business Type**
Polymer Product and Rubber Product Manufacturing	3,073	-2.01%	Victoria	38% non-employed
			1,017	51% small
			New South Wales	11% medium
			1,011	1% large
Basic Polymer Manufacturing	277	-1.77%	Victoria	34% non-employed
			99	54% small
			New South Wales	11% medium
			74	1% large
Electric Cable and Wire Manufacturing	104	+4.0%	Victoria	23% non-employed
			41	54% small
			New South Wales	22% medium
			41	3% large

Source: ABS 8165.0 Counts of Australian Businesses, including Entries and Exits, Jun 2013 to Jun 2017.

**Small business has been defined as employing 1–19 people, medium business as employing 20–199 and large business as employing more than 200 people.

It should also be noted that there are other definitions of the chemical and plastics industry, which includes ANZSIC 'Class 1709: Other Petroleum and Coal Product Manufacturing' and which, in turn, comprises approximately 150 businesses. Within the VET sector, training for this industry is included in the PMA Chemical, Hydrocarbons and Refining Training Package. Accordingly, data on the size of the industry, in terms of businesses and employees, as reported in this Skills Forecast, is lower than in some industry publications.

¹³ Source: ABS 8165.0 Counts of Australian Businesses, including Entries and Exits, Jun 2013 to Jun 2017.

¹⁴ Definition from European Plastics Converters, <https://www.plasticsconverters.eu/>, accessed 21 October 2018.

Key Industry Stakeholders

The PRC industry has several industry associations within its sectors. Due to the significant investment by the Commonwealth Government into the National Broadband Network (NBN) and the public interest in it, the Commonwealth Government is a stakeholder in the cabling sector, despite the majority of fibre optic cables now being manufactured overseas.

During the past year, plastics have had a higher-than-usual presence in the media and created a greater consciousness with consumers.¹⁵ Key areas of focus have been the removal of plastic (non-renewable) bags from major supermarket companies¹⁶ and continuing campaigns to reduce the number of plastic bottles sold worldwide¹⁷ and the number of plastic straws.¹⁸

Plastics

The main stakeholders, including industry associations and regulators, are:

- Advanced Composite Structures Australia
- Australian Institute of Packaging
- Australian Packaging Covenant
- Chemistry Australia
- Composites Australia
- NSW ITAB, Manufacturing Skills Australia
- NuExpanded Polystyrene Australia
- Plastics News
- Plastics Industry Manufacturers of Australia (PIMA)
- Plastics Industry Pipe Association of Australia
- Queensland Plastics Industry Training Committee (Plastics-ITC)
- Resources Industry Training Council (RITC) WA
- Standards Australia
- The Plastics and Chemical Industries Association.

Rubbers

The main stakeholders, including industry associations and regulators, are:

- Australasian Plastics and Rubber Institute Inc
- National Pollutant Inventory
- NSW ITAB, Manufacturing Skills Australia
- PIMA
- Plastics and Chemical Industries Association
- Plastics-ITC
- RITC WA
- Rubber and Plastics News
- Rubber World
- Vinyl Council Australia.

15 <https://www.news.com.au/technology/science/human-body/plastics-have-entered-human-food-chain-small-poo-study-shows/news-story/81d3383daae87c6429c92bae2803f2c>, accessed 5 November 2018.

16 <https://www.theguardian.com/environment/2018/jun/06/coles-and-woolworths-plastic-bag-ban-and-the-choices-that-remain>, accessed 5 November 2018.

17 <https://www.afr.com/news/world/how-visionary-activists-are-taking-on-the-problems-of-ocean-plastics-20181030-h17awn>, accessed 5 November 2018.

18 <https://www.businessinsider.com.au/plastic-straws-shopping-bag-bans-scale-of-plastic-challenge-2018-11>, accessed 5 November 2018.

Cablemaking

The main stakeholders, including industry associations and regulators, are:

- Australian Cablemakers Association
- Department of Communications and the Arts
- NSW ITAB, Manufacturing Skills Australia
- Plastics-ITC
- RITC WA.

Forecasting Skills Priorities

Stakeholders have indicated that declining enrolments in the PMB Plastics, Rubber and Cablemaking Training Package are due to the composition of the units of competency and qualifications no longer being relevant to meet the needs of industry. The work underway on the *Skills for the Polymer Industry* project is intended to allow for skills priorities to be identified and addressed.

Training Snapshot

In 2017, the typical learner enrolled in a PMB Plastics, Rubber and Cablemaking qualification was:



¹⁹ Source: NCVER VOCSTATS, extracted on 15/08/2018. Note that NCVER state that TVA data reported for 2015 to 2017 are for the most part comparable. The 2014 data may be less complete as this was the first and a transition year – some providers were exempted from reporting and others did not report. Any TVA comparisons to 2014 activity should therefore note that the 2014 data may be less complete – for example, TVA enrolment decreases in 2017 relative to 2014 may in reality be greater than they appear from the reported data.

Training Delivery

A total of 13 Registered Training Organisations (RTOs) have the current PMB Plastics, Rubber and Cablemaking Training Package on their scope; with reach across all states and territories. In 2017, 75% of all enrolments in the PMB Plastics, Rubber and Cablemaking Training Packages were in Queensland, where there is only one private RTO with the qualifications on scope. However, PARTEC Institute is a renowned Centre of Excellence established by the plastics industry and has approval to deliver across five states and one territory.²⁰

Despite PARTEC being located in Queensland, most PRC businesses are located in Victoria and New South Wales, where student enrolments are low.²¹ This may be because small businesses are not accessing VET and/or as a result of the closure of some training facilities in those states.²²

Table 2 – Number of RTOs with nationally recognised qualifications on scope

Qualification name	No. of RTOs with the qualification on scope
Certificate II in Polymer Processing	1 (1 enterprise RTO)
Certificate III in Polymer Processing	10 (6 TAFEs, 2 enterprise RTOs, and 2 private providers)
Certificate IV in Polymer Technology	7 (5 TAFEs and 2 private providers)
Diploma of Polymer Technology	4 (4 TAFEs)
Advanced Diploma of Polymer Technology	0

Source: RTOs approved to deliver this qualification. [Training.gov.au](http://training.gov.au), accessed 7 October 2018.

There are no RTOs offering the Advanced Diploma from the PMB Plastics, Rubber and Cablemaking Training Package. In regard to training delivery, no RTOs are offering all four remaining qualifications from the training package, and only two RTOs offer three PMB Plastics, Rubber and Cablemaking Training Package qualifications. They are both TAFE Institutes: Bendigo Kangan Institute and TAFE NSW – South Western Sydney Institute.

The geographic spread of RTOs by state varies across the country – there are 10 in New South Wales, and as few as three in the Australian Capital Territory. Victoria, Queensland, Western Australia and South Australia each have only five or six RTOs with PMB Plastics, Rubber and Cablemaking qualifications on scope.

²⁰ PARTEC was established by the plastics industry in 1990 to provide education and training for the growth of the industry. Students from PARTEC complete their courses and the Queensland Plastics Institute (QPI) grades and recognises qualifications and professional development and endorses PARTEC qualifications.

²¹ The National VET Statistics collection reports student data based on the address the student uses on their enrolment form – so although PARTEC offers its courses across Australia, the bulk of its learners are Queensland-based.

²² Feedback received from the PIMA Training Advisory Committee meeting, 28 August 2018.

Qualifications Available

The current PMB Plastics, Rubber and Cablemaking Training Package includes five qualifications, although the Advanced Diploma is not currently being offered by any of the 13 RTOs offering training from the PMB Training Package.²³

The qualifications are:

- Certificate II in Polymer Processing
- Certificate III in Polymer Processing
- Certificate IV in Polymer Technology
- Diploma of Polymer Technology
- Advanced Diploma of Polymer Technology.

Within the PMB Plastics, Rubber and Cablemaking qualifications, there are 178 native units of competency, as well as 116 imported units of competency.

Qualification Uptake

The number of students enrolled in the PMB Plastics, Rubber and Cablemaking Training Package increased in 2017 after a steep decline between 2014 and 2016.

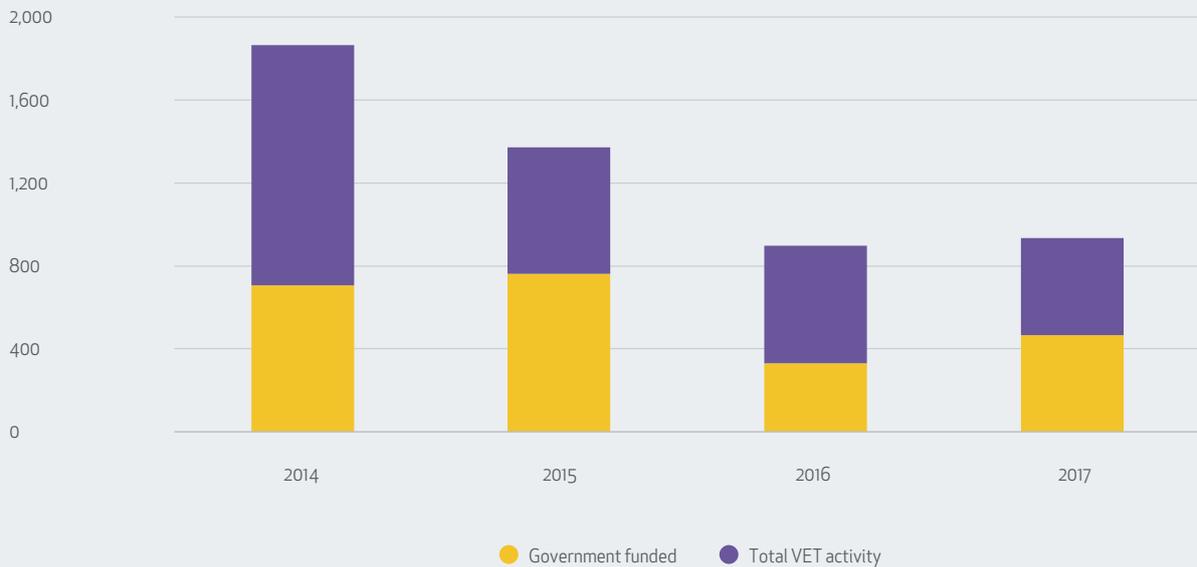
- Total VET enrolments declined 50% between 2014 and 2017, to 934.
- Enrolments increased by 4% from 2016 to 2017.
- The proportion of students receiving government funding to undertake training has declined in absolute numbers (down from 766 students in 2014 to 466 students in 2018).
- The number of government-funded students has increased between 2016 and 2017 (up from 329 enrolments in 2016 to 466 in 2017).²⁴

Advice from industry suggests there are quite a few RTOs that just deliver PMBWELD units – most commonly PMBWELD301 and PMBWELD302. It has been reported that in some states, particularly Victoria, learners enrol in a full Certificate III qualification to access government subsidies but only ever intend to study for the PMBWELD units because they are pipeline installers. This distorts the general PMB Plastics, Rubber and Cablemaking qualifications data.

23 RTOs approved to deliver this qualification. <http://www.training.gov.au>, accessed 7 October 2018.

24 It should be noted that in comparing these two years, the National Centre for Vocational Education Research (NCVER) noted that in 2014 the Total VET Activity (TVA) may be less complete than for other years as this was the first year of collection. This was due to some providers who were granted exemptions from reporting and others who did not report.

Figure 1 – Total program enrolments in PMB Plastics, Rubber and Cablemaking qualifications



Source: NCVET VOCSTATS, extracted on 15/08/2018.

A noticeable trend is apparent in the increasing proportion of students aged less than 30 who are enrolling in a qualification from the PMB Plastics, Rubber and Cablemaking Training Package. Their share of enrolments has grown from 38% in 2014 to 48% of all enrolments in 2017, which augurs well for the industry in attracting a greater proportion of younger workers.

Table 3 – Proportion of PMB Plastics, Rubber and Cablemaking Training Package enrolments by age group

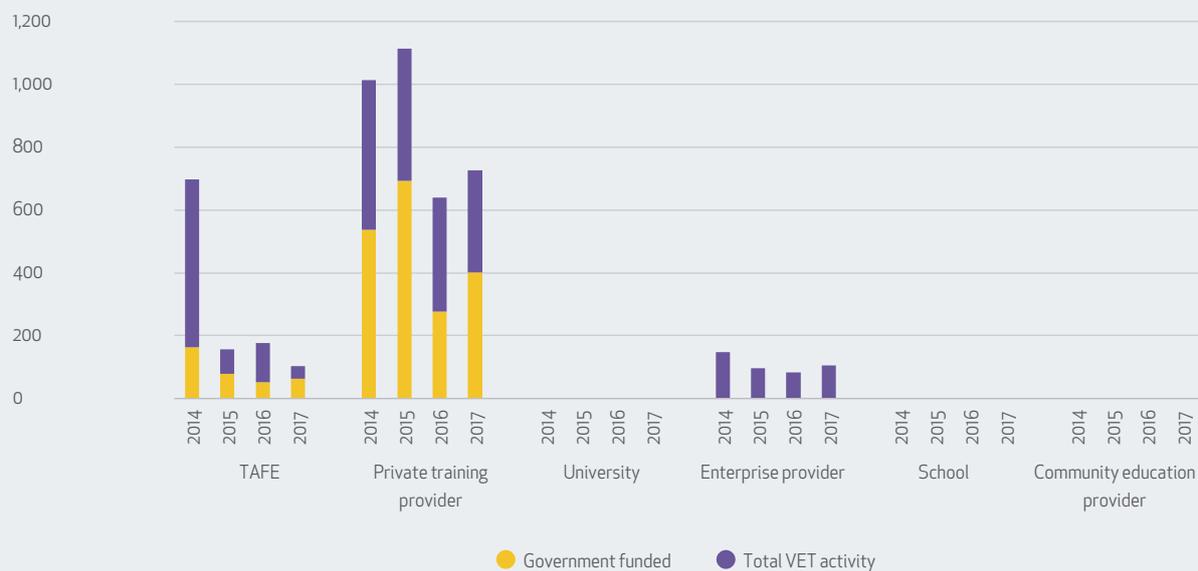
Total VET activity	Proportion of Training Package enrolments for that year			
	2014	2015	2016	2017
19 years and younger	3%	4%	4%	8%
20 to 24 years	16%	13%	14%	20%
25 to 29 years	19%	19%	16%	20%
30 to 39 years	29%	29%	31%	27%
40 to 49 years	19%	20%	19%	15%
50 to 59 years	11%	13%	13%	9%
60 years and over	2%	2%	3%	2%

Source: NCVET VOCSTATS, extracted on 15/08/2018.

Private RTOs increased their market share of delivery of qualifications from the PMB Plastics, Rubber and Cablemaking Training Package by 23% between 2014 and 2017. Although, it should be noted that TAFE's share of enrolments peaked in 2014 with extensive delivery of fee-for-service training. Even at that time, private providers were 55% of total delivery and 77% of government funded delivery.

In 2017, Enterprise RTOs had the same market share as TAFE Institutes.

Figure 2 – PMB Plastics, Rubber and Cablemaking Training Package course enrolments by provider type



Source: NCVET VOCSTATS, extracted on 15/08/2018.

VET delivered to secondary students (formerly VET in Schools) enrolments are not a significant cohort of enrolments in PMB Plastics, Rubber and Cablemaking Training Package qualifications. The number of enrolments has consistently been in single digits and all of them have been in Queensland. In 2017, there were only six students doing a PMB Plastics, Rubber and Cablemaking qualification via a VET delivered to secondary students pathway.

Learners enrolled in an apprenticeship or traineeship were predominantly in Queensland and New South Wales, despite other states offering government funded apprenticeship opportunities.

In 2017, only Certificate III and IV qualifications in the PMB Plastics, Rubber and Cablemaking Training Package had apprenticeship/traineeship enrolments, with 134 in the Certificate III and only seven in the Certificate IV. The three largest states for Certificate III apprenticeship or traineeship enrolments were Queensland with 69 apprentices in training, New South Wales with 32 trainees in training despite no government funding being available for the traineeship, and Western Australia with 22 apprentices in training.

Table 4 – Apprenticeship and traineeship funding and duration by state and territory, 2018

Qualification	NSW	VIC	QLD	WA	SA	TAS	ACT	NT
Certificate II in Polymer Processing	T	~	T	T	T	*	~	T
Available (nominal duration – months)	12	N	18	12	18	N	N	18
Funded	N	N	N	Y	N	N	N	N
Certificate III in Polymer Processing	T	T	A	A	T	*	~	T
Available (nominal duration – months)	24	36	36	36	36	36	N	36
Funded	N	N	Y	Y	N	Y	N	Y
Certificate IV in Polymer Technology	A	T	A	T	~	*	~	T
Available (nominal duration – months)	48	48	48	36	N	N	N	48
Funded	Y	N	Y	Y	N	N	N	N
Diploma of Polymer Technology	T	~	~	~	~	*	T	T
Available (nominal duration – months)	24	N	N	N	N	N	36	24
Funded	N	N	N	N	N	N	Y	N
Advanced Diploma of Polymer Technology	~	~	~	~	~	*	T	~
Available (nominal duration – months)	N	N	N	N	N	N	48	N
Funded	N	N	N	N	N	N	Y	N

Source: NCVET VOCSTATS, extracted on 15/08/2018.

* Tasmania does not differentiate between apprenticeships and traineeships, ~ qualification cannot be undertaken as Apprenticeship or Traineeship.
T= Traineeship.

While employment and further study outcomes are high for all learners who complete a qualification from the PMB Plastics, Rubber and Cablemaking Training Package, they are particularly high for those who complete the Certificate IV qualification.

Table 5 – Surveyed graduates in work or further study, 2018

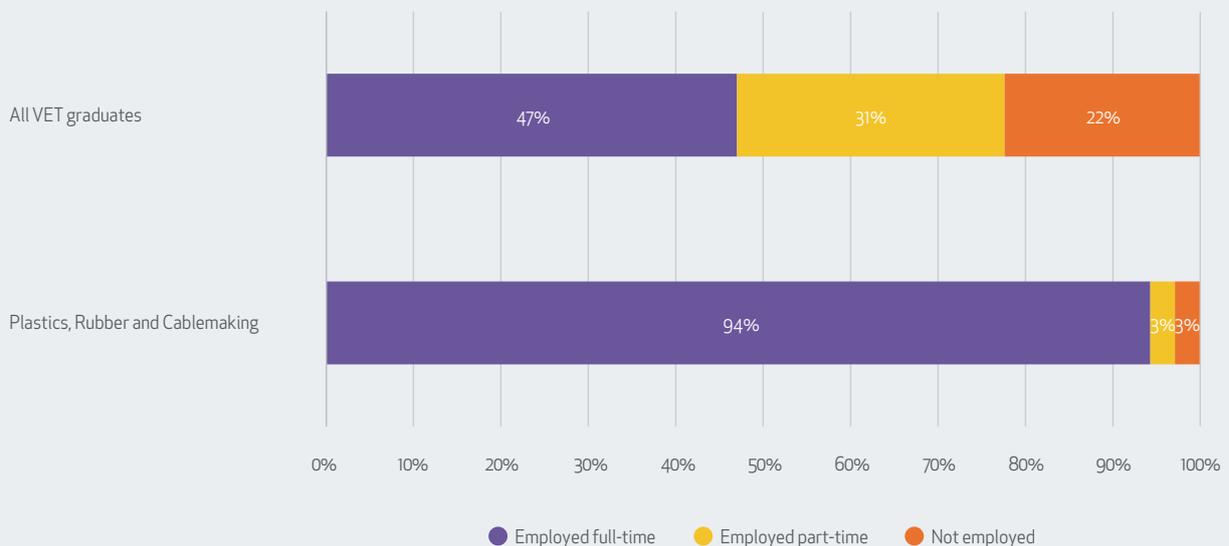
Qualification	% of surveyed graduates in work or further study
Certificate II in Polymer Processing	86.2%
Certificate III in Polymer Processing	87.9%
Certificate IV in Polymer Technology	94.8%
Diploma of Polymer Technology	92%
Advanced Diploma Polymer Technology	N/A*

* There were no enrolments in the Advanced Diploma in 2017; and in the preceding three years there were nine or fewer enrolments. This explains the lack of responses to the Student Outcomes Survey and the lack of reportable data.

Source: <https://www.myskills.gov.au/Courses/Search?keywords=Plastics%2Band%2BRubber%2BFactory%2BWorker&distance=25> accessed 7 October 2018.

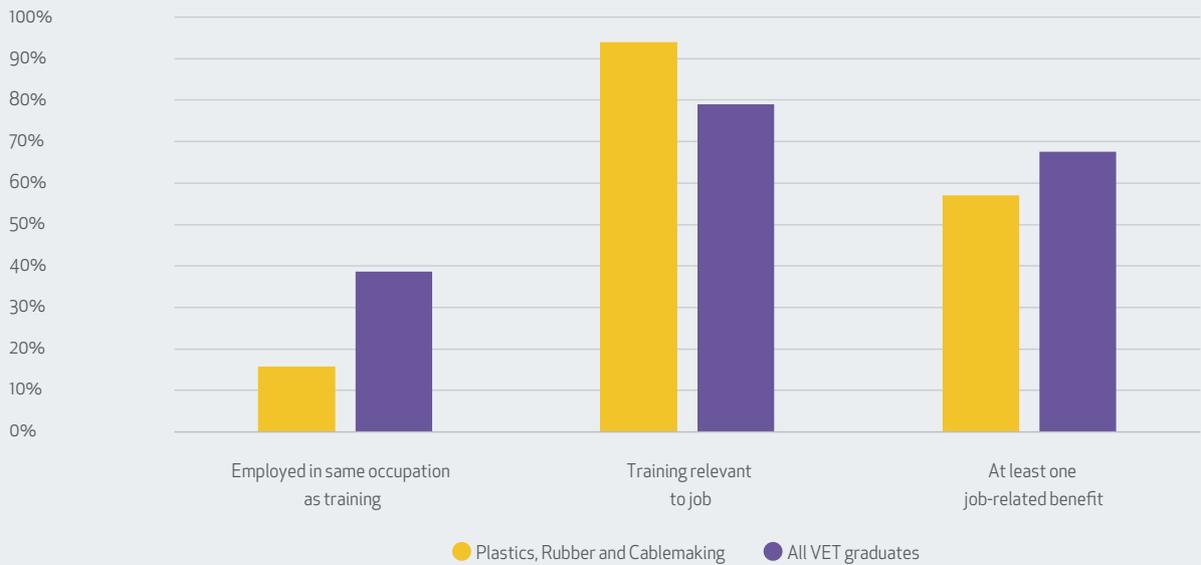
Across all qualification levels in the PMB Plastics, Rubber and Cablemaking Training Package, the annual NCVER Student Outcomes Survey shows graduates have high levels of post-study employment, with 94.3% employed full-time at the end of their training. Their median salary of \$102,900pa is significantly higher than the median for all VET graduates (\$55,000pa).

Figure 3 – VET graduates, employment outcomes after training



They are less likely than other VET graduates to be employed in the same occupation as their training (i.e. they are gaining high rates of employment outside the PRC industries with their PMB Plastics, Rubber and Cablemaking qualifications). Interestingly, though, they were more likely to say their training was relevant to their job.

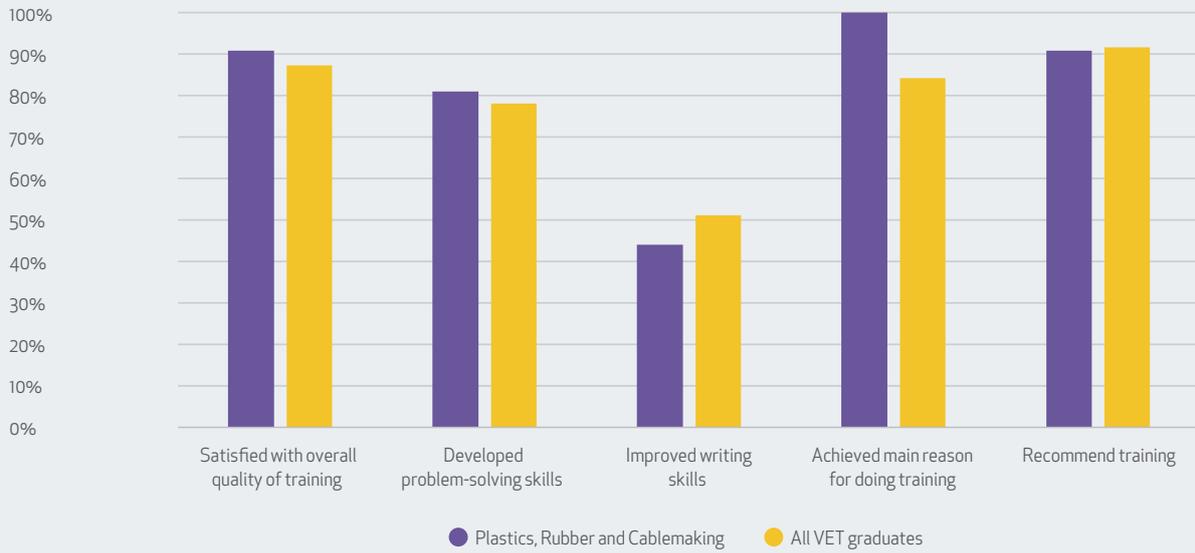
Figure 4 – VET graduates, employment outcomes



Source: NCVET VOCSTATS, extracted on 15/08/2018.

Despite many graduates from the PMB Plastics, Rubber and Cablemaking Training Packages going into employment outside of the PRC industry, they reported levels of satisfaction with their training, which were comparable to the levels reported by all VET graduates. They were also more likely than all VET graduates to say they achieved their main reason for doing training.

Figure 5 – VET graduates, training satisfaction levels



Source: NCVET VOCSTATS, extracted on 15/08/2018.

Challenges and Opportunities

For Industry and Employers

The Process Manufacturing, Recreational Vehicle and Laboratory IRC recently released a report on Future Skills Workshop Outcomes.²⁵ It details their deliberations from a workshop examining future skills challenges. The IRC identified a range of issues as significant challenges for the PRC industry. Their views have been integrated with feedback from a recent meeting of the PIMA Training Advisory Committee.

Technology

- Artificial Intelligence (AI) and Machine Learning: AI technologies have been implemented across the industry sectors in various ways. A significant challenge is for policy and regulation to keep up with the pace of change and implementation. Industry also needs to be better at promoting the employment and skilling opportunities of technology adoption.
- Automation is a related technological issue emerging as leading employers transition to an Industry 4.0 manufacturing environment.

Society and Culture

The key trends affecting the Process Manufacturing, Recreational Vehicle and Laboratory sectors are:

- Changing Work and Career Values: This is an emerging trend, which will become more prevalent in workplaces, particularly with technology expansion and automation. Managed well, workers will have the flexibility to undertake roles that interest them, and employers will benefit from the broader insights and perspectives gained from employees' experience in other areas. However, if changes are imposed on workers, the benefits for individuals may not always be positive.
- Ageing Workforce: Experienced workers are nearing retirement age and there are difficulties attracting sufficient younger workers.
- Global (and Social) Mobility: Higher level skills and industry knowledge are leaving Australia to follow industry jobs moving offshore. Lower level, technical skills are required, and increasingly these roles are being filled by new Australians. This in turn poses additional LLN challenges in the workplace.

²⁵ <https://ibsa.org.au/wp-content/uploads/2018/06/Process-Manufacturing-Recreational-Vehicle-Laboratory-Future-Skills-Outcomes.pdf>, accessed 21 October 2018.

Political and Institutional

The Process Manufacturing, Recreational Vehicle and Laboratory sectors operate in highly regulated environments, with workplaces required to adhere to stringent workplace health and safety (WHS) requirements and many workers requiring licences to undertake their job roles. The consistent need for WHS skills is a key requirement in the PRC industry. Industry experts noted that additional WHS training requirements can pose further challenges when they are not in tune with the practices of businesses that already have high standards and requirements, to which they must comply, because of the nature of the work they do.

Governments also need to ensure funding for training is channelled to the right skill areas so that workers can access training, particularly to meet regulatory requirements.

Resources and Environment

As detailed earlier, there are specific challenges facing the plastics sector of the industry as a result of changing consumer sentiment to plastics, especially plastic packaging. More broadly, in the Process Manufacturing, Recreational Vehicle and Laboratory sectors, international regulations are emerging as a key driver of change, with Australia looking to harmonise to international standards, such as those around emission targets. More generally, resources are more widely understood and accepted as finite challenges faced by the industry, related to disposal of process waste, cost of energy use and access to Information and Communication Technology related infrastructure.

Business and Economics

The key trends affecting the Process Manufacturing, Recreational Vehicle and Laboratory sectors are:

- Empowered, informed and demanding customers: Business is guided by social and cultural dynamics. Changes in consumer demands are being driven by social media movements, which will impact not only product design, but also job design.
- Access to quality internet: This is an important requirement for every business, particularly as workforces are increasingly spread across different geographical locations.
- Financial viability: While impacted by access to and cost of resources, the key challenge for businesses in the industry sectors is to remain financially viable in order to stay competitive and continue to employ and train people.

Supply-side Challenges and Opportunities

In an industry where the number of employees is declining and businesses outside the plastics industry are in serious decline as a result of global competitive forces, no specific supply-side challenges were identified. Nonetheless, attracting young people is identified by employers as a challenge at the same time that increasing numbers of learners aged under 30 are enrolling in PMB Plastics, Rubber and Cablemaking qualifications. Work underway on the Skills for the Polymer Industry project should ensure that the skills of newly qualified workers are better aligned with the industry's workforce skill requirements.

For Learners and Training Package Development

While enrolments in the Certificate IV in the PMB Plastics, Rubber and Cablemaking Training Package have been relatively stable over the past four years, they have declined significantly for the Certificate III qualification, and no RTO currently offers the Advanced Diploma of Process Plant Technology. The work underway on the Skills for the Polymer Industry project is intended to identify improvements needed in the current qualification and units to better address the skills needs of the industry.

Cross-Industry Challenges and Opportunities

As with other sectors of the manufacturing industry, the PRC sectors are dealing with significant offshore competition. They are also working consistently on the development of new products on a smaller scale to meet demands from niche industry sectors, as well as the challenges of automation.

As the Australian Industry and Skills Committee (AISC) currently has nine cross sector projects in progress or completed,²⁶ some of these offer further opportunities for the PRC industry to work with other industry sectors to identify and apply transferable skills for 'more mobile' future workers.

Opportunities may also exist through existing cross sector projects (e.g. Consumer Engagement Through Online and Social Media). The IRC will engage with cross sector projects to provide input on the skill needs and experiences of the manufacturing industry. See [Cross Sector Projects](#) section for more details.

²⁶ <https://www.aisc.net.au/content/cross-sector-projects>, accessed October 2018.

Employment and Skills Outlook

As at May 2018, there were 62,100 people employed in the PRC industry. Projections are for the level of employment to be broadly maintained to 2023, when it is projected that 59,200 people will be employed in the sector.

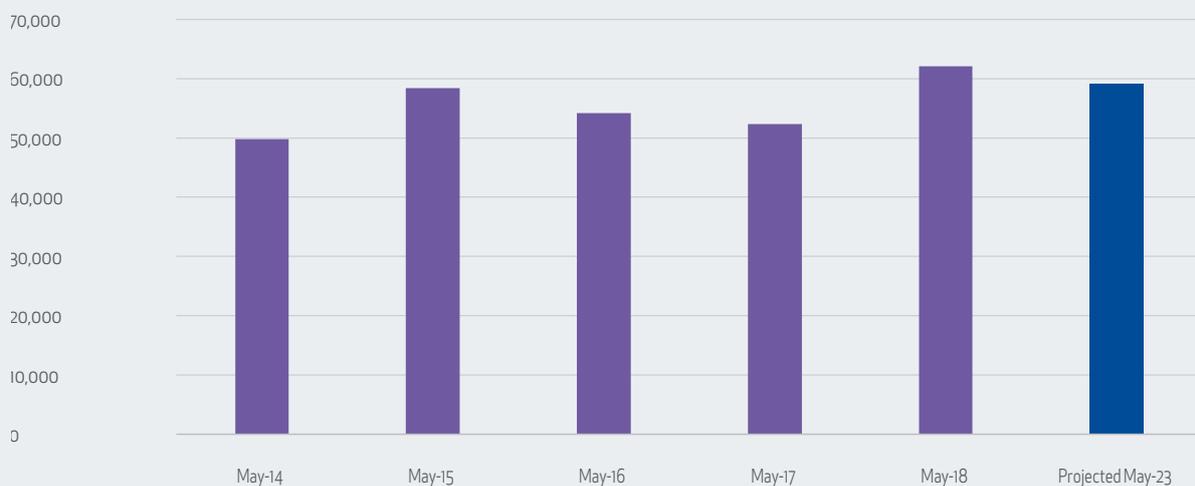
These projections are based on current employment trends and an analysis of factors shaping different industries, as well as the broader Australian economy. If any changes to the PMB Plastics, Rubber and Cablemaking Training Package are made, arising from the *Skills for the Polymer Industry* project, it is expected that the Training Package will have greater relevance to the skills needs of industry, and it is possible that this may in turn improve employment outcomes in the sector.

Employment Outlook

Employment in the PRC industry grew in 2018 after a decline in the three previous years. Pleasingly, projections from the Department of Jobs and Small Business for the next five years indicate only a modest decline in employment, which if realised would still be above employment levels between 2014 and 2017.

Complicating the picture further, industry stakeholders advise that employment in the plastics industry is increasingly being outsourced to labour hire firms. This may further distort the accuracy of employment projections in the industry.

Figure 6 – Employment estimates in the PMB Plastics, Rubber and Cablemaking sectors and projection to 2023²⁷

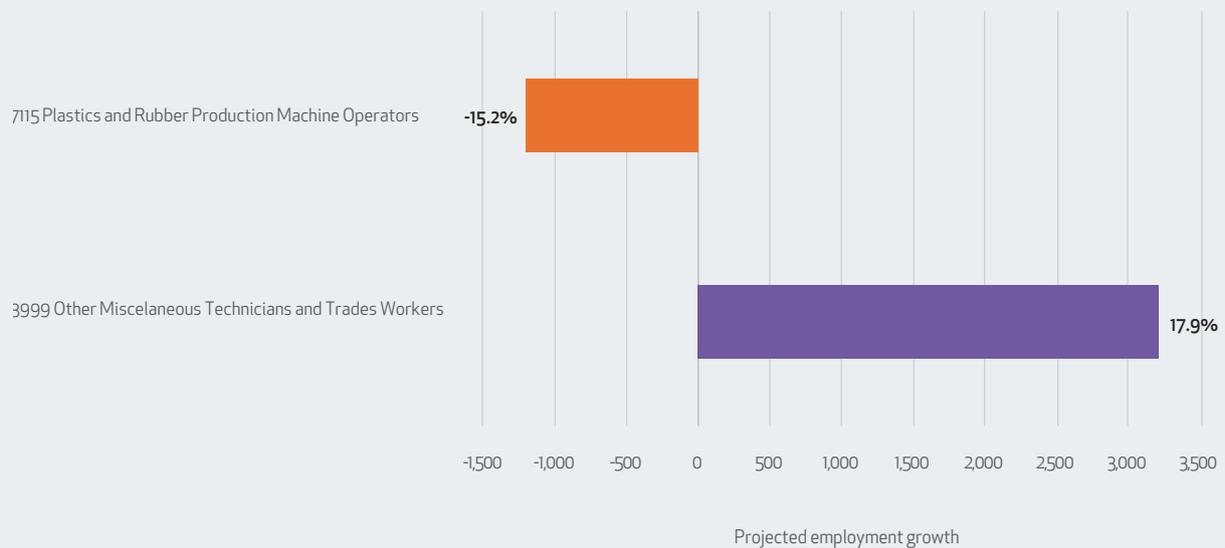


Source: Department of Jobs and Small Business, Labour Market Information Portal.

²⁷ The 2018 employment projections are based on the forecasted and projected total employment growth rates published in the 2018–2019 Budget, the Labour Force Survey (LFS) data (June 2018) for total employment, and the quarterly detailed LFS data (May 2018) for industry employment data.

Viewed by occupational sector, it is clear that different job roles will have different employment futures.

Figure 7 – Projected employment estimates in the PRC sectors: to 2023 by occupation

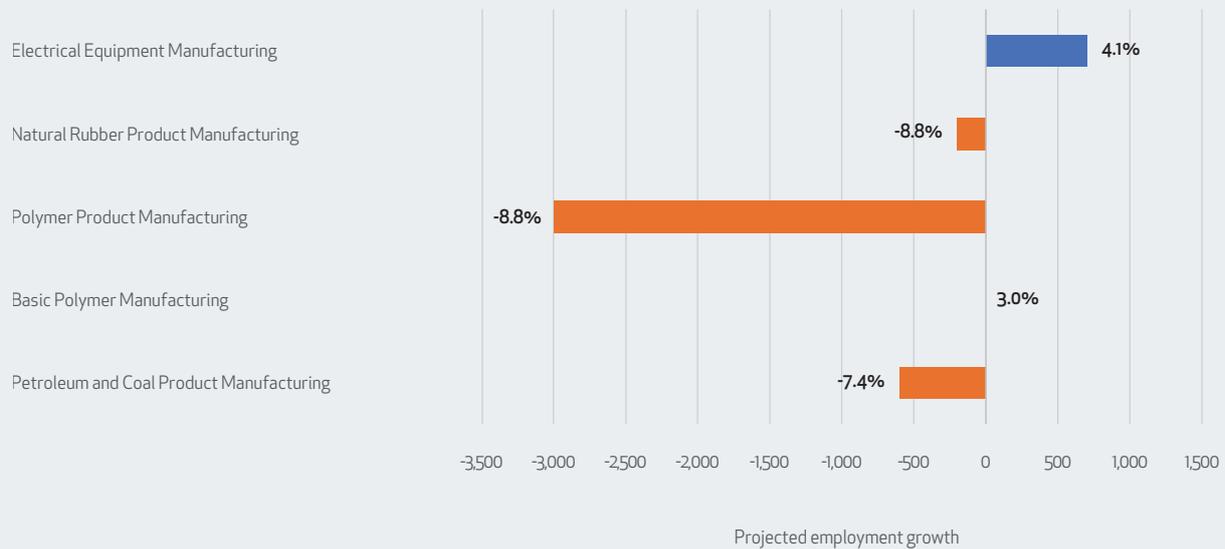


Source: Department of Jobs and Small Business, Labour Market Information Portal. Occupation time series data (May 2014 to May 2017) has been sourced from the ABS 6291.0.55.003 Labour Force, Australia, Detailed, Quarterly, May 2018. Figures are average of preceding four quarters, whereas May 2018 and projection to May 2023 figures are seasonally adjusted and trended as sourced from LMIP.

Taking a more detailed look at employment trends within the industry at sub-industry level, as noted earlier in this report, while there had been concerns about the decline in business activity, and employment, in the cabling sector, in the 12 months to May 2018 the industry has experienced a significant boost in employment. An additional 6,000 people are now employed in the cabling industry, a 54% increase on the total employed in May 2017.

In the other sub-sectors of the industry, employee numbers in basic polymer manufacturing are expected to experience modest growth in the next five years (rising from 1,600 employees in 2018 to 1,700 in 2023). In polymer product manufacturing, employment is predicted to decline.

Figure 8 – Projected five-year employment growth to: 2023 by industry group²⁸



Source: Department of Jobs and Small Business, Labour Market Information Portal

Workforce Supply Challenges

A recent Composites Australia member survey²⁹ confirmed composites businesses are experiencing a national skills shortage with 70% of members reporting they cannot find employees with the 'right skills' and 50% are actively looking for composites technicians with fabricating skills.

Stakeholder feedback also indicates that there is an emerging demand for a specialisation of skills and knowledge across composites and plastic fabrication, with imported healthcare and other inputs, for prosthetics and orthotics technicians.

Further, 73% of members indicated they would consider training new and existing employees in the near future. The *Skills for the Polymer Industry* project, which is the focus of industry at present, will provide workers of the future with the broad range of skills required by industry to fill job roles across broad areas of employment. Once the project is completed, the updated PMB Plastics, Rubber and Cablemaking Training Package, will better align training outcomes with job roles in the industry.

²⁸ The Department of Jobs and Small Business produces these employment projections by industry, occupation, skill level and region for the following five-year period. These employment projections are designed to provide a guide to the future direction of the labour market but are subject to an inherent degree of uncertainty.

²⁹ Composites Trade skills Shortage Looms, Composite Australia Magazine, July 2018, Issue 48. Accessed February 2019.

Skills Outlook

Key Generic Skills

In developing their Industry Skills Forecasts and Proposed Schedules of Work, Manufacturing IRC members have ranked the importance of key generic workforce skills in the table below.

Table 6 – Key generic workforce skills

Combined Manufacturing IRCs		Process Manufacturing, Recreational Vehicle and Laboratory IRC	
1	Design mindset/Thinking critically/Systems thinking/ Problem solving skills	1	Technology use and application skills
2	Technology use and application skills	2	Design mindset/Thinking critically/Systems thinking/ Problem solving skills
3	Learning agility/Information literacy/Intellectual autonomy and self-management skills	3	Managerial/Leadership skills
4	Communication/Collaboration including virtual collaboration/Social intelligence skills	4	LLN skills
5	Science, Technology, Engineering and Mathematics (STEM) skills	5	STEM skills
6	LLN skills	6	Learning agility/Information literacy/Intellectual autonomy and self-management skills
7	Data analysis skills	7	Customer service /Marketing skills
8	Managerial/Leadership skills	8	Communication /Collaboration including virtual collaboration/Social intelligence skills
9	Customer service/Marketing skills	9	Data analysis skills
10	Environmental and sustainability skills	10	Environmental and sustainability skills
11	Entrepreneurial skills	11	Financial skills
12	Financial skills	12	Entrepreneurial skills

Demand for generic skills may vary considerably between industry sectors, regions and individual businesses. Employers may prioritise some generic skills over others depending on their context, workforce and business imperative. All identified generic skills are important throughout the workforce. This ranking represents the importance of generic skills across an industry but should not be expected to reflect the specific experience of every business and employer within that industry.

The Skills for the Polymer Industry project is redeveloping all qualifications and units in the PMB Plastics, Rubber and Cablemaking Training Package.

No additional skills priority areas for training package development have been identified through industry consultation or research.

Key Drivers for Change and Proposed Responses

The challenges and opportunities and the employment and skills outlook described in this report indicate the need for skill development solutions in a number of priority areas. These are outlined in Table 7 below.

Table 7 – Priority skills and key drivers for change

Priority Skills	Key Driver for Change	Proposed Response
Regulatory/Legislative		
European Parliament legislates bans on single use plastics	While Australian manufacturers are not subject to European regulatory changes – growing consumer concerns about plastic waste are likely to see changes towards increased recycling	To be addressed in the current review of the PMB Plastics, Rubber and Cablemaking Training Package
Industry Specific		
Variable uptake and use of Plastics Welding units	Initial analysis suggests there is a need for clearer assessment requirements and better articulation of the amount of practical evidence required to show competency. All changes will be based on industry input. Units will also need to be updated to better comply with the Standards for Training Packages	Current review of PMBWELD units being undertaken
Understanding of the plastics industry	Challenges in attracting new entrants to the industry	Industry to develop a Workforce Development Strategy that will outline the career opportunities and pathways highlighted by the newly redeveloped qualifications within the PMB Plastics, Rubber and Cablemaking Training Package

Training Product Review

Current Activities

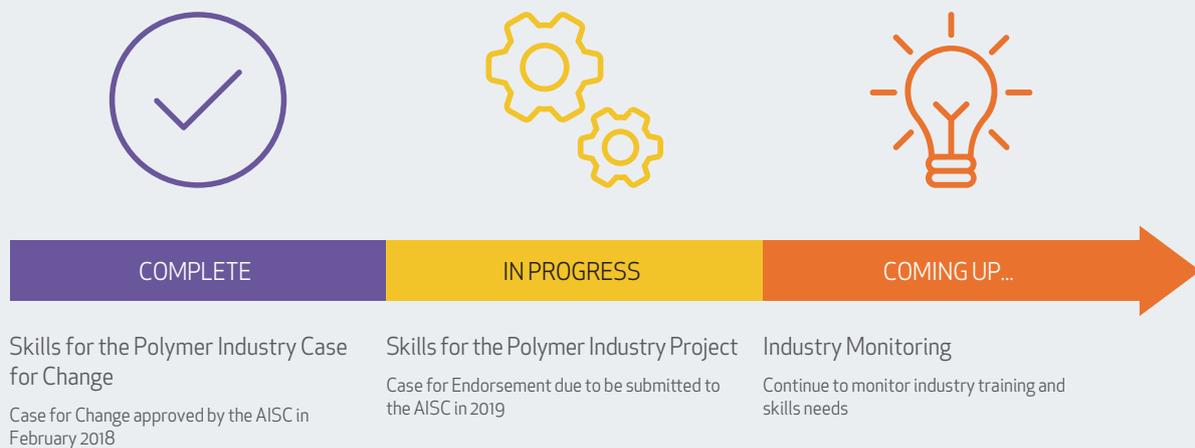
Skills for the Polymer Industry

In September 2018, IBSA Manufacturing was commissioned to undertake a full review and redevelopment of the PMB Plastics, Rubber and Cablemaking Training Package. This work will address concerns raised by industry that the qualifications and related units need to be updated to reflect changes in the Australian polymer converting sector. Stakeholders have indicated the current qualifications do not meet industry needs, which is reflected in the low uptake of these qualifications. To address these issues the project will review and align existing qualifications with current work practices and environment. The work will also assess the number, and levels, of qualifications, the grouping of electives into streams and, where required, development of new units.

This work supports several Council of Australian Governments (COAG) Industry and Skills Council (CISC) and AISC priorities by deleting obsolete and redundant qualifications and units of competency, as well as seeking to address stakeholders' concerns about the quality in the current training system by improving industry's expectations in assessments.

The training package development work is due to be completed and submitted for AISC consideration in September 2019.

Training Product Review – Activities Timeline



AISC Cross Sector Projects

In 2017, the AISC established nine cross sector projects in the common skill areas of automation, big data, digital skills, consumer engagement through social media, cybersecurity, environmental sustainability, inclusion of people with disability in VET, supply chain, and teamwork and participation. This signalled a new approach to training package development that aims to simplify VET and improve mobility through recognition of qualifications between occupations.

To ensure cross sector units are relevant to multiple occupations and industry sectors, each project includes representation across multiple industries. Cross sector units of competency will be housed in the most relevant training package and marked with a cross sector identifier. Once available on training.gov.au, the units can be adopted across all industry training packages as qualifications and skill are reviewed or developed.

The following cross sector projects have been identified as potentially impacting the PMB Plastics, Rubber and Cablemaking Training Package:

- The **Consumer Engagement Through Online and Social Media** cross sector, which is looking at key skills for businesses to remain competitive in a global market, including cultural awareness, customer service, marketing, communication and social media skills. The project is proposing the development of eight new cross sector units and four Skill Sets in the areas of ethical practices, privacy regulations and protocols and awareness of online/ social media users.
- The **Teamwork and Communication** cross sector project aims to develop common 'teamwork' and 'communication' units that can be used across multiple industries. The project includes the development of five new units to be included in the BSB Business Services Training Package.
- The **Supply Chain Skills** cross sector project aims to support industries to increase efficiencies and meet consumer demands through the development of 10 new Skill Sets related to the establishment and maintenance of high-performing supply chains.

There are a further three cross sector projects that may also impact the PMB Plastics, Rubber and Cablemaking Training Package: Automation Skills, Digital Skills and Environmental Sustainability. The next phase of work on these projects is being determined, and the Process Manufacturing, Recreational Vehicle and Laboratory IRC will continue monitoring their progress for consideration in future training package development work.

The Process Manufacturing, Recreational Vehicle and Laboratory IRC will consider recommendations to integrate the new units developed under the above cross sector projects into qualifications in the PMB Plastics, Rubber and Cablemaking Training Package once components are available.

Upcoming Activities

Training Product Review – Priorities 2019–2023

As outlined in the previous section, Training Product Review – Current and Upcoming Activities, the Skills for the Polymer Industry project is due to be completed and submitted for AISC consideration in September 2019.

There are a number of key drivers of change that have been identified in the consultations to support the development of this Industry Skills Forecast. The current review of the Training Package is necessary to ensure employees can adequately respond to different requirements in the production process. The polymer industry faces some major challenges and opportunities. Trade agreements, economic growth and increased wealth in Asia are creating new markets, while at the same time they bring with them the challenge of cheaper imports. New environmental regulations and social pressures arising from the increasing focus on sustainable products and processes could present greater opportunities for the plastics industry to supply new, innovative, environmentally friendly products to downstream industries. In response, the introduction of new technologies and innovations will provide opportunities for industry in areas such as material design, separation technology, reprocessing technology and renewably sourced and biodegradable plastics.³⁰

The types of skills and knowledge required in training package qualifications will need to be driven by changing production processes that require a better aptitude with using automated practices. In recent years, increased automation has allowed the industry to produce quality products in smaller volumes with quick turn-around times. The use of such automated practices requires skills and knowledge in newer types of equipment as well as numeracy and language skills for operating highly sophisticated machinery. New technologies integrated into polymer manufacturing, such as the use of robotics, are changing the skills needed by industry.

30 New Plastics Economy: Rethinking the future of plastics,

Consultation Undertaken

The 2019 Skills Forecast and Proposed Schedule of Work 2019–2023 builds on the consultations undertaken as part of the 2018 return. Feedback on industry imperatives were also captured as part of training package development projects undertaken throughout 2018.

More specifically, key individual industry and group stakeholders, identified by the Process Manufacturing, Recreational Vehicle and Laboratory IRC, were consulted during the development of the Industry Skills Forecast. See [Appendix D](#) for the consultation list.

Feedback was gathered via the following methods:

- forums, meetings and focus groups – attended in person and via webinar
- one-on-one consultation – attended via phone/teleconference and/or face-to-face.

Issues and Sensitivities Raised

Industry consultation identified a number of issues and sensitivities, relating to particular areas within the industry, which have been outlined in the table below. Consultation focussed on the plastics industry as most rubber and cabling now occurs offshore, although there has been a small re-emergence of the cabling industry in Western Australia, which should be the focus of future consultation.

The [Upcoming Activities](#) section provides further information on the action to be taken to address these issues/sensitivities.

Table 8 – Issues and sensitivities raised by stakeholders during consultation

Area	Issue and/or sensitivity	Action to be taken
Entire PMB Plastics, Rubber and Cablemaking Training Package	<ul style="list-style-type: none"> • Current qualifications are too broad, without industry specific skills, and contain redundant electives. PMB Plastics, Rubber and Cablemaking qualifications and units of competency are no longer relevant to meet the needs of industry. • A number of RTOs only deliver PMBWELD units. Learners, particularly in Victoria, enrol in a full Certificate III qualification to access government subsidies but only ever intend to study for the PMBWELD units because they are pipeline installers. • New environmental regulations and social pressures arising from the increasing focus on sustainable products and processes present challenges and opportunities for the plastics industry. It will need to supply new, innovative, environmentally friendly products to downstream industries to survive. • There continues to be a need for LLN and WHS skills within current and future workforces. • In recent years, increased automation has allowed the industry to produce quality products in smaller volumes with quick turn-around times. The use of such automated practices requires skills and knowledge in newer types of equipment as well as numeracy and language skills for operating highly sophisticated machinery. New technologies integrated into polymer manufacturing, such as the use of robotics, are changing the skills needed by industry. 	Review of the entire PMB Plastics, Rubber and Cablemaking Training Package as part of the Skills for the Polymer Industry Project

Proposed Schedule of Work 2019–2020 to 2022–2023

Due to the work underway on the *Skills for the Polymer Industry* project, which involves the redevelopment of all qualifications and units in the PMB Plastics, Rubber and Cablemaking Training Package, the Process Manufacturing, Recreational Vehicle and Laboratory IRC has agreed that a Proposed Schedule of Work not be submitted for this return of the Industry Skills Forecast.

The IRC will consider any additional priorities for training pack development for the Plastics, Rubber and Cablemaking sectors in the 2020 return of the Forecast.

Appendix A: Occupation Classifications

For the purposes of analysing employment trends in the PRC industry, the following ANZSCO codes have been used.

ANZSCO Code		ANZSCO Occupations	
3999	Other Miscellaneous Technicians and Trade Workers	399916	Plastics Technician
		399999	Technicians and Trades Workers nec
7115	Plastics and Rubber Production Machine Operator	711511	Plastic Cablemaking Machine Operator
		711512	Plastic Compounding and Reclamation Machine Operator
		711513	Plastics Fabricator or Welder
		711514	Plastics Production Machine Operator (General)
		711515	Reinforced Plastic and Composite Production Worker
		711516	Rubber Production Machine Operator
		711599	Plastics and Rubber Production Machine Operators nec

Appendix B: Industry Classifications

For the purposes of analysing the business landscape, the following ANZSIC codes have been used.

ANZSIC Code	ANZSIC four-digit Class Name
1821	Synthetic Resin and Synthetic Rubber Manufacturing
1829	Other Basic Polymer Manufacturing
1911	Polymer Film and Sheet Packaging Material Manufacturing
1912	Rigid and Semi-Rigid Polymer Product Manufacturing
1913	Polymer Foam Product Manufacturing
1914	Tyre Manufacturing
1915	Adhesive Manufacturing
1916	Paint and Coatings Manufacturing
1919	Other Polymer Product Manufacturing
1920	Natural Rubber Product Manufacturing
2431	Electric Cable and Wire Manufacturing

Please note: For this Skills Forecast, at the recommendation of the IRC, the following two industry classes are also included for selected industries in the PMA Chemical, Hydrocarbons and Refining Training Package; previously they had only been included in the PMB Plastics, Rubber and Cablemaking Training Package.

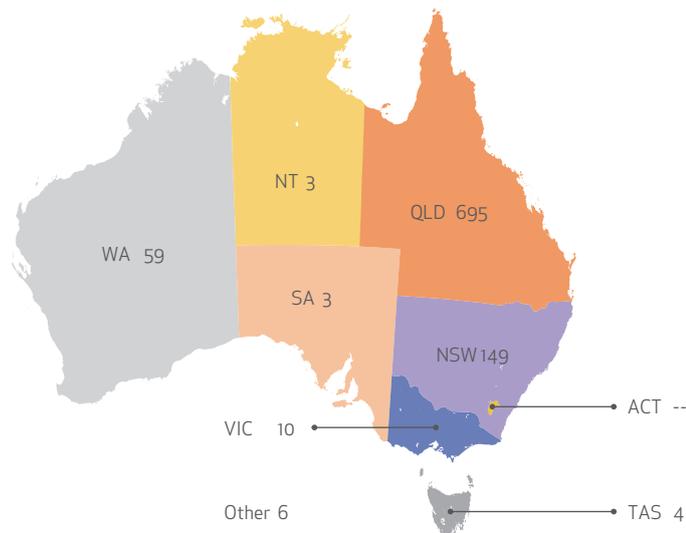
ANZSIC Code	ANZSIC four-digit Class Name
1821	Synthetic Resin and Synthetic Rubber Manufacturing*
1829	Other Basic Polymer Manufacturing*

In terms of estimated employee numbers, the three-digit ANZSIC code 182 had 1,600 estimated employees in 2018. This represents 2% of PMA Chemical, Hydrocarbons and Refining's total number of employees and 3% of PMB Plastics, Rubber and Cablemaking's total (from the selected three-digit ANZSIC codes). However, using 2016 Census data, classification 1821 had 2,385 employees in 2016 and classification 1829 had 125. Together, the 2,510 employees represent 4% of PMA Chemical, Hydrocarbons and Refining's total number of employees (details from the selected four-digit ANZSIC codes, which could be a better representation than the three-digit code ANZSIC code 182).

Appendix C: Enrolment Snapshot

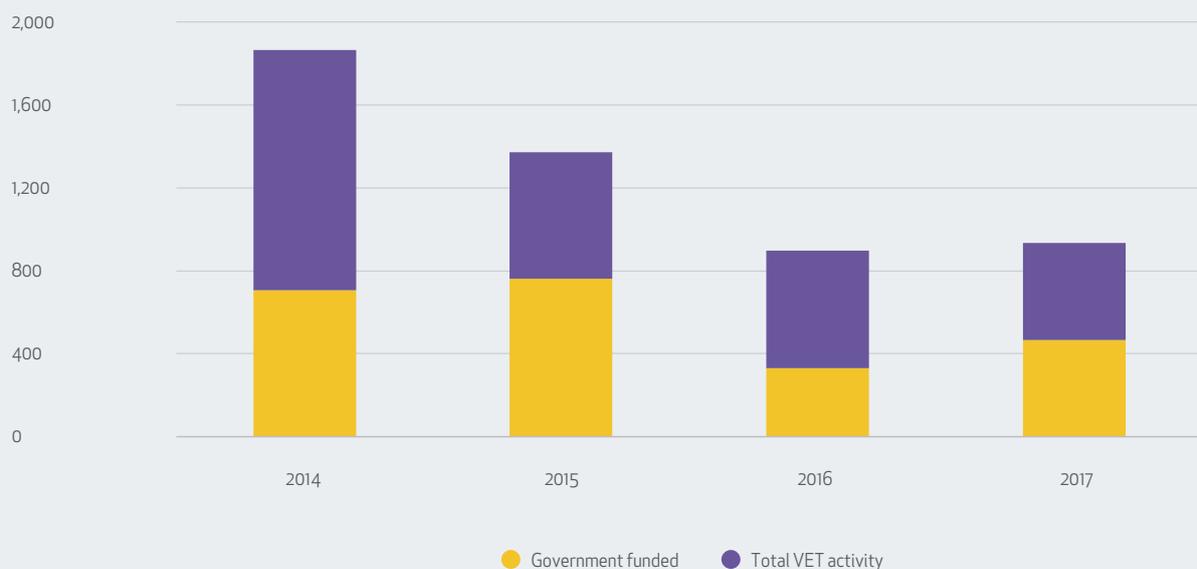
Program enrolments in PMB Plastics, Rubber and Cablemaking qualifications by state/territory of student residence

2017 Total VET Activity



Total program enrolments in PMB Plastics, Rubber and Cablemaking qualifications

2014-2017 Total VET Activity



Proportion of program enrolments in PMB Plastics, Rubber and Cablemaking qualifications by training provider type

2014–2017 Total VET Activity

	2014	2015	2016	2017
TAFE	38%	11%	20%	11%
Private training provider	55%	81%	71%	78%
University	0%	0%	0%	0%
Enterprise provider	8%	7%	9%	11%
School	0%	0%	0%	0%
Community education provider	0%	0%	0%	0%

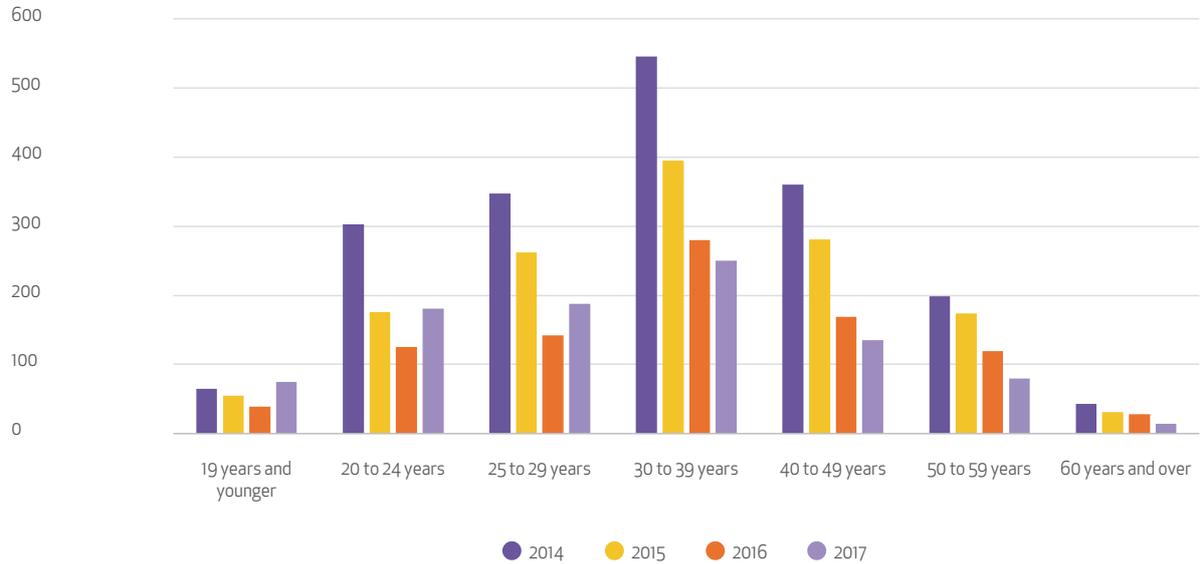
Program enrolments in PMB Plastics, Rubber and Cablemaking qualifications by gender

2017 Total VET Activity



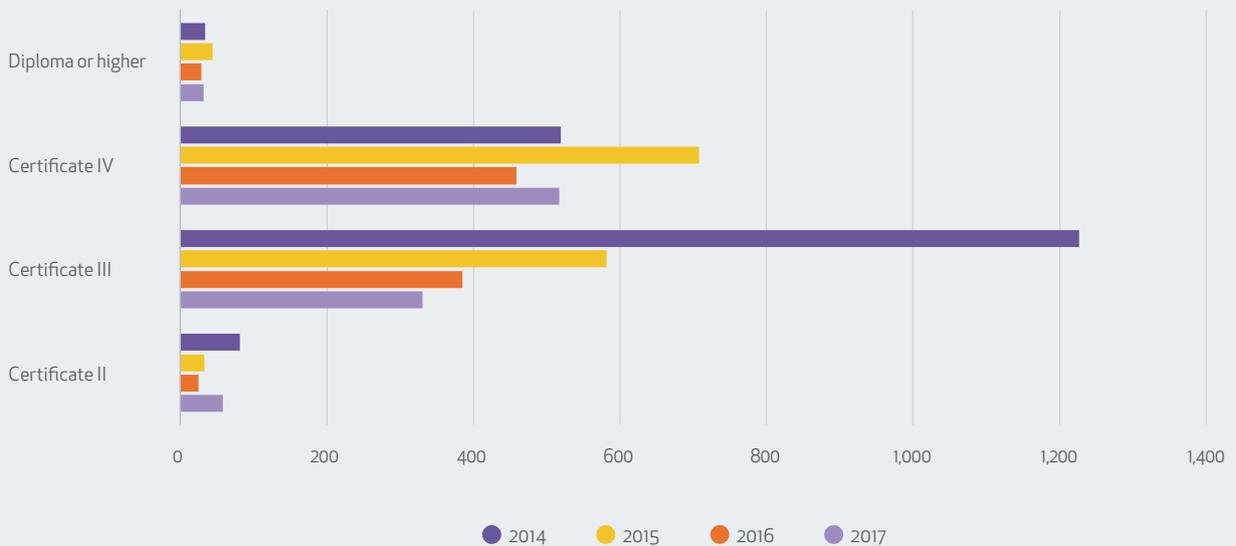
Program enrolments in PMB Plastics, Rubber and Cablemaking qualifications by age group

2014–2017 Total VET Activity



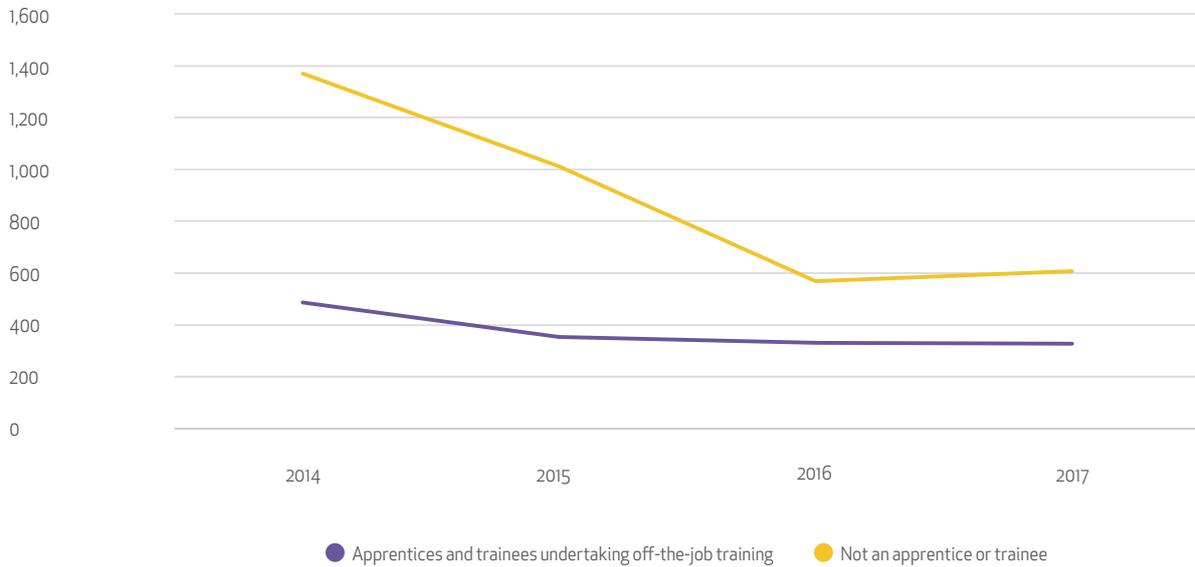
Program enrolments by qualification level in PMB Plastics, Rubber and Cablemaking qualifications

2014–2017 Total VET Activity



Program enrolments in PMB Plastics, Rubber and Cablemaking qualifications by apprentice/trainee undertaking off-the-job training

2014–2017 Total VET Activity



Source: All data in this appendix was extracted from VOCSTATS on 15/08/2018 by IBSA Manufacturing who take responsibility that the information extracted is appropriate for its intended use.

VOCSTATS data are 'randomly' adjusted by small amounts by a data perturbation tool to avoid the release of confidential data. Hence numbers are only approximate. The perturbation impact is negligible for most practical purposes. The effect can be significant and must be considered when interpreting small numbers.

Appendix D: Consultation List

The 2019 Skills Forecast and Proposed Schedule of Work 2019–2023 builds on the consultations undertaken as part of the 2018 return. Feedback on industry imperatives were also captured as part of training package development projects undertaken throughout 2018.

More specifically, key individual industry and group stakeholders, identified by the Process Manufacturing, Recreational Vehicle and Laboratory IRC, were consulted during the development of the Industry Skills Forecast. See the consultation list below.

Feedback was gathered via the following methods:

- forums, meetings and focus groups – attended in person and via webinar
- one-on-one consultation – attended via phone/teleconference and/or face-to-face.

Consultation List

Organisation

Astor Industries

Caps and Closures

Dolphin Products

KM Consulting

Plastic and Rubber Technical Education Centre

Plastic Industry Pipe Association of Australia

Plastics Industry Manufacturers of Australia (PIMA)

PPC Moulding Services

Resources Industry Training Council

TAFE NSW

Victorian Curriculum Maintenance Management Service
