



Australian
Industry and
Skills Committee

SUSTAINABILITY

Case for Change

Name of allocated IRC(s): Sustainability
Name of the SSO: IBSA Manufacturing

1. Administrative information

For a list of the products proposed to be reviewed as part of this project, please see **Attachment A**.

| | |
|-----------------|---|
| Name of IRC(s): | Sustainability Industry Reference Committee |
|-----------------|---|

| | |
|--------------|--------------------|
| Name of SSO: | IBSA Manufacturing |
|--------------|--------------------|

1.1 Name and code of Training Package(s) examined to determine change is required

MSS – Sustainability training package

2. The Case for Change

For information on the job roles to be supported through the proposed qualifications updates, enrolments data, completion rates, and the number of RTOs delivering these qualifications please see **Attachment B**.

2.1 Rationale for change

This case for change, which has been guided and informed by the Sustainability IRC, will investigate an improved structure for the Sustainable Operations and Environmental Monitoring qualifications in the MSS Sustainability Training Package. This work will include the review and redevelopment of four qualifications and 64 units of competency (25 in Sustainable Operations and in 39 Environmental Monitoring).

- MSS40118 - Certificate IV in Sustainable Operations
- MSS50118 - Diploma of Sustainable Operations
- MSS40218- Certificate IV in Environmental Monitoring and Technology
- MSS50218- Diploma of Environmental Monitoring and Technology

The 64 units of competency are listed in **Attachment A**.

These qualifications support job roles including Team Leader/Supervisor (Sustainability), Sustainability Technician/Auditor/Officer, Environmental Consultant/Assistant/Technician/Protection Officer/Compliance Officer/Planning Officer, Ecological Fieldhand, Water Resources Officer, Assistant Field Officer and Local Government Officer (see **Attachment B**).

The project will review and update the units contained within the Sustainable Operations and the Environmental Monitoring and Technology qualifications (within the Sustainability Training Package) so that they support new legislation and new job role requirements which have arisen in the manufacturing sector. These qualifications have not been reviewed and updated since 2016 and industry feedback indicates that they do not reflect current job roles and the contemporary demands of the manufacturing sector. Not only do these qualifications need to be reviewed to reflect current and contemporary job role and industry requirements, but emerging skills requirements are also expected to result from new drivers outlined below.

The *Sustainability Industry Reference Committee Skills Forecast and Proposed Schedule of Work 2019–2023* submitted to AISC in April 2019 is a key source of information about current and emerging skill needs in this Case for Change. Further industry consultation has identified critical issues driving the need to review and redevelop training package components across the Sustainable Operations and the Environmental Monitoring and Technology streams of the MSS Sustainability Training Package as summarised below.

Summary of Industry Changes Driving this Case for Change

Sustainable Operations

There are two sets of changes driving this case for change, one at the *government policy level* and the other at the *qualifications level*. Changes in waste import standards in countries around the world have highlighted the need for Australia to manage its own waste more efficiently. In 2018, China introduced new restrictions on the recyclable materials it imports through its National Sword Policy. Australia is one of more than 100 countries impacted by China's new restrictions. In late 2020, the federal government passed legislation banning the export of unprocessed waste overseas via the *Recycling and Waste Reduction Act 2020*.

Furthermore, there has been a global shift towards a "circular economy" with the realisation that by 2025, the initiative could generate over \$1 trillion of annual material savings globally. The Australian manufacturing sector needs to keep pace with this global trend and moving toward closed loop systems which include recycling, reuse and remanufacturing principles will enable Australia to offer traceable premium green products and reduce reliance on imported goods and materials. (see **Attachment F**)

Additionally, there are emerging federal and state initiatives which support the development of the circular economy. The Australian government's Cooperative Research Centres Projects (CRC-P) Grants provide funding for short-term research collaborations in many areas including sustainability. The Australian Government has also partnered with industry and academia to establish a new Centre of Excellence to drive industry-led product stewardship action in Australia. The Centre of Excellence supports business to better manage the environmental impacts of their products.

Recycling Victoria, Victoria's circular economy policy and action plan, will fundamentally overhaul the state's recycling system and will help to create 3,900 jobs in the environmental protection space which covers many job roles discussed in this case for change. Recycling Victoria addresses the urgent challenges which have caused disruptions to Victoria's recycling services and makes fundamental changes to help prevent these issues from recurring.

The City of Melbourne has established the *Waste Minimisation and Innovation Fund 2021* which provides an annual total of \$175,000 in funding is available through circular economy innovation grants. The circular economy innovation grants are available to support small businesses, small social enterprise/start-ups and medium-sized food businesses working to reduce waste production across the City of Melbourne.

In response to legislative change in the ban on export waste and the global shift towards a circular economy, the project will consider the incorporation of circularity skills into existing units. The units specifically identified for inclusion of circularity skills are listed below:

- MSS015026 Develop strategic sustainability plans
- MSS027024 Select, commission and maintain environmental monitoring instruments
- MSS403085 Ensure process improvements are sustained
- MSS024014 Implement environmental management plans and procedures
- MSS027013 Coordinate environmental management activities
- MSS402002 Sustain process improvements
- MSS407020 Undertake a qualitative review of a process change
- MSS024015 Apply an understanding of environmental principles to a site

- MSS408006 Develop and refine systems for improvement in operations
- MSS015024 Develop required sustainability reports
- MSS015039 Develop response to corporate social responsibility
- MSS015038 Establish and review metrics for social sustainability
- MSS015033 Implement and monitor reengineering for sustainability
- MSS014014 Implement social sustainability in work practices
- MSS015027 Implement sustainability plans
- MSS014008 Improve sustainability through readily implementable change
- MSS015034 Inform and educate organisation and community representatives on sustainability issues

In addition, the project is expected to develop up to five new units for specific circular economy skills relating to management, policy/procedures, design, procurement, and waste management which will be incorporated into sustainable operations qualifications. These new units will be cross-sector in nature and will also be available to be imported into other training packages.

At the qualifications level, industry feedback has identified that the terminology used in the qualifications does not reflect contemporary language and concepts. All relevant units of competency in the Sustainable Operations qualifications need to reflect current language and concepts in sustainability. Additionally, the entire sustainability sector functions on legislation and the qualifications need to promote greater awareness of government regulations. For example, where to find environmental legislation, acts, regulations, standards, guidelines, criteria, policies etc. Furthermore, we will explore opportunities to rationalise superfluous units or units which have low-enrolments and they may be removed from the qualification.

Environmental Monitoring and Technology streams

Industry has provided advice on new job roles which have emerged in the thermography and occupational hygiene sectors. The thermography sector requires skilled workers who can interpret and report on data. The thermography industry uses thermal imaging cameras which detect the energy that is produced by an object or animal and turn this into an image. This can be used for analysis, evaluation accuracy and report writing. A lack of skill and understanding of how to interpret the information is creating significant safety and economic risks for the industries that use thermographic imaging services. New skills are required in interpreting and presenting data, including validating laboratory reports and 'data visualisation', which involves interpreting the available data and communicating it in a way that can be acted upon within an organisation.

The reworking of units proposed in this case for change to include more data analysis skills will assist in addressing a recent trend identified in the *Jobs of Future Index* conducted by consulting firm *Cognizant*. The Index reveals that while "jobs of the future" are still below their pre-pandemic levels, the results suggest they are on their way back. "Jobs of the future" focus on digital skills, data analytics, 3D design and the industrial internet of things (IIoT). A reworking of units contained within the Environmental Monitoring and Technology specialisation to include data analysis skills could assist in a post-COVID revival of "jobs of the future".

In the case of the occupational hygiene job role, the current qualifications need to cover this area. The job role centres around workplace health and not workplace safety per se and consequently there is a

significant gap in the vocational training market in this area. Some examples of vocational work in this area include:

- Asbestos inspection and air monitoring;
- Dust exposure monitoring/real time ambient dust concentration;
- Fume exposure monitoring (welding and metal spraying); and
- Coal dust exposure monitoring.

Additionally, industry consultation has identified that terminology used in the Environmental Monitoring and Technology qualifications also needs to reflect current sustainability practices. For example, the units of competency need to be updated to reflect current terminology around corporate social responsibility.

The issues raised by stakeholders and the appropriate training package response can be found in **Attachment D**.

Implications of not implementing change:

The risks of not implementing the proposed changes are as follows:

- There may be a danger of the thermography and occupational hygiene job roles not having skill pathways.
- Training package content will not fully reflect the current and emerging skill needs in industry such as embedding workplace practices in circular economy principles.
- Superfluous or low-enrolment qualifications will remain in the training system.
- Unit content which does not reflect up-to-date terminology will remain in the qualifications.
- If circular economy issues come dramatically to the fore in the coming years, job roles in the manufacturing sector will not have received the necessary upgrades to include emerging sustainability principles.

Therefore, a review of the current Sustainable Operations and Environmental Monitoring qualifications which improves alignment with contemporary job roles is timely. This will provide pathways to skill workers and ensure the *Modern Manufacturing Strategy* is fully supported.

2.2 Evidence for change

IBSA has undertaken ongoing consultation and research since 2018 which has informed this Case for Change. This consultation and research consisted of focus groups, interviews and questionnaires and it revealed that the sustainability sector is becoming more sophisticated, which is bringing with it a demand for clear science and economic evidence on which to base decisions, as opposed to 'environmentally friendly' motivations. Additionally, IBSA Manufacturing has been approached by the Australian Professional Thermography Association (AUSPTA) with the prospect of working collaboratively on thermography job role requirements.

Furthermore, IBSA's Sustainability Training Package "Issues Register" received stakeholder feedback which highlights the need to update terminology to reflect current best practice, new legislative requirements for environmental sustainability and the need to redevelop these qualifications to better meet industry needs.

The need for circular economy skills, was initially raised by an IRC member associated with the Centre for Sustainable Materials Research and Technology (SMaRT). The centre has conducted significant groundwork

in relation to circular economy principles. Furthermore, stakeholder feedback was received via IBSA's *Modern Manufacturing Industry Consultation* and one-on-one interviews.

The one-on-one interviews with industry and RTO stakeholders demonstrated the importance of the circular economy. When asked what role the circular economy will play over the next five years, the stakeholders discussed the following themes (see **Attachment F**):

- “The circular economy is a game changer”.
- “It will play a huge part, we need equipment to last longer”.
- “It will be massive, the critical issue for Australia is the debate on emissions”.
- “Circular economy is how you create a lifecycle of the product”.
- “It’s going to make a big difference when government funding is sought”.

Feedback obtained through the aforementioned stakeholder engagement activities also highlighted the value of the Sustainable Operations/Environmental Monitoring qualifications and identified the need to align emerging and future job roles to the circular economy and new technologies. In turn, these skills can support industry transition to new models in advanced manufacturing such as Industry 4.0, digitisation and the circular economy.

2.3 Consideration of existing products

IBSA Manufacturing recently conducted a search using the TGA text analysis tool and also conducted a search on training.gov.au to identify any relevant units covering the circular economy skills. There was no evidence of any units offered by other SSOs which offer similar content we are proposing to develop. The relevant units identified were:

- Develop workplace policy and procedures for sustainability (AHCWRK511);
- Apply environmentally sustainable work practices (AHCWRK309);
- Conduct sustainable work practices in open spaces (SISXRES001); and
- Participate in environmentally sustainable work practices (AHCWRK209).

Sustainability units identified focused on “standard sustainability practices” and do not cover circular economy principles.

In relation to the development of a circular economy skillset, consideration has been given to the use of existing skillsets available on training.gov.au (e.g. *Sustainable Practice Skill Set TAESS00016*). However, these do not meet the current requirements of the manufacturing industry. The manufacturing sector requires a circular economy skillset to fully immerse the learner/student in circular economy principles.

2.4 Approach to streamlining and rationalisation of the training products being reviewed

As a result of the removal of the two graduate qualifications from the MSS Sustainability Training Package resulting from the Minister’s streamlining process, there are 14 units which are no longer linked to qualifications. This project will review these units to identify where the skills are associated with particular job roles and ensure that qualifications are updated appropriately.

Additionally, the project will include:

- A review of low or no enrolment units and deletion of any unnecessary units; and
- The adoption of phrases and terminology in the Sustainable Operations/Environmental Monitoring units of competency that make them accessible and transferrable for use in other training packages.

3. Stakeholder consultation

3.1 Stakeholder consultation undertaken in the development of Case for Change

*For a full list of industry-specific stakeholders that actively participated in the stakeholder consultation process undertaken to develop the Case for Change, please see **Attachment C**.*

As part of the consultation process to demonstrate the manufacturing sector's support for the review of the Sustainable Operations and the Environmental Monitoring qualifications, IBSA Manufacturing conducted the following activities:

- Review of the MSS – Sustainability “Issues Register”;
- Undertook 19 in-depth interviews with industry and RTO stakeholders as part of the Modern Manufacturing Industry consultation;
- Conducted a survey with key industry stakeholders (57 responses) as part of the Modern Manufacturing Industry consultation;
- Undertook in-depth one-on-one consultations with circular economy practitioners; and
- Conducted an extensive literature review on the current relevance of the circular economy.

Additionally, there are numerous peak bodies representing sustainability interests in Australia. IBSA will consult with these organisations which include:

- Association for Manufacturing Excellence;
- Association for Sustainability in Business;
- Australian Land and Groundwater Association;
- Australian Sustainable Built Environment Council;
- Australian Sustainable Business Group;
- Business Council of Sustainable Development;
- Centre for Sustainability Leadership;
- Facility Management Association;
- Energy Efficiency Council;
- LEAN Enterprise Australia;
- The Australasian Circular Textile Association; and
- Australian Professional Thermography Association (AUSPTA).

In relation to the circular economy skills, we will consult with experts in the field and also, respondents to the *Export Ban Discussion Paper*. For example, organisations that will be contacted include:

- University of NSW SMART Centre
- Australian Council of Recycling;
- Australian Industry Group;
- Australian Industrial Ecology Network;
- Bioenergy Australia;
- EastWaste;
- National Waste and Recycling Industry Council Australia;

- Suez;
- Cleanaway;
- Veola;
- Polytrade Recycling; and
- Waste Management and Resource Recovery Association.

3.2 Evidence of Industry Support

*For a list of the issues raised by stakeholders during consultation and the IRC's response to these, please see **Attachment D**.*

Key stakeholders have raised the following issues in relation to this case for change:

- Terminology issues – the terminology used in the qualifications is dated and has not kept paced with industry. All relevant units of competency in the Sustainable Operations qualifications need to reflect current terminology and practices in sustainability.
- Qualifications require greater awareness of government regulations - for example, where to find legislation, acts, regulations, standards, guidelines, criteria, policies etc. The whole sustainability sector functions on legislation.
- Missing Occupational Hygiene specialisation/pathway; and
- The qualifications need to reflect the current circular approach to sustainability.

3.3 Proposed stakeholder consultation strategy for project

*Note: For a full list of industry-specific stakeholders who are planned to be contacted to participate in the stakeholder consultation process undertaken for this project, please see **Attachment E**.*

IBSA Manufacturing follows a training package development model, which supports the development of two drafts and two rounds of public consultation. Below is an overview of the process.

- Details about the project are made available on the IBSA Manufacturing website current projects.
- The MSS IRC nominate Technical Advisory Committee (TAC) members who will:
 - provide specific subject-matter advice and technical expertise for the development and review of the training package components. The TAC is made up of industry representing the broad range of users – and RTO representatives.
 - attend regular meetings throughout the project to discuss draft documents, consider issues presented by stakeholders and through public consultation, and to provide expert advice.
- Develop draft training package components.
- Stakeholder consultation strategies include:
 - Promoting the project via the IBSA website, newsletters and email notifications to subscribed stakeholders and industry groups at key stages of the project.
 - Undertaking industry surveys to obtain feedback about:
 - the job roles of people involved in the circular economy
 - the key tasks performed in the workplace and the skills and knowledge required to complete the tasks competently
 - whether skills and knowledge have changed over time
 - the amount of evidence industry would want to see to know that a person is competent and ready to perform in the workplace.

- Conducting broader consultation with industry through engagement and meetings with stakeholders, across a number of jurisdictions to collect industry intelligence to inform training package development work.
- Undertaking targeted consultation with identified regional stakeholder in Geraldton WA
- Completing two rounds of public consultation of draft components for review and comment via the IBSA Manufacturing website.
- Consulting with state and territory training authorities (STAs) throughout the project through:
 - an initial briefing and maintaining open dialogue throughout the project.
 - requesting feedback on Draft 1 and Draft 2/Validation draft components.
 - providing opportunity for STAs to review the components and provide feedback at the conclusion of the project, as provisioned for in the Training Package Development and Endorsement Process Policy.
- Feedback received during public consultations is tabled in an Issues Register and considered by the TAC.
- All feedback will be considered, and competing views dealt with through consultation. The outcomes will be approved in IRC meetings.

*For a full list of industry-specific stakeholders who are planned to be contacted to participate in the stakeholder consultation process undertaken for this project, please see **Attachment E**.*

4. Licencing or regulatory linkages

Qualifications within the scope of this Case for Change have linkages to environmental legislation and standards including, but not limited to:

- Recycling and Waste Reduction Bill 2020;
- Environment Protection and Biodiversity Conservation Act 1999;
- Water Act 2007; and
- AS/NZS ISO 14001 Environmental Management Systems.

5. Project implementation

5.1 Prioritisation category

It is proposed that this project be progressed as a “routine project”. The routine prioritisation category is based on:

- The need for the Sustainable Operations and the Environmental Monitoring qualifications to reflect current job roles.
- The manufacturing sector’s need for a circular economy skillset as requested in the extensive stakeholder consultation undertaken by IBSA.

5.2 Project milestones

Key project milestones include:

- AISC project approval – June 2021
- Draft 1 consultation research and analysis– June – July 2021
- Draft 1 consultation and stakeholder feedback– September 2021
- Stakeholder validation – October - December 2021
- Quality Assurance – January – February 2022
- Final consultation with states and territories – March - April 2022
- CfE submitted for approval – May 2022

Note: IBSA will handover draft 1 components, consultation report and files in December 2021 as required.

5.3 Delivery or implementation issues

During one-on-one consultations, stakeholders have raised issues arising this case for change. These barriers to implementation include:

- the willingness and ability for RTOs to get the updated Sustainable Operations/Environmental Monitoring qualifications and skillset on scope.

Implementing the Skills Minister's Priority reforms for Training Packages (2015 and October 2020)

The case for change addresses the following priorities:

Ensure that more information about industry's expectations of training delivery is available to training providers to improve their delivery and to consumers to enable more informed course choices:

The Implementation Guide will be updated to:

- include information on industry expectations of training delivery.

This Case for Change was agreed to by the Sustainability IRC

Name of Chair

Signature of Chair

Date

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DRAFT

Attachment A: Training Package components to change

IBSA Manufacturing

Contact details: [Insert contact details]

Date submitted: [Insert date submitted]

| Project number | Project Name | Qualification/ Unit / Skillset | Code | Title | Details of last review <i>(endorsement date, nature of this update transition, review, establishment)</i> | Change Required |
|----------------|--------------------|-----------------------------------|-----------|---|--|-----------------|
| 1 | Sustainability CfC | Qualification | MSS40118 | Certificate IV in Sustainable Operations | Reviewed 30/Jul/2020 | Update |
| 1 | Sustainability CfC | Qualification | MSS50118 | Diploma of Sustainable Operations | Reviewed 30/Jul/2020 | Update |
| 1 | Sustainability CfC | Qualification | MSS40218 | Certificate IV in Environmental Monitoring and Technology | Reviewed 30/Jul/2020 | Update |
| 1 | Sustainability CfC | Qualification | MSS50218 | Diploma of Environmental Monitoring and Technology | Reviewed 30/Jul/2020 | Update |
| 1 | Sustainability CfC | Unit | MSS025018 | Assess the environmental risk and impact of a project activity or process | Reviewed 22/Oct/2018 | Update |

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|---|--------------------|------|-----------|---|-------------------------|--------|
| 1 | Sustainability CfC | Unit | MSS024021 | Assist with assessing and monitoring stormwater systems | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS025013 | Assist with assessing and monitoring wetlands | Reviewed 22/Jun/2016 | Update |
| 1 | Sustainability CfC | Unit | MSS025017 | Assist with assessing site environmental indicators | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS025011 | Assist with odour field assessment | Reviewed 22/Jun/2016 | Update |
| 1 | Sustainability CfC | Unit | MSS025010 | Assist with odour source assessment | Reviewed 22/Jun/2016 | Update |
| 1 | Sustainability CfC | Unit | MSS025021 | Collect and evaluate groundwater data | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS024019 | Collect and evaluate meteorological data | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS024017 | Collect spatial and discrete environmental data | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS015011 | Conduct a sustainability energy audit | Reviewed 22/Jun/2016 | Update |
| 1 | Sustainability CfC | Unit | MSS015031 | Conduct a sustainability related transport audit | Reviewed 22/Oct/2018 | Update |

| | | | | | | |
|---|--------------------|------|-----------|--|-------------------------|--------|
| 1 | Sustainability CfC | Unit | MSS015028 | Conduct a sustainable water use audit | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS015030 | Conduct an emissions audit | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS027017 | Contribute to environmental decision making | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS027016 | Contribute to improving environmental performance | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS027021 | Coordinate air quality management activities | Reviewed 25/Jun/2019 | Update |
| 1 | Sustainability CfC | Unit | MSS027013 | Coordinate environmental management activities | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS027022 | Coordinate noise management activities | Reviewed 25/Jun/2019 | Update |
| 1 | Sustainability CfC | Unit | MSS027023 | Coordinate site remediation or rehabilitation activities | Reviewed 25/Jun/2019 | Update |
| 1 | Sustainability CfC | Unit | MSS027020 | Coordinate water quality management activities | Reviewed 25/Jun/2019 | Update |
| 1 | Sustainability CfC | Unit | MSS017015 | Design for sustainability | Reviewed 22/Oct/2018 | Update |

| | | | | | | |
|---|--------------------|------|-----------|---|------------------------------|--------|
| 1 | Sustainability CfC | Unit | MSS405089 | Develop a business case for improved energy management | Establishment 30/Jul/2020 | Update |
| 1 | Sustainability CfC | Unit | MSS015025 | Develop a business case for sustainability improvements | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS017016 | Develop a proactive social sustainability strategy | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS015037 | Develop regulated sustainability reports | Reviewed 25/Jun/2019 | Update |
| 1 | Sustainability CfC | Unit | MSS015024 | Develop required sustainability reports | Reviewed 25/Jun/2019 | Update |
| 1 | Sustainability CfC | Unit | MSS015039 | Develop response to corporate social responsibility | Establishment 25/Jun/2019 | Update |
| 1 | Sustainability CfC | Unit | MSS015036 | Develop response to sustainability related regulation | Reviewed 25/Jun/2019 | Update |
| 1 | Sustainability CfC | Unit | MSS015026 | Develop strategic sustainability plans | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS015038 | Establish and review metrics for social sustainability | Reviewed 25/Jun/2019 | Update |
| 1 | Sustainability CfC | Unit | MSS015020 | Facilitate an energy audit | Establishment 22/Oct/2018 | Update |

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|---|--------------------|------|-----------|--|------------------------------|--------|
| 1 | Sustainability CfC | Unit | MSS017014 | Identify and improve sustainability interactions with the community | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS027019 | Implement and maintain the site health and safety management system | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS015033 | Implement and monitor reengineering for sustainability | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS024014 | Implement environmental management plans and procedures | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS014014 | Implement social sustainability in work practices | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS015027 | Implement sustainability plans | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS014008 | Improve sustainability through readily implementable change | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS015034 | Inform and educate organisation and community representatives on sustainability issues | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS405087 | Investigate energy management as a business issue | Establishment 30/Jul/2020 | Update |

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|---|--------------------|------|-----------|---|-------------------------|--------|
| 1 | Sustainability CfC | Unit | MSS017013 | Manage a major sustainability non | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS015021 | Measure and report carbon footprint of a product or product class | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS025008 | Monitor and evaluate noise | Reviewed 22/Jun/2016 | Update |
| 1 | Sustainability CfC | Unit | MSS024023 | Navigate in urban, regional and remote areas | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS024022 | Perform environmental biological techniques | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS025012 | Perform environmental microbiological tests | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS025009 | Perform sampling and testing of air | Reviewed 22/Jun/2016 | Update |
| 1 | Sustainability CfC | Unit | MSS025014 | Perform sampling and testing of contaminated sites | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS025022 | Perform sampling and testing of soils | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS025016 | Perform sampling and testing of stationary emissions | Reviewed 22/Jun/2016 | Update |

| | | | | | | |
|---|--------------------|------|-----------|---|-------------------------|--------|
| 1 | Sustainability CfC | Unit | MSS024018 | Perform sampling and testing of water | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS025023 | Plan and conduct environmental project work | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS405088 | Plan, implement and monitor energy management | Reviewed 30/Jul/2020 | Update |
| 1 | Sustainability CfC | Unit | MSS024016 | Process and present environmental data | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS025005 | Produce site maps | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS027015 | Provide environmental advice to clients | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS025020 | Provide environmental information to customers | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS024020 | Recognise common geological landforms and samples | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS025019 | Report environmental data | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS015035 | Report to Global Reporting Initiative Standards | Reviewed 25/Jun/2019 | Update |

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|---|--------------------|----------|-----------|--|-------------------------|--------|
| 1 | Sustainability CfC | Unit | MSS027024 | Select, commission and maintain environmental monitoring instruments | Reviewed 25/Jun/2019 | Update |
| 1 | Sustainability CfC | Unit | MSS027018 | Undertake complex environmental project work | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS024024 | Undertake simple environmental project activities | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSS024013 | Work and communicate effectively as an environmental technician | Reviewed 22/Oct/2018 | Update |
| 1 | Sustainability CfC | Unit | MSSXXXXXX | | | New |
| 1 | Sustainability CfC | Unit | MSSXXXXXX | | | New |
| 1 | Sustainability CfC | Unit | MSSXXXXXX | | | New |
| 1 | Sustainability CfC | Unit | MSSXXXXXX | | | New |
| 1 | Sustainability CfC | Unit | MSSXXXXXX | | | New |
| 1 | Sustainability CfC | Skillset | MSSSSXXXX | | | New |

Attachment B: Job role, enrolment information, the number of RTOs currently delivering these qualifications

Please set out the job roles to be supported through the updated qualifications, enrolment data over the past three years in which data is available for each qualification, completion rates for each qualification, and the number of RTOs delivering these qualifications.

| Job role | Qualification to be updated to support the job role | Enrolment data (2017-19) | Completion rates (2017-19) | Number of RTOs delivering |
|---|---|--------------------------|----------------------------|---------------------------|
| <ul style="list-style-type: none"> • Team Leader / Supervisor (Sustainability) • Sustainability Technician | Certificate IV in Sustainable Operations | 5 | 0 | 3 |
| <ul style="list-style-type: none"> • Sustainability Auditor • Sustainability Officer • Environmental Consultant | Diploma of Sustainable Operations | 410 | 65 | 2 |
| <ul style="list-style-type: none"> • Sustainability Officer • Environmental assistant • Environmental technician • Ecological Fieldhand • Environmental officer • Water Resources Officer | Certificate IV in Environmental Monitoring and Technology | 165 | 35 | 5 |
| <ul style="list-style-type: none"> • Environmental Compliance Officer (Local Government) • Environmental Officer • Environmental Technician • Environmental protection officer • Assistant Field Officer • Technical Officer • Local Government Officer • Water Resources Officer • Environmental Planning Officer | Diploma of Environmental Monitoring and Technology | 475 | 145 | 5 |

Attachment C: List of stakeholders that actively participated in the consultation process of the Case for Change

| Name of stakeholder | Title | Organisation | Organisation type (e.g. Employer, peak body, union, RTO, regulator) | Jurisdiction/town/city (e.g. NSW/Sydney) |
|---------------------|--|---|---|--|
| John Condilis | Director | Nobody Denim | Employer | VIC, Melbourne |
| Meriel Chamberlin | Founder | Full Circle Fibres | Employer | QLD |
| Paul Saunders | Curriculum Maintenance Manager | Chisholm Institute | RTO | VIC, Melbourne |
| Bradley Anderson | Program Design | NSW Government | Regulator | NSW, Sydney |
| Bo Christensen | Innovator and implementor, Energy Strategy | Productivity and Sustainability, Workplace Strategy | Employer | VIC, Melbourne |
| Sasha Kraft | General Manager | Slater Cabinets | Employer | WA, Perth |
| Eddy Constable | Director | Welding Quality Management Systems | Employer | Newcastle, NSW |
| Han Michel | Owner | E-three & Associates Pty Ltd | Employer | Newcastle, NSW |
| Janet Dobbie | HR Manager | Varley Group | Employer | Newcastle, NSW |
| Leanne Reid, | Leaning and Development Advisor | Quenos | RTO | Sydney, NSW |
| Nick Eleftheriou | President | The Australian Institute for NDT (AINDT) | Peak Body | Melbourne, VIC |

| | | | | |
|--------------------|----------------------------|---|----------|----------------|
| Matthew Pearson | Teacher | CQ University | RTO | QLD |
| Matthew Scrimgeour | Apprentice Program Manager | Fairbrother Construction | RTO | Devonport, TAS |
| Paul Twynham | Managing Director | Chatoyer Environment | Employer | Sydney, NSW |
| Simon Gazia | Managing Director | LTT Group Pty Ltd | RTO | Perth, WA |
| Steven Quirk | Director | Frontline Group | Employer | Melbourne, VIC |
| Troy Scott | Training Manager | Alliance Airlines | RTO | Brisbane, QLD |
| Hilde Heim | Fashion Designer | Australian Institute of Creative Design | RTO | Brisbane, QLD |
| David Fox | General Manger | LA Services | Employer | Sydney, NSW |

Attachment D: Issues Raised by Stakeholders during consultation on the development of the Case for Change

| Stakeholder Type | Issues Raised | IRC's Response to Issues Raised |
|---|---|--|
| Industry Reference Committee (IRC) Representatives | | |
| Peak Industry Bodies | | |
| Employers (Non-IRC) | | |
| Regulators | | |
| Registered Training Organisations (RTOs) | <p>Qualifications require greater awareness of government regulations.</p> <p>Missing Occupational Hygiene specialisation.</p> <p>Qualification needs to reflect the current circular approach to sustainability.</p> | <p>IBSA will review and update the in Sustainable Operations/ Environmental Monitoring qualifications based on the feedback provided by stakeholders</p> |
| Training Boards/Other | | |
| State and Territory Training Authorities (STAs) | | |
| Unions | | |
| <i>Please add other categories as appropriate</i> | | |

Attachment E: List of stakeholders to be contacted as part of the development of the Case for Endorsement

| Name of Stakeholder | Title | Organisation | Organisation type (e.g. Employer, peak body, union, RTO, regulator) | Jurisdiction/town/city (e.g. NSW/Sydney) |
|---------------------------------------|--|--|---|--|
| Peter Ballas | Head of Business Excellence at Note Printing Australia | Association for Manufacturing Excellence | Peak body | National |
| Sam Stewart | CEO | Association for Sustainability in Business | Peak body | QLD |
| Analisa Haskell | CEO | Australian Land and Groundwater Association | Peak body | NSW |
| Julia Cambage | CEO | Australian Sustainable Built Environment Council | Peak body | NSW |
| Australian Sustainable Business Group | | Australian Sustainable Business Group | Peak body | |
| Andrew Petersen | CEO | Business Council of Sustainable Development | Peak body | Sydney, NSW |
| Centre for Sustainability Leadership | | Centre for Sustainability Leadership | Peak body | Melbourne, VIC |
| Bryon Price | Chairman | Facility Management Association | Peak body | Melbourne, VIC |

| | | | | |
|--------------|-------------------|---------------------------|-----------|----------------|
| Luke Menzel | CEO | Energy Efficiency Council | Peak body | Melbourne, VIC |
| Lisa Warner | CEO | LEAN Enterprise Australia | Peak body | Melbourne, VIC |
| Bill Swetman | Managing director | Central Regional TAFE | RTO | Geraldton, WA |

Attachment F: Circular Economy Background

A circular economy is an economic system aimed at eliminating waste and the continual use of resources. Circular systems employ reuse, repair and recycling to create a closed-loop scheme, minimising the use of resources and the creation of waste. The circular economy aims to keep products, equipment and infrastructure in use for longer, thus improving the productivity and longevity of these resources. Waste materials and energy should become input for other processes.

The circular economy touches on every part of the manufacturing sector. The circular economy needs are immense, but it also should be regarded as having massive opportunities. As part of the Australian government's modern manufacturing strategy, the circular economy will create the opportunity to invest in the new technologies and research and as well require a new range of skills and capabilities across the whole sector. Some of these skills will be specific to the circular economy and some will be quite generic.

Background

In early August 2019, the Council of Australian Governments (COAG) agreed that Australia should establish a timetable to ban the export of waste plastic, paper, glass and tyres, while building Australia's capacity to generate high value recycled commodities from these waste products.¹

Changes in waste import standards in countries around the world have highlighted the need for Australia to manage its own waste more efficiently. In 2018, China introduced new restrictions on the recyclable materials it imports through its National Sword Policy. Australia is one of more than 100 countries impacted by China's new restrictions.²

¹ National Waste and Recycling Taskforce, *Banning exports of waste plastic, paper, glass and tyres*, available from <https://www.environment.gov.au/system/files/consultations/bf403fda-b6d7-4476-9c6f-5627502d52a4/files/waste-export-ban-discussion-paper-november-2019.pdf>, Canberra: Department of Environment and Energy, November 2019, p.4

² Ibid.

On 8 November 2019, the Australian commonwealth, state and territory environment ministers agreed that waste plastic, paper, glass and tyres which have not been processed into useful materials should be banned from export from Australia.¹

Sustainable and agile manufacturing

Australian needs an agile manufacturing sector that responds to changing markets to supply high-value exports and support up-and-coming industries. The sector's workforce needs to be informed, experienced and passionate about closed loop, sustainable manufacturing systems that leverage recycling and green energy.²

Moving toward closed loop systems with recycling, reuse and remanufacturing principles will enable Australia to offer premium green products and reduce reliance on imported goods and materials. The ability to use flexible and digitised manufacturing will also allow manufacturers to pivot their production lines to meet supply shortages and then revert production once the shortfall has been met.³

Stakeholder Consultation

IBSA takes the opportunity in all consultations with the manufacturing sector to gather data and feedback about the *circular economy* and its related principles. As part of the recent Modern Manufacturing Industry Consultation, IBSA manufacturing conducted the following activities with some focus on the circular economy:

- 19 in depth interviews with industry and RTO stakeholders;
- A survey with key industry stakeholders (57 responses);

Further to this, IBSA also conducted research specifically on the topic of the circular economy including:

- In-depth one-on-one consultations with circular economy practitioners; and
- An extensive literature review on the current relevance of the circular economy.

The circular economy is becoming a crucial aspect of the Australian manufacturing sector. The aforementioned in-depth interviews with industry and RTO stakeholders demonstrated the importance of the circular economy. When asked what role the circular economy will play over the next five years, the stakeholders discussed the following themes:

- *“The circular economy is a game changer”.*

¹ National Waste and Recycling Taskforce, *Banning exports of waste plastic, paper, glass and tyres*, available from <https://www.environment.gov.au/system/files/consultations/bf403fda-b6d7-4476-9c6f-5627502d52a4/files/waste-export-ban-discussion-paper-november-2019.pdf>, Canberra: Department of Environment and Energy, November 2019, p.4

² Ibid.

³ CSIRO, “COVID-19: Recovery and resilience: Opportunities for Australia to leverage science and technology to support economic recovery and resilience”, CSIRO; Canberra, 2020

- *“It will play a huge part, we need equipment to last longer”.*
- *“It will be massive, the critical issue for Australia is the debate on emissions”.*
- *“It's important, the longer something lasts, the better it is”.*
- *“Circular economy is how you create a lifecycle of the product”.*
- *“It will be critical, Australia produces a lot of textiles waste and we need to stop this”.*
- *“It's going to be very important, we are trying to reduce waste in the pharmaceutical space”.*
- *“It will have some impact in cabinet making and joinery trades”.*
- *“It's going to make a big difference when government funding is sought”.*

DRAFT

Attachment G: Additional data

Subject enrolments

| Unit code | Unit title | Enrolments 2016-19 |
|-----------|---|--------------------|
| MSS025018 | Assess the environmental risk and impact of a project activity or process | 20 |
| MSS024021 | Assist with assessing and monitoring stormwater systems | 0 |
| MSS025013 | Assist with assessing and monitoring wetlands | 80 |
| MSS025017 | Assist with assessing site environmental indicators | 17 |
| MSS025011 | Assist with odour field assessment | 0 |
| MSS025010 | Assist with odour source assessment | 0 |
| MSS025021 | Collect and evaluate groundwater data | 0 |
| MSS024019 | Collect and evaluate meteorological data | 0 |
| MSS024017 | Collect spatial and discrete environmental data | 0 |
| MSS015011 | Conduct a sustainability energy audit | 405 |
| MSS015031 | Conduct a sustainability related transport audit | 0 |
| MSS015028 | Conduct a sustainable water use audit | 80 |
| MSS015030 | Conduct an emissions audit | 60 |
| MSS027017 | Contribute to environmental decision making | 0 |
| MSS027016 | Contribute to improving environmental performance | 0 |
| MSS027021 | Coordinate air quality management activities | 0 |

| | | |
|-----------|---|----|
| MSS027013 | Coordinate environmental management activities | 0 |
| MSS027022 | Coordinate noise management activities | 0 |
| MSS027023 | Coordinate site remediation or rehabilitation activities | 0 |
| MSS027020 | Coordinate water quality management activities | 0 |
| MSS017015 | Design for sustainability | 0 |
| MSS405089 | Develop a business case for improved energy management | 0 |
| MSS015025 | Develop a business case for sustainability improvements | 80 |
| MSS017016 | Develop a proactive social sustainability strategy | 0 |
| MSS015037 | Develop regulated sustainability reports | 80 |
| MSS015024 | Develop required sustainability reports | 60 |
| MSS015039 | Develop response to corporate social responsibility | 0 |
| MSS015036 | Develop response to sustainability related regulation | 0 |
| MSS015026 | Develop strategic sustainability plans | 35 |
| MSS015038 | Establish and review metrics for social sustainability | 0 |
| MSS015020 | Facilitate an energy audit | 0 |
| MSS017014 | Identify and improve sustainability interactions with the community | 0 |
| MSS027019 | Implement and maintain the site health and safety management system | 0 |
| MSS015033 | Implement and monitor reengineering for sustainability | 0 |
| MSS024014 | Implement environmental management plans and procedures | 5 |

| | | |
|-----------|--|-----|
| MSS014014 | Implement social sustainability in work practices | 65 |
| MSS015027 | Implement sustainability plans | 35 |
| MSS014008 | Improve sustainability through readily implementable change | 60 |
| MSS015034 | Inform and educate organisation and community representatives on sustainability issues | 0 |
| MSS405087 | Investigate energy management as a business issue | 0 |
| MSS017013 | Manage a major sustainability non | 0 |
| MSS015021 | Measure and report carbon footprint of a product or product class | 65 |
| MSS025008 | Monitor and evaluate noise | 185 |
| MSS024023 | Navigate in urban, regional and remote areas | 0 |
| MSS024022 | Perform environmental biological techniques | 0 |
| MSS025012 | Perform environmental microbiological tests | 20 |
| MSS025009 | Perform sampling and testing of air | 310 |
| MSS025014 | Perform sampling and testing of contaminated sites | 150 |
| MSS025022 | Perform sampling and testing of soils | 10 |
| MSS025016 | Perform sampling and testing of stationary emissions | 0 |
| MSS024018 | Perform sampling and testing of water | 5 |
| MSS025023 | Plan and conduct environmental project work | 15 |
| MSS405088 | Plan, implement and monitor energy management | 0 |

| | | |
|-----------|--|-----|
| MSS024016 | Process and present environmental data | 5 |
| MSS025005 | Produce site maps | 100 |
| MSS027015 | Provide environmental advice to clients | 0 |
| MSS025020 | Provide environmental information to customers | 10 |
| MSS024020 | Recognise common geological landforms and samples | 0 |
| MSS025019 | Report environmental data | 0 |
| MSS015035 | Report to Global Reporting Initiative Standards | 0 |
| MSS027024 | Select, commission and maintain environmental monitoring instruments | 0 |
| MSS027018 | Undertake complex environmental project work | 0 |
| MSS024024 | Undertake simple environmental project activities | 0 |
| MSS024013 | Work and communicate effectively as an environmental technician | 0 |

Source: NCVET VOCSTATS 09/04/2021

2020 Employment numbers

Source: Sustainability IRC Prioritisation Report and 2019 MSS Industry Skills Forecast and Proposed Schedule of Work

| Qualification | ANZSCO Code and Class | No. of people employed | % annual growth |
|---|--------------------------|------------------------|-----------------|
| Certificate IV in Sustainable Operations | 3114 Science Technicians | 16,948 | 9.2 |
| Diploma of Sustainable Operations | | | |
| Certificate IV in Environmental Monitoring and Technology | | | |
| Diploma of Environmental Monitoring and Technology | | | |

Occupation Projections to May 2024¹

| Occupation Code | Occupation | Employment level May 2019 ('000) | Department of Employment, Skills, Small and Family Business Projections | | |
|-----------------|---------------------|----------------------------------|---|--|-----|
| | | | Projected employment level May 2024 ('000) | Projected employment growth five years to May 2024 | |
| | | | | ('000) | (%) |
| 3114 | Science Technicians | 16.9 | 17.1 | 0.2 | 1.2 |

¹ Labour Market Information Portal, Australian Government, Occupation Projections – 5 years to May 2024 (Excel), Accessed on 14/04/2021

Apprenticeship funding

| Qualification | States/territories where an apprenticeship/traineeship is available | States/territories where the qualification is JobTrainer eligible |
|---|---|---|
| Certificate IV in Sustainable Operations | TAS | N/A |
| Diploma of Sustainable Operations | N/A | N/A |
| Certificate IV in Environmental Monitoring and Technology | ACT | N/A |
| Diploma of Environmental Monitoring and Technology | NSW, ACT | NSW |

Source: myskills, accessed 14/04/2021

Attachment H: Letters of Support

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