Energy Management

MSS Sustainability Training Package

Case for Change

November 2018

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IBSA MANUFACTURING

Prepared on behalf of the Sustainability IRC for the Australian Industry Skills Committee (AISC)

Sustainability Industry Reference Committee

Case for Change *November 2018*

This Sustainability Industry Reference Committee *Case for Change* has been produced with the assistance of funding provided by the Commonwealth Government through the Department of Education and Training.

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Contents

Administrative Information

This Case for Change proposal is submitted on behalf of:

Sustainability Industry Reference Committee (IRC) Members

Mark Goodsell	Ai Group
Andrew Petersen	Sustainable Business Australia
Karla Paeglis	Energy Efficiency Council
Michael Grogan	Advanced Manufacturing Growth Centre
Ian Curry	Australian Manufacturing Workers' Union
Daniel Giles	The Character Group
Peter Nemtsas (Chair)	Myoora Transformations
Luke McConchie	Leighton O'Brien
Patricia Caswell	Tricia Caswell and Associates
Meriel Chamberlin	Full Circle Fibres
Bradley Anderson	Office of Environment & Heritage, NSW Government

Skills Service Organisation (SSO)

Innovation and Business Skills Australia (IBSA Manufacturing).

The Training Package Components Impacted by the Case for Change Proposal

The Training Packages, Skill Sets and Units of Competency that are impacted by the proposals in this Case for Change are listed in **Schedule A**.

Stakeholder Consultation Method and Scale

Stakeholders involved in the development of this project and preparation of the Case for Change are listed in **Schedule B.**

Executive Summary

Purpose

Energy price shock has been identified as a leading issue and risk for both enterprises and the residential market and was identified by CEOs in Australia as *the biggest risk to doing business in 2017*[1]. Compounding this, Australia has been ranked as "the least energy efficient country in the developed world"[2] according to the 2018 International Energy Efficiency Scorecard produced annually by the American Council for an Energy-Efficient Economy.

Whilst larger organisations are looking to new technology for solutions to ameliorate rising energy costs, this is not a viable option for many smaller organisations. Demand for courses being offered outside of the VET system (such as those run by the NSW Government Office of Environment and Heritage) demonstrates a growing interest in and demand for skills and strategies for managing energy costs in a way that requires little capital investment. This includes skills for tasks such as:

- Understanding energy consumption
- Interpreting energy data
- Identifying potential areas of energy savings
- Developing and implementing energy management systems, policies and plans
- Engaging decision makers and other organisation stakeholders
- Negotiating energy supply contracts
- Identifying and procuring alternative energy options.

Demand for these skills is coming from representatives of a wide range of industries and occupations, from electricians and energy consultants, through to those with responsibilities for managing facilities, environment and sustainability, financial and other aspects of business operations.

A lack of capability and skills within organisations for managing and procuring energy in an efficient and sustainable way poses significant risk for the ongoing viability of Australian businesses and is increasing the risk of whole industry sectors moving offshore. This makes the development of new training products to address these skills a high priority. The cross-sectoral nature of the MSS Sustainability training package makes the Sustainable Operations qualifications the ideal location for these products.

Project Scope and Objectives

The training products to be developed and updated through this project will be relevant to a wide range of occupations with responsibilities for management or procurement of energy within any industry that is being impacted by rising energy costs.

It is proposed that *ISO 50001 Energy Management Systems* is used as the basis to build a cross-sector Energy Management Skill Set, titled ***Implement and Maintain Energy Management Skill Set,*** that provides a common approach for Energy Management across all Training Packages. This standard provides a framework for managing energy performance and addressing rising energy costs, while helping organisations to reduce their environmental impact and meet emission reduction targets. The

[1] DIRECTOR SENTIMENT INDEX: RESEARCH SUMMARY SECOND HALF 2017 p. 6. Institute of Australian Company Directors

[2] American Council for an Energy Efficient Economy (ACEEE), '2018 International Energy Efficiency Scorecard', June 25th, 2018.

'Plan-Do-Check-Act' process followed will be familiar to many organisations, and is consistent with the many of the existing Sustainability units, and recently developed skill sets.

The new *Implement and Maintain Energy Management Skill Set* provides a vocational education pathway for the acquisition of the skills required to establish and maintain an organisation's Energy Management strategy. The Skill Set will be made up of 5 Units of Competency that provide the required systems management, change management, and technical skills as follows:

- **Develop one new unit** on reporting within a continual improvement framework
- **Develop one new unit** on managing energy procurement, if a suitable unit can't be found from following **PSP procurement units**
    - *PSPPCM018 Conduct demand and procurement spend analysis*
    - *PSPPCM021 Coordinate strategic procurement*
    - *PSPPCM026 Establish the strategic procurement context*
    - *PSPPCM027 Evaluate and improve strategic procurement performance*
    - *PSPPCM013 Make procurement decisions*
- **Revise the following unit in the context of ISO50001 Energy Management Standard**
    - MSS015011 Conduct a sustainability energy audit
- **Adopt two existing units**
    - MSS405086 Develop sustainable energy practices
    - MSS015025 Develop a business case for sustainability improvements, and

A pathway from the *Implement and Maintain Energy Management Skill Set* to the MSS qualifications listed below may be achieved by **adding the revised and new units as electives in the following qualifications**.

- MSS40316 - Certificate IV in Competitive Systems and Practices
- MSS50316 - Diploma of Competitive Systems and Practices
- MSS60316 - Advanced Diploma of Competitive Systems and Practices
- MSS80316 - Graduate Certificate in Competitive Systems and Practices
- MSS80416 - Graduate Diploma of Competitive Systems and Practices
- MSS40118 – Certificate IV in Sustainable Operations
- MSS50118 – Diploma of Sustainable Operations
- MSS80118 – Graduate Certificate in Sustainable Operations

The project will also examine the feasibility of creating a 'specialist bank' to house the skill set units in the Diploma of Sustainable Operations to create a specialist pathway in 'Energy Management'.

Summary of Proposed Changes

The training package products listed in **Schedule A** are proposed for development / review in this Case for Change.

Area of Focus: *Reporting*

Develop one new unit / modify an existing unit:

Reporting within continual improvement framework	This NEW unit is proposed to cover Energy Management reporting including: • Input (evaluation results, review and audit results) • Output to management review (changes/improvements)

Area of Focus: *Implementation and Procurement*

Possible development of a new unit if a suitable imported unit can't be identified:

MSSXXXX Manage Energy Procurement	Develop a new unit if required with specific focus on the procurement of energy services, products, equipment and energy. A new unit would only be required if the consultation identifies that none of the PSP units are suitable.
One of the following: *PSPPCM018 Conduct demand and procurement spend analysis* *PSPPCM021 Coordinate strategic procurement* *PSPPCM026 Establish the strategic procurement context* *PSPPCM027 Evaluate and improve strategic procurement performance* *PSPPCM013 Make procurement decisions*	Further analysis of the identified units and consultation with industry to be undertaken to identify the most appropriate unit for import into the Skill Set. It is important that the unit can be contextualised for the procurement of energy, services, products, and equipment. A new unit would only be required if the consultation determines the identified units are not suitable.

Area of Focus: *Energy Usage and Planning, Implementation and Operation*

Revise the following MSS unit in the context of the current ISO 50001 Energy Management Standards:

MSS015011 Conduct a sustainability energy audit	This unit relates to the Energy Management process and maps to competency requirements in the standard. It is recommended that this unit is redeveloped and inclusion of the word "audit" in the title investigated and tested

Area of Focus: *Building internal buy-in and support*

Add existing MSS units to build awareness and support for the need to implement an Energy Management system internally

MSS405086 Develop sustainable energy practices	This unit looks at categorising energy according to lean principles and determining ways to improve energy use and eliminate waste. Addresses some skills identified. It is recommended that it be redeveloped to strengthen alignment with ISO 50001 Energy Management Standards as part of project.
MSS015025 Develop a business case for sustainability improvements	This unit assist with critical 'change management' tasks including management buy-in, scope, benefits, costs, and project justification.

NB: There were 2 existing competencies also considered for determining energy usage, and planning for energy use improvements and reductions. They are:

- *CPCCBC5012A Manage the application and monitoring of energy conservation and management practices and processes*
- *BSBSMB410 Review and implement energy efficiency in business operations*

Both these units were considered not robust or comprehensive enough to meet the key details of the standards, and new/additional competencies would need to be developed to meet industry requirements in this context.

The Case for Change

Current and Emerging Developments

The Case for Change was informed by evidence-based research having regard for the Training Package Development and Endorsement Process Policy and provides robust evidence to support AISC's decision-making process.

Extensive research identified developed units, skill sets and even qualifications to address energy management concepts. They have generally been developed to meet the specific requirements of their own qualification or sector including electrotechnology, meat processing, food processing, property and construction, but the processes have not been written in a generic format that could be applied to all industries even if the units were contextualised. Furthermore, many industries may find it difficult to accept a specific unit from one training package could be contextualised to another unrelated sector or training package.

Units addressing energy management from a cross sectoral perspective are present in the MSS and BSB Training Packages. The BSB Training Packages address the concepts broadly and are useful as electives to raise awareness and implement basic, readily implementable improvements but may be too limited or not comprehensive enough to address the specific skills needed to develop, implement and review Energy Management in the context of current standards and industry requirements. There has not been a standardised approach across all training packages to ensure energy management is implemented, monitored and reviewed abreast of current standards. The development of energy management units in multiple sectors may have arisen from the absence of a comprehensive, accurate and current set of cross sector competencies. Many units have concepts mixed with other issues and are often in the context of environmental management. There is no stand alone, cross sector skill set that addresses the establishment, implementation and review of an Energy Management System that aligns with current standards.

It is important to be aware, as noted in the ISO Standard, that an energy audit is separate to, but can contribute to, an internal Energy Management System or energy performance audit. It also might be part of Environmental Management System or Corporate Social Responsibility reporting. There is considerable overlap within units which makes Energy Management competencies difficult to isolate.

It is also important to note that even if a cross sector skill set was developed in Energy Management, some industries may still require sector specific 'energy' competencies within their own training package to address their specific requirements e.g. electricians advising clients on the energy efficiency of products and technology. This skill would sit outside the development and implementation of an Energy Management System as advocated in this Case for Change.

In summary, although there are

- many units around measuring energy use in different contexts and looking at ways to reduce energy use
- units on energy auditing, expert procurement and sustainability reporting and
- skills sets and units written in the context of Environmental Management Systems and Standards

there is no cross-sector skill set to bring it all together in the context of implementing and managing an Energy Management System; managing energy; and energy procurement.

We have feedback that industry finds it hard to bring it all together and understand the collective requirements. Our research indicates that the collective requirements are generally around:

- Establishing and deploying an energy management policy and system
- Identifying current energy uses, alternatives, and opportunities for energy use improvement and/or reduction
- Developing energy planning, implementing plans, monitoring and reviewing
- Stakeholder engagement and commitment
- Energy management reporting

Sector / Industry Drivers for Change

IBSA Manufacturing has undertaken extensive research and analysis in support of this case for change. This information has been presented to the Sustainability IRC for consideration and discussion prior to the submission of this proposal. This Case for Change is predicated on the following key drivers which have been identified through evidence-based research and stakeholder consultation. See **Schedule B** 'Stakeholder Consultation Method and Scale' for further detail.

The Energy Efficiency Council (EEC) has called for urgent support from Manufacturers to address rising gas and electricity prices stating it is "critical to help manufacturers adjust through improved energy management and switching to lower-cost fuels"[3]. As previously stated, the *Directors Sentiment Index, second half 2017*, Australian Institute of Company Directors (AICD) identified "electricity prices and energy policy as the major economic challenges facing Australian businesses" [4].

Outside of the manufacturing sector, Energy Management is an issue the Council of Small Business Organisations Australia (COSBOA) has identified that "many Australian businesses are grappling with bill shock, unpredictable jumps in energy bills, that badly affect their bottom line"[5]. The COSBOA have established a research project to scope the impact of energy bill shock on small businesses and the development of resources to educate and support small business in Energy Management.

In response to the above, the Sustainability IRC requested the development of a Training Package product to upskill workers in Energy Management, energy procurement and technical skills necessary to establish systems and processes required to improve energy efficiency and drive down costs.

ISO 50001 Energy Management Framework

The MSS IRC members identified ISO 50001 Energy Management as the best practice framework for the development, implementation and continuous improvement of an organisation's Energy Management systems. The ISO 50001 Energy Management is based on the management system model of continuous improvement and the Plan, Do, Check, Act (PDCA) framework also used for other well-known standards such as ISO 9001 Quality Management and ISO 14001 Environmental Management, and is also consistent with the existing PDCA framework for many of the Competitive Systems and Practices units of competency in the Sustainability training package. This familiar framework makes it easier for organisations to integrate Energy Management into their existing quality and environmental management systems and practice. The proposed Energy Management skill set has also been developed using a similar approach, and compliments the recently developed skill sets for the Sustainable Operations qualifications – *SS7 Lead Energy and greenhouse gas improvement* and *SS14 Lead response to Corporate Social Responsibility* (currently in development).

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[3] 2017-18 policy priorities for an energy efficient Australia, p. 11. Energy Efficiency Council http://www.eec.org.au/uploads/Documents/Platofrm%20Documents/eec_priorities_final_web_lowres_200617.pdf

[4] DIRECTOR SENTIMENT INDEX: RESEARCH SUMMARY SECOND HALF 2017 p. 6. Institute of Australian Company Directors

[5] Future Proofing Energy Bills for Small Business. COSBO web site.

Non-Accredited Courses

In response to rising energy costs, government departments and professional associations are providing a range of non-accredited short courses focusing on energy efficiency and management. These programs contain Energy Management courses closely related to the ISO 50001 Energy Management at the basic, intermediate and advanced level.

The Office of Environment & Heritage, NSW Government ran a program of 16 different energy efficiency and management courses from mid-2013 to early 2017 attracting a total of 2,126 participants from a broad cross-section of NSW businesses. While each of the courses relates to energy reduction, some focused on a specific initiative such as lighting or commercial refrigeration. The course which most closely aligns to this project is 'Energy Management Basics' which attracted 402 participants or 96.4% of the total participants. Due to the popularity of the 'Introduction to Energy Management' course, the NSW Government has extended the funding.

The Energy Efficiency Council (EEC) co-deliver some courses with the Office of Environment & Heritage, NSW Government including the Energy Management Basics course which is accounted for in the data above.

The above summary shows there is a demand for Energy Management training and provides an opportunity to build on this industry driven model which could be converted to enrolments by developing a vocational education pathway utilizing the existing Sustainable Operations qualifications.

Job Roles

The Energy Efficiency Council (EEC, 2017) has established that professionals enter the fields of energy efficiency and energy productivity from a range of backgrounds including engineering, financial management, organisational change, stakeholder engagement and organisational excellence / process optimisation / process improvement. It is also likely that the employee given responsibility to implement an organisation's Energy Management System could also be responsible for a portfolio of tasks and / or responsibilities including Carbon Management, Corporate Social Responsibility, Environment Management, Quality/Continuous Improvement, Asset Management or Finance.

Job roles include:

- Environmental Managers
- Engineers
- Quality Managers
- Asset / Finance Manager
- Those responsible for Energy Management in their organisation
- Anyone tasked with implementing an Energy Management system

Opportunity for Development

In addition to the establishment of a new skill set (*Implement and Maintain Energy Management Systems*), there may also be an opportunity to develop a senior management skill set – ***Develop and Deploy Energy Management Policy.***

The focus of this skill set (subject to validation by industry) would be to define, establish, implement and maintain energy policy, including identifying targets, resources, scope, reporting and reviews.

The approach would be to revise existing MSS units or develop new units to address the skills gaps (mainly in energy procurement and energy management system reporting plus knowledge requirements in corrective actions, energy baseline, energy management system components, energy performance indicators EnPI, energy services, energy contracts).

This development would only be undertaken following an assessment by industry that validates the need for a senior management skill set, tentatively titled *Develop and Deploy Energy Management Policy* that would be supported through future enrolments.

Training Package Research and Analysis Undertaken

Extensive desktop research was undertaken to determine all existing units of competency referring to 'Energy' – specifically around 'usage', 'efficiency' and 'management' to determine if they could be contextualized for this development. This research is presented in **Schedule C.**

As indicated above, where appropriate these units will be considered during the development to avoid unnecessary new unit development.

This work highlighted that while there was a number of units that referenced the key areas of energy usage, energy efficiency, and energy management, they were not appropriate when creating a skill set based on the international Energy Management standard 50001 (EnMS). Instead they were quite narrow and specific for the training package e.g. meat processing, electrotechnology, food processing, property and construction, and eliminated the possible use from a cross sectoral perspective.

ISO50001 provides a framework for establishing energy management best practice, and to help organisations to improve their energy efficiency by guiding them through the processes necessary to improve energy performance, including energy efficiency, use, and consumption. The research undertaken confirmed that existing training package components are not suitable for a skill set targeting organisations implementing an energy management system based on the ISO50001 framework.

Please see **Schedule C** for further information.

Recommended Changes

The Sustainability IRC recommends the products listed in **Schedule A** be approved based on the evidence:

- *MSS015011 Conduct a sustainability energy audit* (Energy Usage and Planning / Implementation + Operation - existing unit)
- *MSS405086 Develop sustainable energy practices* (Energy Usage and Planning / Implementation + Operation - existing unit)
- *MSSXXXX Reporting within continual improvement framework* (reporting - new unit) or *MSS015024 Develop required sustainability reports* (reporting - existing unit)
- Either importing of 1 existing procurement unit or develop a new procurement unit - *MSSXXXX Manage Energy Procurement*
- *MSS015025 Develop a business case for sustainability improvements*

Industry support for change

Stakeholder Consultation

Key individual and group stakeholders as identified by the Sustainability IRC were consulted and provided information for this Case for Change during the development phase, and are detailed in Schedule B.

Extensive desktop research was initially undertaken to identify what training package components were currently available in the Energy Management area that could be utilised to meet the project scope and objectives. Once the components were confirmed and their possible usage identified, the scope and proposed project components were developed with extensive IRC input and support. This input also utilised where needed the extensive networks available to individual IRC members. The consultation approach was to validate the research methodology undertaken was comprehensive and accurate, and then to confirm and approve the project scope and objectives would meet industry needs. This scope was then validated by the IRC members' external networks through discussions with a targeted selection of key stakeholders (listed in Schedule B) to assist in the finalisation of this Case for Change. The broad industry sector base of the MSS IRC members meant a good cross section of industry was represented in this early validation stage, and not just representative of manufacturing organisations. This approach is also commensurate with the cross sectoral approach of the Sustainability Training package.

Overview of the Issues Identified

The MSS 2018 Industry Skills Forecast identified that industry needs skills and knowledge in energy management, analysing energy consumption, interpreting energy data, negotiating energy procurement and estimating future energy use. With the rising cost of energy being one of the key risk factors for Australian businesses, organisations need workers who can:

- understand energy basics, concepts and principles
- identify and implement improvements to reduce energy costs
- assess energy bills and have informed conversations with suppliers offering energy management solutions
- understand how energy is consumed in the business
- interpret energy data
- build and implement an energy management system and practical action plan
- build a strategic energy plan and integrate energy management into core business
- understand the best options for energy generation for a business
- use asset planning to optimise energy usage of major equipment
- engage senior management and staff in energy management strategy
- set energy performance indicators to improve energy performance
- develop strategies to generate own carbon free energy and achieve carbon neutrality[6]

Industry has also identified there may be a gap relating to development of the Energy Management Policy which is a senior management responsibility. Those agreeing to, and developing energy management policies, are operating at a CEO, Director or Board Member level. Competencies were found that did address policy development, but it is worth considering that those operating at this level should already

[6] outcomes as listed in training offered by NSW Office of Environment & Heritage http://www.environment.nsw.gov.au/business/energy-management-training.htm

have the skill level to develop policy in response to a standard, regulation or organisational requirement, and that the lack of Energy Management Policy might be due to a lack of commitment instead of a competency gap.

Sensitivities

- No major sensitives or dissenting views from stakeholders have been identified in preliminary research except that there may be different standards, codes, regulations depending on the sector or the type of organisation (i.e. public, government, private, not-for-profit).
- The ASX Corporate Governance Council (Council) has recently completed public consultation on updating and issuing a fourth edition of its Corporate Governance Principles and Recommendations (Code) which may impact requirements in Energy Management and reporting for some companies.
- Due to existing “energy” units across training packages, IBSA Manufacturing will consult with other SSOs to ensure there is no repetition or duplication.

On Stakeholders

Industry has identified energy management and procurement as a priority. No national training currently exists to meet industry requirements for skills and knowledge in energy management, analysing energy consumption, interpreting energy data, negotiating energy procurement and estimating future energy use. New training package components will meet cross sector needs to ensure they are relevant across industries and sectors and be available for importing into other training packages as required.

Risks of not Implementing the Changes

There are currently no units to meet cross sector industry requirements in terms of developing, implementing and reviewing Energy Management in the context of current standards, regulations and industry requirements. Industry has expressed concern that lack of skills and knowledge at senior level in energy management and procurement is making it difficult to respond to increases in energy costs which is having major impacts on organisational efficiency and competitiveness.

Estimated Timeframes and Methodology for Training Package Development

IBSA Manufacturing Training Development Projects follow the Training Package Development and Endorsement Process Policy and uses a five-phase methodology as outlined below. The estimated timeframes are also

Phase 1 – Initial research and analysis
January – March 2019
Establishment of a TAC to validate project scope and undertake a job role functional analysis.

Phase 2 – Draft 1 and public consultation
April – June 2019
Develop first draft of training package components for feedback.

Phase 3 – Draft 2 and public consultation
July – September 2019
Respond to feedback and develop second draft of training package components.

Phase 4 – Approval process
October – December 2019
Adjust training package components in response to further feedback and seek approval from respective committees and endorsement from state training authorities.

Phase 5 – Submission to Department
February 2020
Submit to the Department of Education and Training for AISC approval.

IBSA Manufacturing will schedule this work and provide dates for this activity upon notification that this proposal has been accepted.

Implementing the COAG Industry and Skills Council (CISC) Reforms for Training Packages

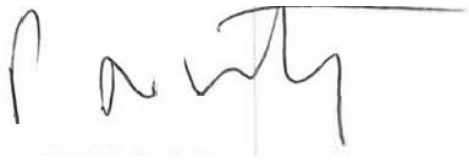
This Case for Change will implement the CISC reforms to the Training Package System as follows:

- ✓ *removing obsolete and superfluous qualifications from the training system to make it easier for consumers to find the training relevant to their needs;*
  - the proposed work will build on existing qualifications to meet the demands of the energy management needs emerging across many sectors. This Case for Change does not include removing any obsolete or superfluous qualifications but may include removing other obsolete training package components, such as units.
- ✓ *making more information available about industry's expectations of training delivery to training providers to improve their delivery and to consumers to enable them to make more informed course choices;*
  - information regarding industry's expectations on implementation will be made available in the Companion Volume.
  - updates to the Companion Volume after this work will provide training providers with clarity on vocational outcomes and pathways and discussions with industry will provide the opportunity to promote these vocational pathways.
- ✓ *ensuring the training system better supports individuals to move easily from one related occupation to another;*
  - the Skill Set training products to be developed through this project will be relevant to a very wide range of occupations and industries, supporting transferability of skills and mobility of skilled workers both within and across industry sectors.
- ✓ *improving the efficiency of the training system by creating units that can be owned and used by multiple industry sectors and housing these units in a 'work and participation bank';*
  - the proposed work builds on existing qualifications and will be developed as cross sector components ensuring that there will be increased portability of skills across industries and sectors.
  - The alignment of the skill set to the ISO 50001 provides transferable skills in a best practice framework that can be adopted and integrated across all Training Packages.
- ✓ *fostering greater recognition of skill sets;* and
  - this Case for Change considers the development of skills sets to build on existing qualifications and to be portable across industries and sectors.
- ✓ *ensuring that accredited courses 'fill the gap' in training packages and provide for training courses to be developed as quickly as industry needs them and support niche skill needs:*
  - this Case for Change does not relate to accredited courses.

IRC Signoff

This IRC Skills Forecast and Proposed Schedule of Work was agreed as the result of a properly constituted Sustainability IRC decision and was approved by the Chair, Peter Nemtsas in November 2018.

This Case for Change was agreed to by the Sustainability IRC.

Name of Chair	Mr Peter Nemtsas
Signature of Chair	
Date	27th November 2018

Schedule A Training Package Components Impacted by the Case for Change Proposal

SSO: Innovation and Business Skills Australia – IBSA Manufacturing

IRC: Sustainability IRC

Date submitted: November 2018

TP code	TP name	Product code	Product name (qualification, skill set, unit of competency)	Review Status (new or updated)	Change Required
MSS	Sustainability	MSSXXXX	Reporting within continual improvement framework (NEW)	New	Develop new unit in the context of ISO50001 Energy Management Standard
MSS	Sustainability	MSSXXXX	Manage energy procurement (NEW)	New or import	Possible new unit development subject to review of PSP units for suitability (refer table below)
MSS	Sustainability	MSS015011	Conduct a sustainability energy audit	Update	Revise in the context of ISO50001 Energy Management Standard
MSS	Sustainability	MSS405086	Develop sustainable energy practices	Adopt	
MSS	Sustainability	MSS015025	Develop a business case for sustainability improvements	Adopt	

TP code	TP name	Product code	Product name (qualification, skill set, unit of competency)	Review Status	Change Required
PSP	Public Sector	PSPPCM018	Conduct demand and procurement spend analysis	Review for relevance	No change required. Potential selection and inclusion of 1 unit related to *Manage energy procurement* if relevant for industry needs.
PSP	Public Sector	PSPPCM021	Coordinate strategic procurement		
PSP	Public Sector	PSPPCM026	Establish the strategic procurement context		
PSP	Public Sector	PSPPCM027	Evaluate and improve strategic procurement performance		
PSP	Public Sector	PSPPCM013	Make procurement decisions		

Schedule B Stakeholder Consultation Method and Scale

Stakeholders

Name	Title / Organisation	Detail method(s) and Scale of Consultation
Industry Stakeholders		
Bradley Anderson	Program Manager Energy Management Services, Office of Environment and Heritage, NSW Government	TAC & IRC Member – discussion, lead contributor to the Case for Change through development, and key contributor to the Carbon Auditing project, and to the Corporate Social Responsibility project.
Andrew Petersen	Chief Executive Officer Sustainable Business Australia	TAC & IRC Member – discussion, key contributor to the Case for Change through development, and key contributor to the Carbon Auditing project, and to the Corporate Social Responsibility project.
Shauna Coffey	Head of Projects Energy Efficiency Council	TAC & IRC Member – discussion, key contributor to the Case for Change through development, and key contributor to the Carbon Auditing project, and to the Corporate Social Responsibility project.
Terry Lawler	Industry Engagement Officer, Industry Skills Advisory Council NT.	TAC Member – discussion, key contributor to the Case for Change through development, and key contributor to the Carbon Auditing project, and to the Corporate Social Responsibility project.
Mark Goodsell	Head – NSW Ai Group	IRC Member – discussion, review of materials, and industry validation.

The following additional stakeholders representing a cross section of Australian industry were consulted by IRC Members in seeking input for this submission, and have confirmed the benefits their organisations or members would gain from this initiative:			
Australian Food and Grocery Council	Australian Industry Group	Weir Minerals	Simplot
Ogis	Liberty Group	BlueScope Steel	Cold Logic
Dematic	L&A Services	Sanitarium	Lion
NSW Business Chamber	Mitsubishi Heavy Industries		
A further 298 organisations have attended a NSW Government Office of Environment and Heritage 'Energy Management' course between 2014 and 2016 and provided further validation of industry need for training in this area.			

Schedule C Findings from Research and Analysis of Training Packages

Training Package components relating to 'Energy Management'

Qualifications relating to Energy Management	Details	Findings / Recommendations
UEE22111 - Certificate II in Sustainable Energy (Career Start)	This qualification covers competencies for work entry program providing grounding in safety and basic skills and knowledge for work in any electrotechnology discipline.	UEE11 Electrotechnology Training Package qualifications are pathways to electrical trades and not for contextualisation for other applications.
UEE42811 - Certificate IV in Air-conditioning Systems Energy Management and Control	This qualification provides competencies to develop strategies for the reduction of energy in buildings and to recommend changes in the way in which energy is controlled in the building either by the installation of new control equipment or by the modification or re-programming of that existing. It includes regulatory requirements for purchasing and handling refrigerants. NB. The Ozone Protection and Synthetic Greenhouse Gas Legislation Amendment Bill 2003 apply to this qualification. Prior to planning the delivery of any training and/or assessment activities all legislative and regulatory requirements shall be identified and included.	UEE11 Electrotechnology Training Package qualifications are pathways to electrical trades and not for contextualisation for other applications.
UEE43111 - Certificate IV in Energy Efficiency and Assessment	This qualification provides competencies to conduct a residential, office and retail dwellings residential and Small Medium Enterprises (SME) energy audit and to develop energy efficient strategies to reduce an energy use in a range of energy services. The qualification also addresses the environmental and legislative contexts with the fundamental energy audit methodology to develop the initiative and solutions of sustainability and financial viability. The core competencies of this qualification meet the prescribed requirements for ERAC requirements for an 'Electrician's licence'.	UEE11 Electrotechnology Training Package qualifications are pathways to electrical trades and not for contextualisation for other applications.

Qualifications relating to Energy Management	Details	Findings / Recommendations
UEE41011 - Certificate IV in Energy Management and Control	This qualification provides competencies to develop strategies for the reduction of energy in buildings and to recommend changes in the way in which energy is controlled in the building either by the installation of new control equipment or by the modification or re-programming of that existing. It includes ERAC requirements for an 'Electrician's licence'.	UEE11 Electrotechnology Training Package qualifications are pathways to electrical trades and not for contextualisation for other applications.
CPP51012 - Diploma of Residential Building Energy Assessment	This qualification is designed to meet the needs of those engaged in assessing the energy and thermal performance of residential buildings. Potential users of this qualification include Nationwide House Energy Rating Scheme (NatHERS) assessors, enterprises, government agencies, industry regulatory bodies, community organisations, building designers, architects and other building professionals associated with residential building thermal performance.	This relates to assessing energy performance and technologies in residential buildings only. Too specific for cross sector application.
MSS40118 – Certificate IV in Sustainable Operations	Contains competencies relating to energy. See MSS units.	Suitable for cross sector application with energy management component.
MSS50118 - Diploma of Sustainable Operations	Contains competencies relating to energy. See MSS units.	Suitable for cross sector application with energy management component.
MSS80118 - Graduate Certificate in Sustainable Operations	Contains competencies relating to energy. See MSS units.	Suitable for cross sector application with energy management component.
BSB42315 - Certificate IV in Environmental Management and Sustainability	This qualification relates to environmental management and implementing an environmental management plan and sustainable work practices. See BSB units.	Suitable for cross sector. Does not appear to address "energy management systems" or align with current standards. It is written in the context of environmental management.

SKILL SETS	Details	Findings / Recommendations
UEESS00102 - Sustainable - Energy assessment of commercial facilities UEESS00103 - Sustainable - Energy Assessment of industrial properties and enterprises UEESS00104 - Sustainable - Energy assessment of residential, office and retail premises UEESS00105 - Sustainable - Energy Efficiency Auditor UEESS00106 - Sustainable - Energy Efficiency Systems Designer UEESS00107 - Sustainable - Energy Efficiency Systems Developer UEESS00108 - Sustainable - Energy Efficiency Systems Integration UEESS00109 - Sustainable - Identify Energy Efficiency Strategies	Various energy assessment and energy management skills sets in the UEE11 Electrotechnology Training Package.	UEE11 Electrotechnology Training Package Skills sets are targeting electrical engineers and electricians and not appropriate for cross sector application and UEE11 units are not suitable for importing into skills sets and qualifications from other Training Packages.

SKILL SETS	Details	Findings / Recommendations
BSBSS00060 - Energy Efficiency in Business Skill Set	*BSBSMB405 - Monitor and manage small business operations* *BSBSMB410 - Review and implement energy efficiency in business operations* *BSBSMB411 - Manage specialist external advisory services*	This skill set is for individuals who contribute to improving energy efficiency in their business operations or work area. It is a pathway to small business management and therefore may not be relevant across all sectors and industries. There is a focus on business plan development and implementation and operations such as providing goods and services. It does also include determining energy use and developing plans to improve energy efficiency. It also includes a general unit on selecting consultants to address skill gaps. This would address procurement in the context of looking for a consultant but not in the context of negotiating energy contracts.
MSSSS00008- SS8 Audit energy usage for a work area	*MSS014009 - Evaluate sustainability impact of a work or process area* *MSS014013 - Contribute to sustainability related audits*	These units cover the evaluation of work area to identify sustainability and environmental issues, causes and potential solutions. It also looks assisting with sustainability related audits in the context of environmental management standards and expressing resource usage and waste as carbon and carbon equivalents. Does not meet the needs of energy management.
MSSSS00009 – SS9 Determine energy usage	*MSS015021 - Measure and report carbon footprint of a product or product class* *MSS015011 - Conduct a sustainability energy audit*	These units cover identifying carbon dioxide equivalent tonnes and calculating embodied carbon of a product. It includes recommending strategies to reduce footprint of product. It also includes auditing product/process or organisation to determine energy usage and providing recommendations for energy reductions. MSS015011 is relevant.

SKILL SETS	Details	Findings / Recommendations
MSSSS00010 – SS10 Improve energy usage for a process or organisation	*MSS015022 - Develop strategies for more sustainable use of resources* *MSS405086 - Develop sustainable energy practices*	This skill set covers improving energy usage. The units cover quantifying and reporting on emissions and resource consumption and waste and consulting with stakeholders to develop strategies and recommendations for improvement. It also covers analysing energy use, developing conservation plans and energy trading plans, investigating alternative energy sources, providing recommendations and consulting with stakeholders to implement plans and monitor improvements. MSS405086 is relevant.
MSSSS00011 – SS11 Improve energy usage for a work area	*MSS014009 - Evaluate sustainability impact of a work or process area* *MSS014010 - Optimise sustainability of a process or work area*	These units cover the evaluation of work area to identify sustainability and environmental issues, causes and potential solutions. It also looks at optimising a manufacturing process or plant.
MSSSS00012 – SS12 Recommend energy improvements	*MSS017010 - Determine process loss through mass or energy balancing*	High level, highly technical unit. Provides credit to Graduate Certificate and Graduate Diploma level qualifications in sustainable operations and competitive systems and practices. AQF 8 and targeting individuals with tertiary qualifications or extensive vocational experience.

UNITS	Details	Findings / Recommendations
UEE11 Electrotechnology Training Package Units	Various units relating to energy management concepts.	UEE11 Electrotechnology Training Package components are targeting electrical engineers and electricians and not appropriate for cross sector application or for importing into skills sets and qualifications from other Training Packages. Note there are some units at a lower AQF level that apply to persons entering work in the energy sector. These are recommended for school based vocational programs and therefore are not written at an appropriate AQF for workers responsible for energy management.
AMPMGT506 Manage utilities and energy	This unit covers identifying energy requirements and costs, monitoring and controlling energy use, reviewing energy performance and costs including procuring/negotiating utility or energy supply conditions and charges. In AQF 5 & 6 qualifications.	This unit states it is for those working in meat sector context – however it does cover identified skills. This unit is quite generic and could be used by any sector.
AMPX313 Contribute to energy efficiency	This unit covers identifying energy use and policies, measuring energy use, interpreting energy use data, maintaining and improving energy efficiency and promoting energy efficient work practices. In AQF 3 qualifications.	Is a generic unit although states it is for meat processing sector. This unit is quite generic and could be used by any sector.
BSBSMB308 Improve energy efficiency in micro or small business operations	In AQF 3 qualification in micro business operations. This unit covers determining where energy savings can be made, evaluating and implementing those options and monitoring them. It applies to micro or small business operations where energy efficiently improvements are readily apparent and easily made within existing budgets and business processes.	Unit addresses some identified skills and knowledge requirements but not at level required for skills set.
BSBSMB410 Review and implement energy efficiency in business operations	In AQF 4 qualifications in business and environmental management and sustainability. Outlines the skills and knowledge required to undertake a structured review and analysis of data relating to energy use, and to plan for and implement	Intended for small business or a work area. This unit addresses the analysis of energy usage and the

UNITS	Details	Findings / Recommendations
	energy efficiency in a small business or work area within a larger organisation.	development of energy efficiency plan.
CPCCBC5012A Manage the application and monitoring of energy conservation and management practices and processes	In AQF 5 building and construction qualifications. Targeting those responsible for managing energy conservation and management practices and processes in medium rise building and construction projects. Preparing, implementing, monitoring, evaluating energy conservation and management plan.	This unit is quite generic and could be used by any sector.
CPCCBC6010A Plan, develop and implement building or construction energy conservation and management practices and processes	In AQF 6 in construction qualifications. This unit is repetitive of above unit. Although it includes scoping and developing overall introduction of energy conservation and management principles and processes.	This unit is quite generic and could be used by any sector although it's title is very specific. It would not be appropriate for addressing cross sector energy management requirements.
CPCCSV5013A Apply principles of energy efficient design to buildings	In AQF 5 & 6 Property Services and Construction qualifications. This unit relates to the design stage of buildings with a view to identifying appropriate energy consumption practices into design briefs.	Does not map to standards. It would not be appropriate for addressing cross sector energy management requirements.
CPPHSA4001A Assess household energy use	AQF 4 qualifications relating to residential application. Includes skills to collect and analyse information on household energy use and provide advice on ways to improve energy efficiency in the home.	Covers skills identified however it very specifically written to residential application and therefore difficult to contextualise. It would not be appropriate for addressing cross sector energy management requirements.
CPPHSA5002A Assess thermal performance and energy efficiency of residential buildings	AQF 5 qualification. Specifically relates to regulation pertaining to residential property.	Does not map. It would not be appropriate for addressing cross sector energy management requirements.
CPPHSA5006A Promote low and zero	AQF 5 qualification.	Does not map. It would not be appropriate for addressing cross

UNITS	Details	Findings / Recommendations
carbon energy technologies in residential buildings	Specifically relates to regulation pertaining to residential property.	sector energy management requirements.
FDFTEC5002A Manage utilities and energy for a production process	AQF 5 qualifications in food processing. Covers energy assessment and supplier contract negotiation.	Covers skills identified however it is very specifically written to food processing application and therefore difficult to contextualise. It would not be appropriate for addressing cross sector energy management requirements.
FWPCOT3263 Maintain and contribute to energy efficiency	AQF 2 & 3 Forest and Wood qualifications. Covers identifying and implementing own requirements to energy efficiency.	It is too basic for inclusion in an Energy Management Skill Set. It would not be appropriate for addressing cross sector energy management requirements.
MEM23143A Apply energy management principles	AQF 5 engineering qualification. Outlines skills and knowledge required to determine an implementation strategy for an energy management program for the purpose of monitoring, fault-finding and managing a building management system (BMS).	This unit is targeting engineers and has mathematical and engineering units as pre-requisites. This is too technical for cross sector application.
MEM23148A Develop energy management solutions	AQF 5 in engineering qualification. Outlines the skills and knowledge required to develop energy management solutions. This includes performing a complete energy audit of a large commercial or industrial building and making recommendations on reducing energy usage.	This unit is targeting engineers and has mathematical and engineering units as pre-requisites. This is too technical for cross sector application.

UNITS	Details	Findings / Recommendations
MSS015011 Conduct a sustainability energy audit	In AQF 4 & 5 qualifications in environmental monitoring and technology, sustainable operations and forestry qualifications. Applies to conducting and energy audit and preparing recommendations. Includes: • Identifying all sources of energy • Calculating energy use (theoretical and actual) • Developing strategies for energy use reduction • Consulting with stakeholders and preparing recommendations	Energy audit units do not map to Energy Management competencies. The energy audit stands alone and can contribute to review findings, but it is only part of the review process. However, this unit does relate to the Energy Management process and map to competency requirements in the standard. Recommend that this unit is reviewed - possible replacement term for "audit" required.
MSS017010 Determine process loss through mass or energy balancing	AQF 8 in competitive systems and sustainable operations qualifications.	This unit would not apply in a cross-sector context or generic energy management application.
MSS405086 Develop sustainable energy practices	In various qualifications at AQF 4, 5, 6 and 8 levels. This unit looks at categorising energy according to lean principles and determining ways to improve energy use and eliminate waste. It also looks at analysing energy use, developing conservation plan, developing trading plans, investigating alternative sources of energy, developing proposals, liaising with stakeholders to implement plans and monitor improvements.	Addresses some skills identified. Recommend it be reviewed as part of project. NB. this unit was reviewed as part of the Carbon Audit Project.
PMAOPS511 Determine energy transfer loads	AQF 5 & 6 manufacturing and plant technology qualifications. Technical unit relating to energy balance and heat transfer for a plant.	This unit would not apply in a cross-sector context or generic energy management application.