



Australian Government

MSS405070 Develop sustainable energy practices

Release: 1

MSS405070 Develop sustainable energy practices

Modification History

Release 1. Supersedes and is equivalent to MSS405070A Develop and manage sustainable energy practices

Application

This unit of competency covers the skills and knowledge required by an individual to identify opportunities for, and make improvements in, sustainable energy practices in an organisation. Areas covered include efficient use of raw materials, management of waste, electricity conservation, heat conservation and management, water management, environment protection and environment obligations of enterprises.

The unit involves analysis of energy used in processes and operations and categorising the energy use according to lean principles. The unit covers categorising energy into necessary use and muda (waste) with the muda being further categorised into necessary muda and unnecessary muda. Strategies for eliminating or minimising energy muda are covered with benefit/cost analyses being required for strategies.

This unit primarily requires the application of communication and problem solving skills associated with collecting and analysing information. An ability to analyse energy use of technology or processes will be applied. Initiative and enterprise, and planning and organising are also required to develop plans for efficient energy use. This unit also requires aspects of self-management and learning to ensure feedback and new learning is integrated into the development of processes.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Competency Field

Competitive systems and practices

Unit Sector

Not applicable

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

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|---|--|-----|--|
| 1 | Analyse energy use | 1.1 | Identify all energy consuming processes. |
| | | 1.2 | Determine quantity and nature of energy consumed. |
| | | 1.3 | Analyse energy consumed and generated in different parts of the process. |
| | | 1.4 | Determine source of energy consumed in process. |
| | | | |
| 2 | Develop energy conservation plans | 2.1 | Determine the efficiency of use of energy by all energy consuming processes. |
| | | 2.2 | Determine causes of low efficiency of use. |
| | | 2.3 | Develop plans for increasing the efficiency of energy use. |
| | | 2.4 | Determine benefit/cost of plans. |
| | | | |
| 3 | Develop energy trading plans | 3.1 | Compare energy generating activities with energy consuming activities. |
| | | 3.2 | Determine feasibility of energy consuming activities using energy generated by other activities. |
| | | 3.3 | Develop plans for energy trading. |
| | | 3.4 | Determine benefit/cost of plans. |
| | | | |
| 4 | Investigate alternative sources of energy | 4.1 | Develop a specification for energy required. |
| | | 4.2 | Identify a range of sources for that energy. |
| | | 4.3 | Determine benefit/cost for alternative energy sources. |
| | | | |
| 5 | Develop plans for more efficient energy use | 5.1 | Compare benefit/costs for different alternatives developed. |
| | | 5.2 | Rank proposals based on benefit/cost compare to limited resources. |
| | | 5.3 | Check proposals meet regulatory requirements. |

		5.4	Recommend proposals for improving energy efficiency.
6	Implement selected plans	6.1	Liaise with relevant people to implement energy efficiency plans.
		6.2	Follow through to ensure implementation occurs.
		6.3	Monitor implementation and make adjustments, as required.
		6.4	Check new energy usage to ensure improvements have occurred.

Foundation Skills

This section describes those required skills (language, literacy and numeracy) that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

- Competitive systems and practices include one or more of:**
- lean operations
 - agile operations
 - preventative and predictive maintenance approaches
 - statistical process control systems, including six sigma and three sigma
 - Just in Time (JIT), kanban and other pull-related operations control systems
 - supply, value, and demand chain monitoring and analysis
 - 5S
 - continuous improvement (kaizen)
 - breakthrough improvement (kaizen blitz)
 - cause/effect diagrams
 - overall equipment effectiveness (OEE)
 - takt time
 - process mapping

	• problem solving • run charts • standard procedures • current reality tree.
Muda includes all of:	• excess production and early production • delays • movement and transport • poor process design • inventory • inefficient performance of a process • making defective items • activities which do not yield any benefit to the organisation or any benefit to the organisations customers.
Necessary muda includes all of:	• an activity or cost which does contribute directly to customer benefit/feature in the product • an activity or cost which cannot be avoided (e.g. regulatory compliance and fixed costs).
Unnecessary muda includes all of:	• an activity or cost which does not contribute directly to customer benefit/features in the product • an activity or cost which can be avoided.
Sources and use of energy includes one or more of:	• all sources of energy used by the process be it electricity, gas/oil/coal or mobile transport fuel • used for heating and cooling • used for moving materials (e.g. pumps and conveyors) • used for modifying materials (e.g. cutting, forming, weaving, knitting, reacting, moulding, extruding and mixing) • used for generating pressure/vacuum or providing motive power for equipment and transport.
Energy trading includes one or more of:	• formal trading, such as buying of energy through alternative suppliers and tender processes and selling of excess energy produced by the organisation to energy companies or other producers • internal trading of excess energy from one area to an energy consuming area elsewhere in the organisation.

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5b04f318-804f-4dc0-9463-c3fb9a3fe998>

Assessment Requirements for MSS405070 Develop sustainable energy practices

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include the ability to develop sustainable energy practices for one (1) or more businesses and to:

- analyse current energy use
- develop conservation and trading plans
- investigate alternative sources of energy
- develop plans for more efficient energy use
- monitor plans implemented and check energy improvements have occurred.

Knowledge Evidence

Must provide evidence that demonstrates sufficient knowledge to interact with relevant personnel and be able to develop sustainable energy practices, including knowledge of:

- sources of data and required calculations
- types and sources of energy
- methods of analysing energy efficiency for different types of energy
- methods of converting energy values from one form to another
- alternative sources of energy
- principles of energy efficiency
- relevant regulatory/legislative requirements
- energy trading schemes and procedures
- organisation and process needs for energy.

Assessment Conditions

- The unit should be assessed holistically and the judgement of competence shall be based on a holistic assessment of the evidence.
- The collection of performance evidence is best done from a report and/or folio of evidence drawn from:
 - a single project which provides sufficient evidence of the requirements of all the elements and performance criteria
 - multiple smaller projects which together provide sufficient evidence of the requirements of all the elements and performance criteria.

- A third-party report, or similar, may be needed to testify to the work done by the individual, particularly when the project has been done as part of a project team.
- Assessment should use a real project developing sustainable energy practices for an operational workplace.
- Knowledge evidence may be collected concurrently with performance evidence or through an independent process such as workbooks, written assessments or interviews (provided a record is kept).
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications associated with this unit.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- Assessors must satisfy the assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.
- The assessor must demonstrate both technical competency and currency.
- Technical competence can be demonstrated through:
 - relevant VET or other qualification/Statement of Attainment AND/OR
 - relevant workplace experience
- Currency can be demonstrated through:
 - performing the competency being assessed as part of current employment OR
 - having consulted with an organisation providing relevant environmental monitoring, management or technology services about performing the competency being assessed within the last twelve months.

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