



Australian Government

MSS015040 Conduct a sustainability energy audit

Release: 1

MSS015040 Conduct a sustainability energy audit

Modification History

Release 1. Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Rang of Conditions removed. Assessment Requirements changed. Supersedes and is equivalent to MSS015011 Conduct a sustainability energy audit.

Application

This unit describes the skills and knowledge required to identify sources and uses of energy for a process, calculate theoretical and actual energy use and identify and evaluate strategies to improve energy usage.

This unit applies to a process within an organisation or its value chain. Audits of multiple processes may be combined to provide broader results, for example, across a site or organisation.

This unit applies to team leaders, technical specialists, managers, or similar roles with the authority to identify and justify improvement options in consultation with a range of stakeholders.

This unit applies to any organisation.

No licensing or certification requirements exist at the time of publication. Relevant legislation, industry standards and codes of practice within Australia must be applied.

Competency Field

Sustainable operations

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Identify all sources and uses of energy in process	1.1 Identify all sources of energy external to the site 1.2 Identify all sources of energy within the site 1.3 Consult with technical, operational and other relevant stakeholders to identify all uses of energy, energy type and intensity required by plant and/or equipment within process
2. Calculate theoretical use of energy	2.1 Calculate theoretical net use of energy by type and intensity for plant and/or equipment

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	2.2 Calculate overall energy balance for process 2.3 Evaluate the need for energy consumption by process compared to alternative processes, plant and/or equipment
3. Measure actual use of energy	3.1 Determine actual net energy use for overall process 3.2 Determine actual net energy use for plant and/or equipment within process 3.3 Calculate difference between theoretical and actual energy use by plant and/or equipment and overall process 3.4 Identify actual energy type used by plant and/or equipment
4. Develop strategies to improve energy usage	4.1 Rank plant and/or equipment by difference between theoretical and actual energy use 4.2 Rank plant and/or equipment by actual energy use 4.3 Identify plant and/or equipment using higher intensity energy than required 4.4 Develop strategies to reduce energy consumption and/or use lower intensity energy
5. Prepare recommendation/s for improved energy usage	5.1 Consult with stakeholders to confirm or amend strategies 5.2 Identify any regulatory or other requirements that impact energy usage and amend strategies as needed to address requirements 5.3 Rank strategies by benefit/cost ratio 5.4 Short-list preferred energy reduction strategies 5.5 Prepare recommendation/s according to procedures and requirements for approval

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

- Reading skills to identify variables and values for energy usage of plant and/or equipment
- Writing skills to document strategies and recommendations for improved energy usage
- Oral communication skills to consult with range of stakeholders
- Numeracy skills to calculate theoretical and actual energy usage.

Other foundation skills essential to performance are explicit in the performance criteria of this unit.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MSS015011 Conduct a sustainability energy audit.

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 MSS015040 Conduct a sustainability energy audit

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Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and demonstrated the ability to:

- determine energy usage and wastage for at least 3 items of plant and/or equipment in a process drawn from:
 - mobile plant
 - fixed plant
 - industrial equipment
 - office equipment
 - • heating, ventilation and air conditioning unit
- develop at least 1 recommendation to improve energy usage for each item.
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Knowledge Evidence

There must be evidence the candidate has knowledge of:

- basic physics of energy types and measuring and calculating energy efficiency
- energy balancing techniques for process and process steps (sometimes known as heat balancing)
- calculating theoretical use of energy
- methods of measuring actual process amount/flows
- current and emerging approaches to energy waste reduction and energy efficiency in the industry or sector and related costs and effectiveness
- cost-benefit analysis
- regulatory and reporting requirements relevant to energy use and the industry.

Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources

- modelling of industry operating conditions.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

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