



**Australian Government**

# **MSS015012 Conduct an emissions audit**

**Release: 1**

# **MSS015012 Conduct an emissions audit**

## **Modification History**

Release 1. Supersedes and is equivalent to MSS015012A Conduct an emissions audit.

## **Application**

This unit of competency covers conducting an audit of emissions related to product or process in an organisation, or part or all of the value chain.

This unit applies to auditing emissions inside organisations and their value chains (e.g. supplier of goods or services or customer). The unit has been developed with manufacturing operations as a focus. However, because of the range of organisations in a typical manufacturing value chain it may also be applied to other types of organisations.

The audit may be conducted to assist in regulatory compliance or as part of a strategy to improve the sustainability of manufacturing operations.

The emphasis in the unit is on informing decision making in regards to emissions using material balancing techniques. While the unit does not preclude actual measurement of emissions it does not cover the measurement/testing or other technical skills to undertake physical measurement of emissions or environmental impact of the emissions. However, there is a requirement to present and organise data. The complexity of this requirement will vary according to the type and scale of the organisation's processes.

A manager or technical specialist who has a major responsibility for sustainability as part of a broader work role would typically undertake this, or sustainability may be their primary work responsibility. The manager or technical specialist may undertake this alone or as part of a team.

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

## **Pre-requisite Unit**

Nil

## **Competency Field**

Sustainable operations

## **Unit Sector**

Not applicable

## **Elements and Performance Criteria**

Elements describe the      Performance criteria describe the performance needed to

|                     |                                                                                                                             |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------|
| essential outcomes. | demonstrate achievement of the element.                                                                                     |
| 1                   | <b>Identify all sources and uses of materials in process</b>                                                                |
| 1.1                 | Identify all sources of materials external to the site.                                                                     |
| 1.2                 | Identify all sources of materials within the site, where appropriate.                                                       |
| 1.3                 | Identify all uses of materials by the process overall.                                                                      |
| 1.4                 | Identify all uses of materials by each process unit.                                                                        |
| 2                   | <b>Calculate theoretical use of the materials</b>                                                                           |
| 2.1                 | Calculate theoretical net consumption of material for each process unit.                                                    |
| 2.2                 | Calculate overall material balance for process/site.                                                                        |
| 2.3                 | Evaluate the need for material consumption by process and units within the process compared to alternative processes/units. |
| 3                   | <b>Measure actual use of materials</b>                                                                                      |
| 3.1                 | Determine actual net material consumption for overall process/site.                                                         |
| 3.2                 | Determine actual net material consumption for each process unit.                                                            |
| 3.3                 | Calculate difference between theoretical and actual material consumption by unit and overall.                               |
| 3.4                 | Identify actual emissions by each process unit.                                                                             |
| 4                   | <b>Develop strategies for reducing emissions</b>                                                                            |
| 4.1                 | Rank units by difference between theoretical and actual material consumption.                                               |
| 4.2                 | Rank units by actual material consumption.                                                                                  |
| 4.3                 | Develop strategies to reduce material consumption.                                                                          |
| 5                   | <b>Prepare a recommendation for an emissions reduction</b>                                                                  |
| 5.1                 | Consult with key stakeholders.                                                                                              |
| 5.2                 | Identify strategies required to meet regulatory or similar requirements.                                                    |

**strategy**

- 5.3 Rank strategies by benefit/cost ratio.
- 5.4 Short-list preferred emission reduction strategies.
- 5.5 Prepare recommendation for reducing emissions.

## 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.

**Materials include one or more of**

- materials directly used and also materials which comprise components which are used
- materials/resources which may be consumed to make a physical product
- materials which may be consumed in delivering a service (e.g. fuel, energy and other consumables).

**Emissions include one or more of**

- fluid leaving the process, other than as part of the product
- solid leaving the process, other than as part of the product
- material leaving in waste streams or entering the process but not leaving as part of the product.

## Unit Mapping Information

Release 1. Supersedes and is equivalent to MSS015012A Conduct an emissions 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 MSS015012 Conduct an emissions audit

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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, for one or more products/processes or part/all of the value chain, to:

- define appropriate boundaries for the sustainability emissions audit
- conduct material balance analyses for a site or value chain
- identify high emissions units/areas
- undertake benefit/cost ratio analyses
- ensure improvement strategies proposed reflect stakeholder needs and regulatory environment.

## Knowledge Evidence

Must provide evidence that demonstrates sufficient knowledge to interact with relevant personnel and be able to conduct an audit of emissions including knowledge of:

- nature of emissions
- material balancing techniques for process and process steps (sometimes known as mass balancing)
- methods of measuring actual process amount/flows
- emission reduction strategies and methods along with costs, effectiveness and alternative disposal strategies caused
- cost-benefit analysis
- relevant legislation, regulations and protocols.

## 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 where an audit of emissions is conducted 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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