



Australian Government

MSS015003 Analyse product life cycle for sustainability

Release: 1

MSS015003 Analyse product life cycle for sustainability

Modification History

Release 1. Supersedes and is equivalent to MSS015003A Analyse product life cycle for sustainability.

Application

This unit of competency covers analysing the life cycle of an existing or a proposed product to inform sustainability related decision making.

This unit applies to analysing all aspects of a product, including its design, production, storage and distribution, use, and end of life reuse, recycling or disposal. This analysis may be undertaken to assist in improving the sustainability of a product or process.

This unit applies inside organisations and their value chains. 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. 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 technologist may undertake this alone or as part of a team.

The technical measurement of operational performance or measurement of emissions or other environmental impact is not covered by this unit.

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 essential outcomes.

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

1 **Assess raw sources of**

1.1 Identify current or planned materials back to their source in the value chain.

	material and resources	1.2	Identify possible alternative materials/sources.
		1.3	Assess the sustainability impacts of each material.
2	Assess the production process	2.1	Identify design brief for product.
		2.2	Map out the current or planned process.
		2.3	Assess the sustainability impacts of each process.
		2.4	Assess the sustainability impact of each material on the process sustainability.
		2.5	Identify possible alternative steps or processes.
		2.6	Determine if alternative steps or processes maintain design brief while improving sustainability.
3	Assess the product life and end of life disposal	3.1	Determine sustainability impacts from steps to final consumer.
		3.2	Determine sustainability impacts from likely uses and applications.
		3.3	Determine sustainability impacts from final use or disposal at end of life.
		3.4	Identify possible alternative steps to customer, use and disposal.
		3.5	Determine sustainability impacts from these alternatives.
4	Develop strategies to improve life cycle	4.1	Identify alternative processes, logistics, usage and disposal with better sustainability impacts.
		4.2	Determine requirements to implement these alternatives.
		4.3	Determine benefit/cost for each alternative.
		4.4	Select preferred alternatives.
5	Prepare a	5.1	Consult with key stakeholders.

**recommendation
for life cycle
improvement**

5.2

Prepare a recommendation for improving product life cycle.

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).

Design brief includes all of

- regulatory environment
- material specifications
- production process
- estimated and actual material and energy consumption
- budget
- timelines
- product use and disposal assumptions
- market assumptions, including target groups, product image and cost.

Sustainability impact includes one or more of

- carbon footprint of product and process
- current and future availability of raw materials
- current and future availability of energy
- waste generation and disposal
- efficiency of process
- the extent to which the production process and product affects the

environment (e.g. on climate, quality of local air and water, ecology, noise)

- relationship with the local and broader community, (e.g. effect of operations on aesthetic appearance, preservation of heritage, and proximity to schools and religious facilities)
- extent of regulatory oversight and cost of compliance.

Final use or disposal at end of life includes decisions and actions on one or more of

- reuse for modified or different purpose
- recycling of components
- disposal.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MSS015003A Analyse product life cycle for sustainability.

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 MSS015003 Analyse product life cycle for sustainability

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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 product/process, to:

- identify materials and their source in the value chain
- identify current and alternative steps in the production process and their sustainability impact
- assess sustainability impact to end of life
- suggest sustainability improvements at each stage of life cycle
- analyse re-use and recycling options.

Knowledge Evidence

Must provide evidence that demonstrates sufficient knowledge to interact with relevant personnel and be able to analyse the life cycle of an existing or a proposed product to inform sustainability related decision making, including knowledge of:

- value chain for analysed products
- sources and uses of materials
- alternative sources of materials
- production process and sustainability impacts of process
- sustainability impacts of supply chain and delivery chain
- alternative ways of delivering value to customer
- cost-benefit calculation.

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 analysis is undertaken to assist in improving the sustainability of a product or process 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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