



Australian Government

MSS015044 Design sustainable product or process

Release: 1

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Modification History

Release 1. Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Supersedes and is not equivalent to MSS015023 Design sustainable product or process.

Application

This unit describes the skills and knowledge required to design a new or redesign an existing product (process, product or service) and its production process to achieve optimal sustainability outcomes.

This unit applies to managers, operational or technical experts or similar roles who are required to liaise with the internal or external customer and to investigate, evaluate and innovate to achieve agreed product and process specifications. The specifications will reflect decisions for 'improved' outcomes in direct, indirect and/or intangible sustainability impact.

This unit does not require the use of design software, detailed drawing or visual design skills.

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.

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1. Negotiate product parameters for low sustainability impact	1.1 Consult with customer to determine apparent need and desired function and features of product 1.2 Determine customer expectations in relation to sustainability impact of product 1.3 Identify market, expected time to market and cost constraints of product and production process 1.4 Identify desired functions and features likely to generate significant sustainability impacts throughout life of product 1.5 Source and analyse specialist advice, stakeholder input and other information to identify alternatives with lower sustainability impacts 1.6 Provide rationale and negotiate with stakeholders to refine product functions and features to reduce sustainability impacts 1.7 Develop and document agreed initial product parameters
2. Develop sustainable product design and production design options	2.1 Identify resource options suitable for product parameters 2.2 Identify production processes suitable for product parameters 2.3 Evaluate immediate and long-term benefits, costs, risks and impacts for different combinations of resources and production processes 2.4 Investigate alternatives with lower sustainability impact and evaluate against product parameters and cost, benefit and risk factors 2.5 Identify product parameters which generate significant sustainability impacts and determine alternatives to improve sustainability 2.6 Present low sustainability impact options for product and production design and alternative product parameters to stakeholders 2.7 Negotiate with stakeholders to confirm final product parameters

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
3. Develop product and production design	3.1 Develop product design specifications with input from specialists and other stakeholders 3.2 Confirm sustainability impacts throughout expected life of process, product or service 3.3 Review designs against product parameters 3.4 Obtain confirmation and/or authorisations from customer and other stakeholders 3.5 Document design specifications according to organisation requirements

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 review information on approaches to sustainability
- Writing skills to document design specifications
- Oral communication skills to negotiate with customer and other stakeholders
- Numeracy skills to quantify direct and intangible aspects of sustainability impact
- Learning skills to identify information needs and sources of information.

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

Unit Mapping Information

Release 1. No equivalent unit.

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 MSS015044 Design sustainable product or process

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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:

- develop and evaluate sustainability impact of at least 2 sets of design options which include both product design and production design
- negotiate and confirm design specifications for optimal sustainability outcomes for at least one process, product or service.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- sustainability impacts from using different materials and different processes and to produce products of different specifications
- current and emerging design approaches to improve sustainability and the impact throughout the life of a process, product or service including:
 - human-centred and iterative design
 - designing out waste and pollution
 - choice of materials, resources and energy
 - reduction of material, resources and energy usage including digitalisation, dematerialisation, shared resources, service-based ‘products’
 - extended product life including modularity, repairability, stewardship, remanufacturing
- alternative sources of materials and components related to the product design and the sustainability differences of each
- alternative processes related to the production design and the sustainability differences of each
- current and emerging approaches to quantifying and evaluating costs, benefits, impacts and risks in relation to sustainability, including direct, indirect and intangible factors
- carbon equivalence and conversion factors
- design documentation and approvals requirements.
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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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