



Australian Government

MSS014003 Optimise sustainability of a process or plant area

Release: 1

MSS014003 Optimise sustainability of a process or plant area

Modification History

Release 1. Supersedes and is equivalent to MSS014003A Optimise sustainability of a process or plant area.

Application

This unit of competency covers optimising the sustainability performance of a complete work area in a plant or part of the manufacturing value chain. It includes ensuring that production systems comply with sustainability and other environmental requirements and that optimal process, plant and equipment utilisation is planned and carried out. It also covers problem solving to fully meet sustainability needs and to ensure that production of finished goods meets customer requirements.

This unit applies inside organisations and their value chains and has been developed with manufacturing operations as a focus especially work areas that process materials or components to manufacture products. However, because of the range of organisations in a typical manufacturing value chain it may also be applied to other types of organisations.

The unit scope includes products made, services offered, and use of sites by an organisation or manufacturing value chain member (e.g. supplier of goods or services or a customer).

This unit describes the work conducted by senior operators, technicians, team leaders or frontline managers and other support staff who optimise process systems as part of their work function. The unit includes all items of equipment and unit operations which form part of the process of a complete area and assumes that the required production, technical, science or other operational skills and knowledge necessary to work in the process or work area have already been gained.

Environmental sensitivities referred to in this unit are at the issue level. 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.

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| 1 | Analyse and evaluate current sustainability performance of process or work area | 1.1 | Identify sustainability goals of the enterprise as they relate to work area. |
| | | 1.2 | Compare actual with possible performance. |
| | | 1.3 | Identify abnormal or sub-optimal sustainability performance. |
| | | 1.4 | Identify hazards associated with process, plant and equipment relevant to work area. |
| | | 1.5 | Collect and evaluate relevant records to determine possible causes for sub-optimal sustainability performance. |
| | | 1.6 | Use appropriate techniques to rank possible causes from most to least probable cause. |
| 2 | Develop plan to optimise sustainable performance of process or work area | 2.1 | Analyse causes to determine action. |
| | | 2.2 | Predict the impact of a change in one unit or area on other value chain components. |
| | | 2.3 | Predict the impact of a change on sustainability performance. |
| | | 2.4 | Develop measurable objectives and evaluate alternatives. |
| | | 2.5 | Identify requirements to implement change. |
| | | 2.6 | Consult with stakeholders regarding planned changes and impacts. |
| | | 2.7 | Develop optimisation plan taking account of hazards identified and sustainability implications and communicate to appropriate personnel. |
| | | 2.8 | Evaluate optimisation action to determine measures of effectiveness. |

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| 3 | Coordinate sustainability optimisation action plan | 3.1 | Coordinate all appropriate process steps and operations in order to rectify causes in process, plant and equipment performance. |
| | | 3.2 | Initiate and/or implement all required optimisation actions. |
| | | 3.3 | Communicate optimisation outcomes to all relevant personnel. |
| | | 3.4 | Implement procedures and systems to eliminate possible future causes. |
| | | 3.5 | Record all relevant information. |
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| 4 | Develop continuous improvement strategies | 4.1 | Review sources of information to identify possible factors causing sub-optimal performance. |
| | | 4.2 | Identify options for removing or controlling the risk of sub-optimal performance. |
| | | 4.3 | Assess the adequacy of existing control and quality methods and systems. |
| | | 4.4 | Identify opportunities to continuously improve performance. |
| | | 4.5 | Develop recommendations for continual improvement of process, plant and equipment effectiveness. |
| | | 4.6 | Consult with appropriate personnel and implement continuous improvement strategies. |
| | | 4.7 | Document implementation of continuous improvement strategies. |

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.

Sustainability includes all of

- meeting all regulatory requirements
- conforming to all relevant industry covenants, protocols and best practice guides
- minimising ecological footprint of process, plant, product or work area
- maximising economic benefit of process plant and product to the organisation and the community
- minimising the negative work health and safety (WHS) impact on employees, community and customer (e.g. WHS impacts of process, product and wastes).

Interactions with the environment include one or more of

- drawing physical resources from the environment
- releasing materials to the environment (e.g. emissions)
- drawing energy from/releasing energy to the environment.

Procedures (written, verbal, visual, computer based, etc.) include one or any combination of

- work instructions
- standard operating procedures
- safe work method statements
- formulas/recipes
- batch sheets
- temporary instructions
- any similar instructions provided for the smooth running of the plant.

Environmental sensitivities include one or more of

- fragile areas, and rare or threatened species
- heritage or cultural sensitivity issues
- hazardous emissions
- real or perceived overuse of scarce resources
- noise
- regulated emissions or other regulatory issues
- community perceptions or other issues.

Performance is indicated by one or

- historical data and records
- design performance

- more of**
- process/takt time requirements.
- Sustainability improvements include reduction in use of one or more of**
- energy
 - water
 - raw materials
 - emissions
 - embedded carbon in transport, storage, rework and errors, inefficient processes and design, and general facility efficiencies.
- Sustainability related issues include one or more of**
- current and future availability of raw materials
 - current and future availability of energy
 - extent and type of waste generation and disposal
 - efficiency of process in terms of consumption of materials and energy regarded as in short supply or which are regarded as environmentally sensitive
 - the extent to which the production process, product and waste affects the environment
 - 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 extent and cost of compliance.
- Hazards is used to include one or more of**
- sustainability hazards
 - environmental hazards
 - health hazards
 - safety hazards.
- Data and records include one or more of**
- orders, project briefs or customer specifications
 - hazard logs
 - incident reports
 - maintenance records
 - errors and non-conformance reports
 - production records.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MSS014003A Optimise sustainability of a process or plant area.

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 MSS014003 Optimise sustainability of a process or plant area

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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 process or plant area, to:

- analyse and evaluate current production performance, and develop and implement plans to optimise process systems
- determine sustainability impacts of current processes and products in work area
- develop proposals for improvement to processes that are measurable and positively impact on sustainability.

Knowledge Evidence

Must provide evidence that demonstrates knowledge relevant to their job role sufficient to fulfil their job role independently, including:

- principles and theory of the process, equipment and systems used in the work area
- support functions needed for effective functioning of the process or work area, such as logistics, order processing, warehousing and storage, maintenance and administration
- organisational standard procedures and work instructions
- relevant regulatory requirements, including those related to sustainability and work health and safety (WHS) risk control, as appropriate to process/plant area optimisation
- starting quantity and quality of materials
- efficiency maximisation processes relevant to work area
- throughput maximisation processes relevant to work area
- energy efficiency concepts relevant to work area
- potential ecological impacts of work area processes or products
- use of utilities
- labour utilisation concepts relevant to work area
- minimisation of waste and rework
- potential of improved workplace layout and workflow.

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 optimising the sustainability performance of a complete work area in a plant or part of the value chain occurs in 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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