

assessment methods

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About the assessment guide

Aim of the guide

The Sustainability Skills assessment guide will assist Registered Training Organisations (RTOs) to design and contextualise their assessment activities and evidence requirements for the unit of competency **MSS014001A Improve sustainability through readily implementable change..**

In particular the guide demonstrates how:

- Assessment methods can be chosen to suit the learner, for example, if a learner has existing skills and experience in the unit of competency a portfolio of evidence is more useful than direct observation.
- Assessment methods can be chosen to suit the industry context, for example, where a work place has established sustainability policies and procedures direct observation and work place documentation / records could be used.
- Specific types of evidence can be identified that relate to the unit requirements and the industry context, for example, if the company has weekly production meetings minutes of these might provide evidence of making recommendations.

These decisions are used to design the assessment activities. For example a work place project might be developed around the aspects of the unit that can be applied and/or demonstrated in the workplace. Portfolio requirements might be designed around evidence that can be found, or generated, from typical day to day activities. An interview or test might be designed around aspects of the unit where knowledge needs to be tested because it is not clearly demonstrated in the practical activities or to test an individual's knowledge in a team environment.

The guide also provides examples that show how:

- a contextualised workplace project can be developed that demonstrates relevant aspects of the unit
- **questions can be identified** to assist in the authentication of evidence and show understanding of the application of the concepts of sustainability.

The assessment guide uses a fictional scenario as the basis for demonstrating one approach to developing an assessment tool for this unit of competency.

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Note that the guide should be read in conjunction with the unit of competency (see training.gov.au).





What the guide does not provide

The guide focuses on selecting assessment methods and evidence and does not provide a complete or validated assessment instrument. It is for guidance only; there are others ways that the unit could be assessed and many ways that an assessment can be contextualised. None of the processes or ideas in this guide is mandatory.

It does not cover everything that an RTO must address to deliver an assessment and meet compliance. For example the RTO will need to address:

- development of assessment instruments and documentation
- validation of assessment tools, processes and outcomes
- consulting with industry and developing a training and assessment strategy
- how the assessment will be 'delivered', for example, scheduling the activities, monitoring and providing support to the learner, and engaging input from enterprise managers
- full mapping of evidence to units of competency.

Each RTO will need to decide whether to follow any of the processes demonstrated here. If so, the RTO will need to amend the evidence and other details to reflect the characteristics of their learner/s and the context of their assessment. This should be based on their consultations with industry and clients, and the other information within their training and assessment strategy.

Focus of the guide

MSS11 Sustainability Training Package Assessment Guidelines

The Assessment Guidelines in MSS11 state that "assessment should be conducted in the workplace or in a in a work-like environment. Many of the units also require the measurement of environmental and other indicators over a period of time and for this reason project based assessment is also preferred."

This unit of competency states that "Assessors must be satisfied that the candidate can competently and consistently apply the skills covered in this unit of competency in new and different situations and contexts."

In addition the Sustainable Operations qualifications are designed for workers experienced in their industry who require an 'overlay' of skills to improve the sustainability of the business.

Therefore the assessment guides focus on assessment methods for experienced workers and workplace assessment.

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Contextualising

The guide focuses on contextualising assessment to the participants / learners and the workplace context. It demonstrates how the context of the assessment can be analysed and used to select assessment methods and evidence to meet the requirements of the unit of competency.

Typically the context comprises information about:

- industry or enterprise systems, practices and documentation
- characteristics of the learner/s
- mode of delivery of any training.

The guide outlines one approach to planning and designing assessment activities and evidence that are contextualised.

There are many ways that an assessment can be designed to meet the context and the unit requirements. The approach outlined in this guide is just one way. If an RTO follows this approach they should amend the activities, evidence and other details to reflect the characteristics of their learner/s and the context of their assessment.

Contextualising for different sectors is critical. The sustainability issues that are significant to one industry sector or process might not be found in another. For example the casting and forging sectors use large amounts of energy and produce emissions such as dust and greenhouse gases (GHGs). However, one of the key sustainability issues in furniture manufacture may be sourcing plantation timber.

Additional information is available on the Skills for Sustainability website at http://www.sustainabilityskills.net.au including information about this unit of competency and information about sustainability issues in different sectors.

The website also has information about contextualization, understanding sustainability issues within different sectors, designing an assessment, developing workplace projects and using simulated workplace environments.

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What's in the assessment guide

This guide provides:

- a scenario outlining the RTO, learner and enterprise context
- key points drawn out from the scenario
- checklists to help link the context to the assessment methods and evidence:
 - o checklists relating to the context for the assessment
 - checklists relating to assessment methods, and methods of collecting and submitting evidence
- an evidence planning table, linking the scenario context with evidence and the unit of competency
- a work-based project based on the scenario and unit of competency and contextualised using the identified evidence
- questions based on the scenario and unit of competency and contextualised using the identified evidence.

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Assessment planning and design

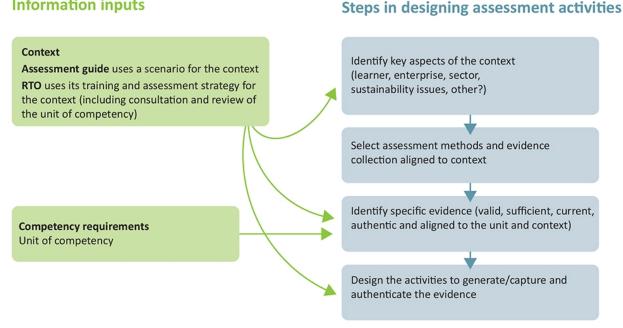
Planning every aspect of an assessment is a broad process that requires many steps and sources of information. Arguably it can start with industry consultation and developing the training and assessment strategy; and conclude with the assessment decision and feedback to the learner.

This guide focuses on a small section of the process. It targets the steps of analysing the unit of competency and the context of the assessment in order to select appropriate assessment activities and evidence collection. These steps are represented in the flow chart at Figure 1.

Typically the context comprises the industry or enterprise systems, practices and documentation and characteristics of the learner/s and mode of delivery of any training. As an RTO you will collect much of this information from your industry consultation and discussion with clients, and capture it in your training and assessment strategy.

In this guide the context is described in a scenario which includes a fictional RTO, learner profile and an industry sector or enterprise context. It uses this information to identify suitable assessment methods and available evidence that are aligned to the unit of competency. These are used to design the assessment activities linked to the unit requirements.

Information inputs



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Figure 1 Designing assessment activities





Context: The scenario

The RTO

Toowoomba Institute of Technology is delivering MSS40111 Certificate IV in Sustainable Operations online by distance education using the National Broadband Network. Each learner is self-paced and can join the group at any time during the year. As this is a nationally recognised competency based program at AQF level 4 learners are required to implement their skills in the workplace and provide evidence of competency.

The learner

Geoff is the maintenance team leader at Gumtree Outdoor Furniture at Orange in New South Wales. Geoff has been asked by the sustainability improvement team to contribute to the implementation of the company's strategic sustainability plan. Geoff has decided to:

- Do a systematic review of his team's work plan and schedules.
- Identify where to target improvements, what readily implementable changes could be made and which changes will deliver the greatest benefits.
- Start by checking and fixing all the company's forklifts and machinery for oil or water leaks and by checking the lathes, routers and saws for current compliance to manufacturers' recommended maintenance and operational settings (this is typical 'low hanging fruit').
- Prepare information that can be used as part of the company's strategic sustainability plan. The information will include the priorities for making changes over the next 12 months and strategies for maintaining the equipment at optimum performance levels in order to preserve the gains.
- Lead his team in the new practices and promote a culture of commitment to ongoing sustainability improvements. He will need to be able to promote culture change in the team and address resistance to change.

Geoff has enrolled in the unit *MSS014001A Improve sustainability through readily implementable change* to begin with as this unit was recommended by the course advisor who thought it would give Geoff some confidence as he is returning to study. If all goes well Geoff will then go on to the other units of competency and complete the MSS40111 Certificate IV in Sustainable Operations.

The enterprise context

Gumtree Outdoor Furniture is a family owned and operated business that has been producing quality hoop pine outdoor furniture since 1959. The timber used to manufacture the furniture is grown in Queensland and comes with a chain of custody certificate ensuring there can be no illegal felling or selling of the logs. The workshop has some computerised cutting equipment and there are 15 furniture makers employed.

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The company has developed a strategic sustainability plan, implemented the ISO 14001 Environmental management systems, and meets the Environment Protection Authority (EPA) regulations associated with the *Clean Air Act 1990*. The furniture they make is Good Environmental Choice Australia (GECA) certified.

There are potential 'readily implementable' changes in the maintenance area and procedures in equipment energy and material use; oil and water consumption; reduction of toxic emissions from gluing, cleaning and finishing; storage of solvents; reduction in release of volatile organic compounds from adhesives and coatings; and preventative maintenance scheduling.

Key points from the scenario

- The industry sector is furniture making.
- As Geoff will be implementing the competency in the workplace a workplace project is a feasible key assessment method.
- Geoff has access to workplace documents, such as production records and emissions data and will be able to identify and liaise with the stakeholders.
- The company has a sustainability improvement team that Geoff works with and a strategic sustainability plan.
- Geoff has detailed technical knowledge of the products and processes and is confident with using information technology.
- Geoff will be learning online and will start with one unit, then go on to others for the whole qualification.
- The probable sustainability issues include safety, efficient use of resources (raw materials, oil, water, fuel, electricity and gas), emissions of volatile organic compounds, preventative maintenance and reducing waste.

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What does the scenario tell us about the context for the assessment?

- ✓ Classroom based
- Existing worker in this field
- Not currently employed in this field
- ☑ Off the job learning
- ☑ On the job implementation
- 🗖 RPL
- □ Simulated workplace environment
- ☑ Single unit of competency
- Skill cluster
- Whole qualification
- ☑ Workplace based

Which assessment methods are suitable?

Direct observation, for example;

- \blacksquare Practical demonstration in the workplace
- ☑ Real work/real time activities in the workplace
- U Work activities in a simulated workplace environment

Structured activities, for example;

- Activity sheets
- Presentation to colleagues
- □ Scenario based project
- □ Simulation exercises such as hypotheticals and role plays
- U Work based case study
- ☑ Work based project (and documentation)

Questioning, for example;

- Oral or written examinations (may be applicable at higher AQF levels)
- Questionnaires
- Self assessment
- ☑ Verbal questioning / discussion / interview
- ☑ Written questions



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- Portfolios of evidence, for example;
- □ Authenticated prior achievements
- ☑ Collection of work samples compiled by the learner
- □ Evidence of training courses attended
- Historical evidence
- Information about life experience
- Journal or log book
- ☑ Photographs or video
- Product with supporting documentation
- □ Verified workplace history/CV
- \blacksquare Workplace documentation / records

Third party feedback, for example;

- $\hfill\square$ Interview with employer, supervisor, or peer
- Letter of support from a work place
- $\hfill\square$ Testimonials and reports from employers and supervisors
- $\hfill\square$ Third party report from supervisor or technical expert

How will evidence be collected or submitted?

- Documents electronically / in person / mail
- Data capture video / audio / notes /smart pen by assessor / 3rd party / candidate
- Data submission web upload / mail (USB drive / SD card / disc etc)
- Online real time Skype, web conference
- ☑ Online self paced online tests, interactive simulation

Evidence: What evidence will be available and suitable?

The evidence planning table shows one way of linking the context of the scenario with the unit of competency. It examines the unit of competency, the context and the selected assessment method in order to identify appropriate assessment evidence.

Based on the scenario, the learner and the context identified above, the following evidence could be expected to be available as part of the assessment. Keep in mind that some evidence might apply to several aspects of the unit or even several units.

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In the scenario used in this guide the learners all work in a different enterprise and sector. So the RTO would need to adapt the evidence and to reflect each enterprise context and learner.





Evidence planning table

This table provides an example of identifying evidence that is available in the workplace. The evidence listed here has been selected so that it covers the required skills, required knowledge and critical aspects of assessment for this unit, however, this has not been shown in the table.

The table is not intended as a format for mapping to meet compliance requirements and each RTO needs to determine the type of mapping that may be required by its registering body.

Element	Performance Criteria	Evidence
1 Examine sustainability outcomes required	 1.1. Identify drivers of sustainability change 1.2. Define sustainability problem or need 1.3. Consult with stakeholders on a range of possible ways of satisfying the need 1.4. Agree possible acceptable outcomes with key stakeholders 	 Work-based project (and documentation) A work plan and schedule Workplace documentation/records Company strategic sustainability plan with relevant sustainability change drivers highlighted Notes of the sustainability improvement team discussing ways to solve the sustainability needs that have been identified Evidence of defining the sustainability problem and consulting e.g. butcher's paper record of brainstorming sustainability issues, identifying wastes, analysis of customer feedback from the marketing department Collection of work samples compiled by the learner Collection of documents that define the problem or need, such as audit of social, economic and environmental sustainability issues for the value chain; sustainability audits of energy, water, emissions or transport; site inspection records; and sustainability checklists Verbal questioning in a discussion or as an interview Interview by the assessor about the work-based project
2 Examine operations for readily implementable changes to improve sustainability	 2.1 Identify current operational and maintenance standard procedures 2.2 Identify potential sustainability issues in process 2.3 Short list potential sustainability issues which may be able to be easily eliminated or improved 2.4 Rank short listed sustainability issues by estimated benefit/cost 2.5 Determine success factors to assess benefits of eliminating waste 	 Workplace documentation/records Value chain map for production lines or processes identifying potential sustainability issues Sustainability project plan for the changes to be made for the work area or process, including short list of issues and a benefit/cost analysis Verbal questioning in a discussion or as an interview Interview by the assessor about the work-based project



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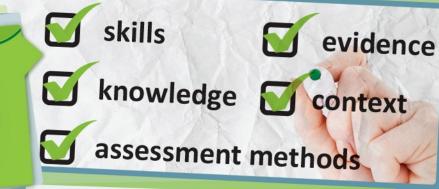
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Assessment Guide

MSS014001A Improve sustainability through readily implementable change

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Skills



Element	Performance Criteria	Evidence
3 Implement improvements	 3.1 Develop implementation plan to deliver required outcomes 3.2 Negotiate required resources with relevant stakeholders 3.3 Negotiate timelines and measures / indicators of success with change stakeholders 3.4 Acquire and deploy resources required to achieve agreed outcome 3.5 Monitor implementation and take action as required to achieve required outcome 3.6 Renegotiate with relevant stakeholders as necessary 	 Workplace documentation/records Sustainability project plan for the changes to be made for the work area or process, including a process map showing the value chain items where changes can be made, timeline, success factors and a simple benefit/cost analysis for the proposed changes Minutes of a production team meeting short listing readily implementable changes to make and who will make them Revised procedures, for example, changing from using rags to clean up oil spills to using cane sugar based clean up kits Real work/real time activities in the workplace Report of site visit by the assessor to see the implementation of changes made Collection of work samples compiled by the learner Evidence of the sustainability improvements made, such as measurements, photos of before and after, and revised procedures Evidence of communication, such as videos of toolbox talks, emails, visual workplace posters, items in staff newsletters, reports to management and PowerPoint presentations to staff meetings Photographs or video Photographs of before and after sustainability improvements uploaded from an iphone Live streaming showing the assessor the sustainability improvements made on the shop floor, such as reduction in the inventory of spare parts Verbal questioning in a discussion or as an interview Interview by the assessor about the work-based project

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Element	Performance Criteria	Evidence
Element 4 Recommend further improvements	 Performance Criteria 4.1 Measure improvements actually obtained 4.2 Identify non-compliances with planned improvements 4.3 Determine additional improvements desirable 	 Workplace documentation / records Evidence of updating project plans with changes to address non-compliances, such as different versions of project plans, or changes to project plans marked up Records showing measures of improvements made and success factors, such as power bills showing reduced power use Graphs of improvements in sustainability for work noticeboards Verbal questioning in a discussion or as an interview
		 Verbal questioning in a discussion or as an interview Interview by the assessor about the work-based project

Assessment activity: Work based project

The work based project defines a project that the learner can do in the work place. This might be part of their normal activities or it could be an additional activity. In this example there is a clear relationship between the unit of competency and a work place activity to 'improve sustainability through readily implementable changes'.

So, for this unit, the outline of the project can come from the unit itself. The details of the project can be designed by bringing together the context with the evidence that is available in the work place (or that can be generated by the project). The evidence that has been identified in the evidence planning table helps to define the project.

A work-based project for Geoff at Gumtree Furniture

The project is to improve sustainability by identifying and implementing readily implementable changes to maintenance and production procedures.

Readily implementable changes can be made immediately and don't need substantial significant capital expenditure, prior technical analysis or planning. They are characterised by the term 'low hanging fruit'.

To improve the sustainability through readily implementable change Geoff will need to examine the sustainability outcomes required, identify the changes to be made, make the changes and recommend further changes.

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Geoff will need to complete the following:

- 1. Consult with the sustainability improvement team about who he should communicate with and what sustainability outcomes are required.
- 2. Plan what he is going to do and how he will go about doing it, including:
 - o providing a description of the overall company
 - providing a description of the portion of the value chain that will be evaluated for sustainability impact
 - o identifying who will be involved and how he will consult with them
 - identifying any codes of practice, covenants, legislation, EPA regulations, protocols and standards relevant to the company, such as ISO 14001 Environmental management systems, Good Environmental Choice Australia protocols and the Clean Air Act 1990
 - o identifying the sustainability goals for Gumtree Outdoor Furniture.
- 3. Identify the relevant maintenance procedures.
- 4. Identify the potential sustainability issues, such as waste and environmental issues by brainstorming with his team members using muda (the 7 wastes).
- 5. Short list and rank the issues using a simple benefit/cost analysis.
- 6. Determine how he will measure the success of the changes, for example, metrics, such as reduced waste to landfill, reduction in lost time injuries or decreased use of materials.
- 7. Develop a sustainability project plan for the changes to be made, including resources required, timelines and measures/indicators of success and obtain feedback from the sustainability improvement team.
- 8. Make the changes, monitor the success by measuring the sustainability improvements and take action to achieve the outcomes using the plan, do, check, act cycle.
- 9. Determine additional improvements to be made over the next 12 months and discuss these with the sustainability improvement team.

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Assessment activity: Questions

In this guide, questioning is used to assess required knowledge and aspects of competency which are difficult to assess in other ways, for example, testing the application of the concepts to the project activities. The questions also help to authenticate the evidence.

Based on the scenario, the assessor will interview Geoff and ask these questions at pre-determined points during the project. He will also review Geoff's progress and provide feedback as part of his delivery and assessment responsibilities.

Questions for Geoff at Gumtree Furniture

How did you decide what you were going to do and how you were going to go about it?

Who did you have to consult with at Gumtree Outdoor furniture?

What are the issues for your company and how are they different to those for the furniture industry as a whole?

Did you do this work as part of a team? If so outline what your role was.

Talk us through your recommendations for making readily implementable changes in the maintenance and production areas and how you measured the success.

Were your measures of success the same ones as management or your team members may be interested in?

Where did you draw the line between readily implementable changes which are quickly and cheaply implemented and those requiring planning, capital expenditure and substantial prior analysis?

Did you find examples of all of the seven wastes? Which ones?

Did you have to spend any money to make the changes?

Did you discover any sustainability changes that were not readily implementable? Why weren't you able to make the changes for them?

How did you go about bringing the rest of your maintenance team on board?

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What problems did you find when implementing the changes and what did you do to overcome them?

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How do the changes you have made fit in with the implementation of the ISO 14001 Environmental management systems at your company?



