



Australian Government

UEERE0067 Develop engineering solutions to renewable energy (RE) problems

Release: 1

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Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

This unit replaces and is not equivalent to UEERE0033 Develop engineering solutions to renewable energy (RE) problems. Modifications include:

- Prerequisites changed
- Significant amendments made to Elements and Performance Criteria
- Range of conditions updated
- Significant amendments to Performance and Knowledge Evidence and CVIG content developed.

Application

This unit involves the skills and knowledge required to apply engineering principles to develop engineering solutions to renewable energy (RE) problems.

It includes determining and applying engineering solutions to RE systems and components and their operating parameters. It also includes applying problem-solving techniques, and testing and documenting alternative engineering solutions to RE problems.

This unit is appropriate for Licenced Electricians or Electrical Engineers with responsibility for developing engineering solutions to renewable energy (RE) problems.

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

Pre-requisite Unit

UEECD0062 Write specifications for renewable energy engineering projects

UEERE0055 Conduct site survey for off-grid photovoltaic/generating set systems

UEERE0063 Design off-grid photovoltaic/generating set systems

and

UEEEL0039 Design, install and verify compliance and functionality of general electrical installations

or

UEERE0051 Apply electrical principles to renewable energy design

Competency Field

Renewable Energy

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Determine RE problem and plan work

2 Develop engineering solutions for RE problem

PERFORMANCE CRITERIA

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

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|------------|--|
| 1.1 | Nature and scope of the RE problem is determined from relevant documentation and consultation with relevant person/s |
| 1.2 | Relevant work health and safety (WHS)/occupational health and safety (OHS) processes and workplace procedures are identified |
| 1.3 | Established technical and practical engineering methods are identified for application to solution development |
| 1.4 | Technical and practical techniques, tools and resources appropriate for solution development are identified and planned |
| 1.5 | Personnel required to support solution development and implementation are identified, consulted and roles and responsibilities confirmed |
| 1.6 | Project plan including quality measures is developed and tested in consultation with relevant person/s |
| 2.1 | WHS/OHS risk control measures and workplace procedures are followed for carrying out work |
| 2.2 | Information/data is gathered and analysed in accordance with project plan |
| 2.3 | RE systems, components, construction, operation characteristics and applications are analysed in accordance with project plan |

	2.4	Parameters, specifications and performance requirements in relation to RE work are determined in accordance with project plan
	2.5	Systematic synthesis and design processes are applied to development of engineering solution options to achieve project requirements
	2.6	Work is monitored in accordance with established quality measures, relevant industry standards and project plan
3 Test, document and implement engineering principles	3.1	Engineering solution/s are tested to determine their effectiveness and modified, as required
	3.2	Engineering solutions are documented and instructions for implementation that incorporate risk control measures included
	3.3	Competent person/s to implement engineering solutions are identified and coordinated in accordance with regulatory requirements and workplace policies
	3.4	Justification for engineering solution/s used are documented and included in work/project records in accordance with relevant industry standards

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEE Electrotechnology Training Package Companion Volume Implementation Guide.

Must include developing at least two different solutions to solve the problem. The solutions must involve at least two of the following areas:

- energy efficiency
- demand management
- heat loss management
- electrical equipment options
- renewable energy
- non-electrical resource management.

Unit Mapping Information

This unit replaces and is not equivalent to UEERE0033 Develop engineering solutions to renewable energy (RE) problems.

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>