



Australian Government

UEERE0033 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.

Application

This unit involves the skills and knowledge required 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.

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

Pre-requisite Unit

UEERE0011 Design grid-connected photovoltaic power supply systems

UEERE0013 Develop strategies to address environmental and sustainability issues in the energy sector

UEERE0029 Design micro-hydro systems rated to 6.4 kW

UEERE0031 Design stand-alone renewable energy (RE) systems

UEERE0032 Design wind energy conversion systems (WECS) rated to 10 kW

Competency Field

Renewable Energy

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential Performance criteria describe the performance needed to

outcomes.

demonstrate achievement of the element.

1 Determine RE problems

- 1.1** Work health and safety (WHS)/occupational health and safety (OHS) processes and workplace procedures for a given work area are identified, obtained and applied
- 1.2** Hazards are identified, WHS/OHS risks are assessed, and control measures and workplace procedures are implemented in preparation for work
- 1.3** Scope of the RE problem is determined from performance specifications, situation reports and in consultation with relevant person/s
- 1.4** Activities are planned to meet scheduled timelines in consultation with person/s involved in the work
- 1.5** Strategies are determined and solutions developed and implemented in accordance with workplace procedures

2 Develop engineering solutions for RE problems

- 2.1** WHS/OHS risk control measures and workplace procedures are followed for carrying out work
- 2.2** RE systems, components, construction, operation characteristics and applications are applied to develop engineering solutions to RE problems
- 2.3** Parameters, specifications and performance requirements in relation to each RE problem are determined in accordance with workplace procedures
- 2.4** Engineering solution/s to resolve RE problem/s is analysed to provide most effective solution/s
- 2.5** Unplanned events are dealt with safely and effectively in accordance with regulatory requirements and workplace policies
- 2.6** Quality of work is monitored in accordance with performance agreement and/or workplace procedures or relevant industry standards

3 Test, document and implement engineering solution for RE problem

- 3.1** Engineering solution/s to RE problem/s is 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 to RE problems is identified and coordinated in accordance with regulatory requirements and workplace policies
- 3.4 Justification for engineering solution/s used to solve RE problems is 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.

Developing engineering solutions to RE problems must include at least the following:

- two RE problems

Unit Mapping Information

This unit replaces and is equivalent to UEENEEK140A 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>