



**Australian Government**

# **UEERE0068 Develop strategies to address sustainability issues for electrical installations**

**Release: 1**

# **UEERE0068 Develop strategies to address sustainability issues for electrical installations**

## **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 UEERE0014 Develop strategies to address sustainability issues for electrical installations. Modifications include:

- Prerequisites changed
- Several unnecessary performance criteria and ones that duplicated others removed
- Performance and Knowledge Evidence updated.

## **Application**

This unit involves the skills and knowledge required to develop strategies to address sustainability issues for electrical installation.

It includes identifying, developing and documenting strategies to address sustainability issues. It also includes developing strategies to address greenhouse gases and sustainability issues for residential, commercial and industrial electrical installations; gathering and analysing data and applying problem-solving techniques.

This unit is appropriate for Licenced Electricians or Electrical Engineers with responsibility for developing strategies to address sustainability issues for electrical installations.

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

## **Pre-requisite Unit**

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

### PERFORMANCE CRITERIA

Elements describe the essential outcomes.

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

#### **1 Identify sustainability issues for electrical installation**

- 1.1** Work health and safety (WHS)/occupational health and safety (OHS) requirements and workplace procedures are identified and applied
- 1.2** Extent of sustainability issues are determined from performance specifications, situation reports and in consultation with relevant person/s
- 1.3** Work activities are planned to meet scheduled timelines in consultation with relevant person/s
- 1.4** Strategies are determined to ensure solution development and implementation is completed

#### **2 Develop strategies to address electrical installation sustainability issues**

- 2.1** Sustainability principles are applied to develop strategies to address greenhouse gas emissions
- 2.2** Parameters, specifications and performance requirements of sustainability issues are determined in accordance with workplace procedures
- 2.3** Solutions for sustainability issues are analysed and selected
- 2.4** Quality of work is monitored against workplace procedures

#### **3 Document strategies for electrical installation sustainability issues**

- 3.1** Solutions to sustainability issues are tested for effectiveness and modified, as required
- 3.2** Final solutions are documented, including instructions for implementation, and relevant person/s notified in accordance with workplace procedures
- 3.3** Person/s authorised and qualified to implement solutions to sustainability issues is consulted in accordance with workplace procedures
- 3.4** Solutions used to solve sustainability issues are justified and documented in accordance with workplace

procedures

## **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.

## **Unit Mapping Information**

This unit replaces and is not equivalent to UEERE0014 Develop strategies to address sustainability issues for electrical installations.

## **Links**

Companion Volume Implementation Guides are found in VETNet -

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

# **Assessment Requirements for UEERE0068 Develop strategies to address sustainability issues for electrical installations**

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- Performance and Knowledge Evidence updated.

## **Performance Evidence**

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least two occasions and include:

- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including implementing risk control measures
- understanding the extent of the electrical installation energy problem/s
- forming effective strategies for solution development and implementation
- obtaining energy system/component parameters, specifications and performance requirements appropriate to each problem
- analysing and selecting solutions for sustainability issues
- testing solutions to energy problems
- identifying, developing and documenting strategies to address sustainability issues
- documenting instruction for implementation of solutions that incorporate risk control measure to be followed
- documenting justification of solutions implemented in accordance with professional standards.

## **Knowledge Evidence**

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- electrical installation energy sustainability strategies, including:
  - energy management, legislation and regulation encompassing:
    - energy management
    - climate change
    - greenhouse effect/greenhouse gases
    - standards and codes

- legislation and regulations
- energy audits
- electrical motors, pumps and fans encompassing:
  - motor construction, components and losses
  - motor efficiency (AS/NZS 1359.5 Rotating electrical machines - General requirements - Three-phase cage induction motors - High efficiency and minimum energy performance standards requirements)
- appliances encompassing:
  - energy star ratings
  - washing machines
  - clothes dryers
  - dishwashers
  - televisions and computers
  - standby management strategies
- energy efficient lighting encompassing:
  - lighting efficiency
  - efficient lighting design
  - ballasts
  - lighting controls
- water heating encompassing:
  - water heating systems and losses
  - electric, gas, oil, heat pump and solar water heater design
  - control strategies
- space heating and cooling encompassing:
  - space heating systems and losses
  - space cooling systems and losses
  - heating - electric, gas, oil, heat pump and solar heater design
  - cooling – direct expansion, chilled water and ventilation
  - control strategies
- solar energy encompassing:
  - system design fundamentals
  - solar photovoltaic (PV) design elements
  - solar PV system performance
  - analysis of system capital and operating cost performance
- quality assurance
- relevant job safety assessments or risk mitigation processes, including risk control measures
- relevant manufacturer specifications
- relevant WHS/OHS legislated requirements
- relevant workplace documentation, policies and procedures
- solution development and implementation techniques and strategies.

## Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

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.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or other simulations
- relevant and appropriate materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

## Links

Companion Volume Implementation Guides are found in VETNet -

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