



Australian Government

UEERE0021 Provide basic sustainable energy solutions for energy reduction in residential premises

Release: 1

UEERE0021 Provide basic sustainable energy solutions for energy reduction in residential premises

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 provide sustainable energy solutions for energy reduction in residential premises.

It includes preparing for and conducting monitoring of energy usage and providing solutions for energy reduction. It also includes completing monitoring activities and reporting.

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

Pre-requisite Unit

Not applicable

Competency Field

Renewable Energy

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

- 1 Prepare to monitor energy usage and provide solutions for energy reduction**

PERFORMANCE CRITERIA

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

- 1.1** Monitoring activities are planned and prepared in accordance with work health and safety (WHS)/occupational health and safety (OHS) policies and workplace procedures and work is sequenced in accordance with requirements

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| | 1.2 | Relevant person/s is consulted to ensure work is coordinated effectively with others |
| | 1.3 | Materials are obtained and checked in accordance with workplace procedures and job requirements |
| | 1.4 | Location of monitoring activities is determined from job requirements |
| 2 Undertake monitoring of energy usage and provide solutions for energy reduction | 2.1 | WHS/OHS policies and procedures for monitoring activities are applied |
| | 2.2 | Monitoring activities are conducted in accordance with requirements without damage or distortion to the surrounding environment or services |
| | 2.3 | Sustainable energy options are determined from energy consumption monitoring activities, measurements and calculations |
| | 2.4 | Unplanned events or conditions are responded to in accordance with workplace procedures |
| | 2.5 | Approval is obtained from relevant person/s before any energy reduction solutions are implemented in accordance with workplace procedures |
| | 2.6 | Quality checks are conducted in accordance with workplace procedures |
| 3 Complete monitoring activities and report | 3.1 | Documentation/reports are completed in accordance with administrative requirements |
| | 3.2 | Relevant person/s is notified of work completion 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 equivalent to UEENEEK112A Provide basic sustainable energy solutions for energy reduction in residential premises.

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 UEERE0021 Provide basic sustainable energy solutions for energy reduction in residential premises

Modification History

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

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 one occasion and include:

- providing basic sustainable energy solutions for energy reduction in domestic premises
- dealing with unplanned events
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements and workplace procedures and practices, including the use of risk control measures
- applying sustainable energy principles and practices
- completing relevant reporting
- conducting monitoring activities of energy usage
- completing quality checks
- coordinating work with relevant person/s
- identifying and accessing materials, tools, equipment and testing devices
- measuring and calculating energy consumption values in accordance with relevant industry standards
- preparing to monitor energy usage.

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:

- concepts of renewable energy (RE), including:
 - non-technical issues encompassing:
 - current economic, social, environmental and political issues impacting on RE technology
 - energy services/demand encompassing:
 - terminology
 - energy, power, temperature, symbols and units
 - energy conversion and efficiency
 - domestic dwelling: energy services and energy demand of individual appliances

- energy efficient appliances
- primary energy and end-use energy
- embodied energy
- solar radiation resource encompassing:
 - terminology
 - units, symbols and conversions
 - sun path diagrams
 - solar contour maps
 - solar window
- solar thermal systems encompassing:
 - terminology
 - components
 - applications
 - types of hot water systems
- photovoltaic (PV) arrays encompassing:
 - terminology
 - current, voltage and power
 - modules: types, efficiency and applications
 - I-V curve
 - irradiance and temperature effects
 - array configurations
- wind energy resource and technology encompassing:
 - terminology, units and symbols
 - wind speed, direction, turbulence, wind and power
 - vertical wind speed profile (wind shear)
 - local terrain roughness
 - isovent maps
 - measuring instruments
 - wind energy conversion systems (WECS)
 - terminology
 - characteristics
 - applications
- micro-hydro resource and technology encompassing:
 - terminology, units and symbols
 - flow rate, head and assessment
 - turbine types and applications
- stand-alone power system configuration encompassing:
 - basic configuration series systems
 - components: functions, efficiencies, regulators, inverters, battery chargers and generators

- relevant industry standard energy consumption measurements and calculations
- sustainable energy solutions for energy reduction in residential premises
- relevant manufacturer specifications
- relevant safe work method statements (SWMS)
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace policies and procedures.

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 suitable workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in suitable 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
- resources that reflect current industry practices in relation to providing basic sustainable energy solutions for energy reduction in residential premises
- 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>