



Australian Government

Assessment Requirements for UEERE0021

Provide basic sustainable energy solutions for energy reduction in residential premises

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.

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>