

Training Package	Electrotechnology (UEE07)		HSC Requirements and Advice
Unit title	Provide basic sustainable energy solutions for energy reduction in domestic premises		HSC Indicative Hours
Unit code	UEENEEK012B	Competency field	25
		Renewable and Sustainable Energy	

Unit descriptor	This unit covers monitoring energy use and providing basic sustainable energy options to reduce the energy consumption in domestic residences. It encompasses working safely and providing basic sustainable energy solutions for energy reduction in domestic premises.
Application of the unit	This unit shall apply to persons entering work in electrotechnology and may be used in school-based vocational programs.
Employability skills	The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skills requirements.
Prerequisite unit(s)	Competencies There are no prerequisite competencies for this unit.
	Literacy and numeracy skills Participants are best equipped to achieve competency in this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in <i>Appendix 1</i> of this Syllabus. Reading 3 Writing 3 Numeracy 3
Licence to practise	The skills and knowledge described in this unit do not require a licence to practise in the workplace. However, practice in this unit is subject to regulations directly related to occupational health and safety and contracts of training such as new apprenticeships. Note: <ol style="list-style-type: none"> 1. Compliance with permits may be required in various jurisdictions and typically relates to the operation of plant, machinery and equipment such as elevating work platforms, powder operated fixing tools, power operated tools, vehicles, road signage and traffic control and lifting equipment. Permits may also be required for some work environments such as confined spaces, working aloft, near live electrical apparatus and site rehabilitation. 2. Compliance may be required in various jurisdictions relating to currency in First Aid, confined space, lifting, risk safety measures etc.

Required Skills and Knowledge

This describes the essential skills and knowledge and their level **required** for this unit.

Evidence shall show that knowledge has been acquired of safe working practices and providing basic sustainable energy solutions for energy reduction in domestic premises.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

The extent of the essential knowledge and associated skills (EKAS) required is given in *Appendix 2* of this Syllabus. It forms an integral part of this unit.

2.8.1.2 Fundamental electrical principles

2.8.2.1 Direct current circuits principles

2.18.1 Occupational Health and Safety principles

2.20.3 Introduction to renewable energy technologies.

Evidence Guide

This provides essential advice for assessment of the unit. It must be read in conjunction with the Performance Criteria and the Range Statement of the unit and the Training Package Assessment Guidelines.

The Evidence Guide forms an integral part of this unit. It must be used in conjunction with all parts of the unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of assessment	Critical aspects of evidence required to demonstrate competency in this unit
<p>Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the industry-preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accordance with industry and regulatory policy.</p> <p>Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.</p> <p>The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Sources of evidence need to be 'rich' in nature to minimise error in judgment.</p> <p>Activities associated with normal everyday work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.</p>	<p>Before the critical aspects of evidence are considered all prerequisites must be met.</p> <p>Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines – UEE07'. Evidence shall also comprise:</p> <ul style="list-style-type: none"> • a representative body of performance criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to: <ul style="list-style-type: none"> - implement Occupational Health and Safety workplace procedures and practices, including the use of risk control measures as specified in the performance criteria and range statement - apply sustainable energy principles and practices as specified in the performance criteria and Range Statement - demonstrate an understanding of the essential knowledge and associated skills as described in this unit. It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements. - demonstrate an appropriate level of skills enabling employment - conduct work observing the relevant Anti Discrimination legislation, regulations, polices and workplace procedures • demonstrated consistent performance across a representative range of contexts from the prescribed items below: <ul style="list-style-type: none"> - provide basic sustainable energy solutions for energy reduction in domestic premises as described in the Range Statement and including: <ul style="list-style-type: none"> ▪ providing basic sustainable energy solutions for energy reduction in domestic premises ▪ dealing with unplanned events by drawing on essential knowledge and skills to provide appropriate solutions incorporated in a holistic assessment with the above listed items. <p>Note: Successful completion of relevant vendor training may be used to contribute to evidence on which competency is deemed. In these cases the alignment of outcomes of vendor training with performance criteria and critical aspects of evidence must be clearly identified.</p>

Evidence Guide cont/d

Context of and specific resources for assessment	Method of assessment	Concurrent assessment and relationship with other units
<p>This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace.</p> <p>This should include:</p> <ul style="list-style-type: none"> • OHS policy and work procedures and instructions • suitable work environment, facilities, equipment and materials to undertake actual work as prescribed in this unit. <p>These should be used in the formal learning/assessment environment.</p> <p>Note: Where simulation is considered a suitable strategy for assessment, conditions for assessment must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.</p> <p>The resources used for assessment should reflect current industry practices in relation to providing basic sustainable energy solutions for energy reduction in domestic premises.</p>	<p>This unit shall be assessed by methods given in <i>Appendix 3</i> of this Syllabus.</p> <p>Note: Competent performance with inherent safe working practices is expected in the Industry to which this unit applies. This requires assessment in a structured environment which is intended primarily for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and skills described in this unit.</p>	<p>There are no concurrent assessment recommendations for this unit.</p>

Element	Performance Criteria	Range Statement
1 Prepare to monitor energy usage and provide basic solutions for energy reduction	1.1 Monitoring activities are planned and prepared for to ensure OHS policies and procedures are followed with the work appropriately sequenced in accordance with requirements.	This relates to the unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance. This unit must be demonstrated in relation to the provision of basic sustainable energy solutions for energy reduction in domestic premises in any of the following disciplines: <ul style="list-style-type: none"> • appliances • business equipment • computers • data communications • electrical • electrical machines • electronics • fire protection • instrumentation • refrigeration and air-conditioning • renewable/sustainable energy • security technology.
	1.2 Appropriate personnel are consulted to ensure the work is coordinated effectively with others involved.	
	1.3 Materials are obtained and checked in accordance with established procedures and to comply with requirements.	
	1.4 Location in which monitoring activities are to be undertaken is determined from job requirements.	
	1.5 Materials necessary to complete the work are obtained in accordance with established procedures and checked against job requirements.	
	1.6 Materials needed to carry out the monitoring are obtained in accordance with established procedures.	
2 Undertake monitoring of energy usage and provide basic solutions for energy reduction	2.1 OHS policies and procedures for undertaking monitoring activities are followed.	Generic terms used throughout this Vocational Standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms that apply are given in <i>Appendix 4</i> of this Syllabus.
	2.2 Monitoring activities are undertaken in accordance with requirements, without damage or distortion to the surrounding environment or services.	
	2.3 Unplanned events or conditions are responded to in accordance with established procedures.	
	2.4 Approval is obtained in accordance with established procedures from appropriate personnel before any contingencies are implemented.	
	2.5 Ongoing checks of the quality of the work are carried out in accordance with established procedures.	

Element	Performance Criteria	Range Statement
3 Complete monitoring activities and provide reports where necessary	3.1 Documentation/reports are completed to ensure administrative requirements are met.	
	3.2 Work completion is notified in accordance with established procedures.	