REGISTERED
NATIONAL STANDARD

UNIT OF COMPETENCY

Title:	**Promote and contribute to energy efficiency**				
TQF Level:	3	**Credits:**	4	**Version:**	2[1]
National standard code:	NS 051-03				
Associated qualification (and code):	National Certificate in Sustainable Energy Level 2 (QR-02-NQ-018-02-0504-26-02)				
Approval date:	25th Mar. 2026	**Review date:**	25th Mar. 2031		
Purpose:	This unit standard is for persons who work, or intend to work, in the energy sector. It describes the outcomes required to maintain energy efficient work practices and contribute to systems improvement with regard to energy efficiency (EE). Persons credited with this unit standard are able to: 1. Identify and describe the requirements to maintain EE; 2. Explain the benefits relating to EE using different sources of renewable energy; 3. Promote and apply energy efficient work practices; 4. Identify opportunities for efficiencies in energy consumption or use of raw materials; 5. Identify opportunities for innovation in EE.				

[1] This Tonga unit standard, with the unit code *NS051-03*, is adapted from the Pacific regional unit standard *SE3203* which carries the same title mentioned above. Unit standard SE3203 is a component of the Pacific regional qualification *Certificate 2 in Sustainable Energy* which is equivalent to the Tonga *National Certificate of Sustainable Energy Level 2*.

Learning Outcome 1 (LO1)	**Review the requirements to maintain and contribute to energy efficiency on worksites**
Performance standards	1.1 Identify the requirements for maintenance of energy efficiency; 1.2 Describe benefits relating to energy efficiency and renewable energy sources; 1.3 Compare and contrast the use of alternative sources of energy and raw materials in terms of their advantages and disadvantages to humans and the environment; 1.4 Determine useful in-house energy efficient practices at the workplace.
Learning Outcome 2 (LO2)	**Follow and promote energy efficient work practices**
Performance Standards	2.1 Identify worksite or community energy efficiency standards or policy or procedures, including those related to recycling and waste management; 2.2 Adhere to worksite or community energy efficiency standards/policy/procedures, including those related to recycling and waste management; 2.3 Describe energy efficient techniques for operating equipment and power tools; 2.4 Operate equipment and power tools using maximum energy efficient procedures; 2.5 Monitor own work practices to maintain energy efficiency; 2.6 Demonstrate energy efficient practices to colleagues and community, by way of posters or flyers or oral presentation etc.;
Learning Outcome 3 (LO3)	**Contribute to systems improvement with regard to energy efficiency**
Performance standards	3.1 Contribute to and support reviews and operation for improvement in energy efficiency; 3.2 Identify opportunities for efficiencies in consumption of raw materials and progress through appropriate involvement of personnel or community members;

	3.3 Identify opportunities for innovation in energy efficiency and progress through established channels; 3.4 Provide direction and support to personnel or members of the community who have energy efficient initiatives for systems improvement.
Pre-requisites	N/A
Co-requisites	N/A
Underpinning skills and knowledge	The following knowledge and skill underpin this unit standard; • Knowledge on organizational and community standards relevant to maintaining and contributing to energy efficiency; • Knowledge of environmental protection and conservation requirements including safe disposal of waste material and recycling; • Workplace communication skills, protocols and procedures; • Skills in safe use of equipment and tools to complete work tasks whilst optimizing energy efficiency
Suggested assessment methods	**Context of assessment:** To support student assessment and to ensure they are valid, reliable, flexible, and fair, provider institutions are encouraged to make the necessary arrangements to involve the relevant key industry organisations such as *Tonga Energy Commission* (TEC), *Tonga Power Limited* (TPL) and other trusted licensed private energy and electricity entrepreneurs in the assessment of the required standards and competencies. Possible areas for collaboration between provider institutions and the industry include but not restricted to the following: 1. Experts from the industry are engaged as trainers, assessors, or assessment moderators. 2. Industry experts have input to the design and implementation of assessment activities 3. Students are placed in the relevant industry organisations for workplace attachment 4. Industry experts act as supervisors of students on workplace attachment 5. Etc. To show that students have the required competence they will need to: 1. **Demonstrate knowledge in the workplace (or in an environment that closely resembles the workplace) on:** a) The meaning of key concepts such as: i. Energy efficiency; ii. Energy efficient practices;

iii. Renewable energy sources;
iv. Energy efficiency standards or policy or procedures:
v. Energy efficiency initiatives;

b) The advantages of energy efficiency practices, in terms of:
   i. Benefits to individuals, families and communities;
   ii. Benefits to the environment (local community, regional, and global);

c) Different kinds of energy efficient practices, by describing and/or defining them.

2. Apply their knowledge and skills in the workplace (or in an environment that closely resembles the workplace), by:

a) Following and promoting energy efficient work practices, by:
   i. Identifying worksite/community energy efficiency standards/policy/procedures, including those related to recycling and waste management;
   ii. Adhering to worksite/community energy efficiency standards/policy/procedures, including those related to recycling and waste management;
   iii. Operating equipment and power tools in ways which that maximise their energy efficiency;
   iv. Monitoring one's own work practices to maintain energy efficiency;
   v. Promoting positive aspects of using renewable energy sources and technologies to alternative energy sources

b) Contributing to systems improvement with regard to energy efficiency, by:
   i. Supporting reviews and operation for improvements in energy efficiency;
   ii. Recognizing opportunities for efficiencies in consumption of raw materials and progress through appropriate personnel/community members.
   iii. Recognizing opportunities for innovation in energy efficiency and progress through established channels.
   iv. Providing direction and support to personnel or members of the community who have energy efficient initiatives to support systems improvement in the area of energy efficiency.

	Methods of assessment: A range of assessment methods should be used to assess students' knowledge and application of skills, include but not restricted to the following: 1. Direct observation of students performing certain tasks as mentioned in the context of assessment; 2. Written or oral questions to test relevant skills and knowledge during observation; 3. Written report; 4. Student portfolio; 5. Review of workplace attachment reports (e.g. Supervisor/third party reports).
Resource requirements	1. Text Books or printed resources for Promote and Contribute to Energy Efficiency at the discretion of the course/unit coordinator or trainer, 2. Computer, Printer, Internet Access, 3. Conventional classroom, classroom furniture and resources: White/blackboard, tables or benches, chairs, student notice boards, A3 coloured cards or wall charts for group discussions. 4. Renewable Energy Technology (RET) and Energy Efficiency (EE) Equipment for promotion in communities i. Hybrid Wind, Solar, Biogas and Micro-hydro schematics ii. Energy efficient appliances such as Lighting and Lighting controls
Moderation arrangements	Provider Institutions are responsible for moderation arrangements to ensure consistency in assessments. Moderation process must be approved by TNQAB.
Requirements to complete this unit	There are three (3) Learning Outcomes and thirteen (13) Performance Standards to measure competence. To demonstrate competence, the person studying this unit is: 1. Required to attain an *Achieved*[2] grade (Competent) to fulfil the requirements of the Unit Standard. 2. Eligible to three (3) attempts to achieve the required competency within 14 days of the first attempt. Failure to achieve the required competency level after three (3) attempts of the exam or specific part of the assessment will require the person studying this Unit to re-enrol for the same Unit.

[2] This unit is competency-based in which there are only two possible grades: *Achieved* and *Not Achieved*. An 'Achieved' grade is assigned to a candidate who has met the competency requirements of the unit.

Important notes and definitions	**Notes**: **1.** All activities associated with this unit standard must comply with the requirements of national codes of practice, regulations and legislation for workplace health, safety, and environmental protection and any subsequent amendments. **2.** Assessors must comply with TNQAB assessment and moderation requirements. **3.** Work area includes any place where work activities are conducted inside or outside a physical building. This includes a location in a rural or remote area, villages, communities, houses, water-based location above or below the water surface, caves, and travel to reach a work site. **4.** Renewable energy sources include: solar, wind, hydro, biomass, biogas, biofuel. **Definitions:** 1. **Energy efficiency** refers to the utlisation of minimal energy to do work; 2. **Energy efficient (EE) practices:** In this unit, energy efficient practices refer to activities or behaviours that save energy and cost with long term economic and financial benefits, such as: a. adjusting thermostats and changing timing of energy intensive activities, b. Installation of energy efficient fixtures, c. Purchasing of renewable energy sources. 3. **Renewable energy sources** refer to sources of energy that are available naturally and can be replenished by nature. They include sunlight, wind, rain (water), tides and waves, plants, and geothermal heat; 4. **Energy efficiency standards (or policies or procedures) -** these are a set of procedures and regulations that prescribe the energy performance of manufacture of energy-using products. These regulations prohibit the sale of products that are less efficient than a minimum level. There are three main types of energy efficient standards[3]:

[3] Classification and definitions are in accordance to those provided by:
Wiel, S. and McMahon, J. E. (2003). Governments should implement energy-efficiency standards and labels—cautiously. *Energy Policy, 31(13)*, 1403-1415. Full text is available for download from: https://www.researchgate.net/publication/4760864_Governments_should_implement_energy-efficiency_standards_and_labels--cautiously

	a. ***Prescriptive standards*** refer to those that require the installations (or non-installation) of a feature or device in all new products in order to improve energy efficiency. b. ***Minimum energy performance standards*** **(MEPS)** refer to regulations that specify a number of performance requirements for an energy-using product that manufacturers must achieve in each and every product, thus limiting the maximum amount of energy that may be consumed by the product in performing a specified task. c. ***Class-average standards*** refers to regulations that specify the average efficiency of a manufactured product, allowing each manufacturer to select the level of efficiency for each model so that the overall average is achieved. 5. **Energy efficient initiatives** refer to new or creative ideas or activities that promote energy efficiency. 6. **Safety** refers to the condition of being protected from or unlikely to cause danger, risk, or injury.
Public comments on unit	Please contact TNQAB National Qualifications Unit (email EnquireNQ@tnqab.to or Telephone 28136) if you like to discuss or suggest changes to the details of this unit.