



## REGISTERED NATIONAL STANDARD

### UNIT OF COMPETENCY

<b>Title:</b>	<b>Promoting Sustainable Energy Practices in the Pacific Island Communities</b>		
<b>TQF Level:</b>	1	<b>Credits:</b>	8
		<b>Version:</b>	1 <sup>1</sup>
<b>National standard code:</b>	NS045-01		
<b>Associated qualification (and code):</b>	National Certificate in Sustainable Energy Level 1 (QR-01-NQ-018-01-0504-20-01)		
<b>Approval date:</b>	30 Nov 2020	<b>Review date:</b>	30 Nov 2025
<b>Purpose:</b>	<p>This unit standard is for people who work, or intend to work in Energy and Energy related fields.</p> <p>Persons credited with this unit standard are able to:</p> <ol style="list-style-type: none"> <li>1. Identify and explain safe <i>Sustainable energy</i> (SE) practice to others in the community;</li> <li>2. Prepare to promote recognized, safe, reliable and affordable SE practice at regional, national and domestic levels</li> <li>3. Report on completed promotion activities on SE.</li> </ol>		

<sup>1</sup> This Tonga Unit standard, encoded *NS045-01* has been adapted from Pacific regional Unit standard *SE1003* (Version 1). *SE1003*, which carry the same title mentioned above, is a component of the Regional qualification *Certificate 1 in Sustainable Energy* (qualification code RQ-Q0001) which has been accredited by the Pacific Community's Educational Quality and Assessment Programme (EQAP) and registered on the *Pacific Register of Qualifications and Standards* (PQRS) on <http://prqs.spc.int/Search/SearchROAQualification.aspx>.

<b>Learning Outcome 1 (LO1)</b>	Identify and explain safe, <i>Sustainable energy</i> (SE) practices for communities
<b>Performance standards</b>	<p>1.1 Explain the need to use SE practices, as mitigation measure to reduce greenhouse gas emission in Tonga and the rest of Pacific Island communities</p> <p>1.2 Identify safe and SE practices at workplaces and in households within communities</p> <p>1.3 Explain procedures and or processes in achieving safe and SE practices for workplace and households in communities</p> <p>1.4 Describe the use of appropriate materials and equipment for SE practices in communities</p>
<b>Learning Outcome 2 (LO2)</b>	Prepare to promote recognised, safe, reliable and affordable SE practices at regional, national and domestic levels.
<b>Performance Standards</b>	<p>2.1 Describe what <i>Energy conservation</i> means</p> <p>2.2 Define the term <i>Renewable energy technologies</i> (RETs)</p> <p>2.3 Perform basic household electrical appliances inventory</p> <p>2.4 Describe strategies or activities to promote safe, reliable and affordable SE practices at regional, national and domestic levels</p> <p>2.5 Undertake planned activities to promote safe, reliable and affordable SE practices at a domestic level</p> <p>2.6 Explain how to respond to unexpected factors to achieve safe, reliable and affordable SE practices at domestic levels in communities.</p>
<b>Learning Outcome 3 (LO3)</b>	Assist in preparing records and report on activities for promoting sustainable energy in communities
<b>Performance standards</b>	<p>3.1 Describe workplace requirements for file management or record-keeping.</p> <p>3.2 Prepare relevant records in accordance with workplace requirements for file management or record-keeping.</p> <p>3.3 Organize records for clarity and ease of reference (e.g.</p>

	<p>chronologically).</p> <p>3.4 Identify energy challenges experienced in communities in Tonga and make suggestions for future improvements in SE promotional activities</p> <p>3.5 Prepare reports on SE strategies and activities in communities in Tonga to meet the needs of various stakeholders.</p> <p>3.6 Report to stakeholders on plans and strategies related to appropriate SE practices for a community.</p>
<b>Pre-requisites</b>	N/A
<b>Co-requisites</b>	N/A
<b>Underpinning skill and knowledge</b>	<p>The following knowledge and skills underpin this unit standard:</p> <ul style="list-style-type: none"> <li>i. Knowledge of the basic geography of Tonga (and the Pacific) including culture, norms and values</li> <li>ii. Knowledge of the general weather and climatic conditions in: <ul style="list-style-type: none"> <li>a. One's local area (such as a specific part of Tonga e.g. Niuas, different parts of Vava'u, different parts of Ha'apai, different parts of Tongatapu, 'Eua,);</li> <li>b. Tonga;</li> <li>c. Pacific region.</li> </ul> </li> <li>iii. Understanding of environmental problems associated with increased greenhouse gas emissions.</li> <li>iv. Basic knowledge on renewable energy sources and corresponding renewable energy technologies</li> <li>v. Efficient use and supply of SE.</li> <li>vi. Skills in communication (oral and written) with groups and individuals.</li> <li>vii. Using the internet, email, and mobile phones for communication.</li> <li>viii. Basic knowledge on safety and tools</li> </ul>

**Suggested assessment methods**

**Context of assessment:**

To support student assessment and to ensure assessments are valid, reliable, flexible, and fair, provider institutions are encouraged to collaborate with the relevant key industry organisations such as *Tonga Electricity 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.

**Context of assessment:**

To show that students have the required competence they will need to:

1. Demonstrate knowledge of the *Principles of sustainable energy* in the workplace (or in an environment that closely resembles the workplace) in relation to:
  - i. The differences between *Sustainable energy (SE)* and *Renewable energy (RE)*;
  - ii. The importance of sustainable energy practices and employing RE resources.
  - iii. The use of energy in the home.
  - iv. Safe, affordable and reliable energy practices, regionally, nationally and domestically.
  - v. Household electrical appliances inventory.
  - vi. Community energy inventory.
  - vii. Energy conservation – Definition, example and benefits.

- viii. Renewable Energy Technologies (RETs) – What are they and how they sustain lives in Pacific Island Communities.

To show that students can apply their knowledge in the workplace they will also need to:

2. Prepare for sustainable energy advocacy in applying knowledge on sustainable energy practices, greenhouse gas mitigation, general weather and climate in Tonga and the Pacific region, climate change impacts on communities, energy conservation and energy efficiency practices.
3. Prepare for household energy inventory by applying knowledge on electrical appliances, energy conservation practices and use of renewable energy sources.

**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 (such as identifying safe SE community practices, prepare to promote reliable and affordable SE practices at the National Level, and assist in recording, preparing and reporting on SE in the communities)
2. Written or oral questions to test relevant skills and knowledge during observation
3. Template of household inventory
4. Recommendation of safe, reliable and affordable SE practices
5. Promotion of SE in the communities
6. Report on SE advocacy in local communities
7. Student Portfolio
8. Review of workplace attachment reports (e.g. Supervisor/third party reports)

<p><b>Resource requirements</b></p>	<ol style="list-style-type: none"> <li>1. Printed resources on promoting SE practices in Tonga (or the Pacific Island Countries) at the discretion of the course/unit coordinator or trainer.</li> <li>2. Computers (plus printers) and Internet access for staff and students;</li> <li>3. Conventional classroom, classroom furniture and resources such as white/blackboard, tables or benches, chairs, student notice boards, A3 coloured cards or wall charts.</li> <li>4. Energy-efficient devices for comparison with conventional electrical devices.</li> <li>5. <i>Renewable energy technology (RET)</i> and <i>Energy efficiency (EE)</i> equipment for promotion in communities</li> </ol>
<p><b>Moderation arrangements</b></p>	<p>Provider Institutions will be responsible for moderation arrangements to ensure consistency in assessments. Moderation process must be approved by TNQAB.</p>
<p><b>Requirements to complete this unit</b></p>	<p>There are three (3) <i>Learning outcomes</i> and sixteen (16) <i>Performance standards</i> to define the competencies to be attained at the end of training. To demonstrate competence, the person studying this unit is:</p> <ol style="list-style-type: none"> <li>1. Required to attain an <i>Achieved (A)</i><sup>2</sup> grade to fulfil the requirements of the Unit Standard.</li> <li>2. Eligible to three (3) attempts to attain the required competency in 1 above within 5 days of the first attempt.</li> </ol> <p>Failure to achieve the required competency level after three (3) attempts of the assessment (or a specific part of the assessment) will require the person to re-enrol for unit.</p>
<p><b>Important notes and definitions</b></p>	<p><u>Notes:</u></p> <ol style="list-style-type: none"> <li>1. All activities associated with this unit standard must comply with the requirements of national codes of practice, regulations and legislation for workplace health and safety, and environmental protection and any subsequent amendments.</li> <li>2. Assessors must comply with the assessment and moderation requirements.</li> </ol> <p><u>Definitions:</u></p>

<sup>2</sup> 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.

	<ol style="list-style-type: none"> <li>1. <i>Sustainable energy practices</i> refer to activities which are carried out to reduce the adverse environmental impact from the use of energy. Examples of sustainable energy practices include, but not limited to, the following: <ul style="list-style-type: none"> <li>○ Adjusting thermostats</li> <li>○ Changing the timing of energy intensive activities,</li> <li>○ Installing energy efficient fixtures,</li> <li>○ Purchasing and using renewable technology</li> </ul> </li> <li>2. <i>Climate</i> refers to the slowly varying aspects of the atmosphere–hydrosphere–land surface system.</li> <li>3. <i>Climate change</i> refers to the systematic change in the long-term statistics of climatic parameters (such as temperature, pressure, or winds) sustained over several decades or longer.</li> <li>4. <i>Greenhouse gas</i> refers to any of the atmospheric gases trapped in the atmosphere that contribute, when absorbing infrared radiation, to solar warming of the Earth's surface.</li> <li>5. <i>Mitigation</i> refers to the measures or intervention employed nationally and globally to reduce the emission of greenhouse gases</li> </ol>
<p><b>Public comments on unit</b></p>	<p>Please contact TNQAB National Qualifications Unit (email <a href="mailto:EnquireNQ@tnqab.to">EnquireNQ@tnqab.to</a> or Telephone 28136) if you like to discuss or suggest changes to the details of this unit.</p>