



Concept Note

Empowering Vava'u Communities: Accelerating Energy Efficiency and Renewable Energy Goals through Local Engagement

Monday 25 – Friday 30, November 2024

Background

Tonga Energy Sector

Tonga depends mostly on imported diesel (around 80%) to generate its electricity, and this is a major climate change concern and economic burden. In response, the Government of Tonga has set an ambitious target to generate 70% of the country's electricity from renewable energy resources by 2030 through the Tonga Energy Roadmap Plus (TERM Plus) 2021 – 2030.

The Tonga Energy Road Map Plus (TERMPLUSS) is an extension to Tonga's original Tonga Energy, aimed at further advancing the country's sustainable energy goals further. It includes specific targets that align well with the Tonga's updated Nationally Determined Contributions (NDCs) and overall climate resilience strategy as below:

- *Renewable Energy Share: achieving a higher percentage of renewable energy in the national electricity grid by 70% in 2030.*
- *Energy Efficiency: improving Energy Efficiency (EE) across sectors, especially in transport and electricity through implementing Minimum Energy Performance Standards (MEPs) etc.*
- *Transport Decarbonization: Increasing the adoption of Electric Vehicles and hybrid vehicles as part of reducing fossil fuel dependence, especially within government fleets.*
- *Resilience and Adaptation: Strengthening energy infrastructure to withstand national disasters and climate impacts.*
- *Capacity Building: building local expertise and capacity for maintaining renewable energy systems and promoting sustainable energy practices.*

Further, The Tonga Renewable Energy Projects (TREP), which is co financed by the Green Climate Fund (GCF), the Asian Development Bank, and the Government of Australia, is amongst the key projects that are currently implemented in Tonga in pursuit of the adopted national targets. One of the key components of the project was to electrify 4 outer islands in Vava'u with a solar Mini grids system where these island residents can access to AC power supply.

Currently, residents on the outer islands of Vava'u rely on Solar Home Systems (SHS) for DC power, primarily used for basic lighting and charging mobile phones or portable radios. These systems are managed by the Vava'u Outer Islands Solar Electrification Societies (VOISES). However, DC power is limited in capacity and restricts the range of applications available to residents.

One of the significant challenges Tonga faces in achieving its national energy targets is the lack of technical and institutional capacity as well as public awareness on energy as a whole. This limitation affects nearly all aspects of energy sector development, from planning and policy implementation to operation and maintenance of renewable energy systems.

Transforming Energy Access Programme – Pacific – The Pacific Community (TEA-P-SPC)

The Pacific Community (SPC) has started rolling out the UK-funded Clean Energy Access in Remote Pacific Island Communities (CLEARPICs) project. Part II of the CLEARPICs is the - **Transforming Energy**



Access Programme – Pacific – The Pacific Community (TEA-P-SPC). Work Stream 2 of the TEA-P-SPC is to support works of the PCREEE in its **Key Strategic Area 1 - Local RE Business Start-Up and Entrepreneurship Support.** These include:

- Support to sustainable energy business start-ups and the conduct of energy investment forums
- Support to the works of the STAR-C on national energy qualifications, quality infrastructure and a technical accredited scheme for solar practitioners
- Strengthen the work of national energy industry associations, electrification committees, etc
- Technical advice on income generating activities and the productive uses of energy

Tonga – PCREEE Partnerships

The Nuku’alofa-based PCREEE is co-hosted by the Pacific Community (SPC) and the Government of Tonga and is a young and new contributor to the National Energy Target (TERM and now TERM Plus) and has continuously supported the Tonga Department of Energy with its effort on energy transition.

The PCREEE Business Plan 2020-2030 calls on the PCREEE to provide support to improve the policy and regulatory frameworks and business enabling environment for rural electrification at both the regional and national levels.

Since the establishment of the PCREEE in Nuku’alofa, the center has supported the Government of Tonga with delivering technical assistance through the following initiatives:

- Facilitated the development and delivery of Sustainable Energy Qualifications in Tonga.
- Reviewing and finalizing Tonga Energy Efficiency Master Plan 2020 – 2030 and supported developing of fundings proposals and concept notes.
- Hosted and delivered training and workshops both at the main islands and outer islands on sustainable energy that has covered various topics energy efficiency measures, Mini grids, sustainable energy business startup as well as e-mobility.
- Funded representatives from department of energy and power utility to participate in regional and international workshops on sustainable energy.
- Supported the department of energy with developing of awareness materials on energy and have distributed across Tonga.

Request for Support: PCREEE – MEIDECC Joint Event

The Tonga Department of Energy (DoE) is planning to host Annual General Meeting (AGM) at the end of the year in Vava’u targeting the Vava’u Outer Islands Solar Electrification Societies (VOISES) members including town officers and technicians from outer island communities in Vava’u. Based on previous experiences, the AGM usually take about a half to a full one day depending on the Agenda items.

The PCREEE, in collaboration with Tonga National University, is working on establishing a National Centre for Climate Change and Energy. As of today, the PCREEE has developed and registered the National Certificate for Sustainable Energy (NCSE) Levels 1–3 in Tonga and is currently developing Levels 4 and 5 (diploma level).

Tonga Department of Energy has approached PCREEE to add value to its VOISES AGM by co-hosting a series of training and awareness programs under the TEA-SPC. Through a discussion with the A/Director for DoE and the Manager for PCREEE on Friday 8th November 2024, both were agreed to:



- Conduct lectures to raise awareness about the business, employment and further studies opportunities on sustainable energy targeting youths and school leavers (final year students)
- Deliver training on energy efficiency measures and the productive use of energy, specifically targeting residents of the four outer islands included in the TREP projects namely Falevai, Hunga, 'Otea and Ofu and their timely transition to 24/7 240V AC electricity service.

Objectives

- Strengthen sub-national buy-in and participation to accelerate progress on RE & EE to meet national energy and GHG ambitions.
- Improve the adoption of Energy Efficiency measures and the productive use/utilization of energy
- Encourage interests in sustainable energy careers, advanced technologies such as emobility and entrepreneurial opportunities within the community and among youths/students

Training and Awareness Program Strategy and Contents.

The mission is a joint collaboration between the PCREEE and Tonga Department of Energy for 5-working days, guided by these key activities:

1. School visits – Public talks and lectures | Monday 25th Nov– Tuesday 26th Nov 2024.
 - This will include school visit and will involve public talks and lectures targeting final year students from secondary school focusing on the evolution of renewable energy, energy efficiency and e-mobility in Tonga as well experiences on these topics from other Pacific island countries. This will be also an opportunity to share update and progress on Sustainable Energy Qualification in Tonga (Level 1 – 5).

**Tentative schedule and agenda for the school visits are contained in Annex 1.

2. VOISES Annual General Meeting | Wednesday 27th Nov 2024
 - The mission will be concluded with a half-day AGM meeting and workshops and half-day technical meeting with the solar water pumps committees which involves the rural communities of Vava'u.

**tentative schedule for the AGM meeting is in Annex 2.

3. Mini-grids Training in Vava'u Outer Islands | Thurs 28th – Fri 29th, Nov 2024.
 - The four outer islands in Vava'u—Falevai, Hunga, Ofu and 'Otea—are among the beneficiaries of the TREP mini-grid components. The construction and installation of mini grids on these islands are currently underway and are expected to be completed by end of the year or during first quarter of 2025. This training presents an important opportunity for the residents to gain awareness of energy efficiency measures and learn about the productive use of energy, both of which are essential for maximizing the benefits of the mini-grid system once it is operational.
 - Maximum of 2 – 3 hours trainings per island – Hunga and Falevai Is on Thurs 28th Nov then Otea and Ofu on Friday 29th Nov 2024.

**Tentative agenda for the mini-grids trainings are contained in Annex 3.

Women, girls and people with special needs are much encouraged to participate in these training awareness programs, and will be mentioned in the invitation letter.



Output & Deliverables

A Technical Assistance Report covering:

- A report on the 2-days awareness school visit program.
- A training/Workshop report that will document the outcomes of the discussions during the two-day trainings in the four outer islands as well as the AGM and the Solar Water Pumps committee meeting on Wednesday.

Budget & Costs

To successfully deliver this support, the PCREEE and the Tonga Department of Energy will co-finance the proposed activities, as outlined below:

Cost items	Estimated (USD)	Government of Tonga (USD)	PCREEE (USD)	VOISES (USD)	Comments
Return Travel airfares & per diem (4 staffs)	5,000	-	5000		3 staff from DoE & 1 PCREEE staff
Catering for training/workshop days – outer islands and AGM	2,000	1,500	-		
Boat hires & fuel	2,000	2,000	-		
Hired rental cars & fuel	500	500	-		
Boat hire for Town Officers and meeting fee				500	
		4,000	5,000	500	
TOTAL		\$9,500 USD			

The cost associated with PCREEE will be covered through its funding allocation at the UK CLEARPICs project, thus contributing specifically to:

- Achieve the work package 1's objective i.e. to enhance coordination of partners to achieve national energy access targets in the region.
- Output 4 of Workstream 2: Support to improvement of the policy and regulatory frameworks and business enabling environment both at the regional and national levels.
 - *Indicator O4 (b) Number of promotions of income-generating activities and productive uses of renewable energy.*
 - ✓ *TAs will include the conduct of income generating training activities targeting remote communities, disaster affected communities and their recovery effort, etc and focussing on women and youths.*



Annex 1- Tentative schedule and agenda for the school visits

Schedule for school visit

Day 1, Monday 25 November	
9am – 11am	Intro meeting with MEIDECC OIC, confirmation of logistics etc.
11am – 1pm	Mizbha
1pm – 2pm	Lunch
2pm – 4pm	Channel College
Day 2, Tuesday 26 November	
9am – 11am	Si'ulikutapu & Mailefihi
11am – 1pm	Tailulu College
1pm – 2pm	LUNCH
2pm – 4pm	Vava'u High School

Tentative agenda for public lecture during school visit – max of 2 hours per school

Agenda items (proposed high-level topics)	Facilitator /presenter
Opening, introductory remarks (10 minutes)	MEDIECC/ Tonga Department of Energy
Introduction and overview of energy sector in Tonga <ul style="list-style-type: none"> • Legislations in place • Current national energy plans /policies etc. (energy targets) • Youths involvement in the Energy sector 20mins	DoE ('Eli)
Highlight of major Renewable Energy and Energy Efficiency Projects – ongoing and future pipeline projects 20 mins	DoE (Kipola /Filimone)
Introduce PCREEE and its roles and share experiences with their support provided to Pacific Islands Countries including Tonga, in terms of: <ul style="list-style-type: none"> • Sustainable Energy Business Start-up includes sustainable Energy qualifications in Tonga • Sustainable E-mobility – EVs etc • Mini grids • Energy Efficiency Investment 30 mins	PCREEE
Questions and Answers Session – 40 mins	Facilitated by PCREEE/ DoE
Wrap Up and Close – 10mins	Facilitated by PCREEE/DoE



Annex 2: Tentative Agenda for VOISES AGM and Sustainable Energy Workshop and Solar Water Pumps Committee Meeting

Vava'u Outer Islands Solar Electrification Societies Annual General Meeting November 2024

Date: Wednesday 27th November, 2024

Time: 10 AM – 12:30 PM

Agenda Items	Facilitator/Presenter
Opening Prayer	TBC
Welcome Remark	Department of Energy
Chairman's Remark	Hon. Fakatulolo (Lord Governor of Vava'u)
Adoption of the previous AGM Minutes	AGM Members
Technical Report <ul style="list-style-type: none"> Solar Home System Solar Freezer System Solar Streetlight System 	Department of Energy
Q&A Discussion	Department of Energy
Financial Report	Department of Energy
Budget Proposal 2025	
PCREEE <ul style="list-style-type: none"> PCREE roles and experiences with their support provided to Pacific Islands Countries including Tonga and its outer islands 	PCREEE
Other matters	Department of Energy
Wrap up & Closing	Chairperson
LUNCH	

Vava'u Solar Water Pumps Committee Annual General Meeting

Date: 26th November 2024

Time: 1:30 – 4:00 PM

Agenda Items	Facilitator/Presenter
Opening Prayer	TBC
Welcome Remark	Department of Energy
Technical Report <ul style="list-style-type: none"> Community maintenance roles Technical Roles and functions of the Department of Energy 	Department of Energy
Q&A Discussion	Department of Energy/Solar Water Pumps technicians
PCREEE <ul style="list-style-type: none"> PCREE roles, experiences, involvements and its supports to the Pacific Islands Countries including Tonga and its outer islands 	PCREEE
Other matters	Department of Energy
Way forwards & Closing	Department of Energy
AFTERNOON TEA	



Annex 3: Tentative Agenda for Mini-grids training – Falevai, Hunga, ‘Otea & Ofu

Pacific Centre for Renewable Energy and Energy Efficiency (PCREEE) and Tonga Department of Energy joint workshop on Mini-grids.

***max of 2 hrs training per island*

Thursday 29th & Friday 29th November 2024

Agenda items (proposed high-level topics)	Facilitator /presenter
Opening, introductory remarks (10 minutes)	MEDIECC/ Tonga Department of Energy
Introduction and overview of energy sector in Tonga <ul style="list-style-type: none"> • Legislations in place • Current national energy plans /policies etc. (energy targets) • Tonga Mini-grids program – TREP, OIREP and other related topics 20mins	DoE (‘Eliate)
Highlight of major Renewable Energy and Energy Efficiency Projects – ongoing and future pipeline projects 20 mins	DoE (Kipola – RE /Filimone - EE)
Introduce PCREEE and its roles and share experiences with their support provided to Pacific Islands Countries including Tonga, in terms of: <ul style="list-style-type: none"> • Sustainable Energy Business Start-up includes sustainable Energy qualifications in Tonga • Sustainable E-mobility – EVs etc • Mini grids • Energy Efficiency Investment 5 mins Presentation on EE measures and productive Use of Energy 20 mins	PCREEE
Questions and Answers Session – 40 mins	Facilitated by PCREEE/ DoE
Wrap Up and Close – 10mins	Facilitated by PCREEE/DoE
** Refreshments will be provided by MEIDECC/DoE at each island.	