PCREEE Follow-Up Workshops and Trainings to promote Sustainable Energy in Tuvalu

31st July – 4th August 2023

Concept Note

1. Background

Pacific Centre for Renewable Energy and Energy Efficiency

The SPC's Pacific Centre for Renewable Energy and Energy Efficiency (PCREEE) was established in 2017 as an arm of the Georesources & Energy Programme (GEP) with its headquarters in Nuku'alofa, Tonga. The Centre has a strong focus to accelerate the private sector's participation and increase investment in Renewable Energy (RE) and Energy Efficiency (EE) programs to achieve Pacific Islands Countries and Territories (PICTs) targets and to enhance the productivity and competitiveness of key industries with high job leverage in the Pacific (e.g., agriculture, tourism, fishery, manufacturing, creative industry).

Tuvalu Energy Sector Overview

Tuvalu is one of the world's least populated countries with a 99 % access to electricity and a low per capita emission of greenhouse gases (GHG). Tuvalu however recognizes the need to be responsible citizens and is committed to join the global community in reducing its GHG emission and enjoy the substantial co-benefits of reduced oil imports, improved energy security, improved local air quality, increased employment and investments and being a green tourism destination.

In response to the world oil market and to ensure enhanced energy security, Tuvalu submitted its updated (Second) Nationally Determined Contribution in November 2022, with the following commitments:

- Tuvalu commits to reduction of emissions of greenhouse gases from the electricity generation (power) sector, by 100%, i.e., almost zero emissions by 2030.
- Increase energy efficiency in Funafuti by 2030
- Tuvalu's indicative quantified economy-wide target for a reduction in total emissions of GHGs from the entire energy sector to 60% below 2010 levels by 2030.
- Zero Carbon development pathway by 2050.

PCREEE Work Programming Mission to Tuvalu, 1st – 3rd May 2023

Tuvalu is among the SPC member countries that has received very minimal assistance from the PCREEE. Apart from serving as a member of the PCREEE Steering Committee and

attending its meetings plus an E-Mobility webinar in 2022, there has not been any on-the-ground assistance by the PCREEE in Tuvalu.

Through consultations with the Director of Energy (Simona Kilei) as well as the General Manager of the Tuvalu Electricity Corporation (TEC) in early April 2023, they have expressed the need for PCREEE support in operationalizing its MEPSL legislation, a training on mini-grids as well as supporting their current e-bike demonstration project.

Therefore, one of the PCREEE's staff travelled to Tuvalu for a 3-days mission from 29 – 31 May and met with key stakeholders, including the Tuvalu Department of Energy and Tuvalu Electricity Corporation (TEC) to discuss current and planned energy projects. The meetings also served to identify areas where PCREEE can provide to Tuvalu.

Upon completion of the mission, three key areas of support were identified:

i. Conduct a refresher training on the operationalization of MEPSL legislations to Energy and Custom Officials as well as appliances importers (suppliers).
ii. Conduct a national stakeholders' workshop on Sustainable Business Start-up and Entrepreneurship, as well as basic training on installation and maintenance of mini grid/solar roof top systems.
iii. Support the TEC e-bike pilot project through the establishment of a battery swapping business model.

In relation to above-identified key areas of support i) and ii), these are scheduled to deliver on the ground in early August 2023 in Tuvalu.

1. MEPSL program in Tuvalu

The Tuvalu Energy Efficiency Act that was passed in 2016 with a purpose to promote the energy efficiency, energy conservation and to give effects to certain obligations that Tuvalu has under the Climate Change Conventions and related conventions. This act has established the minimum energy performance standards applicable to, and standards for energy labelling of electrical products and to facilitate the implementation of energy efficiency measures. Under the Act, the refrigerator/freezers, air conditioners and lighting appliances are currently regulated in Tuvalu.

Since 2016, the Tuvalu Department of Energy has been led with the implementation of the MEPSL programs and there are identified gaps with its administration and enforcement, such as below:

- Yet to access to regional online Pacific Online Database (PAD). As of now, the importers have to manually fill up an application form prior to import an electrical appliance (such as refrigerators, lightings and air conditioners) and submit to the Tuvalu Department of Energy (DoE). The DoE will then screen the application form and verify using a downloadable excel sheet from the AUST/NZ MEPSL

website. If products are complied with, the DoE will issue a letter of release /clearance to importers.

- There is no clear guidelines, Standards of Operating Procedures (SOPs), shop inspection forms or MOUs in place to guide the works of the enforcement officers for DoE and Department of Customs.

2. Sustainable Energy (SE) Business Start-up and Entrepreneurship.

Within the PCREEE 10 years (2021-2030) Business Plan, RE and EE Business start-up and Entrepreneurship Support is one of the four (4) strategic areas that guided the work of the PCREEE. The objective of this programme area is to provide differentiated support to entrepreneurial RE&EE businesses across the enterprise development life cycle (start-up, early-stage, growth, and maturity). This objective is guided by four(4) key outputs:

i. Project preparation Technical Assistance (TA) to support companies to progress until achieving financial close.
ii. Financial support in the PICTs to increase RE & EE business opportunities for local companies and industry.
iii. Access to finance via different instruments, including connecting with existing financing facilities (i.e. local development banks, targeted local stimulus packages, local energy/environment funds, or the Asian Development Bank (ADB))
iv. Support to improvement of the policy and regulatory frameworks and business enabling environment both at the regional and national levels.

The above technical supports will seek to enhance the awareness, capacity skills, and expertise of eligible businesses such as electrical contractors, established community (women) group and other potential local businesses that are willing to participate in the RE & EE systems market.

3. Sustainable RE Mini-Grid Systems.

PCREEE's mini-grids programme is designed to assist in overcoming identified gaps in the market to promote mini-grid renewable energy development. The program includes measures to address market intelligence, capacity building, and Public and Private Partnerships and guidelines and an Operation and Maintenance (O&M) Platform.

In Tuvalu, there are total of eight outer islands apart from Funafuti, and seven (7) has a mini-grid systems which comprised of a solar PV with battery storage and a standby diesel generator and one (1) has Standalone Home Solar (SHS) Systems for all households. These systems have been installed in 2015 and Tuvalu Electricity Corporation (TEC) was responsible for its installation, operation, and maintenance. On the main island of Funafuti, solar rooftops have been put on some of the government as well as private buildings, but they are all connected to the main grid. However, there is a rooftop solar coupled with a battery storage that has been trialed in one of the TEC buildings as per below photos. The installation, operation and maintenance of this solar roof top system is currently conducted by TEC, however, there is a plan to handover these tasks to the electrical contractors once these systems are scaled up in

Tuvalu. Given there are solar rooftop projects are in pipeline, it is critical at this stage to introduce a basic and hands-on training on the installation (wiring etc.) and maintenance to the electrical contractors in Funafuti.

Solar inverter

Solar rooftop

Battery storage

2. Objectives

a) To have a better understanding of the MEPSL components of the Tuvalu Energy Efficiency Act 2016.
b) To enhance the skills of government officials (Energy and Customs Division) in administering the MEPSL components of the Tuvalu Energy Efficiency Act 2016
c) To introduce to participants on the use of the Pacific Appliance Database [currently used by Samoa, Vanuatu and Solomon Islands]
d) Promote the SE business start-up and opportunities from the Tuvalu Energy Policies NDCs and other National Strategic Plans
e) Promote Gender balance in Energy sectors and employment opportunities for youth on Sustainable Energy.
f) To support the capacity of the government officials and the private sectors in the design, installation, and maintenance of solar mini-grids systems.

3. Expected Outcomes

a) Enhanced understanding of the MEPSL legislations and how it will be effectively administered and monitored, the roles of the regulator, suppliers, and border control (Custom).
b) Increased awareness of alternative resource mobilization opportunities to strengthen MEPSL implementation.
c) Increased new business start-up and entrepreneurship opportunities that would be create by the draft Energy Bill and national energy plans /strategies.
d) Promoted the gender balance in the energy sectors and raise awareness of business and employment opportunities for women and youth on SE.
e) Increased awareness of PCREEE supporting initiatives to strengthen the capacity of private sectors on business creation, the regulator on regulating the utility, Energy Association etc.

f) Enhanced knowledge and skills on the installation and maintenance of the mini-grids system including solar rooftop.

4. Target Outputs

a) Successfully conducted and documented the outcomes of the workshops on MEPSL including the experiences being shared on its implementation since 2016.
b) The participants have successfully trained on how to access, monitor, and manage the online registration system (PAD).
c) Successfully conducted and documented the SE business start-up and entrepreneurship workshop.
d) The participants particularly the electrical contractors have successfully trained on the installations and maintenance of the mini-grid system/ the solar roof-top system

5. Consultation Strategy, Participants Composition and Contents

- The first three days training will be focused MEPSL and to be held from Monday 31st July to Wednesday 2nd August, 2023. The MEPSL training is targeted to invite representatives from the Energy Division, Electrical appliances importers and suppliers – wholesalers and retailers, as well as Department of Customs officials.

    - *Tentative Agenda for MEPSL training in ANNEX 1*

- The Sustainable Energy (SE) and Business start-up and entrepreneurship workshop will be conducted on Thursday, 4th August 2023. This workshop will invite representatives from the Tuvalu Department of Energy, financial bank institutions, Ministry of Labor and Commerce, electrical contractors including those with no license, solar installers, and entrepreneurs and women from any energy sector. **Women are much encouraged to participate during the workshop and will be mentioned in the invitation**.
- The mini-grid training will be followed on Friday, 5th August whereas basic hands-on training will be held during the morning session. A site visit will be also organized during the afternoon session.

    - *Tentative Agenda for SE Business Start-up and Entrepreneurship Workshop and Mini-grid training are in ANNEX 2*

6. Budget

Cost Item	PCREEE (AUD)	Tuvalu (in-kind)	Comments
Return ticket and DSA for PCREEE staff to travel Tuvalu	~5000		
Venue – 5 days workshops		(1000)In-kind contribution	Department of Energy will be organizing and securing the venue for the 4.5 days
Catering – 5 days workshops (morning tea, lunch and afternoon tea)	~3,000		Friday 4th August – only morning tea & lunch.
Workshop Materials – projectors, printing (agendas) and wifi connection		(500) In-kind contribution	
TOTAL(AUD)	**8,000**	**(1,500)**	