PCREEE
Pacific Centre for Renewable Energy and Energy Efficiency
SE4ALL Centre of Excellence to Promote Sustainable Energy Markets, Industries and Innovation

Pacific Community
Communauté du Pacifique

Electric Vehicle Webinar

26th May, 2022

KIRIBATI

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WHO WE ARE?

- Pacific Centre for Renewable Energy and Energy Efficiency (PCREEE) was established in 2017.
- PCREEE is co-hosted by SPC and the Government of Tonga, and it is located in Tonga
- Part of a series of regional centres around the world under the Global Network of Regional Sustainable Energy Centres.

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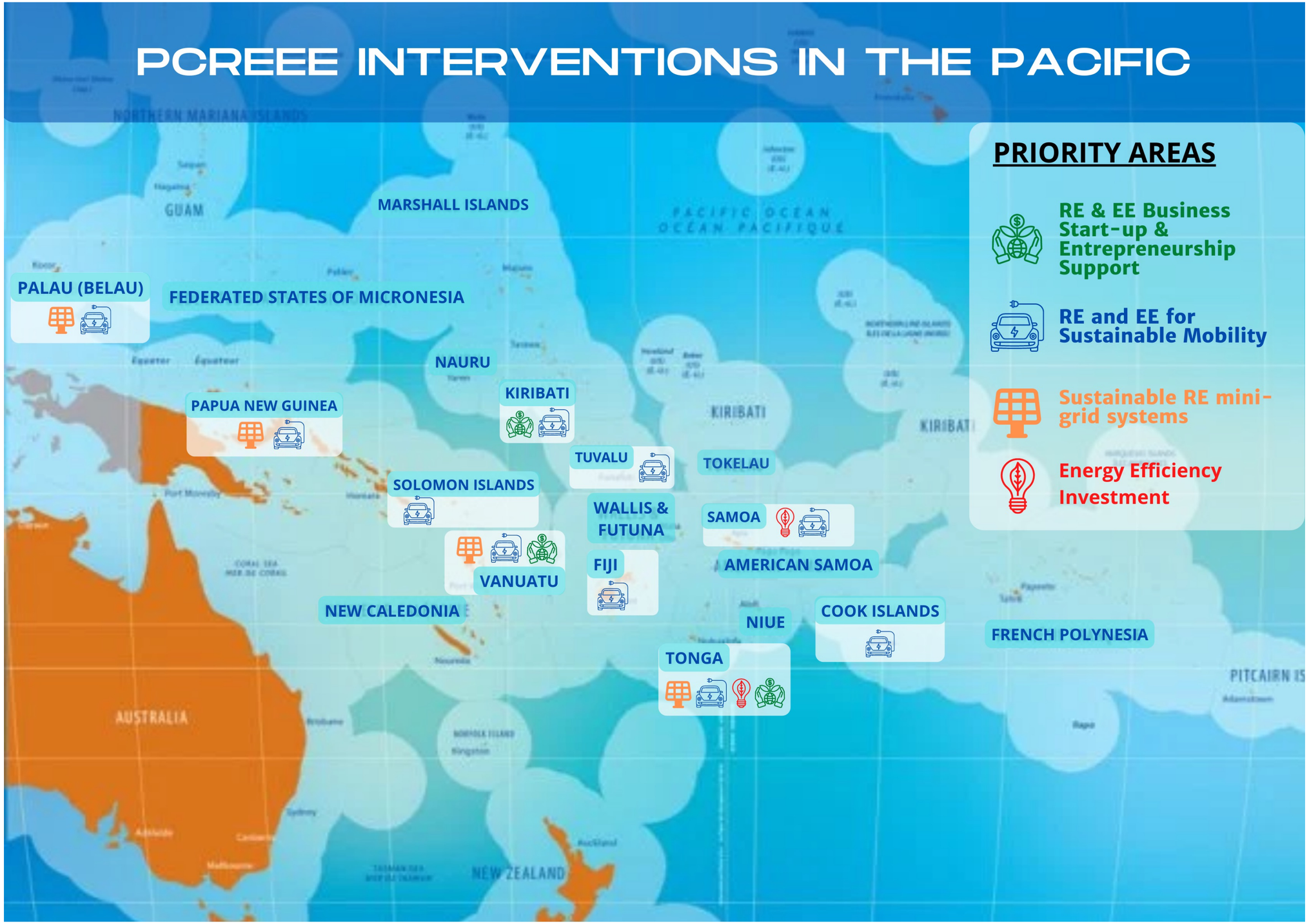
OUR ROLE

- Assist and support SPC members countries;
- Supports and executes RE&EE activities and projects which cover one or more PICTs;
- Focuses primarily on activities and projects with regional impact or national projects which demonstrate high potential for scaling-up or regional replication;
- Works in urban as well as peri-urban and rural areas due to the high relevance of decentralized RE&EE technologies and services for rural areas linked with the agricultural sector
- Guided by PCREEE Business Plan and the Framework for Energy Security and Resilience in the Pacific

PCREEE INTERVENTIONS IN THE PACIFIC



PRIORITY AREAS

- RE & EE Business Start-up & Entrepreneurship Support
- RE and EE for Sustainable Mobility
- Sustainable RE mini-grid systems
- Energy Efficiency Investment

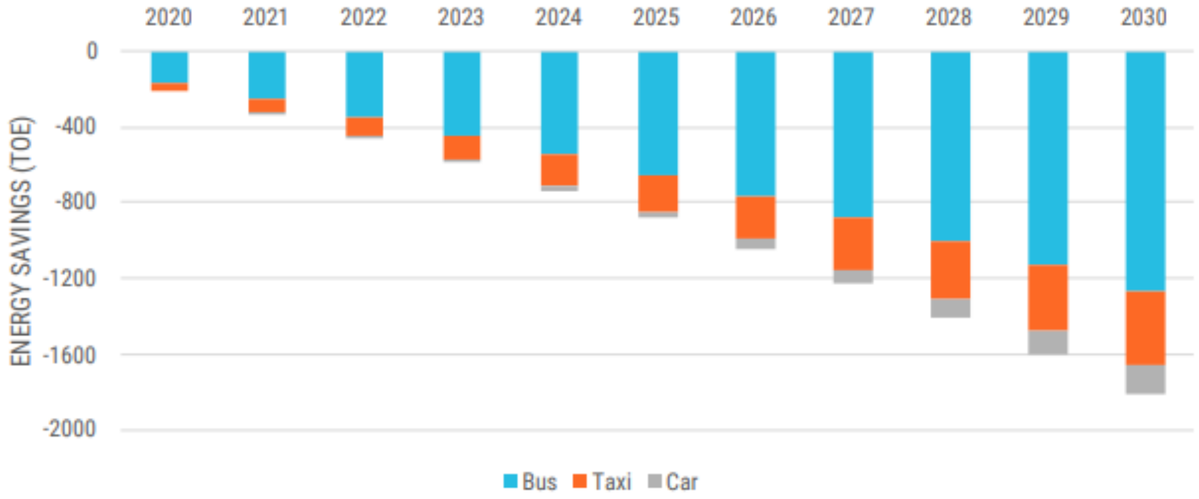
WHAT DOES E-MOBILITY LOOKS LIKE THE PACIFIC ISLANDS

- Heavy dependence of the region on fossil fuel
- Major fossil fuel users / GHG emissions are electricity generation and transportation
- Existing policies - Energy / Mitigation / SDG-7 Roadmaps and Investment Plans, NDCs, LEDS, etc
- Second-hand vehicle has become increasingly cheaper from Japan led to increase road congestions
- Countries are testing out EV without waiting for the Governments
- Very new technologies and some countries, consumers, private sectors are trying out Hyrbid before moving to EV
- Rise in fuel price - interest in EV
- Power Utilities rethink catering for EV futures

Samoa's 2nd NDC

"Land transport Reducing GHG emissions in the land transport sector may be achieved by initially electrifying a percentage of vehicles in Samoa ……
The successful adoption of these measures will require further feasibility studies and assessments ……. "

Tonga SDG-7 Roadmap: Energy savings via transport electrification measures



Country Data, 2018

Pacific DMC	Population ('000)	Land Area (km^2)	Number of Islands/Atolls	GDP per Capita (current $)	Electricity Access	Renewable Energy Target by Year
Papua New Guinea	8,738	452,860	approximately 600	2,651	12%	100% by 2030
Fiji	885	18,274	332	5,639	87%	100% by 2030
Solomon Islands	670	27,990	approximately 998	1,724	23%	79% by 2030
Vanuatu	297	12,274	84	2,876	33%	100% by 2030
Samoa	197	2,934	9 plus adjacent small islets	4,258	100%	100% by 2025
Kiribati	114	810	33	1,729	>65%	23%–40% by 2025
Tonga	105	750	171	4,011	89%	50% by 2020
Micronesia, Federated States of	102	702	607	3,300	65%	>30% by 2020
Marshall Islands	55	181	5 islands, 29 atolls made up of an indeterminate number of islets	3,669	87%	20% by 2020
Cook Islands	19	240	15	15,613	99%	100% by 2020
Palau	18	189	more than 300	16,261	98%	45% by 2025
Nauru	13	21	1	8,330	100%	50% by 2020
Tuvalu	10	27	9	3,545	98%	100% by 2020
Niue	1.6	261	1	15,074[a]	99%	80% by 2025

DMC = developing member country, GDP = gross domestic product, km^2 = square kilometer

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Electricity Generation from RE for selected PICs

Country	RE target	by [year]	Actual 2000	Actual 2017
Cook Islands	50%	2015	0.0%	15.1%
	100%	2020		
Fiji	81%	2020	82.4%	53.5%
	100%	2030		
FSM	30%	2020		2.7%
Kiribati	23% (South Tarawa)	2025	0.0%	17%
	40% (Kiritimati)	2025		
	40% (rural public)	2025		
	100% (rural households)	2025		
Nauru	50%	2020	0.0	2.5%
Niue	100%	2020	0.0%	0.0%
Palau	30%	2020	0.0	2.1%
	45%	2025		
PNG	100%	2030	57.1%	69.2%
RMI	100%	2050	4.2%	2.8%
Samoa	100%	2025	54.0%	60.4%
Solomon Islands	50%	2020	1.4%	7.8%
	100%	2030		
Tonga	50%	2020	0.2%	9.3%
Tuvalu	100%	2020	0.2%	23.3%
Vanuatu	100%	2030	1.8%	20.7%

RE targets are from Renewable Energy Costs in the Pacific (PRIF, 2019) and national PIC sources.
Source for 2000 & 2017 actual is IRENA (data as for Figure 2)

Barriers of EV development in the Pacific

EVs are new to PICs and there are many barriers with associated with this "newness" including:

- a lack of mandate to drive EV policy (opportunities in the revisions of NDCs and Energy Roadmaps);
- a lack of supporting institutional and regulatory framework
  - Transport Authority deal mostly with vehicle registration while MoI/MoT deal with roads and bridges and Police deals with enforcing the traffic laws.
  - In some countries, EVs do not fall into any of the vehicle categories, making it difficult to register them.
  - Duty is based on engine size and no regards to the fuel type or no categories for electric engine
- absence of standards is a safety hazards and could ruin the reputation of the technology
- a lack of charging infrastructure
- a lack of technical support capability and capacity
- a general lack of awareness of EVs (& market access).

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PICs EV initiatives

Cook Islands – Duty free for EV
2020 = > 80 BEVs

- **Fiji –** EV bus and EV taxi trials
- **Niue –** Electric bike business
- **Vanuatu –** E-mobility feasibility study
- **Samoa –** EV rentals by local company
- **Tonga –** Solar Tuk tuk, EV charging demonstration and EV roadmap
- **Kiribati –** EV Bus
- **PNG** – EV Policy

Regional e-mobility readiness Programme

Objective: PICTs are **best prepared** for their respective sustainable mobility future

Output 1: Central Policy and Administration

Output 2: Standards and Guidelines

Output 3: Awareness and Promotion

Output 4: Demonstration and Upscale

- Promotes SIDS-SIDS cooperation under the umbrella of the GN-SEC - https://www.gn-sec.net/
- RE&EE For Sustainable Mobility in the PCREEE Business Plan & in the FESRIP too

Target Actions of the Regional EV Program

Central Policy and Administration

1. Develop high-level targets and mandates concerning EV uptake.
2. Establish a staffed and funded Regional EV Hub with regional representatives responsible for coordinating national programs and collecting and sharing information and international links including those related to SIDS-SIDS cooperation.
3. Support PICTs in developing and implementing national EV roadmaps.
4. Identify tax levels or incentive packages to encourage the importation of desired EV goods.
5. Establish partnerships in EVs.
6. Develop a M & E system for national EV programmes.
7. As appropriate, introduce/amend the regulatory frameworks for transport to include EVs.
8. Maintain a watching brief on global EV-related developments.

Target Actions of the Regional EV Program

Standards & Guidelines

1. Develop and set minimum standards for EVs imports and for fitness testing.
2. Ensure appropriate standards are in place for the retirement of EVs.
3. Set guidelines for charging, including the specification of charging connectors.
4. Develop criteria "EV-readiness“ in new construction and infrastructure.
5. Develop guidelines for the use of V2H and on-site managed charging.
6. Develop (at least voluntary) standards for low-voltage vehicles, the charging of them, and the use of "mobility batteries" for local power supply circuits.
7. Develop and introduce accredited technical courses on EVs.
8. Develop guidelines for e-mobility safety.
9. Provide buyer and user guides on low-voltage e-mobility options.

Target Actions of the Regional EV Program

Awareness & Promotion

1. Undertake social marketing research.
2. Develop and deliver an awareness, information and promotion campaign supporting the uptake of EVs.
3. Develop, publish and promote guidelines on:
   - EV purchase (micro-mobility through 4-wheelers);
   - Charging (micro-mobility through 4-wheelers);
   - Servicing and Support (micro-mobility through 4-wheelers).
4. Collate and distribute global and PICT EV information.
5. Ensure that first responders are aware of correct procedures.

Target Actions of the Regional EV Program

Demonstration & Upscale

1. Promote government leadership in purchasing of appropriate EVs.
2. Consider supporting electric bus demonstrations.
3. Consider supporting the demonstration of other non-passenger car EV projects if there is a good case for them.
4. Consider methods to share heavy EV technical support capability across fleets and PICTs.
5. Consider opportunities for the electrification of small marine vessels.
6. Facilitate or co-invest in public charging infrastructure.
7. Provide facilities in support of micro through large e-mobility options, beginning with facilities at public offices.
8. Develop EV service industry and support local capability and capacity.
9. (Support the introduction of Time of Use (TOU) electricity pricing).
10. Conduct investment forums on EVs

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PCREEE EV Awareness

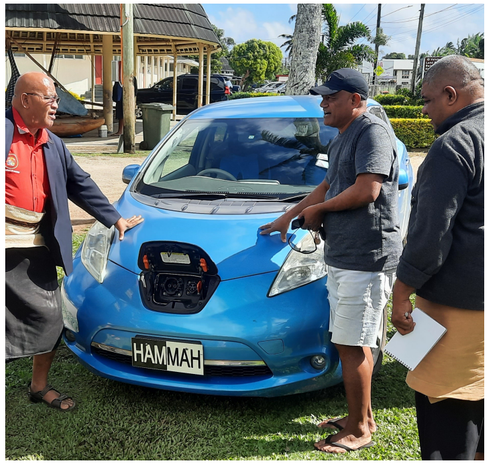
- **<u>Samoa- EV Awareness Week</u>**
- Support EV Awareness week

- **<u>Tonga – Tonga Environment week</u>**
- Support EV display at the Tonga Environment Awareness week

- **<u>Regional – EV Awareness documents</u>**
- Brochures, colouring books, posters

PCREE EV Demonstrations

- **<u>Tonga - EV charging</u>**
- Testing the impacts of EV charging on the national grid
- Public awareness



- **<u>Fiji - EV Taxi</u>**
- Review the Electricity Act and identify business opportunity for EV taxi businesses

- **<u>Vanuatu – EV charging</u>**
- On hold until completion of CTCN feasibility study

Message 1:

Promotion of EVs must be carried out jointly with the pursuit of each country's renewable energy and energy efficiency targets

Message 2:

Promotion of EVs cannot be done in isolation from the Power Utilities and authorities who are responsible for the generation and distribution of electricity & tariff setting too

Message 3:

PICs must be fully informed and prepared with the necessary policies, legislations and structures IN PLACE before a nation-wide uptake of EVs

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MALO ‘AUPITO

Agenda

Time (Kiribati Time)	Topic	Detailed outline
10:00 – 10:10 am	Welcoming remarks	Director for MISE
10:10 – 10:15 am	Introduction	PCREEE
10:15 - 10:30 am	Session-1: Speaker: Kakau Foliaki	SPC regional E-mobility programme and EV developments in the PICs
10:30 - 10:45 am	Session-2: Speaker: Thomas Tebwateki & Tiaon Aukitino	Background to the e-bus project
10:45 – 10:55 am	Q & A Session	Kakau Foliaki & Tiaon Aukitino
10:55 - 11:25 am	Session-3 Speaker: Andrew Campbell	Global experience with the EVs
11:25 - 11: 40 am	Session-4 Speaker: Katherine Cooke	Feasibility Study on Promoting decarbonizing of Public Bus Transport in Fiji
11:40 – 11:55 pm	Session- Speaker: OECC	OECC
11:55 – 12:00pm	Q & A Session and Closing	Kakau Foliaki & Tiaon Aukitino