

## WEBINAR ON EV DEVELOPMENTS IN THE PACIFIC REGION AND ABROAD

23 February 2022

Virtual Meeting: Zoom Platform

Host: PCREEE

Moderator: Solomone Fifita

Speaker: Andrew Campbell

### 1. BACKGROUND

Under the PCREEE's e-mobility readiness programme, a webinar on EV developments in the Pacific regional and abroad was conducted on 23 February 2022. The objectives of the webinar were to:

- Update on EV developments
- Network & share experiences
- To listen to ideas which may be fed into a paper on e-mobility to be presented to the Officials and Ministers of Energy and Transport Meetings later in 2022
- To identify areas for collaborations and identify a way forward

### 2. OPENING

Mr Akuila Tawake, Deputy Director of the Georesources and Energy programme of SPC delivered the opening remark and welcomed participants to the webinar. Mr Tawake thanked the PCREEE team and Andrew Campbell's assistance in organising the event.

Mr Tawake noted that EV is not new to the region and there are rapid developments in developed regions of the world. It is therefore timely to get an update regarding:

- Putting in the necessary legal frameworks and policies
- Bringing in investors and entrepreneurs
- Establishing local business in order for EV to become a reality in the region.

### 3. INTRODUCTION

Mr Solomone Fifita gave an introductory presentation to the development on EVs in the region and abroad:

- **Cook Is**
  - NDC target - net zero emissions by 2030
  - In 2020 - 46 cars (mostly LEAFs, 10 Vans (mostly ENV200 Nissans), 3 pickups and 2 trucks (Mitsubishi mainly I believe) 24 motorcycles (no idea of brands) & 4 scooters).
- **Niue**
  - 1% of fuel-efficient vehicles by 2020
  - Freedom Bikes
  - GEF AREAN Project
- **PNG**
  - PNG National Energy Policy: 2017 - 2027



- CNG & LPG as alternative to diesel and petrol. EV & hybrid are future options for govt.
- HEAT is working on developing a national policy for deploying and scaling up e-mobility and supporting sustainable infrastructure in PNG. The project is supported by CTCN and CCDA.
- just imported 3 electric vehicles, small commercial vans.
- currently sitting on the wharf because PNG Customs does not have the correct import code to process them.
- EVs are declared to be 0% duty but the PNG Customs computer system still has them coded as 20% duty.
- **Samoa**
  - Ford Hyundai Samoa is importing Hyundai Kona EV
  - Lotopa Commercial Vehicles
  - Supply of electric cars and charging stations for EPC
- **Tonga**
  - 10% of new LDVs are electric by 2030
  - 2 Nissan Leaf cars
- **Tuvalu**
  - Awaiting the arrival of 12 e-scooters from a Chinese supplier
- **Solomon Is & Vanuatu**
  - Feasibility Study on EE in land transport
  - Identifying barriers and suggesting solution, including EVs
- **New Zealand**
  - First e-boat put to sea in late 2021
- **Thailand**
  - Thailand's electrification policy: Becoming an EV production hub for ASEAN region by 2025
  - Thailand charts EV road map with investment incentives. Program targets Chinese makers, with 30% output goal in 2030
  - The Thai government has also set a target for electrified vehicles to reach 30% of total domestic vehicle production by 2030 as part of its EV Production Policy.
  - Thailand ships vehicles to 120 countries worldwide as all the world's automakers and parts manufacturers have a presence in the country.
  - In the ASEAN market, Thailand and Indonesia aim to be regional EV production hubs as well as build manufacturing facilities for EV batteries.
- **USA**
  - White House rolls out a \$5 Billion EV charging programme

#### 4. MAIN PRESENTATION - GLOBAL EXPERIENCE WITH EVs

Andrew Campbell delivered the main presentation providing a background to EVs and the *drivers to change* being:

- Climate Change •
- Cost of fuel imports •
- Air quality •
- Congestion •
- Pedestrians first

and the *enablers of change* being:

- Technologies are developing rapidly
- Falling costs

- Rapidly increasing capability of technology
- Clever combinations to new ways
- Affordability/better access
- Accelerated uptake of e-mobility

He alluded to the fact that results being a **variety of e-mobility solutions expanding.**

Andrew emphasized that the vehicle is only one part of the EV Solution and noted 6 future mobility trends:

1. Electrification is global and happening in all sectors.
2. Autonomous vehicles will transform the automotive industry ◊ declining vehicle ownership, declining vehicle manufacture.
3. Lithium-based batteries will continue to be the great enabler for electrification over the next decade, but new technologies developing.
4. Powertrain safety via thermal management will be critical as the market matures.
5. Advanced motors and power electronics are key to lowering cost and increasing range (Mercedes have showcased a 1000km EV).
6. Hydrogen fuel cells are the last piece of the puzzle to decarbonize land transport ... many weakness but potential to fill some gaps.

#### **In terms of the EV Global Status in 2020:**

- E-bikes - 300 million on roads in China alone (Bloomfield)
- E-scooters - 34 million produced in China in 2020 (IDTechx)
- E-cars - Globally, 10 million on road 2020 (IEA, 145m by 2030)
- E-buses - 600,000 on road 2020, >99% in China (IEA)
- E-trucks - Globally, 31,000 on road 2020 (IEA)

#### **The most common Global Incentives Schemes for EV include:**

- Purchase price subsidies and/or purchase/rego tax rebates to reduce price gap.
- Tailpipe CO2 mandates ◊ EVs cheaper option for EU manufacturers to meet them.
- Mandatory EV sales targets (e.g., California and China).
- Low- and zero-emission zones (Oslo, China).
- Full phase out of ICEs over next 10-30 years (20 countries).

Andrew presented examples of countries starting EV programs: Thailand, Vietnam, Malaysia, Indonesia & Singapore. **Common Success Themes among these countries:** (also for countries with developed EV sectors) **include:**

- Have a vision of what future is wanted.
- A specific government group and a specific industry/public group responsible for developing EV sector.
- An agreed roadmap across all parties.
- Targets.
- Well thought out incentives.
- Quality, dependable information ... and quality marketing/public management.
- Supporting policy.

#### **Technology Catalogue of Transport Options**

According to a work commissioned by MFAT, NZ established 37 mobility options. The assessment of their practicality, 15 Assessment Dimensions was used:

1. Type of journey/ service
2. Overall suitability (horizons H1/H2/H3)
3. Global tech outlook (feasibility/ availability)
4. Affordability/ cost
5. Supply/ availability
6. Carbon footprint
7. Energy security
8. Convenience, comfort, safety and accessibility
9. Infrastructure & refuelling requirements
10. Operation & maintenance requirements
11. Waste/ end-of-life disposal
12. Environmental & social impact
13. Local value chain/ economic opportunity
14. Required complementary measures
15. Other consideration

**The 37 mobility options can be grouped:**

- Walking and Micromobility
- Small Format Vehicles
- Medium Format Vehicles
- Large Format Vehicles
- Water Transport
- Domestic Aviation
- Energy and Fuels
- Supporting Service

Andrew also discussed the key points when looking across the easy- to difficult mobility options:

- Require alternatives to the use of non-renewable fuels.
- 'Pedestrians first'.
- Target:
  - to become 'EV-ready':
  - Manage barriers.
  - Support capacity building.
  - Familiarisation with technology important ◊ early demonstration.
  - Work towards 'normalisation' (required for national-scale change).
  - Marketing and quality information.
- Small-format mobility important – e.g., makes public transport more accessible. Current roading may require change to be fit for smallformat mobility.
- • Avoid import of low-performance/low quality goods.
- Network communications systems an enabler of many smart transport options (and therefore an important new technology enabler).

Therefore, in preparing for EV options in the future, it is crucial to **consider the barriers to promising technology;**

- Need to ensure quality and service support

- Availability, require confidence
- Many road not fit for micro mobility
- Money and service support.

**In preparation for potential future, it is crucial to consider:**

- Together, components of a policy roadmap
- Better roads, standards and capacity development
- Intro support measures and time
- Standards, time and capacity development
- Urban road design and built
- Intro supporting measures and time
- Consider the scale and where EV sector might go

**Developing a EV Roadmap – important to:**

- Have a government structure to manage the change
- Structure is linked to business and people
- Private sector has a role too

**Policy Development consider the change in planning methods; the sustainable transport paradigm shift such as the shift from “car first” to “pedestrian first”.**

Furthermore, consider the following with regards to the EV and the charging too:

- Design
- Build
- Supply
- Purchase [and resell]
- Installation
- Inservice Operation:
  - General use
  - Charging
  - Servicing / maintenance
  - Maintenance / breakdown
- End of life

Crucial to have standards to direct industry (e.g. connectors), ensure there is minimum performance standards in place and for security and others for the purposes of:

- Consumer Protection
- Compatibility
- Environmental Protection
- Get rid of poor practices
- Safety

**Early focus areas for an EV roadmap:**

- Standards: vehicle and charging
- Fitting EVs into vehicle registration systems
- Awareness and information
- Building industry capacity
- Become EV ready

## 5. SUMMING UP

- Lessons to be learned from others
- EV Roadmap very important, with vision and targets.
- Require an across-government solution for developing and executing policy
- form a focus group to manage uptake.
- Look across life of vehicle/infrastructure.
- Identify gaps and focus on major barriers.
- Develop good marketing and information campaign.

## 6. PCREEE FOLLOW UP

- Validate the draft EV charging guideline for PICs
- Establish an EV Task Force or Lead Group to lead in the internal discussions
- Andrew to review the guidelines based on the discussions
- Finalise guideline and distribute

### Possible members of the Pacific EV Task Force

1. Andrew Campbell – resource person
2. Solomone Fifita – Coordinator
3. Kakau Foliaki / Sione Misi – Secretary
4. Christian Lohberger – rep of the business community / vehicle importers [PNG]
5. Alex Reddaway – rep of the business community / vehicle importers [Leaf Capital / Fiji]
6. Manu Rawali – Academic / UPNG
7. Mafalu Lotolua – Power Utility [Tuvalu]
8. Mau – Power Utility [Samoa]
9. Sonia Talagi – Niue Dept of Transport
10. Rep of an energy office
11. Rep from EV association (Cook island)??

## 7. CHATS DURING THE WEBINAR

- 00:48:21 Sonya - NIUE:  
thank you for the presentation after...
- 01:03:05 Solomone Fifita;  
We will have Q & A after Andrew's presentation. Questions, comments, reflections, suggestions, etc are most welcome. Use Raise Hand in Reactions if you like.
- 01:05:21 Johnson Kilis:  
It would be great if we can have copies of the presentations.
- 01:06:32 Solomone Fifita:  
Certainly, the presentations and record of the webinar will be shared.
- 01:07:21 Johnson Kilis:  
Thank you Solomone
- 01:53:47 Debra Sungi :  
Through the Climate Change and Development Authority we are looking at developing the E – Mobility Policy together with the Department of Transport. We have just received support from the Climate Technology Centre Network (CTCN) towards PNG's Enhanced NDC in the Mitigation Contribution of Energy Sector under Potential Energy Measures - Transport. The Project is "Developing a National Policy for deploying and scaling up E-mobility and supporting sustainable infrastructure in PNG."  
CTCN will provide support under its Technical Assistance Facility to PNG on developing a national electric mobility policy and feasibility study on low carbon interventions. The technical assistance will help in conducting a market analysis for the promotion and implementation of low carbon transport through electric vehicles. The outcome of the market analysis will be used to develop and draft a policy and a roadmap of action plans for the implementation, from which selected action plans will be undertaken for feasibility study.
- 01:54:15 Debra Sungi :  
This project duration will be from 21st March 2022 to January 2023.  
The Government under the PNG NDC targets Actions from the transport subsector are contained in the National Transport Strategy, the Medium-Term Transport Plan II 2019-2022, National Energy Policy 2017-2027, and National Climate Compatible Development Management Policy but will need financial and technical support for them to be implemented by 2030.
- 01:54:44 Debra Sungi :  
These measures include the following:
- ☑ Reduce vehicle-miles through more compact development patterns;
  - ☑ Encourage the introduction of fuel-efficient transport equipment;
  - ☑ Encourage sustainable substitution of fossil fuels with biofuels;
  - ☑ Monitor vehicle fleet-weighted fuel and CO2 efficiency;
  - ☑ Eliminate high emission vehicles;
  - ☑ Establish low carbon fuel standards;
  - ☑ Encourage the introduction of hybrid and electric vehicles



We are happy to have the PCREEE to be part of the team in ensuring that necessary effective measures are captured in the policy moving forward.

02:00:01 Hobert Asari:

Hi Debra thank you for the update on CCDA's progress.

02:20:26 mafalu lotolua:

Many thanks PACREEE for the coordination of this meeting and looking forward for more meetings on EV mobility

02:21:52 Manny Adelbai:

Thank you everyone for the informative webinar!



## 8. PARTICIPANTS LIST

### Webinar on EV Developments in the Pacific Region and Abroad

#### Participants List 23 February 2022

	Name	Organisation	Position	Phone/Email contact	Gender (M/F)
1	Andrew Campbell	Fuel and Technology Ltd Wellington, NZ	Consultant/ Workshop Key Speaker	<a href="mailto:acampbell@fueltechnology.net">acampbell@fuel technology.net</a>	M
2	Akuila Tawake	Pacific Community (SPC)	Deputy Director - Geo-resources & Energy Programme	<a href="mailto:akuilat@spc.int">akuilat@spc.int</a>	M
3	Solomon e Fifita	Pacific Centre for Renewable Energy and Energy Efficiency (PCREEE)	Manager	<a href="mailto:solomonef@spc.int">solomonef@spc. int</a>	M
4	Kelvin Passfield	PCREEE	Sustainable Energy Coordinator – COOK ISLANDS	<a href="mailto:kelvin.passfield@gmail.com">kelvin.passfield @gmail.com</a>	M
5	Kakau Foliaki	PCREEE	Programme Delivery Officer	<a href="mailto:kakaufoliaki@gmail.com">kakaufoliaki@g mail.com</a>	M
6	Sione Misi	PCREEE	Pacific Islands Energy Professional	<a href="mailto:sionem@spc.int">sionem@spc.int</a>	M
7	Kitione Malugule vu	PCREEE	Sustainable Energy Coordinator – SOLOMON ISLANDS	<a href="mailto:kitionem@gmail.com">kitionem@gmail .com</a>	M
8	Hobert Asari	PCREEE	Sustainable Energy Coordinator – Papua New Guinea	<a href="mailto:hobbieasari@gmail.com">hobbieasari@g mail.com</a>	M
9	Peceli Nakavule vu	International Renewable Energy Agency (IRENA)	Pacific Focal Point	<a href="mailto:PNakavulevu@irena.org">PNakavulevu@ir ena.org</a>	M
10	Abraham Simpson	Pacific Power Association Suva, Fiji		<a href="mailto:abrahams@ppa.org.fj">abrahams@ppa. org.fj</a>	M
11	Ken Sugiyama	Palau Public Utilities Corporation	Engineer	<a href="mailto:ken@ppuc.com">ken@ppuc.com</a>	M
12	Mau Simanu	Electric Power Corporation Samoa	Chief Engineer	<a href="mailto:simanum@epc.ws">simanum@epc. ws</a>	M
13	Alexander	Leaf Capital Pte Ltd Suva, Fiji	Owner and Director	<a href="mailto:a.b.reddaway@gmail.com">a.b.reddaway@ gmail.com</a>	M



	Reddaway				
14	Apisake Soakai	Pacific Regional Infrastructure Facility	Consultant	<a href="mailto:Apisake.soakai@gmail.com">Apisake.soakai@gmail.com</a>	F
15	David Eyre	Private Financing Advisory Network	Pacific Coordinator	<a href="mailto:david.eyre@pfan.net">david.eyre@pfan.net</a>	M
16	Debra Sungi	Climate Change Development Authority PNG	A/Manager		F
17	Frank Vukikom oala	EU SEAM Pohnpei, FSM	Project Manager	<a href="mailto:frankv@spc.int">frankv@spc.int</a>	M
18	Mafalu Lotolua	Tuvalu Electricity Corporation	General Manager	<a href="mailto:Mafaluloto2@gmail.com">Mafaluloto2@gmail.com</a>	M
19	Mohinesh Prasad	Total Energies Suva, Fiji	Manager – Business Development	<a href="mailto:Mohinesh.prasad@totalenergies.com">Mohinesh.prasad@totalenergies.com</a>	M
20	Neeta Sharma	Heat International	Regional Manager/ Africa	<a href="mailto:Neeta.Sharma@heat-international.de">Neeta.Sharma@heat-international.de</a>	F
21	Shigeo Aoki	OECC - Japan		<a href="mailto:saoki@oecc.or.jp">saoki@oecc.or.jp</a>	M
22	Jiro Ogahara	OECC - Japan		<a href="mailto:ogahara@oecc.or.jp">ogahara@oecc.or.jp</a>	M
23	Sonya Talagi	Department of Transport Niue	Director	<a href="mailto:Sonya.Talagi@mail.gov.nu">Sonya.Talagi@mail.gov.nu</a>	F
24	Terry Mael	Department of Energy Vanuatu		<a href="mailto:tmael@vanuatu.gov.vu">tmael@vanuatu.gov.vu</a>	M
25	Lilian Penaia	Energy Division Samoa	Principal Energy Officer	<a href="mailto:Lilian.Penaia@of.gov.ws">Lilian.Penaia@of.gov.ws</a>	F
26	Johnson Kilis	CCDA, PNG	Mitigation Officer	<a href="mailto:Kilisjohnson18@gmail.com">Kilisjohnson18@gmail.com</a>	M
27	Fred Conning	Tina River Hydropower Development Project Solomon Is		<a href="mailto:Fred.conning@tina-hydro.com">Fred.conning@tina-hydro.com</a>	M
28	Manny Adelbai	Palau Public Utilities Corporation	Mechanical Engineer		M
29	Peter				
30	Dovi Kanaimawi	Sustainable Sea Transport Initiative, Suva, Fiji.		<a href="mailto:dovikanaimawi@gmail.com">dovikanaimawi@gmail.com</a>	M
31	Duane				
32	J0458513				

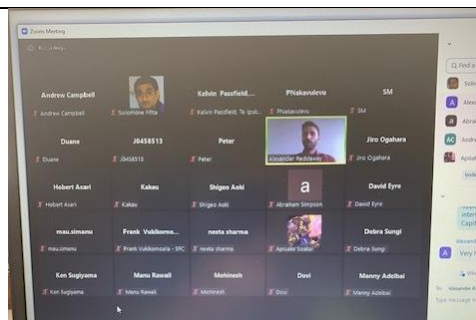
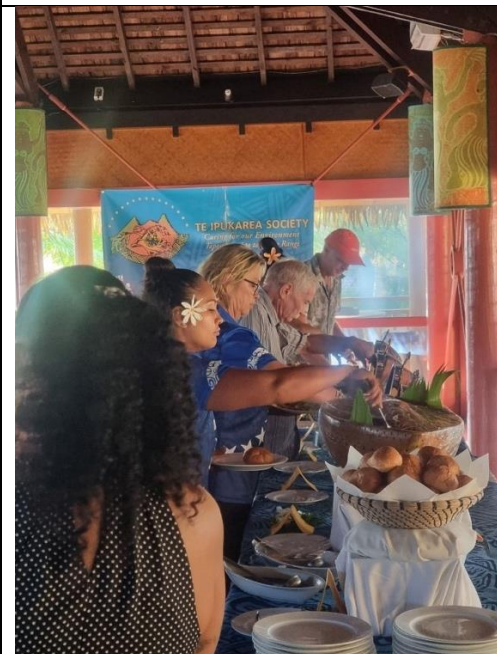
### Cook Is Participants



Name	Affiliation	Mobile number	email address
Mariana Pere	Cook Islands Motor Mentre	52770	<a href="mailto:sales@motorcentre.co.ck">sales@motorcentre.co.ck</a>
Diane Fletcher	Cook Islands Motor Mentre	55425	<a href="mailto:diane@motorcentre.co.ck">diane@motorcentre.co.ck</a>
Anna Glassie	Bank of the Cook Islands	71110	<a href="mailto:anna.glassie@bci.co.ck">anna.glassie@bci.co.ck</a>
Lawrence Holder	Magic Reef Bungalows	52105	<a href="mailto:lawrence@magicreef.com">lawrence@magicreef.com</a>
Teuru Passfield	Ministry of Foreign Affairs	78508	<a href="mailto:teuru06@gmail.com">teuru06@gmail.com</a>
Max Apaiau Cumming	Tangaroa and Cumming Ltd	73031	<a href="mailto:kiwimax@xtra.co.nz">kiwimax@xtra.co.nz</a>
Ra Tangaroa	Tangaroa and Cumming Ltd	75686	<a href="mailto:raski1966@gmail.com">raski1966@gmail.com</a>
Nathan Matata	Raro Cars	74555	<a href="mailto:manamoana@gmail.com">manamoana@gmail.com</a>
Terena Koteka-Wiki	Te Ipukarea Society	57071	<a href="mailto:tkotekwiki@yahoo.com">tkotekwiki@yahoo.com</a>
Ana Tiraa	GCF Ministry of Finance and E	53973	<a href="mailto:aetiraa@gmail.com">aetiraa@gmail.com</a>
Bill Caruthers	Barefoot Laser	58585	<a href="mailto:BILLRARO@gmail.com">BILLRARO@gmail.com</a>
Pasha Caruthers	USP Cook Islands	40767	<a href="mailto:PASHARARO@gmail.com">PASHARARO@gmail.com</a>
Teresa Manarangi-Trott	Pacific Consultatnts	50700	<a href="mailto:tmtrott@gmail.com">tmtrott@gmail.com</a>
Teriu Woonton	Cook Islands Television	77678	<a href="mailto:teriu.woonton@gmail.com">teriu.woonton@gmail.com</a>
Alanna Smith	Te Ipukarea Society	72199	<a href="mailto:alannamatamaru@gmail.com">alannamatamaru@gmail.com</a>

## 9. PHOTOS AND TELEVISION INTERVIEW FROM THE RAROTONGA GATHERING

### PHOTOS



### INTERVIEW

A television interview for the local television news was also televised the day after the event. The interview can be viewed [here](#) (start at 4 minutes 20 seconds).

## 10. FURTHER INFORMATION

Copy of the webinar presentations can be found here - [Webinar on EV Developments in the Pacific Region and Abroad | PCREEE](#)