

POWERING UP THE BLUE PACIFIC



Lighting the Way:
A Partnership for a
100% Renewable
Blue Pacific

NOVEMBER 2025



Renewable
Energy Council
ASIA-PACIFIC



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Forewords

President Surangel S. Whipps, Jr. Republic of Palau Incoming Chair of the 2026 Pacific Islands Forum

Palau and our brothers and sisters in the Pacific contribute the least to global emissions, however, we suffer the most from the climate crisis. Rising sea levels and extreme weather events threaten our hospitals, schools, infrastructure and food security, putting our children's future at risk.

Nevertheless, we have long believed that the best form of leadership is leadership by example. Which is why we have already taken the lead with some of the most ambitious renewable energy and decarbonisation plans of anywhere in the world.

These plans are supported by bodies such as the Australian Infrastructure Financing Facility for the Pacific, which is helping ensure a solar farm in Palau can deliver 20 percent of our energy needs alone.

Changes in the availability of green technology such as solar photovoltaic panels, batteries, and electric vehicles now mean that we can rapidly move to the next step of achieving 100% renewable energy—becoming the first region in the world to do so.

In doing so, we can be a beacon to the world for rapid decarbonisation to keep the Paris Agreement goal of limiting global warming to 1.5°C within reach.

This discussion paper highlights the great work already underway across the Blue Pacific to decarbonise energy systems.

From solar kits in PNG to big batteries supporting grids in Cook Islands.

From sail power in the Marshall Islands to retrofitting electric outboard motors in the Solomon Islands.

Even a privately-operated electric vehicle fast charging network in Fiji with our Fijian cousins committing to 100% renewable energy by 2035.

There are many initiatives underway.

But we have now reached a pivotal moment where with the right support, the right platforms, and with our region's profound political will in our sails, we can now take the next step to reach 100% renewable energy.

This would be good for our energy security.

This would be good for our economy, providing jobs and business opportunities.

This would be good for our health and wellbeing.

This would give our children the best chance of a future.

As things stand, and even in light of our efforts to decarbonise, most of our countries still spend between 10 to 25% of our GDPs on importing fossil fuels.

Imagine how different our societies will be if we can keep that money in our communities and give everyone access to clean affordable electricity and electric mobility?

L-R: Niue Minister for Natural Resources The Hon Mona Ainu'u, Australian Minister for Climate Change and Energy The Hon Chris Bowen MP, Republic of Palau President Surangel S. Whipps, Jr., then Samoan Minister for Natural Resources, Environment and Lands The Hon Toeolesulusulu Cedric Pose.



As I said at the Smart Energy Conference in Sydney in April 2025, we cannot let the opportunity of Australia's potential hosting of COP31 in partnership with the Pacific go by without demonstrating to our people the tangible benefit for them through a landmark outcome such as this.

Hosting COP31 in our region is not just about symbolism — it is a test of fairness, balance and integrity in the global climate process. Bringing COP to the Pacific at this moment would allow the world to witness both the climate crisis and our leadership up close — to see not only the devastating impacts of climate change, but also the real, local and scalable solutions that Australia and Pacific nations are already delivering.

But, frankly, a new effort to achieve 100% renewables in the Pacific makes sense irrespective of COP31. Because now is the time for us to tackle

the difficult challenge of removing fossil fuels from our energy systems. And the Pacific once again are prepared to lead by example.

That is why, including against the backdrop also of Palau's incoming chairmanship of the 2026 Pacific Islands Forum, I hope to work with my regional counterparts and our relevant ministers and communities throughout the course of next year to do the work necessary to build regional consensus, to crystallise our own thinking as to how it is best achieved, and to emphasise to donors the importance of a new collective effort towards a vision such as this.

Will you join me in advancing this ambition?

I commend this report to you as a timely contribution on the pathway to achieving 100% renewable energy in the Pacific.

L-R: Pacific Strategy Consultant Taholo Kami, Tuvalu Prime Minister The Hon Feleti Teo, Vanuatu Climate Change, Energy and the Environment Minister The Hon Ralph Regenvanu at the launch of the Discussion Paper in the margins of the 54th Pacific Islands Forum in Honiara.



The Hon. Feleti Penitala Teo, Prime Minister of Tuvalu

I have repeatedly stressed the need for rapid scaling of renewable energy to combat climate change, limit warming to 1.5°C, and fulfill Paris Agreement commitments.

In Tuvalu we have ambitious targets like achieving 100% clean power by 2030 and zero-carbon development by 2050, but we need the help of the international community to phase-out fossil fuels and enhance climate finance.

Our survival, and the survival of the planet, is on the line.

Let us commit not only to setting ambitious targets, but to taking concrete action that ensures a safe and sustainable future for all.

Through the Falepili Union Treaty with Australia we are developing a renewable energy masterplan to identify priorities, sequencing, and technical needs for scaling up renewables and strengthening our capacity to ensure grid stability and reliability during the transition.

By facilitating our shift to solar, wind and other renewables, we are directly reducing our reliance on imported fossil fuels.

By working with us to achieve 100% renewable energy, we are also showing the rest of the world what is possible.

Even the smallest nations can lead in the fight against climate change.

Ralph Regenvanu, Minister for Climate Change, Energy and the Environment, Vanuatu

Unfortunately, I think that the political impetus to phase out fossil fuels is not going anywhere fast despite the July 2025 Advisory Opinion by the International Court of Justice which clearly identifies this as a legal obligation of states under international law.

We are seeing the rapid roll-out of renewables, which is very good, but the actual phasing out of fossil fuels is not moving at a commensurate rate. And that is a reflection of where this world is.

People say that it is too hard to phase out fossil fuels.

I disagree. Across the Pacific Islands we are tackling this challenge head on.

In my own country, we are working with our donors to install new hydropower capacity and solar PV

and battery systems, as well as venturing into coconut oil as a biofuel. We are upgrading existing solar PV and battery systems, including through innovative delivery mechanisms, such as, Respond Global's health support vessel HELPR-1 which transports electricians to different locations across our archipelago to ensure that renewable energy systems remain in good working order.

I urge all countries to cease permitting new fossil fuel projects and ensure that they incorporate renewable energy into projects to transform our energy systems to 100% renewable energy.

If we can manage the rapid transition of our energy systems in Pacific Islands, it can be a beacon for the rest of the globe.

Our survival depends on it.

John Grimes, CEO Smart Energy Council and Chair-elect, Global Solar Council

Like Australia, the Pacific Islands are reliant on importing diesel and petrol. This not only costs a lot and puts us at the mercy of fluctuations in international prices, but our energy security is at risk if liquid fuel supply chains become disrupted.

Fortunately there is a better way. From the highlands of Papua New Guinea where I was born to the outer islands of Kiribati, solar PV is changing lives.

The cost of solar PV, batteries and electric vehicles have plummeted, now on par or less than their fossil fuel equivalents.

Technology has advanced too, with grids able to be run from renewable energy alone with power electronics providing grid forming services.

Switching from fossil fuels to renewable energy also reduces air and noise pollution.

Every home, every business, every church, every community, every island has the opportunity to move from diesel to renewable energy and electric mobility.

The Smart Energy Council and the Renewable Energy Council Asia-Pacific have been making great progress in supporting the transition, including through the COP28 goal of tripling global renewable energy capacity to at least 11,000 GW by 2030.

This is our moment to lead with purpose—a 100% renewable energy Blue Pacific can be a beacon for the rest of the world.

Smart Energy Council CEO John Grimes with the High Commissioners of the Federated States of Micronesia, Tuvalu and Tonga, together with diplomatic representatives from Samoa, Solomon Islands and Vanuatu on 8 October in Canberra.





Key Messages

1

Pacific leaders want a 100% Renewable Pacific to be a signature outcome from COP31

- Pacific Island countries are working with Australia to host the COP31 UN climate summit in 2026. This will be the largest summit held in the region, with thousands of delegates expected.
- Pacific Island Leaders have called for a new initiative to support the Pacific to be the first region in the world to become 100%-powered by renewables. Pacific Leaders want this to be a signature initiative for COP31, and the Pacific Islands Forum (chaired by Palau) or the Pre-COP (potentially held in the Pacific) provide natural moments for such a Partnership to be launched.
- The proposal, championed among others by President Surangel S. Whipps, Jr. of the Republic of Palau as the incoming Chair of the Pacific Islands Forum, builds on the region's existing renewable energy achievements, ambitious targets, and advances in the cost and efficiency of green energy technology.

2

Powering island countries with renewables saves billions and boosts development

- While COP31 provides critical momentum, a goal for a 100% Renewable Pacific makes sense regardless, offering major cost savings and development, security and resilience benefits for the Pacific.
- Diesel imports cost Pacific island countries US\$6 billion per annum and fossil fuel imports are between 10 to 25% of GDP for some Pacific nations.
- Falling technology costs mean solar and battery systems now outperform fossil fuels for electricity generation, offering immediate savings for Pacific countries.
- Accelerating the shift to renewable energy can help Pacific nations expand access to electricity, create new jobs and skills, enhance energy security and save on fuel bills.

3

The technologies to power the Pacific with renewable energy are available right now

- Pacific utilities can replace diesel and oil generators with renewable generation from solar and wind, backed up by battery energy storage systems, biomass, and hydro.
- Installed costs for solar power generation have dropped more than fivefold since 2010, and the levelised cost of energy for solar is now cheaper than fossil fuels.
- Solutions also exist for Pacific transport, including electric vehicles for urban centres, battery-electric motors for 'banana boats' and decarbonising inter-island shipping.

4

Moving to a 100% Renewable Blue Planet is key to survival of Pacific Island nations

- Achieving the Paris Agreement goal of limiting global heating to 1.5°C is key to survival for Pacific Island countries. The rallying cry is '1.5 to stay alive'!
- At COP28, countries agreed to transition away from fossil fuels and triple the roll out of renewable energy—what is needed now is cooperation to accelerate the uptake of clean energy technologies.
- Pacific Island countries can lead the way by demonstrating the scalable solutions at hand but the whole world must follow suit. A 100% renewable Blue Pacific can set the course for a 100% renewable Blue Planet.

Key Recommendations

Five steps ahead of and at COP31 to develop a Partnership for a 100% Renewable Pacific:

1

Solidify a regional political goal for a 100% Renewable Pacific

Consider solidifying a regional goal for a 100% Renewable Pacific through officials-level meetings of the Australia-Pacific COP31 Taskforce; ministerial discussions at the 2026 Pacific Transport and Energy Ministers' Meeting; and leader-level discussions at the 2026 Pacific Islands Forum ahead of COP31.

2

Develop a regional policy framework for a 100% Renewable Pacific Partnership, to deliver on a regional goal

Building on existing Pacific policy frameworks, consider developing a regional framework for a 100% Renewable Pacific Partnership, to deliver on a regional political goal. Ideally considered by Ministers and Leaders alongside a regional political goal, this framework could set out key strategies, investment priorities, partners and coordination arrangements to maximise regional synergies and economies of scale while recognising the renewable energy pathway will look different in each Pacific nation. This framework could be incorporated into the existing Framework for Energy Security and Resilience in the Pacific (2021-2030), which is due for a mid-term review.

3

Establish a Pacific Energy Commissioner supported by a regional hub, to enhance regional coordination and action

As endorsed by Pacific Island Forum Leaders in 2023, consider establishing a Pacific Energy Commissioner with a mandate to coordinate and implement a 100% Renewable Pacific Partnership. The Commissioner could be supported by a regional secretariat or hub linked with the Secretariat of the Pacific Community (SPC), as the region's lead agency on energy.

4

Launch a regional finance platform or pledge for a 100% Renewable Pacific, to scale-up international partnerships and financing

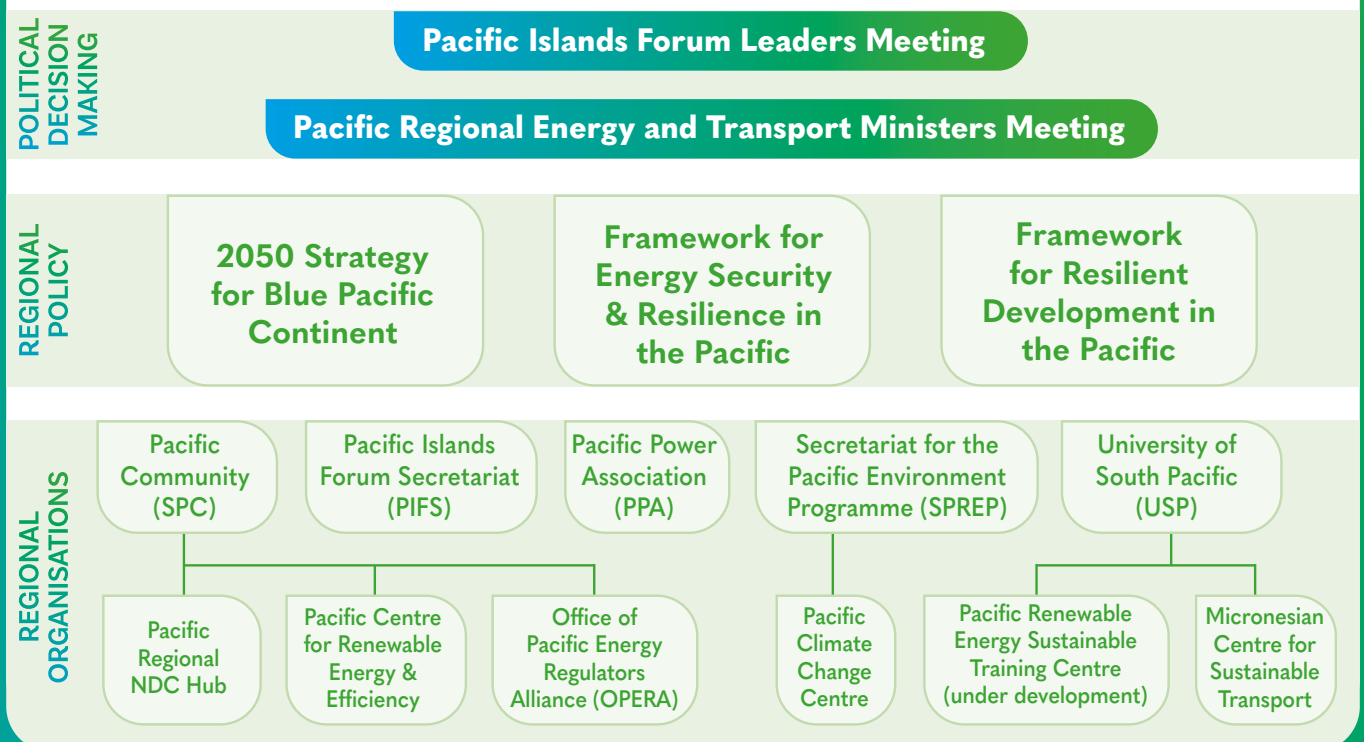
At COP31, consider launching a regional finance platform or pledge to attract new and diversified international resources for a 100% Renewable Pacific Partnership. Under the guidance of the Pacific Energy Commissioner, a regional finance platform could help coordinate support for renewable energy initiatives and channel finance to underfunded initiatives. This platform could also help to de-risk investment in larger-scale renewable energy infrastructure.

5

Co-create and implement a 100% Renewable Pacific with key stakeholders and communities, to ensure a just transition

A just energy transition for the region must be co-created and implemented with Pacific peoples through wide consultations, including with national energy ministries, local governments, power utilities, private sector bodies, faith groups and civil society organisations, education providers; and island communities. Discussions should include workforce training and skills needs.

Pacific renewable energy arrangements



1. Introduction: About this report

Launched by Pacific Leaders and Ministers at COP30 in Belem, Brazil, this report makes the case for the Blue Pacific to become the world's first region 100% powered by renewable energy, continuing a long history of Pacific climate change leadership. Drawing on consultations with Pacific governments, regional organisations, civil society groups and development partners, the report demonstrates the economic and security benefits of renewables and how a renewables transition will strengthen resilience across Pacific communities.

While there is strong political and policy commitment for renewable energy across the Pacific, the region's renewable energy future is being held back by gaps in financing, skills, operations and regulation. This report outlines how a 100% Renewable Pacific can

be achieved through a new partnership that strengthens a regional approach, backed with scaled-up funding to deliver. It makes recommendations for the next 12 months, to build a Partnership for a 100% Renewable Pacific as a flagship initiative of COP31—helping to attract international resources for the Pacific's renewable energy transition, and charting the course for a global movement to a 100% Renewable Blue Planet.

* This report follows the release of a discussion paper: Powering up the Blue Pacific at the 54th Pacific Islands Forum Leaders Meeting in Honiara, Solomon Islands in September 2025. We thank governments, organisations and individuals for their feedback and ideas on the discussion paper, which helped shape this full report.

Case Study: Sailing Ships

A renaissance is taking place in sail-powered cargo vessels, with the retrofit of modern sails onto regular cargo vessels, and newbuild sail-powered ships dedicated to cheaper and cleaner freight services.

Could this reawakening be the future of freight cargo and ecotourism in the Pacific?

A long-term advocate of shipping decarbonisation in the International Maritime Organization and the UNFCCC, the Republic of Marshall Islands (RMI), has been working with German development agency GIZ to test whether sail-powered vessels can help the country achieve its goal of 100% maritime decarbonisation.

RMI's approach could help other Pacific Island states to introduce low-carbon technologies and concepts for maritime transport, working with private and public donors.

Early results have been encouraging. The **SV Kwai** and the **SV Juren Ae** are delivering cargo around RMI and promise lower cost and higher frequency than was the case with marine oil-fuelled vessels.

Photo: Andrew Dickson, SEC Director



2. Why a Partnership for a 100% Renewable Pacific

Pacific island countries are not waiting for the world to act. Pacific leaders are ready to show the way by becoming the first region of the world that is 100% powered by renewable energy. This commitment builds on decades of climate leadership by Pacific nations and leverages the opportunity of partnering with Australia to host COP31 in 2026.

Working toward a 100% renewable region is also a development opportunity—saving Pacific nations billions of dollars that is wasted on expensive fossil fuel imports and creating new jobs and industry.

Ultimately, the shift to renewable energy is about survival. By setting course for a 100% renewable Blue Pacific, island leaders light the way for a 100% renewable Blue Planet.

Lighting the way: Building on the Pacific's global climate leadership

Pacific Island countries are at the frontlines of the climate crisis. Rising seas, ocean warming and acidification, coastal erosion, and stronger cyclones are already impacting island communities, ecosystems and infrastructure. Spiralling costs for adaptation are putting a

strain on island economies and undermining national development. Pacific leaders are adamant that climate change is the “single greatest threat to the livelihoods, security and well-being of the peoples of the Pacific” (Pacific Islands Forum 2018; 2025).

But Pacific nations are not just the passive victims of a warming planet. Through determined diplomacy, Pacific countries have shaped global efforts to address the climate crisis for decades. Pacific nations helped secure the 2015 Paris Agreement which now guides global cooperation to limit warming to 1.5°C (Morgan, Carter and Manoa; 2024). The Republic of the Marshall Islands played a critical role by stitching together a coalition of countries that spanned traditional negotiating blocs in the UN climate talks. The ‘High Ambition Coalition’ that was formed and led by the Marshall Islands Foreign Minister, the late Tony de Brum, grew to more than 100 countries, including the United States and the countries of the European Union. It was this coalition that secured the final terms of the Paris Agreement. When he met with Pacific leaders in Hawaii in 2016, US President Barack Obama told them “we could not have gotten

Embracing renewable energy in the Blue Pacific

The Blue Pacific is a vast maritime region, home to large ocean states that share unique cultural connections to the sea. Pacific



nations have sovereign rights across much of the Pacific Ocean through Exclusive Economic Zones established under the UN Law of the Sea.

Members of the Pacific Islands Forum have agreed to work together as one region through a **2050 Strategy for the Blue Pacific**. The strategy sets a clear direction toward renewable energy supported by innovative technologies (PIF 2022). The **Framework for Energy Security and Resilience in the Pacific 2021-2030** (SPC 2021) reinforces this vision, aiming for universal access to electricity and household energy services that are not only resilient to climate and disaster risks but are increasingly powered by renewable sources.

“ We support a joint hosting of COP31 by Australia and the Pacific because of what we think will be the benefits for Pacific Island countries—particularly in terms of financial investment in our transition to a renewable economy.



**Vanuatu Climate Minister
Ralph Regenvanu**

a Paris Agreement without the incredible efforts and hard work of island nations” (Obama; 2016).

Over the past decade, Pacific Island countries have helped to implement the Paris Agreement, including by upholding the integrity of the regime and pushing for accountability. Pacific countries have played a key role in the creation of a new UN fund to address loss and damage from climate change.

Pacific nations have also helped to clarify the legal obligations countries have to protect the Earth’s climate system. Vanuatu, and other island nations, succeeded in passing a UN General Assembly resolution in 2023 asking the International Court of Justice to issue an advisory opinion on countries’ obligations and consequences for countries causing “significant harm” to Earth’s climate. In July 2025, the Court found—in a unanimous ruling—that all countries must set national targets to cut emissions that are in line with limiting global warming to 1.5°C above the long-term average. Importantly, the world’s highest court said all countries should move away from fossil fuels. The judges said fossil fuel production and consumption, the granting of fossil fuel exploration licenses, and fossil fuel subsidies may constitute ‘internationally wrongful acts’ (ICJ; 2025).

Today, Pacific nations can again lead the way by moving to 100% renewable energy for electricity, land and sea transport and shipping. Pacific countries have set bold renewable energy targets in national commitments under the Paris Agreement. Regional policy frameworks also include a commitment to shifting to renewables. These

can be consolidated in a regional goal for 100% renewable energy.

Harnessing an Australia-Pacific COP31

Australia—in partnership with Pacific island countries—is in the box seat to host the COP31 global climate talks in 2026. This will be the largest summit ever held in the region, with thousands of delegates expected to attend talks in Australia and satellite events in the Pacific.

With the world’s attention focussed on the region, Pacific island countries have a chance to showcase the Pacific’s climate leadership and attract international finance to accelerate the shift to renewable energy and build resilience to climate impacts. A plan to become the first region 100% powered by renewables can become a signature initiative of the COP31 summit. This, along with the mobilisation of the Pacific Resilience Facility (PRF), is clearly emerging as two concrete asks from regional governments as core “pillars of a Pacific partnership” with Australia to deliver COP31—and Canberra will have a key role to play especially in mobilising other donor governments.

The COP landscape is shifting. With the Paris Agreement in place, discussions have shifted toward implementation and delivery of initiatives to achieve the shared goal of limiting warming to 1.5°C. A regional initiative to support a 100% renewable Pacific is a clear demonstration of practical delivery—one that can be supported by development partners and international philanthropy ahead of COP31.

A partnership for a 100% renewable Pacific could be a key outcome of the Action Agenda



Second Australian and Pacific COP31 Senior Officials Taskforce meeting in Brisbane in September 2025.

at COP31. The annual COP talks have two key parts: the formal UN negotiations by country delegates that are held in the COP 'Blue Zone' and an 'Action Agenda', made up of initiatives developed alongside the formal talks in the 'Green Zone'. The Green Zone provides a space for many different actors including industry and civil society to engage with each other, build networks and partnerships, share lessons, and focus on accelerating the implementation of climate solutions. The Green Zone and Action Agenda have become an increasingly important and influential part of the COP, particularly at 'implementation COPs' (Climate Council and Smart Energy Council 2024).

Over the next 12 months, Pacific countries can work with Australia to shape the Action Agenda for COP31. Pacific climate ministers and senior officials have established a COP31 Taskforce and are meeting regularly to shape shared priorities, objectives and the potential legacy for an Australia-Pacific COP31 (DCCEEW 2025). Working together, Pacific officials can ensure the Action Agenda includes a new partnership for a 100% Renewable Pacific—as part of a push for the global transition to renewable energy, to limit warming to 1.5°C, and as a signature initiative of the COP31 UN climate summit.

Key milestones in the lead up to COP31—including the 2026 Pacific Energy and Transport Ministers Meeting in Papua New Guinea and the 2026 Pacific Islands Forum in Palau—are a chance to consider a regional political goal and policy framework for a 100% Renewable Pacific Partnership.. Palau's President Surangel Whipps Jr has also called for a pre-COP31 gathering in the region to launch a renewable energy initiative for the Pacific, rally donor governments, and channel other international resources (Whipps 2025).

Renewables for Pacific development and energy security

Moving to renewable energy is an economic and development opportunity for Pacific island nations. Today, Pacific nations spend US\$9 billion each year on imported diesel—between 10-25% of GDP (UNESCAP 2023). Clean energy technologies such as wind, solar and storage can deliver energy at lower costs than imported fossil fuels, and create new jobs and industries. Investing in renewable energy will also improve energy security, enabling many island communities to access electricity and improving the resilience of energy systems in times of disaster.

Pacific Island countries face unique energy challenges. Energy supplies currently depend on imported fossil fuels, which account for nearly 80% of the region's total energy spending (SPC 2023). This reliance leaves Pacific economies highly vulnerable to fluctuations in global oil prices and disruptions in supply. Added to this, Pacific Islands' dispersed geography, limited economies of scale, and outdated power infrastructure have resulted in high electricity costs, significant transmission losses, and low household electrification rates.

Recognising these challenges, the shift to renewable energy stands out as a powerful opportunity for the Pacific. By harnessing abundant natural resources like solar, wind, and hydro power, Pacific Island countries can bring greater stability to electricity prices for households, businesses and governments. Money saved from ending fossil fuel imports can be redirected to essential infrastructure, social services, and climate resilience measures.

Falling technology costs mean solar and battery systems now outperform fossil fuels for electricity generation, offering immediate

Case Study: Off-Grid Electrification

Villagers along PNG's Fly River have recently received solar kits as part of an Australian development assistance program to deliver 1,000 kits in six months.

While welcome, this only goes a small way toward addressing energy poverty, with millions of people in PNG still lacking reliable electricity. Many communities already have solar lanterns and small solar kits — the next step is to accelerate toward larger systems that provide better and more diverse energy services.

What if every household could have its own rooftop solar system, a battery and electrification kit comprising a rechargeable light, a rechargeable torch, small chest freezer, an electric cooker, an electric kettle and a mobile phone?

Women could be safer going to the latrine at night with a torch. Eyes, noses, throats and lungs would be free from irritation from woodfire smoke. Students could study at night.

Director of the Solar Energy Association of PNG, lecturer, consultant and part time UNSW PhD candidate Manu Rawali is training the next generation of PNG installers to deploy systems that could power refrigeration, satellite comms and transportation.

Manu said refrigeration would allow perishable food to be stored and traded. Similarly, medicine and vaccines could be stored and remote diagnostics could be available.

Schools could give students access to the latest education material and provide night time community classes.

Micro businesses could be created, such as charging batteries for electric bikes, scooters and outboard motors.

The satellite comms could also form the basis of a mesh communication networks, improving community information dissemination by text to those beyond the reach of mobile telephony, as well as assist in disaster reporting.

This is the vision of Smart Energy Council member Leigh Storr. Leigh is keen to make this happen with logistic support from established firms like Inloc International in PNG and Solomons and Respond Global which operates the MV HELPR-1 health and logistics vessel in Vanuatu to help cut transportation costs.

Moreover, more money could be retained in communities instead of being spent on imported diesel, contributing to local economies and employment growth.

Photo: Respond Global



savings for Pacific Island countries. Pacific utilities can replace diesel and oil generators with renewable generation from solar and wind, backed up by battery energy storage systems, biomass, and hydro. With international support to meet up-front capital costs, Pacific power utilities can be owners and managers of renewable energy assets.

Installed costs for solar power generation have dropped more than fivefold since 2010, and the levelised cost of energy for solar is now cheaper than fossil fuels (ADB 2024). Replacing diesel generators with solar PV and batteries would cost between US\$2-2.5 billion and save between US\$400-550 million annually.¹ Solutions also exist for Pacific transport, including electric vehicles

for urban centres, battery-electric motors for 'banana boats', and decarbonising inter-island shipping.

Importantly, renewable energy can help connect remote and rural communities. It is estimated that up to four million Pacific Islanders still lack any access to electricity, with the majority residing in Papua New Guinea (AIFFP 2023). Off-grid renewable systems can help to deliver energy to the 74% of Pacific Islanders who live in rural and remote areas not well-served by existing grids. Ensuring access to electricity will improve access to education while also unlocking economic opportunities in key sectors such as agriculture, fishing, and tourism.

¹ Author calculations. Sources: IRENA Renewable Power Generation Costs 2024; IFC Powering the Pacific 2019, updated benchmarks, PCREEE Renewable Energy Costs in the Pacific (2019, adjusted for 15% annual decline).

The renewable energy industry itself offers economic opportunities. As countries pursue 100% renewable energy, demand for skilled local workforces—from design and engineering to finance and regulation—is climbing. At the same time, phasing out polluting technologies and replacing them with clean, safe alternatives will also have greater health benefits for the people of the Blue Pacific.

Updating the Pacific's energy sector is also an opportunity to ensure energy resilience, which is critical in the face of increasing extreme weather events due to climate change.

Global leadership—building a 100% Renewable Blue Planet

Pacific Islanders have been master navigators for centuries, thriving on thousands of islands scattered across the vast Pacific Ocean. Today, Pacific Island countries are embarking on a voyage to become the world's first region 100% powered by renewable energy. This is a voyage for survival, but to succeed the whole world must follow suit.

At the COP28 UN climate talks in Dubai in 2023, governments from nearly 200 countries agreed to triple the roll-out of renewables

before 2030 (UNFCCC 2023). This is crucial if the world is to achieve the Paris Agreement temperature goal of limiting warming to 1.5°C above pre-industrial levels. What is needed now are tangible pathways to accelerate the uptake of renewables.

Limiting warming is key to survival for Pacific Island nations. The rallying cry is “1.5 to stay alive”. Surpassing 1.5°C of global warming risks triggering climate tipping points—such as the collapse of coral reef systems and disruptions to ocean circulation—which would have irreversible impacts on Pacific Islands and the planet (Climate Council 2023). For Pacific atoll nations—including Tuvalu, Kiribati and Marshall Islands—exceeding 1.5°C will accelerate sea level rise, with coastal inundation threatening entire communities and nations (WMO 2024).

Hosting COP31 in partnership with Australia is a chance to showcase the climate emergency confronting Pacific Island countries, but also the scalable solutions at hand for the region and the world. By committing to a 100% Renewable Pacific, Island Leaders can chart the course for a global movement for a 100% Renewable Blue Planet.

Case Study: Grid Batteries

So what happens when two different solar projects designed to cover 20 per cent of an island's electricity grid are built at the same time?

That's what happened in Palau with a rooftop solar PV project supported by the Asian Development Bank and a 15.2MW solar PV installation supported by Australia.

So the solution, add a 12.9MWh battery.

Built by the privately-owned Solar Pristine Pacific Power Company, the project demonstrated how Australian development finance can encourage private sector investment to deliver critical, climate resilient infrastructure in the Pacific.

Australia's financing package includes a loan of US\$17 million and a grant of US\$3.8 million to Solar Pacific Pristine Power Inc to develop the project.

The project also demonstrates how Australian financing can leverage Big batteries help avoid having too much electricity in the middle of the

day when the sun is shining, allowing it to be stored for the evening peak.

Big batteries can also provide the basis for further decarbonisation of Palau's grid.

That's because the software that controls big batteries can provide grid forming capabilities, replacing diesel generators that are the beating heart of many island electricity grids.

Photo: Solar Pacific



Renewable Energy Sites Underway

1 PALAU 15.2MW solar PV installation and 12.9MWh battery blended finance package from the Australian Government by way of an USD16.9 million loan and a USD3.7 million grant to Solar Pacific Pristine Power Inc.

2 PAPUA NEW GUINEA 1400 remote area families received a portable solar power unit in a partnership with solar energy company Sola PayGo, payment services provider Bmobile, product manufacturer d.light, and the Australian Government.

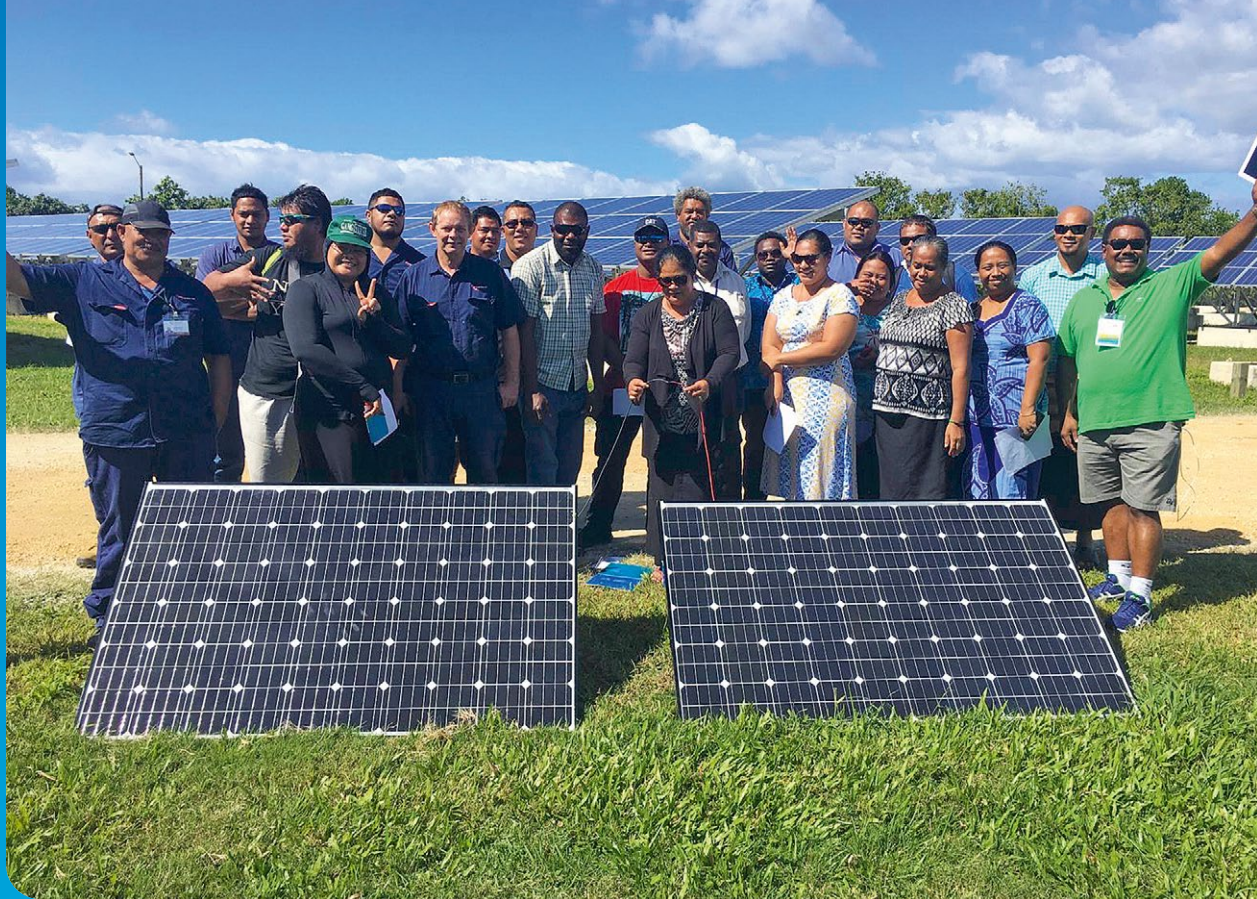
3 FSM USD42 million World Bank-funded project to deploy solar and batteries to achieve 70% RE by 2030.

4 MARSHALL ISLANDS Since 2017, RMI has been working with German development agency GIZ and has deployed two sail-powered vessels, SV Kwai and the SV Juren Ae, to deliver cargo and passengers at lower cost than marine oil-fuelled vessels.

5 SOLOMON ISLANDS Innovative Australian firm eClassOutboards conducting a trial retrofit of an existing outboard motor to battery electric using kit supplied from Australia.

6 VANUATU Respond Global's health and logistics vessel, HELPR-1, received additional financial assistance to employ four electricians and one plumber to repair or upgrade remote health centre solar PV and battery systems, as well as water pumps.

7



Solar PV training
in Tonga, led by
the Smart Energy
Council's
Geoff Bragg

8

7 NAURU 6MW solar farm and 2.5MWh BESS to go from 3% to 47% renewable energy by 2025.

8 KIRIBATI The ADB-funded South Tarawa Renewable Energy Project Phase 2 introduces 9MW of floating PV systems, plus BESS & 33kV transmission networks.

9 TUVALU A 500kW rooftop solar system and a 2MWh battery energy storage system (BESS) were installed in 2024, increasing renewable power in Funafuti from 15% to 32%.

10 FIJI The Fiji Rural Electrification Fund, implemented by the Fiji Department of Energy and supported by UNDP, is working to electrify at least 20 rural communities over the next four years through rural mini grids to improve access to clean, affordable and reliable renewable energy.

11 TONGA The Tonga Renewable Energy Project, funded by the ADB et al, is to achieve 70% renewable energy by 2030 with a mixture of solar, BESS and a 2.25MW wind power project. Contractors from China built the three 750kW wind turbines and associated infrastructure, including a 110kV switch station.

12 NIUE USD12.1 million solar farm and USD1.5 million BESS to reach 80% RE by 2025 funded by NZ Govt.

13 SAMOA Tesla installed 13.6 MWh Power Pack on the island of Upolu to promote renewables growth and maintained the system following storm damage.

14 COOK ISLANDS Utility Te Aponga Uira's Rarotonga Airport South BESS system uses a 2MW/8MWh Tesla Powerpack technology and controller, enabling it to respond instantaneously to the utility's commands.

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3. Building a Partnership for a 100% Renewable Pacific

Building on the Pacific Islands' long history of regional collaboration and climate change leadership, a Partnership for 100% Renewable Pacific will maximise resources, technology and knowledge sharing to scale-up the Pacific's clean energy transition. Such a partnership will complement existing regional policy frameworks, particularly the Framework for Energy Security and Resilience, and regional initiatives underway by the Pacific Community (SPC), Pacific Power Association (PPA) and regional

development partners. It will seek to fill gaps in coordination, regulation, finance and skills, to increase the pace and scale of the renewables transition. This section sets out five elements for a 100% Renewable Pacific Partnership, and recommended actions ahead of and at COP31 to build the Partnership. To ensure a holistic and integrated approach, these actions and recommendations include the development of a regional political goal and policy framework to guide a 100% Renewable

Case Study: Electric Vehicle Fast Charging

Can the private sector play a role in the electrification of transport in the Pacific?

That is what one entrepreneur set out to try in Fiji.

Alex Reddaway founded [Leaf.Com](#) in 2021 to accelerate the adoption of EVs in Fiji. Like all startups, business plans changed in line with circumstances including a global pandemic and changes in shipping arrangements.

Nonetheless, Alex persisted, and began installing EV chargers and solar PV in 2022.

In mid-2023, the company installed Fiji's first direct current fast chargers between Nadi and Suva and by the end of the year began leasing electric vehicles.

Asked if EV fast charging was a profitable business, Alex replied in the negative. He said, "most people trickle charge their EVs at home so there's not a lot of demand for EV fast charging. Solar PV installations are by far the mainstay of the business", he added.

When asked about what the Government could do, he replied "two things".

"The first would be to mandate the purchase of EVs for government and private fleets to ensure a steady supply on the second hand market. The second would be to make it possible for businesses

like his own to lease public land to install DC fast chargers at lay over and drop off points on bus, taxi and ride-share routes to facilitate the electrification of the island's public transport fleet."

He added, "this could also help to save on operating costs by eliminating fossil fuel from the transport sector."

On a positive note, he said "there was an increasing availability of EVs on the Fiji market, including models from global EV market leader BYD, as well as established manufacturers like MG, Nissan and VW. There were also buses and minivans from companies like Kinglong and Skywell. Similarly, it was encouraging to see Fiji Airports and Fiji Tourism expanding their EV fleets."

Solar installer for Leaf.Com Lekima Delana pictured with an EV taxi.



Case Study: Solar Electric Boats

ECClass Outboards are undertaking a trial outboard motor retrofit training program in the Solomon Islands using kit supplied from Australia.

Led by Lynelle Johnson, a social entrepreneur, the ECClass kits reflect 15 years of precision engineering excellency by innovator Ron Kelly. The retrofit program in Solomon Islands follows successful pilots in West Africa.

The outboard motors range from 5kW all the way up to 30kW, the equivalent of 60 horsepower and the retrofit and other power electronics all use commercially available parts, with ECClass making the right selection and sequencing of parts and manufacturing precision tooling to allow existing outboard motor casings to be retrofitted.

Local partner, solar installer Gavin Pereira, is pleased with the trial. He sees good opportunities to establish solar-powered battery recharging stations around the archipelago to support the electrification of small vessels.

While not yet mainstream, one ECClass customer is already experimenting with fitting flexible solar panels on vessel canopies.

Early results are promising, demonstrating that depending on the speed of travel, it is possible to fit vessels with flexible solar panels and travel on sunshine alone!

ECClass is a member of Australia's Maritime Emissions Reduction Coalition (MERC).

Able led by husband and wife team Angus and Christine McDonald, MERC represents more than 30 companies ranging from small boat to hydrofoil and large commercial ferry electric boat builders and designers, technology providers and port electrification specialists.



Pacific, backed by dedicated regional coordination and scaled-up partnerships and financing to deliver. These recommendations have been designed for the consideration of Pacific governments, power utilities, regional organisations, development partners, industry and community organisations.

Regional Goal for 100% Renewable Pacific

A Partnership for 100% Renewable Pacific is an opportunity to solidify a regional approach to the renewables transition. Through a region-wide approach, Pacific nations can accelerate economic development and strengthen energy security, benefitting from regional economies of scale; policy, skills and technical collaboration; and collective action to drive the financing and investment needed to deliver the transition.

At the national level, Pacific Island countries have set bold renewable energy targets in their Paris Agreement Nationally Determined Contributions (NDCs) and in national energy strategies. Cook Islands, Nauru, Marshall Islands, Samoa, Tuvalu, and Vanuatu have all

pledged to achieve 100% renewable energy by 2030 while Fiji has set out a plan to reach 100% renewable energy by 2035. Meanwhile, Papua New Guinea, Tonga and Solomon Islands have set targets at 70% or above renewable energy by 2030.

Regional policies and national commitments can be consolidated into a regional goal for a 100% Renewable Pacific. This would deliver on priorities of the **2050 Strategy for the Blue Pacific Continent** and the **Framework for Energy Security and Resilience**, which aims to ensure universal access to electricity, transport fuel and household energy services that are increasingly supplied by renewable resources (SPC 2021). Further, it would deliver on the **Port Vila Call for a Just Transition to a Fossil Fuel Free Pacific**, issued by Pacific energy and transport ministers in 2023, and Pacific Island Forum Leaders commitment to “transition away from coal, oil, and gas in our energy systems” to limit global warming to 1.5°C (Pacific Islands Forum 2023).

Pacific nations have a long history of working regionally on shared priorities to pool resources and maximise impact, supported

RECOMMENDATION 1: Consider solidifying a regional goal for a 100% Renewable Pacific through officials-level meetings of the Australia-Pacific COP31 Taskforce; ministerial discussions at the 2026 Pacific Transport and Energy Ministers' Meeting; and leader-level discussions at the 2026 Pacific Islands Forum ahead of COP31, culminating in a COP31 signature initiative.

by their Council of Regional Organisations of the Pacific (CROP) agencies. Solidifying a regional approach to the renewable energy transition through a 100% Pacific Renewable Partnership would send a strong global signal of Pacific leadership, attracting international finance, technology partnerships and donor support. It would also unify national efforts into a single regional vision, creating economies of scale in procurement, training and infrastructure. Further, it would strengthen negotiating power at COP31 and other international forums, positioning the Pacific as a global model for the renewable energy transition.

In the lead up to COP31, there are important opportunities to shape and promote a 100% Renewable Pacific Partnership including the 6th Pacific Regional Energy and Transport Ministers Meeting in Papua New Guinea in May 2026, and the 55th Pacific Islands Forum Leaders Meeting in Palau in August. These events provide an ideal platform to consider a regional goal and policy framework for a 100% Renewable Pacific Partnership.

Developing Regional Policy and Technical Pathways

Achieving a 100% Renewable Pacific is an ambitious goal. Meeting the goal will require the right policy settings, regulatory frameworks and stakeholder and community engagement at national and regional levels.

Pacific nations face unique challenges that make economic development and the delivery of energy more difficult than in other parts of the world. Challenges include the small size of domestic markets, distance from external markets, widely dispersed populations, high transport costs, a heavy reliance on imports, outdated infrastructure and technology, and a vulnerability to disasters and climate change impacts. Faced with such challenges, the Pacific region has been slower in making renewable energy investments than other parts of the world. Currently, renewable electricity penetration varies from highs of around 60% renewable

electricity generation in some Pacific nations to almost zero renewables in others (UNESCAP 2023).

When it comes to natural resources, the Pacific Islands are ideally placed to scale up the renewable energy transition. The Pacific has excellent solar resources, which are already being harnessed in the Cook Islands, Fiji, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tokelau and Vanuatu. Geothermal power has potential in many Pacific nations but is at various stages of development, while good potential also exists for biomass and biofuel production. Developments in Papua New Guinea, Fiji, Solomon Islands and Vanuatu are demonstrating that hydropower offers another good source. Wind resources are generally limited, although small wind farms are operating in several countries and there is the potential for several hundred megawatts of wind farm development across the region. Finally, tidal and wave resources are recognised to be enormous and widespread, but require technology development for commercial realisation (UNESCAP 2023).

The Pacific's energy transition will not be a one-size-fits-all approach. While a region-wide blueprint can help to harmonise policy settings and attract investment, the pathway to achieving 100% renewable energy will look different in each Pacific nation. Factors to be considered include resource availability, traditional knowledge, existing infrastructure, energy demand, and population density. Achieving 100% renewable energy generation will require a wholesale transformation of generation infrastructure in some Pacific nations as well, as decentralised small-scale systems in rural and remote areas not connected to central grids.

Pacific energy utilities will need ongoing support to evolve their business models to accommodate renewable energy technologies. Typically, the region's national utilities have a centralised monopoly on electricity generation and transmission infrastructure, with a heavy focus on diesel

generation (Pueyo and Haas 2025). These utilities tend to focus on long-term asset recovery and can view distributed energy generation from renewables as a potential threat to their revenue base. Utilities are also concerned about maintaining grid stability. National policymakers and regulators can help by setting clear national targets for renewable energy, phasing out subsidies for diesel generation, investing in consumer awareness campaigns on the benefits of renewable energy, and considering incentives for businesses and households to convert to renewable energy solutions. Utilities may also need direct financial support to invest in utility-scale renewable energy infrastructure and battery energy storage systems (BESS).

With the Pacific's **Framework for Energy Security and Resilience** due for a mid-term review, there is an opportunity to embed a new regional blueprint for achieving a 100% Renewable Pacific into a revised Framework. Based on a regional political goal, this could encompass regional energy options and transition pathways; and strategies for where regional coordination will deliver greater benefits including regulatory harmonisation, knowledge sharing, bulk procurement, shared transport and logistics, skills development, investment attraction and educational awareness. Sitting beneath a regional blueprint, each country will need a country-led, tailored renewable energy strategy and regulatory framework. National strategies must place Pacific Islanders at the centre, and focus on a just transition for workers and communities impacted by a fossil fuel production phase out.



The AI Gore Round Table in Sydney in October, and inset, Smart Energy Council Director Scott Hamilton and Climate Energy Finance Director Tim Buckley.

Regional Collaboration and Partnerships

Accelerating the Pacific's renewable energy transition will require collaboration and coordination across all levels of government and with power utilities, communities, businesses, regional organisations and development partners. A 100% Renewable Pacific Partnership could enable this collaboration and a regional secretariat linked to existing arrangements could help with coordination.

The Pacific's renewable energy priorities are currently supported at the regional level by SPC, PPA and other agencies under the Council of Regional Organisations in the Pacific (CROP). SPC leads on implementation of the Framework for Energy

RECOMMENDATION 2: Building on existing Pacific policy frameworks, consider developing a regional framework for a 100% Renewable Pacific Partnership, to deliver on a regional political goal. Ideally considered by Ministers and Leaders alongside a regional political goal, this framework could set out key strategies, investment priorities, partnership and coordination arrangements to maximise regional synergies and economies of scale while recognising the renewable energy pathway will look different in each Pacific nation. This framework could be incorporated into the existing Framework for Energy Security and Resilience in the Pacific (2021-2030), which is due for mid-term review.

RECOMMENDATION 3: As endorsed by Pacific Islands Forum Leaders in 2023, consider establishing a Pacific Energy Commissioner with a mandate to coordinate and implement a 100% Renewable Pacific Partnership. The Commissioner can be supported by a regional secretariat or hub linked with the Secretariat of the Pacific Community (SPC) as the region's lead agency on energy.

Security and Resilience and hosts the **Pacific Centre for Renewable Energy and Energy Efficiency (PCREEE)**—a regional vehicle to accelerate the uptake of renewable energy and energy efficient technologies, and the **Office of the Pacific Energy Regulators Alliance (OPERA)**—a forum for Pacific energy regulators to enhance regulatory decision-making skills and technical capacities. PPA promotes the direct cooperation of Pacific

power utilities to improve the quality of power in the region including the increased use of renewable energy.

Regional civil society and the private sector also have a key role to play in a 100% Renewable Pacific Partnership. Non-government organisations, churches and advocacy groups help with awareness raising, community engagement and ensuring equitable access. The private

Case Study: Balcony Solar

Consumers in the Pacific may find it difficult to install full rooftop solar PV systems.

To help offset the high cost of grid supplied electricity, balcony solar kits could be the solution.

Popular in Germany and sold throughout Europe by Ikea, balcony solar kits plug directly into a house's electricity system, encouraging electricity consumption when the sun is shining.

Lower electricity prices can improve health outcomes by providing access to boiled water and clean cooking to reduce the irritations caused by wood smoke.

The kits can also help recharge portable electronic devices, lights and torches, as well as contribute to the running of refrigeration and other devices in a modern household.

Upgrade Time

Once Pacific families can afford to upgrade to a full rooftop system and/or are permitted to do so

by local authorities, the balcony solar kit may be traded in and redeployed.

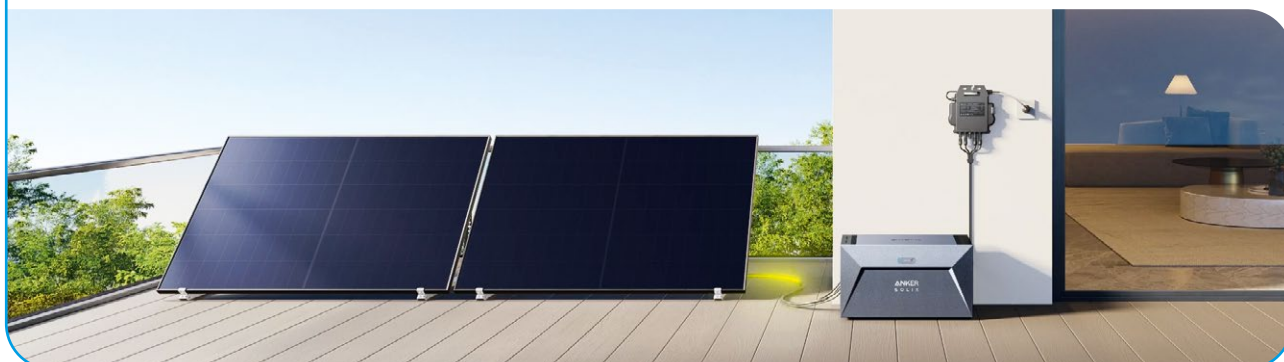
Upgraded households may choose to add a battery energy storage system and even participate in a virtual power plant.

As grids increasingly switch from diesel generators to big batteries and solar PV, consumers who can shift their energy use to when the sun is shining or store energy for later sale or use could see lower electricity bills.

These benefits could be economy wide if smart meters are installed, facilitating time-of-use pricing, providing that energy storage is sufficient to avoid high peak prices.

As EVs become more widespread, households could also benefit from using the electricity stored in their car battery to power their homes (vehicle-to-load) or even sell electricity back into the grid when it is required (vehicle-to-grid).

An exciting electric Pacific future!



Pacific Island delegates at the Smart Energy Conference in Sydney in April 2025. L-R: Former Ambassador of the Republic of Fiji to Australia and former Permanent Representative of Fiji to the United Nations Luke Daunivalu, The Pacific Community Director of Climate Change and Sustainability Coral Pasisi, Niue Minister for Natural Resources The Hon Mona Aiu'u.



sector, coordinated regionally through the **Sustainable Energy Industry Association of the Pacific Islands (SEIAPI)** and other associations, plays a critical role in supplying services, technology, skills and capital. Universities provide data, innovation and capacity building. To maximise local job and economic opportunities from the renewables transition, a 100% Renewable Pacific Partnership should focus on maximising local private sector engagement. This will require procurement of local goods and services, to support local supply chains and invest in Pacific skills development.

Accelerating the Pacific's renewable energy transition will also require greater coordinated support from international partners and donors including development agencies, international financing institutions and philanthropic actors. Currently, the **Energy Technical Working Group of the Pacific Regional Infrastructure Facility (PRIF)** plays an important role in coordinating

technical assistance and programming of its donor members which could be built on for wider funder collaboration.

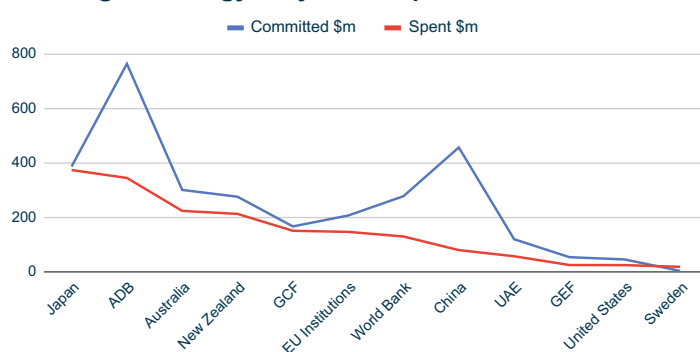
In 2023, Pacific Islands Forum Leaders called for the establishment of a Regional Energy Commissioner for a just transition to a fossil fuel free Pacific. A 100% Renewable Pacific Partnership could be led through standing up a Regional Energy Commissioner, supported by a regional secretariat housed within or linked to SPC. The secretariat could coordinate planning, share technical expertise, and provide monitoring and reporting capacity. It could also reduce duplication of donor projects, ensure knowledge transfer across countries, and help utilities and governments overcome technical and operational barriers.

Financing for a 100% Renewable Pacific

The path to a 100% Renewable Pacific will require substantial investment to deliver on regional and national renewable energy plans, infrastructure and capacity building. This needs to cover large-scale infrastructure as well as community-scale systems such as microgrids, and household-level solutions such as rooftop solar.

Pacific Island countries face large upfront costs to establish clean energy systems, upgrade electricity transmission networks, and develop the skills needed to build and maintain renewable energy systems. The upfront estimated cost of replacing all existing fossil fuel electricity generation in eight PICs alone—Kiribati, Federated States of

Funding for Energy Projects - Top 12 Donors



Source: Lowy Institute Pacific Aid Map 27 October 2025

RECOMMENDATION 4: At COP31, consider launching a regional finance platform or pledge to attract new and diversified international resources for a 100% Renewable Pacific Partnership Under the guidance of the Pacific Energy Commissioner, a regional finance platform could help coordinate support for renewable energy initiatives and channel finance to underfunded initiatives. This platform could also help to de-risk investment in larger-scale renewable energy infrastructure.

Micronesia, Fiji, Papua New Guinea, Samoa, Solomon Islands, Tuvalu and Vanuatu—ranges from US\$691 million to just over US\$1 billion, depending on the specific technology mix (Casule et al. 2023). However, with the Levelised Cost of Electricity generated by onshore wind and utility solar PV now lower than that of coal, oil or gas, these initial investments would result in a net economic gain over the lifetime of the generation assets.

Despite their urgent need, Pacific nations have received, on average each year, less than 0.03% of the global climate finance promise of US\$100 billion per annum (SPC 2025). Currently, the energy sector accounts for between 7-9% of total development assistance to the Pacific Islands, with development partners contributing US\$1.9 billion since 2010 (Lowy Institute 2025).

Key development partners for the Pacific's renewable energy transition include Australia, China, Japan, New Zealand and the European Union—as well as multilateral institutions such as the Asian Development Bank (ADB), the Green Climate Fund and the World Bank.

Pacific Island countries currently face considerable challenges in accessing the finance needed for a just renewable energy transition. Financial support from donor countries is often not well coordinated and short-term project cycles can produce disconnected investments that struggle to achieve system-wide transformation. Multilateral climate finance instruments such as the Green Climate Fund (GCF) are complex, slow to disperse funds, and not well geared to support community-scale projects. Only a few Pacific countries have been accredited to access funds through the GCF

Case study: Transforming Islands Development through Electrification and Sustainability

In December 2024, the New Zealand and United Kingdom Governments jointly committed US\$31.9 million to a new blended financing platform to catalyse investment in the Pacific's renewable energy sector.

Transforming Islands Development through Electrification and Sustainability (TIDES), is a new US\$100 million blended finance fund created by climate impact fund manager, Camco, in partnership with SPC's Pacific Centre for Renewable Energy and Energy Efficiency. It is designed to deliver deep impact by strengthening the region's renewable energy and energy efficiency sectors. It will also increase energy access and reduce communities' reliance on expensive and polluting imported diesel.

Expected to reach financial close this year, TIDES is the first of its kind for the region, blending



Pacific
Community
Communauté
du Pacifique



camco

A BRIGHTER FUTURE, TODAY

donor funding with private sector capital. It will provide flexible financing to local renewable energy developers behind zero-emissions projects across the full range of sizes, from mini-grids to large grid-connected systems.

directly, and even they have not received significant disbursements yet. Further, private firms are often reluctant to invest in the Pacific Islands where returns are low, and risks are high given the unique development constraints including small size, geographic dispersion and vulnerability to climate change and disasters. Only 4% of climate finance in the Pacific comes from private funders, compared to up to 49% globally (SPC 2024).

The 2023 **Port Vila Call for a Just Transition to a Fossil Free Pacific** calls on international partners to mobilise billions dollars needed in grant-based financing and direct investments for Pacific Islands countries and for reform of the existing financial institutions and climate finance mechanisms to enable scaled-

up, timely and accessible funding for the renewable energy transition.

As part of a 100% Renewable Pacific Partnership, Pacific Island countries and development partners could consider designing a regional funding platform to ensure substantial, long-term investment in renewable energy, pooling donor and private funds and de-risking investments. This platform could focus on reorienting donor practice toward larger, longer-term, capacity-focused, and regionally coordinated interventions that will accelerate durable and locally owned renewable energy outcomes. It could enhance coordination of existing renewable energy initiatives and channel funding to underfunded initiatives such as

Case Study: Virtual Power Plants

As a grid moves from centralised power generation to distributed renewable energy, how do you manage supply and demand for electricity without requiring an upgrade to the grid?

Virtual Power Plants (VPP) that use networked customer batteries are increasingly popular, particularly in grids subject to disasters.

Take Puerto Rico for example. In 2017, the US Caribbean territory was hit by a category four hurricane that knocked out the island's electricity supply which then took eleven months before restoring power to all 1.5 million customers.

Since that time, the territory has amassed over 70,000 Tesla Powerwalls, with over 59,000 participating in a VPP reaching over 300MW in total.

When Puerto Rico's grid operator requests emergency power, participating Powerwall units will automatically dispatch their excess stored energy to help prevent outages and keep the community powered.

When the grid is under stress, this network of Powerwall units can deliver up to 50 MW of clean, reliable energy to homes and businesses across the island—reducing the likelihood of power outages and increasing energy resilience in the community.

Powerwall always prioritises home backup and can automatically charge to 100 per cent before a storm arrives.

When a grid event occurs, Powerwall will only share the amount of energy approved by the

consumer, stopping when it reaches the minimum storage capacity to keep the rest to power the home or business.

Consumers receive bill credits for each kWh of energy shared.

Powerwall units connected to solar PV can also continue to provide power to the home or business, even if there is a broader network outage, further enhancing energy security.

Powerwall networks already exist in Australia, California, Massachusetts, Texas and the UK.

A distributed generation becomes the norm, distributed storage offers an ideal solution to help maintain community power.

VPPs can also play a valuable role in the Pacific to support the grid.

Photo: Barbara Elliston, SEC Director



the region's own **Pacific Resilience Facility**, to deliver community-scale grants for renewable energy projects. The platform could also consider new funding initiatives where there are current gaps including funding for larger-scale renewable energy infrastructure; incentivising the uptake of renewables by utilities, businesses and households; supporting a just transition; and maintenance financing to ensure the sustainability of solutions.

A 100% Renewable Pacific Partnership could also better incentivise and engage the private sector to invest in the Pacific's renewable energy transition. Catalytic capital, in the form of public or philanthropic funds, can be used for feasibility studies and early-stage development costs, allowing private sector funds to kick in when the project has been

deemed technically feasible and financially viable. There is also an opportunity to better enable the role of Independent Power Producers (IPPs) in the Pacific's electricity market, to attract private investment, diversify energy sources and enhance market competition. For example, Fiji has recently announced a new FJD \$2 billion (US\$0.9 billion) green energy transition investment plan, with a significant portion of this to be with IPPs to develop and integrate new renewable energy projects.

Pacific Island countries, supported by regional organisations, are viewing an Australia-Pacific COP31 as a key opportunity to scale-up global climate finance for the Pacific. This includes plans to host a Climate Investment Forum in Suva, Fiji, in the lead up to COP31, which will provide an important opportunity

Case Study: Off-grid schools

In 2008, Its Time Foundation delivered its first off grid solar system on Rabi Island, Fiji.

Since then, the foundation has delivered 32 systems on remote schools across the country.

In 2025, the foundation is scaling with 40-45 schools due for completion by mid 2026 with support from DFAT and an undisclosed funder.

The foundation has built a strong reputation for quality and reliability, specifying the particular panels, inverters and batteries to be installed.

Installers are also required to be members of SEIAPI, contributing to the development of the region's peak industry body.

By sticking to standard parts, the foundation has a ready stock of spare parts if required.

The foundation has established an innovative operation and maintenance funding model—solarfund-fj.org—that receives an initial payment from the project donors (US\$7,500 per school) as well as ongoing funding from the school from diesel fuel savings and from teachers who value the convenience of 24/7 power.

To manage system load, teachers' residences are limited to 960W, sufficient to power a rice cooker, fan, TV, mobile device charging and a small refrigerator. The teachers are delighted to receive reliable 24 hour power.

Teachers are encouraged to go to the school to do their ironing and other high load activities

during the day to minimise the load and maintain the integrity of the micro grid.

The schools receive a computer bench with computers provided by another charity, as well as a starlink system for remote monitoring that also provides significant broadband capacity to improve communications more broadly.

In terms of refrigeration, the system supports small chest freezers which minimise cooling loss by design.

Its Time has a strong commitment to capacity building by encouraging women in the industry.

They provide introductory sessions to older students in the schools, encouraging girls to consider renewable energy career pathways.

In early 2026, a group of women technicians from various contractors will install a solar system and wiring for a 12-classroom school, three hostels and ten teachers' homes.

Photo: Its Time Foundation



RECOMMENDATION 5: A just energy transition for the region must be co-created and implemented with Pacific peoples through wide consultations, including with national energy ministries; local governments, power utilities; private sector bodies; faith groups and civil society organisations; education providers; and island communities. Discussions should include workforce training and skills needs.

to consider the pipeline of investment needed for the Pacific's energy transition and the appropriate mix of financial instruments to deliver it. COP31 itself provides a key opportunity to globally launch a funding pledge or platform for a 100% Renewable Pacific Partnership.

Technology, Skills and Education

Achieving the Pacific's clean energy transition requires investment in technology, skills

and education to ensure effective and sustainable energy solutions and maximise local economic development and job opportunities. The Pacific's renewable energy workforce will need a unique set of skills to design, install, operate and maintain renewable energy systems. Currently, there are significant skill shortages and capacity constraints in Pacific utilities and governments for planning, procurement, operation and maintenance of renewable systems.

Case Study: Sustainable Energy Training Centre

A long-term goal of the Sustainable Energy Industry Association of Pacific Islands (SEIAPI) has been the establishment of a renewable energy training centre.

In July 2022, Australian solar industry veteran Geoff Stapleton AO stepped back from full time work and took on the SEIAPI Executive Officer role following many years in the Pacific supporting the deployment of quality renewable energy systems by skilled Pacific workers.

Having delivered training for solar installers all around the region in makeshift locations, Geoff had tirelessly urged donors to invest in a physical training centre. In the end, Geoff secured funding from a private foundation for the centre.

Construction began in May 2025 at the University of the South Pacific's Pacific Technical and Further Education Statham campus in Fiji,

and is expected to be complete and operational by mid-2026.

Once established, the centre is expected to have two full time trainers and a suite of equipment, all funded by the same foundation.

When international development partners appreciate the necessity of ongoing local hands-on renewable energy training and continued upskilling, they'll incorporate this in their renewable energy support.

SEIAPI's other goals include:

1. The design and installation of on-grid and off-grid solar systems by governments, power utilities, private contractors and donors are in accordance with SEIAPI technical guidelines to improve quality and longevity;
2. Work with PICT Governments to have PV system designers and installers accredited through PPA/ SEIAPI or via in-country solar technicians license;
3. Work with PICT governments to mandate international standards for PV components and systems;
4. Work with PICT education agencies to adopt the training standards developed through the Sustainable Energy Industry Development Project; and
5. Train inspectors to verify PV systems are installed in accordance with the relevant technical guidelines/ standards.



Photo: Geoff Stapleton AO

Visualising a 100% Renewable Pacific Partnership

POLITICAL
COMMITMENT

**Pacific Leaders' political commitment/
regional goal for 100% Renewable Pacific**

POLICY
DEVELOPMENT

**Framework for 100% Renewable Pacific
Partnership - linked to/embedded in the
Framework for Energy Security and Resilience**

REGIONAL
COORDINATION &
IMPLEMENTATION

**Pacific Energy Commissioner
supported by Regional Secretariat**

**Regional finance
platform**

**Partner and donor
coordination**

**Regional policy
implementation**

**Knowledge sharing
& technical advice**

**Education & skills
development**

A 100% Renewable Pacific Partnership could help build the skills, education and technology transfer needed for the Pacific's renewable energy transition. Training and education must be tailored to the Pacific Islands' contexts, embedding the role of traditional knowledge alongside renewables technology and operations. Traditional knowledge has a key role to play in community decision-making, site selection, resilient design and long-term stewardship of Pacific energy systems. Formal training programs can be paired with train-the-trainer programs, community-scale training hubs and structured mentoring that embed renewable energy capabilities in communities and create career pathways for women and youth.

National universities and training centres have a key role to play, and existing efforts can be financed for scaling up. Currently, the University of the South Pacific (USP), through its USP Pacific TAFE, offers online short courses for designing and installing grid and off-grid solar PV and battery storage systems. The Sustainable Energy Industry Association of the Pacific Islands (SEIAPI) is building a dedicated Pacific Regional Sustainable Energy Training Centre at USP Pacific TAFE. The International Solar Alliance has supported the establishment of a Solar Technology Application Resource Centre (STAR-C) at the

Kiribati Institute of Technology. Additional centres are being considered for Fiji, PNG and Vanuatu. In addition to formal training and qualifications, there are opportunities for greater knowledge exchange and learning through industry associations and networks such as SEIAPI and the Renewable Energy Council Asia-Pacific (RECAP).

Delivering the Pacific's renewable energy transition will require efforts to bring all Pacific stakeholders along, building understanding of the economic, security and resilience benefits of clean energy. This requires strong engagement of communities and traditional elders in program design and delivery, and public awareness raising initiatives. There is also an opportunity to develop Pacific-focused school education resources on the renewable energy transition, positioning the Pacific as a global leader in the shift to renewable energy adoption. For example, the Niue Energy Project is combining the construction of a solar farm and Battery Energy Storage System with community engagement and education to support the long-term success of the project. This includes a targeted STEM education program for schools delivered in partnership with the Government of Niue Department of Education.

Case Study: Electric Vehicle Maintenance Training

One of the benefits of owning an EV is reduced maintenance.

Apart from the occasional changing of windscreen wipers, tyres or air filters, there's not a lot of maintenance required compared to the servicing of internal combustion engine vehicles.

Even brake pads can last a long time if regenerative braking is used.

But what happens when things do go wrong?

That is the challenge being addressed by Australia's EV TAFE Centre of Excellence at the Canberra Institute of Technology.

The centre is the first of an expected network of 20 around the country focused on growing the number of skilled workers for emerging and critical industries to fill critical skill gaps.

Students train with the latest diagnostic equipment from international partners to isolate and repair battery, electric motor or other power electronic faults.

Through strategic partnerships with the automotive industry, Jobs and Skills Councils, universities, and the National TAFE Networks, the centre is developing new and innovative models of training to enrich students' learning experiences.

With Canberra a leading Asia-Pacific centre for EV adoption and renewable energy solutions, the centre is strengthening the design and delivery of EV skills training to produce skilled graduates equipped to meet the demands of Australia's future energy workforce.

Pacific pathways

CIT would be delighted to provide training for groups of up to eight experienced mechanics with appropriate English language proficiency on a cost recovery basis.

A four-week course could involve two thirds of the time in the training facility and one third at electric car and truck conversion, deployment and related facilities around the country.

Possible sites could include Elmofo or Janus Trucks on the NSW Central Coast, GB Auto in regional NSW, Exro Technologies in Dandenong Victoria or Custom Lithium in Brisbane.

One of these companies, Janus, has recently secured international sales of its Class 8 Prime Mover conversion kits in Africa and North America (Los Angeles Ports).

Conversion of existing bus and truck engines offers a rapid pathway for the replacement of fossil fuels in the Pacific.



Photo: Richard Neumann, SEC Senior Adviser

4. Conclusion: Charting the way forward

Pacific Islands sailors have mastered their vast ocean home for centuries. In recent decades, Pacific diplomats and negotiators have navigated the UN climate negotiations, pressing the global community to limit dangerous warming and ensure the survival of their island homes.

Today, Pacific leaders have set sail for a clean energy future. At COP31, Pacific Island countries can set a clear target to be the world's first region that is 100% powered by renewable energy. In doing so, the Blue Pacific can be a global beacon for action, charting the way for a 100% Renewable Planet.

The next 12 months are crucial to make the most of this opportunity. This report has set out five key steps—for the months ahead of COP31—to develop a partnership for a 100% Renewable Pacific.

- 1. Solidify a regional political goal for a 100% Renewable Pacific**
- 2. Develop a regional policy framework for a 100% Renewable Pacific Partnership, to deliver on a regional goal**
- 3. Establish a Pacific Energy Commissioner supported by a regional hub to enhance regional coordination and action**
- 4. Launch a regional finance platform or pledge for a 100% Renewable Pacific to scale-up international partnerships and financing**
- 5. Co-create and implement a 100% Renewable Pacific with key stakeholders and communities, to ensure a just transition**

Setting Course for a 100% Renewable Pacific: Key Milestones ahead of COP31

EVENT	DATE/LOCATION	OPPORTUNITY
Pacific Climate Investment Forum	April 2026, Suva, Fiji	Promote investment opportunities in a 100% Renewable Pacific
6th Pacific Regional Energy and Transport Ministers Meeting	May 2026, Papua New Guinea	Consider regional goal and policy framework for 100% Renewable Pacific Partnership
UNFCCC intersessional meeting	June 2026, Bonn, Germany	Discuss 100% Renewable Pacific as a COP31 outcome
55th Pacific Islands Forum	August/September 2026, Palau	Consider regional goal and policy framework for 100% Renewable Pacific Partnership
33rd Pacific Power Association Conference	September 2026, Fiji	Discuss a 100% Renewable Pacific Partnership including technical pathways and investment priorities
Pre-COP or High Level Engagement in the Pacific	TBC, Pacific	Launch a 100% Renewable Pacific Partnership and Funding Pledge/Platform
UNFCCC COP 31	November 2026	Launch a 100% Renewable Pacific Partnership and Funding Pledge/Platform

Case Study: Agri-Voltaics

Farmers around the world are finding that animals and plants are happier and yields improve when shielded from the hot sun.

In Australia, grazing sheep in solar farms not only reduces the need for mowing, but wool yields improve and the grass grows better because it benefits from dew drop.

Similarly, fruit and vegetable growers are finding improved yields and reduced water needs.

Agri-voltaic systems can be designed with fixed or tracking panels that follow the sun, and the height of the panels can be adjusted to accommodate different crops and growth stages.

Farmers can also earn extra income from selling solar power to the grid or to offset their own energy needs.

These systems do cost more to set up and may require government support and clear policy guidance to encourage adoption.

The systems work by using bifacial solar panels or thin film technologies to absorb near infrared to produce electricity but allow blue light to pass through for photosynthesis.

Green light is partially absorbed with some transmitted to the plants while red light is partially transmitted with some absorbed.

In French Polynesia and New Caledonia, Akuo Energy has installed cyclone-proof greenhouses since 2019, with rooftop solar PV.

These structures protect agriculture from extreme weather, reduce water use, and integrate battery storage for grid stability in remote island networks.

The design addresses land scarcity by enabling dual production on limited space.

Can you see agri-voltaics working in the Pacific more broadly?



Photo: Akuo Energy

Case Study: Remote Island Grids

King Island and Flinders Island are stunning, windswept places—but they're a long way from mainland Australia.

For decades, diesel was the only option for powering homes and businesses.

Then the game changed. From 2007, Entura helped Hydro Tasmania create the world's first MW-scale off-grid energy system capable of 100% renewable energy on King Island.

Wind turbines, solar panels, fast-responding batteries, flywheels, and some very clever control systems—all working elegantly together so the island can run autonomously.

This system—first known as the King Island Renewable Energy Integration Project (KIREIP)—allowed King Island to run on renewables and smash records for sustained periods of 'zero diesel' operation.

King Island now averages 65% renewable energy, and real time dashboards allow the systems to be viewed anywhere.

On Flinders Island, Entura developed a 'plug-and-play'-style hybrid energy hub—with everything from solar panels

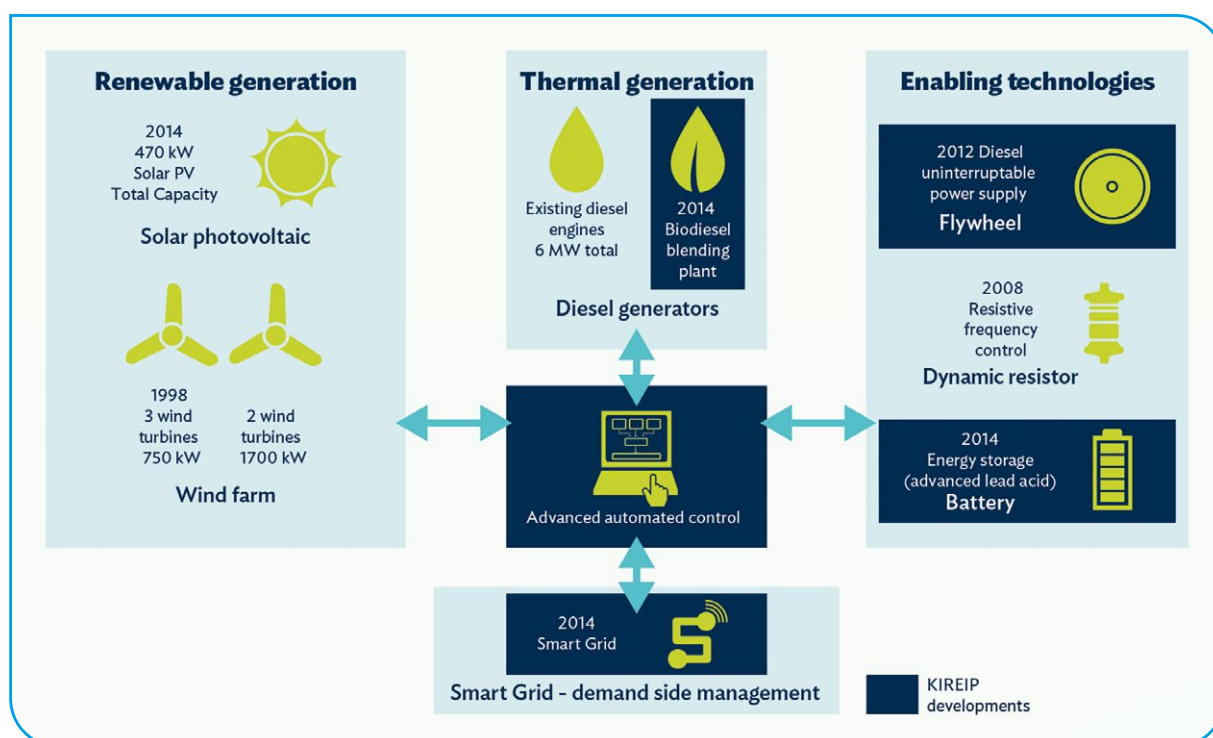
to control systems built off-site in container-like modules, then shipped and connected up quickly.

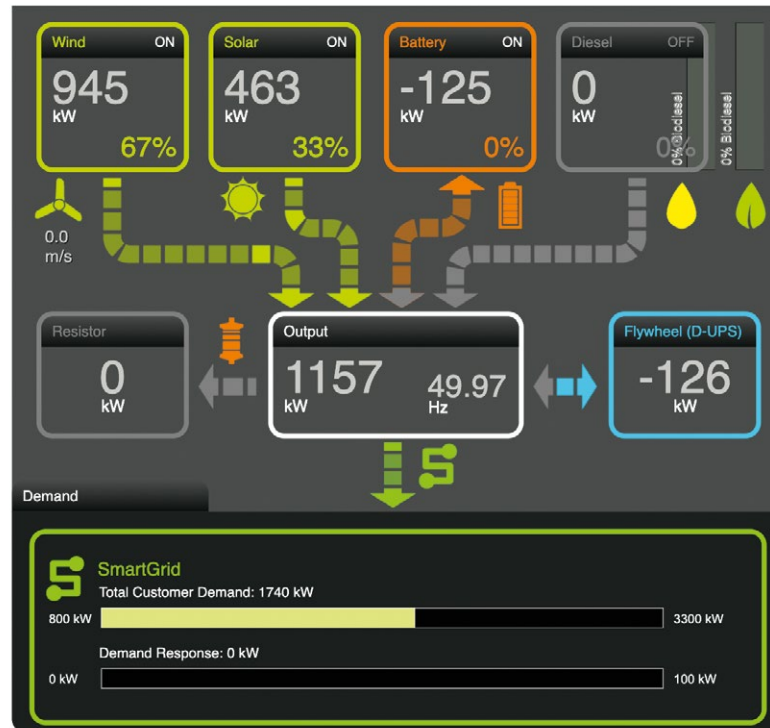
The result was reliable power, far less diesel, and the ability to scale or replicate the system almost anywhere.

By 2013, Entura was rolling out sustainable offgrid solutions across mainland Australia, beginning with Rottnest Island (Western Australia) and Coober Pedy (South Australia), then Jabiru (Northern Territory) and at remote mining sites where mine owners are decarbonising their operations.

Entura has extended remote area offgrid power expertise across the Pacific, supporting projects in Tonga, Cook Islands, Solomon Islands, Marshall Islands, Federated States of Micronesia and Tuvalu.

The Tonga Renewable Energy Project (TREP)—funded by the Asian Development Bank, Green Climate Fund and Australia's Department of Foreign Affairs and Trade—was established to provide more renewable generation and energy storage to increase electricity access, improve service





The dashboard for the Hydro Tasmania King Island renewable energy solution.

quality and reliability, and support Tonga's energy transition, climate resilience and environmental sustainability (less diesel!)

Thanks to TREP, there are now new solar and battery systems on main island Tongatapu, grid-connected renewable energy generation on 'Eua and Vava'u islands, and nine outer islands have solar-battery systems.

On those outer islands, nearly 500 households have 24/7 grid electricity—for the very first time.

Thanks to reliable electricity and new electric appliances, many community members have reported being able to better manage their work-life balance and studies, start micro-businesses that use electric appliances, earn more income, and eat fresher food.

What's more, the TREP project had strong gender targets, resulting in many local women being trained as carpenters, electricians and line workers.

Entura's roles included feasibility assessments, due diligence, support for tendering and procurement, construction supervision as

Owner's Engineer, and providing capacity building to sustain future operations and maintenance of the renewable energy systems.

An ongoing loop of learning

What Entura trialled and proved on King and Flinders Islands provided a springboard to deliver hybrid renewables projects in the Pacific and beyond.

Now, projects across the region bring fresh ideas and deeper experience to refine and evolve future systems.



Solar array and battery energy system on Vava'u Island, Tonga.

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L-R: Thom Woodroffe, SEC Director Scott Hamilton and SEC CEO John Grimes in Brisbane in September previewing the discussion paper ahead of the launch.

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