

Powering up remote Tuvalu through solar

Sustainable energy for Nukufetau, Nui and Nukulaelae



Government of Tuvalu



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PIGGAREP sent a team to Tuvalu to film a documentary about the benefits of solar power in remote Tuvalu.

A photograph of two men in conversation. The man on the left is seen from the back, wearing a purple shirt. The man on the right is wearing a blue shirt and a black baseball cap, looking towards the first man. They are in an indoor setting with a white wall and ceiling.

ABOUT THIS PUBLICATION

The Government of Tuvalu and the European Union are working in partnership to improve access to reliable and environmentally sound energy services to three remote outer islands of Tuvalu.

This partnership between the Government of Tuvalu and the European Union is also being supported by the Ministry of Foreign Affairs and Trade (MFAT) of New Zealand, the Government of Finland and PIGGAREP – the Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project.

PIGGAREP is funded through the Global Environment Facility (GEF), implemented by the United Nations Development Programme (UNDP) in Samoa, and executed by the Secretariat of the Pacific Regional Environment Programme (SPREP).

In February 2015, PIGGAREP sent a small team to the remote islands of Tuvalu to find out about how access to 24 hour solar power looks set to change people's lives. This publication, and a companion film, document some of the discussions between the PIGGAREP team and local communities about the many benefits that will come about as a result of powering up remote Tuvalu by solar.

POWERING UP REMOTE TUVALU TROUGH SOLAR: CHALLENGES AND BENEFITS

The Pacific island nation of Tuvalu, formerly known as the Ellice Islands, is situated 4,000 kilometres northeast of Australia. Tuvalu consists of three reef islands and six atolls.

The provision of electricity to these islands – accessible only by boat – poses complex logistical issues. Currently these locations are entirely reliant on diesel generators, a reliance that comes at a significant economic and environmental cost. The fluctuating price of fuel and the difficulties inherent in transporting essential equipment by sea has meant that energy supply to date has been expensive and unreliable.

From an environmental perspective, diesel is far from an ideal energy source. It is non-renewable and generates carbon emissions which contribute to global climate change and rising sea levels. Diesel is also a potentially devastating pollution hazard to the fragile marine environments on which local communities depend.

Through a groundbreaking partnership between the Government of Tuvalu, the European Union and other partners, three new solar photovoltaic (PV) off-grid installations have been constructed on the islands of Nukufetau, Nukulaelae and Nui. These installations will ensure that, for the first time ever, electricity will be available 24 hours a day to the communities in these remote locations.

Electricity generated by solar power is cheaper and more reliable than diesel generated electricity. Importantly, it's also environmentally friendly.



Access to 24 hour solar power will reduce reliance on diesel and kerosene.

24 HOUR SOLAR POWER =



Access to 24 hour solar power will mean that excess fish can be frozen for later use.

Food security

A young boy is sitting on the ground, looking towards the camera. He is wearing a light-colored, short-sleeved shirt. In front of him is a large, dark fish, possibly a shark or a large cod. The background shows a busy outdoor area with several people standing around, some wearing dark clothing. There is a white container or bin and a dark-colored truck or vehicle. The overall scene suggests a market or a food processing area in a rural or coastal setting.

Having 24 hour access to electricity means that food can be refrigerated or frozen for future use. This luxury is one that many of us take for granted.

Communities on the outer islands of Tuvalu rely heavily on fishing for subsistence, but long interruptions to the power supply mean that fish, and other foods, cannot be stored safely for later use. Access to 24 hour solar power will change this.

Sasave Tekinene from Nui explains that boats are currently taken out daily to catch supplies of fish and that this results in high fuel costs:

“Once the fridges and freezers are on all day and night we will be able to store extra fish for the next day. Right now we have no choice except to boil it and feed it to our pigs. When we have 24 hour power it will also mean that we can keep food frozen for the times when the boat is delayed and the island runs out of supplies. It will be a nice feeling to know that we have a back-up plan for these times.”

Access to 24 hour power – through the European Union and Government of Tuvalu partnership – will also mean that a greater variety of food items can be transported and stored on the islands which is good for local business as well as for the health and wellbeing of local communities.

24 HOUR SOLAR POWER =



For the first time, school children in remote Tuvalu will be able to depend on having light in the evenings so they can study.

Education and productivity improvements

At a fundamental level, having access to 24 hour solar power will increase the number of hours available to communities to engage in productive activities.

Valisi Tovia, the Secretary of the Nukefetau island council, explains that the existing diesel generator on the island is sometimes out of order for periods of up to two weeks. She believes that school children in particular, will benefit enormously from reliable access to power:

“There is no doubt that 24 hour access to electricity will improve our standard of living and give our children brighter prospects for the future. Our school children will, for the first time, be able to depend on having light available in the evenings so that they can study and read books. They will also be able to use computers and internet when they need to. To get a good education children need certainty and stability – they need these things so that they can be confident about their circumstances.”

For all members of the local communities, 24 hour power provides a key to greater freedom. Like many others, Valisi believes that initiatives like this partnership between the European Union and the Government of Tuvalu, will help to stop the flow of families moving away from the outer islands to better serviced locations such as Funafuti:

“With a stable population we all benefit and we can work together to contribute to our ongoing development.”

24 HOUR SOLAR POWER =



Health and hygiene benefits

Electricity is required to store life-saving vaccines and medicines at the appropriate temperature. It is also essential to power the equipment used for the treatment of acute medical issues.


While the Nui Health Clinic currently has a back-up generator for such emergencies the Senior Nurse, Mamaha Viliamu, explains that a mechanic has to be called upon to switch on the generator when it's required, a process that can take around an hour or longer:

"In urgent cases, such as when the ventolin nebuliser is required for acute asthma, we lose valuable time walking around the island in darkness to notify the mechanic to switch on the emergency generator for us. In peak times, such as when there is an influenza outbreak, the generator has to be switched on as often as three times a week. Access to 24 hour power will mean we can treat our patients immediately. It may even save lives."

With many water pumps requiring electricity to operate, a further health benefit stemming from this partnership is improved access to clean water for cooking, bathing and sanitation.

Senior Nurse Mamaha Viliamu from the Nui Health Clinic is looking forward to 24 hour solar power.

24 HOUR SOLAR POWER =



On a global scale Tuvalu contributes a negligible quantity of greenhouse gas emissions. But like other low lying atoll nations, the country stands to be gravely impacted by changing weather patterns and rising sea levels.

Tuvalu is one of many Pacific island countries and territories that are walking the talk and leading by example by switching to environmentally friendly and sustainable electricity generation. It is hoped that the example being set in the Pacific island region will prove to other areas of the world that it can be done.

On completion of the project in early 2015, the three specialised solar power installations will meet 60% of the electricity demands of Nukufetau, Nui and Nukulaelae, saving an estimated 120,000 kilograms of CO₂ emissions annually.

This solar array has been located in the lagoon so as to not impact upon land pressure on the island of Nukufetau.

A sustainable future



These outcomes will, in turn, support the stated goal of the Government of Tuvalu to convert all diesel power generation to 100% renewable energy by 2020.

Mr Mafalu Lotolua, General Manager of the Tuvalu Electricity Corporation has observed a strong swell of public support for the project:

“Tuvaluan communities in these outer islands are looking forward to the day when the ribbon is cut on these solar facilities. Presently they face so many interruptions and breakdowns with the diesel system. They cannot wait for remote Tuvalu to be powered up by solar!”



The documentary film entitled 'Powering up remote Tuvalu through solar' can be found at www.sprep.org.

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