

## Solar Energy South Africa

# Tokelau solar panels for energy



## Overview

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Can a solar array power Tokelau?

Solar Array's seen on the three tiny islands of Tokelau to completely produce solar power energy. The renewable energy system comprising of solar panels, storage batteries and generators running on biofuel derived from coconut will generate enough electricity to meet 150% of the islands' power demand.

How much electricity does a solar system provide in Tokelau?

Each system alone is among the largest off-grid solar power systems in the world, and together they are capable of providing 150% of current electricity demand in Tokelau, a much higher amount than the 90% that was originally planned for.

What is the Tokelau PV project?

The Government of Tokelau sees the PV Project as the first step and therefore trial towards the long-term goal of energy independence based on renewable energy. The project is implemented by the Government of Tokelau and funded jointly by Government of New Zealand, Government of France, UNESCO Apia and UNDP Samoa.

Where does Tokelau get its electricity from?

Except for that part of the electricity supply provided by Solar Photovoltaic (PV) to TeleTok facilities on all three atolls and the University of the South Pacific (USP) facility on Atafu, essentially all energy in Tokelau currently is from imported petroleum.

Why did Tokelau switch to solar?

Yet despite the challenges involved in installing comprehensive solar systems in such a remote location, switching to solar was absolutely crucial for the tiny collection of islands. "Tokelau's atolls are low-lying and especially susceptible to the adverse effects of climate change," Mayhew stressed.

How many people live in Tokelau?

Tokelau is made up of three small atolls, Atafu, Nukunonu and Fakaofu, has an area of around 10km<sup>2</sup> and is populated by 1,411 New Zealand citizens, all of whom now have their energy needs met by solar electricity systems. "Each system alone is among the largest off-grid solar power systems in the world."

## Tokelau solar panels for energy

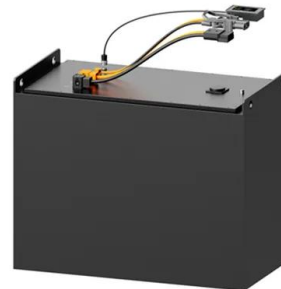


### Tokelau - the world's first solar power sufficient nation

Target: 100% renewable energy; Status: Achieved; RES: 1MW off-grid solar energy system across three main atolls of Tokelau. The project includes : 4032 solar modules, 196 string inverters, 112 DC charge ...

### Three tiny islands are world's first to rely entirely on solar power

Solar energy is increasingly being used to power operations both big and small, but a group of three tiny islands in the South Pacific are now able to entirely use solar power to meet their energy



### Gagana Tokelau , Lighting the Way with Solar Energy

When Tokelau decided to switch to renewable energy, people thought critically about the options. They decided that solar energy could be a cost-effective option well-suited to Tokelau's climate. Over four thousand solar panels were installed, making Tokelau the first nation in the world to convert to 100 percent renewable energy. Technology

### Solar Power in Tokelau Junior Journal 57 nior orna 10?''?^??0

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29: Solar Energy (Levels 2-4), and at Science Online: What do my students need to learn. Overview Solar Power in Tokelau by Iona McNaughton Junior Journal 57 Level 2 This text is levelled at Gold 2 Other texts about solar power or other forms of electric power: "Power from the Sun" and "Borrower" (a poem, both in JJ 57);



**Beyond Tokelau's 100% solar: add wind power!**

Tokelau was the first nation in the world to go 100% solar in 2012. Now the country is aiming to keep its fully renewable energy status in the future using wind power. This is going to reduce the need for diesel fuel backup in prolonged times of cloudy weather, and when the solar cell system needs maintenance.

[Tokelau: Energy Country Profile](#)

What share of the country's energy consumption comes from solar power? Low-carbon energy can come from nuclear or renewable technologies. How big of a role do renewable technologies play? Tokelau: Energy intensity: how much energy does it use per unit of GDP?



**World's First Truly Renewable Energy Nation: Tokelau**

Surprisingly enough, the new solar panels are expected to supply 150% of their current energy needs, and will supply power for 15-18 hours. Powersmart Solar, a lead contractor that builds and installs solar power generators, is building the island's 4032 solar panels, 392 inverters and 1344 batteries.

## Tokelau reaches solar power goal , Beehive.govt.nz

Foreign Affairs Minister Murray McCully today welcomed the completion of a third New Zealand-funded solar power system in Tokelau - meaning almost 100 per cent of the territory's electricity needs are met through solar generation. "The Tokelau Renewable Energy Project is a world first. Tokelau's three main atolls now have enough solar capacity, on ...



## Tokelau prepares for new phase in renewable energy path

Tokelau is preparing to move into the second phase of its 100 percent renewable energy project. Last year, five years after plans were made by the Ongoing Government, Tokelau became the first country in the world to source all its electricity from solar power.

## Tokelau takes step toward energy independence , Beehive.govt.nz

Foreign Affairs Minister Murray McCully today welcomed the launch of Tokelau's first solar power system. It is the first of three systems that, when fully operational, will provide almost 100 per cent of Tokelau's power. "Many of our Pacific neighbours are reliant on expensive imported diesel for electricity generation and this is a barrier to developing their economies," ...



## Tokelau Wins EECA Renewable



## Energy Award

Harvesting the sun's energy is with solar panels is expected to save Tokelau roughly NZD \$900,000 (~ AUD \$824,500) per year in diesel costs. The Tokelau Renewable Energy Project (TREP) was a joint undertaking between the Government of Tokelau and the New Zealand Ministry of Foreign Affairs and Trade.

## Tokelau islands reach 100% solar power goal , Solar Power

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(SeeNews) - Nov 7, 2012 - The atolls of Tokelau in the South Pacific became the first territory in the world to meet almost all of its power demand with solar power via a NZD-8.5-million (USD 7m/EUR 5.5m) solar project, New Zealand's government said Monday.



## Green Nation plans to develop 750MW solar and energy

The UK's Green Nation has unveiled plans for a solar and energy storage project, aiming to contribute up to 750MW to the country's National Grid. Called Whitestone Solar Farm, the solar facility is located between Rotherham and Doncaster in South Yorkshire and is in the preliminary stages of development.

## [Tokelau's Approach to Renewable Energy](#)

Tokelau installed 4,032 solar panels, 392 inverters, and 1,344 batteries across its three atolls. This setup generates enough electricity to meet all of Tokelau's energy needs. What are the

benefits of Tokelau using solar power? Switching  
...



## [Tokelau - 100% Renewable Energy Atlas](#)

Target: 100% renewable energy; Status: Achieved; RES: 1MW off-grid solar energy system across three main atolls of Tokelau. The project includes : 4032 solar modules, 196 string inverters, 112 DC charge controllers, 84 battery inverters and 1344 batteries in 48V banks. The system allows for up to 2 days of energy without any solar input.

## Tokelau Renewable Energy Project , ITP Renewables

Tokelau Renewable Energy Project The South Pacific nation of Tokelau became the first country in the world to have all of its electricity needs met by solar power. Designed by Powersmart Solar in partnership with ITP Renewables, construction of the combined 1 MW of stand-alone PV spread across the three atolls was completed in October 2012.



## Renewable energy opportunities and challenges in the ...

kWh/m<sup>2</sup>/day Kilowatts per square metre per day



(measure of solar energy) kWp Kilowatts peak of solar panel capacity (at standard conditions) LPG Liquefied Petroleum Gas NZD New Zealand dollars (currency) Tokelau 3 2. Energy landscape Energy supply and demand. Petroleum. Until 2012, all power generation was by

## CLIMATE CANE IN ASIA-PACIFIC 5. The Solar Nation of Tokelau

It was the birth of Tokelau's ambitious 'Renewable Energy Project', which would see Tokelau become the first nation on earth to be almost 100 percent powered by solar energy and reduce its carbon footprint to almost zero. The machinery behind the project is three solar power plants--one on each island-- with a combined output of 1 Megawatt.



### Solar Power in Tokelau / Junior Journal 57, Level 2, ...

This report highlights the world-first achievement of Tokelau in using renewable energy sources (solar energy and coconut oil) for all its electricity. It explains why Tokelau decided to switch from using fossil fuels and includes comments from ...

### [Pre 2003 Tokelau solar energy](#)

Tokelau solar energy where we are at Robin Pene, General Manager Tokelau Energy, 28 August 2014 Tokelau power benefits over time Pre-2003 oDiesel generators in each of the three villages oOnly a few hours' electricity each day for consumers Since 2003 + 11,000 volt system

provides electricity 24



## lar Power Tokelau is made up of three atolls. An atoll is a ...

power, power stations, renewable energy, solar energy, solar panels, solar power, sun, sunlight, sustainability, Tokelau JUNIOR JOURNAL 57 r l 57 Tokelau is a very small and very sunny country in the middle of the Pacific Ocean. Tokelau is also a very special country because it uses only renewable energy. It gets nearly all of its

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