

Can Tokelau support itself with solar energy?

Tokelau, an island nation in the South Pacific, is now completely able to support itself with solar energy. Elly Earls met Joseph Mayhew of the New Zealand Aid Programme to find out how this tiny collection of atolls has become almost 100% self-sufficient in less than 12 months.

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.

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.

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.

Why is electricity so expensive in Tokelau?

Before the PowerSmart systems were installed on the nation's three atolls, Tokelau was highly dependent on imported fossil fuels to meet its energy needs and therefore vulnerable to international price fluctuations and increasing fuel costs, making electricity extremely expensive for both households and businesses.

Some power generation using diesel remains necessary as backup and in prolonged cloudy spells. The initial investment was NZ\$7.5 million by New Zealand plus NZ\$1 million by Tokelau governments. Maintenance costs can be significant in the demanding climate conditions of high temperature, high humidity and high salinity.

Energy Supply. 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

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An off-grid solar energy system is currently in operation, and was design and constructed, in collaboration with the local Tokelau community, by private companies and development organisations. Population: 1,499 (2016) Area: 10 km² (3.9 sq mi) Link: The world's first truly renewable energy nation

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Fakaofu was the first set put into service on 2nd July, Nukunonu followed by on the 20th August and Atafu - that finally started up on 25th September", the Director of Energy, Robin Pene stated in his email. "The generators are basically there as backup generation as needed and adding much needed Battery stability.

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A backup diesel generator was added into the system to guarantee energy supply during long low sunlight periods. This below diagram shows the energy system, specially supply side after TREP: Modular clusters including a collection of panels, inverters, and batteries were used in the design of the PV system.

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.

Tokelau, a small group of Pacific atolls off the coast of New Zealand, is well on its way to becoming the world's first truly renewable nation. Housing 1,400 people, the island is currently dependent on diesel fuel generators, burning 200 litres of gas daily. However, the residents hope to shed this wasteful habit by October of this year using solar energy.

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Tokelau is the first country in the world to produce all its electricity needs from renewable energy. This small Pacific nation with three atolls and 1160 people has switched off its noisy, polluting diesel generators and is now totally powered by the sun. People in Tokelau began talking about a solar-powered future more than a decade ago.

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