

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.

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 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.

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.

How much does a diesel generator cost in Tokelau?

Indeed, until recently, diesel generators were burning around 200 litres of fuel daily on each atoll, meaning more than 2,000 barrels of diesel were used to generate electricity in Tokelau each year, costing more than \$1m NZD.

The South Pacific archipelago of Tokelau is on its way to becoming the world's first fully solar-powered nation, with 4,032 PV modules, 392 inverters and 1,344 batteries set to provide the ...

The Tokelau Renewable Energy Project was launched in 2010 and culminated in the installation of a photovoltaic-diesel hybrid system with battery storage on each of Tokelau's three atolls; ...

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.

The Tokelau Renewable Energy Project was launched in 2010 and culminated in the installation of a photovoltaic-diesel hybrid system with battery storage on each of Tokelau's three atolls; Fakaofo, Nukunonu and Atafu. The new solar power systems replaced the existing diesel systems and were designed to provide at

least 90% of

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This report presents the findings of post installation reviews for three solar-hybrid power systems installed on the atolls of Tokelau. The report is presented in two parts: Part 1 -Financial Review and Part 2 - Technical Review.

"This is a perfect example of our long term commitment to the island nations of the South Pacific, where this type of PV hybrid system is ideal. We are proud to have been able to support PowerSmart Solar and the New Zealand government in achieving fossil fuel independence for Tokelau."

Thanks to joint funding by the government of Tokelau and New Zealand, the Tokelau Renewable Energy Expansion Project (TREEP) is now underway; set to return Tokelau to approximately 100% renewable energy with installation set to commence in early 2020.

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