Tokelau solar generator for industrial use

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.

Could Tokelau be the world's first renewable nation?
Solar power plants and coconut biofuel-powered generators switched on in Tokelau has made the islands the world's first truly renewable nation.' Imagine a place where the only energy to be found is clean,reliable solar power. Solar Array's seen on the three tiny islands of Tokelau to completely produce solar power energy.

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.

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 Fakaofo,has an area of around 10km² and is populated by 1,411New 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."

The documentary tells the story of three small remote atolls in the middle of the Pacific that overcame their isolation and dependence on diesel generators to become the first 100% solar-powered nation in the world, proving that it is possible to reduce the use of fossil fuels and emission of greenhouse gases to a minimum.

In 2012, Tokelau switched from using 100 per cent diesel-generated power to 100 per cent solar electricity, using a design appropriate for their difficult tropical marine environment. Tokelau''s draft energy roadmap for 2015-25 highlights their commitment to being fully reliant on renewable energy.

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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 ...

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.

o The solar hybrid system was designed to provide 90% of the electrical needs of Tokelau. o The reduction in diesel costs from pre-solar days has dropped by 84%. If there are seven hours of bright sunlight there is no need for back-up generation o The availability of 24/7 power has provided vast improvement to the quality of life in the ...

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.

Along with the solar panels, a battery storage system was installed which allowed Tokelau to still have power during the night or if they encountered days with less sunshine (MFAT, March 2013). As a backup, there is a generator available if the solar panels cannot provide sufficient power to charge the batteries.

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