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Fiji Solar Report

Prepared by J.v.G. Technology GmbH

J.v.G. Technology GmbH is a German engineering company specializing in turnkey solar module production lines and manufacturing consulting, with project experience ranging from 20 MW to 500 MW per production line, including multi-line and gigafactory projects exceeding this scale.

This Solar Report is part of the **PVKnowHow** Knowledge Network.
The data, analysis, and conclusions in this document are based on real research, consulting insights, and international solar market data.

Gain comprehensive insights into the statistics and metrics surrounding the solar production industry in Fiji

KEY POINTS

All figures have been converted into USD

Yearly sunshine (sun hours per year)

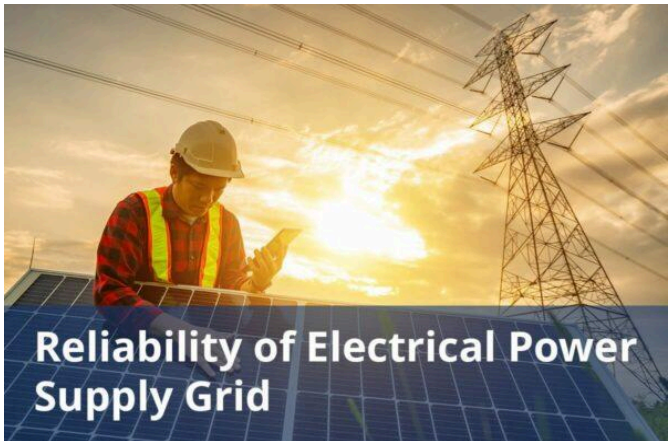
Yearly Sunshine:
- Average daily sunlight: 5.5 hours
- Total annual sunshine: 2000 hours
- Peak sunlight hours: 6.5 hours

kWh per kWp installed

kWh per kWp:
- Average efficiency: 1000 kWh per kWp
- Maximum theoretical: 1200 kWh per kWp
- Minimum efficiency: 800 kWh per kWp

Average cost per kWh from utility company

Average Cost per kWh:
- Residential price: $0.120/kWh
- Commercial price: $0.150/kWh
- Industrial price: $0.180/kWh



Reliability of electrical power supply grid

Reliability:
- Uptime percentage: 99.9%
- Maintenance frequency: Every 6 months
- Backup system activation: Immediate




DETAILED INFORMATION

All figures have been converted into USD

Total solar panel production capacity (installed)

Total Solar Panel Installed:
- Number of panels: 100000
- Total capacity: 250 MW
- Installed in last year: 20000 panels

Total solar panel production capacity (projected)

Total Solar Panel Projected:
- Expected installations in next year: 30000 panels
- Total projected capacity: 350 MW
- Growth rate: 30%

Average costs of various electricity generation sources (coal, natural gas, solar, etc)

Average Costs:
- Installation cost per panel: $300/panel
- Maintenance cost per year: $10/panel
- Total average cost per kWh: $0.140/kWh

Percentages of various electricity generation sources (coal, natural gas, solar, etc)

Percentages of Electricity:
- Renewable sources: 25%
- Non-renewable sources: 75%
- Solar contribution: 10%

Average daily availability of electricity from the national grid (measured in hours)

Daily Availability:
- Average operational days: 300 days/year
- Maintenance downtime: 5 days/year
- Available sunlight days: 250 days/year

Number of residential solar panel installations

Number of Residential Panels:
- Total homes with solar: 40000
- Average panels per home: 3
- Total residential panels: 120000

Total number of solar farms (installed and projected)

Number of Farms:
- Total solar farms: 10
- Average size per farm: 25 MW
- Total capacity from farms: 250 MW

Off-grid market demand for solar panels (current and projected)

Off-grid market demand for solar panels (current and projected):
Many of Fiji's small islands and remote areas are not connected to the main electricity grid.
The off-grid households are supplied electricity by government through the Fiji Department of Energy (FDoE).
These off-grid systems comprise solar home systems, diesel generators, pico-hydro and solar hybrid systems.
There are also plans for 75 isolated Fijian communities to gain access to affordable, reliable energy through $60M USD hybrid solar PV mini-grid project, enhancing quality of life and economic opportunities.

On-grid market demand for solar panels (current and projected)

On-grid market demand for solar panels (current and projected):
Fiji has around 4 MW of grid-connected solar PV installed, primarily on the main island of Viti Levu.
There are ambitious plans to expand solar PV capacity.
By 2030, Fiji aims to add 90 MW of new solar PV on Viti Levu's grid, 5 MW on Vanua Levu's grid, and 4 MW on Ovalau's grid.
This expansion is expected to generate approximately 167 GWh annually, significantly reducing carbon emissions.

Average monthly income of workers in solar industry (labor cost)

Average monthly income of workers in solar industry (labor cost):

The average salary earned by workers in the solar industry in Fiji can vary based on experience, skills, and location.
Solar Engineer: A person working as Solar Engineer in Fiji typically earns around $1,917 USD.
Salaries range from $882 USD (lowest) to $3,046 USD (highest).
Project manager: A person working as Project Manager in Fiji typically earns around $2,416 USD.
Salaries range from $1,112 USD (lowest) to $3,839 USD (highest).
General labor: The average salary for general labor workers in Fiji typically ranges from $377 USD to $782 USD per month.

Population of the country

Population of the country:
As of August 2024, the population of Fiji is currently 929,447.

Average overhead costs of solar panel production (with a brief breakdown)

Average overhead costs of solar panel production (with a brief breakdown):
Factory rent/mortgage:
Factory rents in Fiji are generally lower compared to many other countries.
For example, commercial spaces can range from $4,500 to $16,200 per month, depending on the location and size.
Utilities (electricity, water, etc.):
Electricity: The cost of electricity in Fiji is approximately $0.15 USD per kWh.

Water: Fijians pay one of the lowest water tariffs in the Pacific at $0.07 USD per cubic meter.
Equipment maintenance:
The cost of maintaining solar equipment in Fiji can vary depending on the size and complexity of the system.
On average, maintenance costs can range from $90 to $225 per year for residential systems.
For larger commercial systems, the costs can be higher, typically ranging from $450 to $1,350 per year.

A summary of the energy infrastructure

A summary of the energy infrastructure:
Key data points about the Fiji energy infrastructure are as follows:
Electricity generation:
The energy production in Fiji is approximately 1.04 billion kilowatt per year.
Fiji's energy production continues to be heavily reliant on imported fossil fuels and hydropower, primarily for transportation and thermal power generation.
Notwithstanding, the country has committed to a strategic transition towards more renewable energy sources to achieve net-zero emissions by 2050.
Electricity consumption:
Fiji's annual electricity consumption totals 936.31 million kWh, and averagely 1,000 kWh per capita.
The country has the potential for energy self-sufficiency, with domestic power generation exceeding consumption by 11%.
Grid Infrastructure:
Energy Fiji Limited (EFL) primarily manages Fiji's power grid, serving approximately 90% of the population on the main islands.

While the main grid serves the larger islands, smaller islands often rely on diesel generators, micro-hydro systems, or biofuel generators for their electricity supply.

Energy Access:

According to a statistics publish in 2021, only about 92% of the total population in Fiji have access to electricity.

It estimates 96% of people living in urban areas and 87% of the people residing in rural areas of the country.

Some of the government regulations surrounding solar panel production

Some of the government regulations surrounding solar panel production:

Approval Process:

To install a solar system in Fiji, you need to hire a licensed electrician or solar installer.

The process involves filling out an application form, providing supporting documents, paying an application fee, and waiting for approval from Energy Fiji Limited (EFL).

Climate Change Act:

This act includes provisions for promoting renewable energy projects, including solar, as part of Fiji's commitment to reducing greenhouse gas emissions.

National Energy Policy 2023-2034:

This policy aims to increase Fiji's energy security by utilizing indigenous renewable energy sources, including solar.

It sets ambitious targets to reduce dependence on imported fossil fuels and address climate and disaster risks.

Government initiatives in solar panel production (includes investments and subsidies)

Government initiatives in solar panel production (includes investments and subsidies):
Fiji is actively promoting solar energy as a key part of its renewable energy goals.
Some of the plans include:
Incentives for Solar Energy:
The government offers financial incentives to encourage individuals and businesses to adopt solar power, making it a more attractive alternative to other energy sources.
Renewable Energy Targets:
Fiji has established ambitious renewable energy targets, aiming to meet the majority of its power needs through renewable sources by 2030.
To achieve this, the government has implemented policies that prioritize renewable energy generation.
Educational Programs:
Fiji is investing in education to promote solar energy awareness and equip its citizens with the knowledge needed to make informed decisions about adopting this sustainable technology.

Notable solar projects in the country (installed and projected)

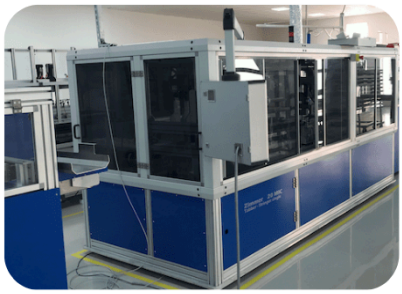
Notable solar projects in the country (installed and projected):
Installed Projects:
Vuda Solar Farm:
Location: Vuda, Lautoka, Fiji.
Capacity: 67 kilowatts.

Details: Owned by Total (Fiji) Limited. In a year, the solar farm supplies 100megawatts of electricity hourly.
Projected Projects:
Mua Solar Farm project:
Location: Taveuni island, Fiji.
Capacity: 1.55MW.
Details: The project started in 2019 but was delayed due to the pandemic and it is expected to be completed soon.
It was funded by the Korea International Cooperation Agency (KOICA).
Energy Fiji Solar PV Park:
Capacity: 15MW.
Details: It was funded by IFC (International Finance Corporation).
It is intended to be the largest solar project in the Pacific.
The project is currently at the permitting stage and construction is expected to begin by 2024.
Nadi International Airport solar farm project:
Location: Adjacent Fiji Airports, Nadi.
Capacity: 3.5MW.
Details: Fiji Airports partnered with ITP Renewables Australia.
The project is in its initial phase of construction.

Some of the notable solar companies (plus brief details on what they do)

Some of the notable solar companies (plus brief details on what they do):
Clay Energy Pty Ltd:
They offer a comprehensive range of renewable energy services, including design, engineering, procurement, construction, operation and maintenance, project management, and consulting.
Solar Fiji:

They specialize in off-grid and grid-connect solar power systems supply, installations and engineering.
Solar Fiji is an official distributor of leading solar brands.
Yasana Energy Limited:
They specialize in operating and managing solar projects such as Hybrid Energy, Distributed Generation, Energy Storage, Off-Grid Energy, Remote Communities, HV, Substations, Grid Connections, Battery Energy Storage Systems (BESS), and Microgrid.



ABOUT THIS REPORT

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All market data, analysis, and conclusions follow JvG's internal consulting standards and international PV market research practices.

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https://www.pvknowhow.com/solar-report/fiji/

About J.v.G. Technology GmbH

J.v.G. Technology GmbH is a European engineering and advisory specialist for solar production lines and manufacturing equipment, supporting investors and operators with market, location and production-focused decision frameworks.
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