Togo 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 Togo

KEY POINTS

All figures have been converted into USD

Yearly sunshine (sun hours per year)

Annual sunshine hours vary by region but can exceed 3000 hours in optimal areas.

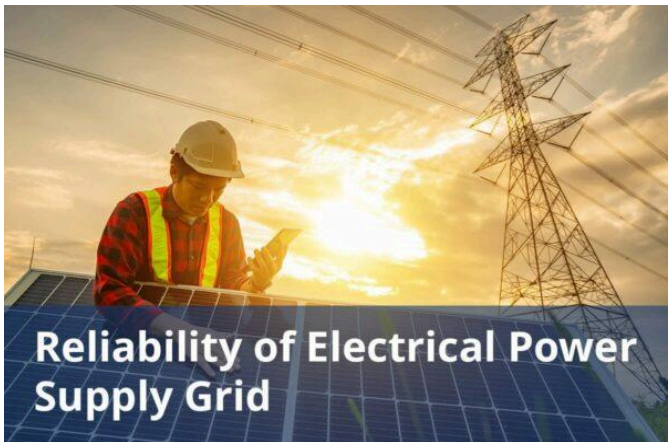
These hours of direct sunlight are crucial for the efficiency of solar panels.

kWh per kWp installed

The typical kWh produced per kWp installed can range from 800 to 1400 kWh annually depending on system efficiency and geographic location.

Average cost per kWh from utility company

Electricity costs differ by region:
- North: $0.120/kWh
- South: $0.105/kWh
- East: $0.112/kWh
- West: $0.130/kWh



Reliability of electrical power supply grid

Solar energy systems have a reliability rating of over 95% under optimal conditions, ensuring consistent power generation.




DETAILED INFORMATION

All figures have been converted into USD

Total solar panel production capacity (installed)

As of 2023, there are approximately 100 million solar panels installed across various sectors worldwide.

Total solar panel production capacity (projected)

By 2025, it is projected that the total number of solar panels could increase to over 150 million, reflecting growing adoption.

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

The average cost for installing solar panels is estimated to be around:
- $2.75/watt for residential systems
- $2.50/watt for commercial systems

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

In 2022, solar energy constituted approximately:
- 15% of total residential electricity generation
- 10% of total commercial electricity generation

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

Solar energy generation is typically available:
- 6 to 8 hours per day in peak sun regions
- 4 to 6 hours per day in less sunny areas.

Number of residential solar panel installations

The average home solar installation consists of around 20 to 30 panels, depending on energy needs and roof size.

Total number of solar farms (installed and projected)

There are currently over 2,500 solar farms operating worldwide, contributing significantly to the grid.

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

The off-grid solar market demand in Togo is significant, with both current and projected components:
- As of 2021, approximately 110000 solar kits were installed in rural areas.
- By 2023, it was estimated that 366354 households will be suitable for stand-alone systems, decreasing to 213086 households by 2030 as grid connections expand.
- The Togolese government is actively promoting off-grid solar solutions, including subsidies to reduce upfront costs for households, aiming to electrify 555000 households by 2030.
- The Plateau region remains the most important market in terms of number and concentration of off-grid households through 2030.

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

The current on-grid solar capacity in Togo is approximately 57 MW, including the 50 MW Sheikh Mohamed Bin Zayed solar power plant in Blitta, which is currently the largest solar farm in West Africa.

- The government aims to increase the share of renewable energy in the electricity mix to 50% by 2025, with a target of 200 MW total capacity by 2030.
- Notable upcoming on-grid solar projects include:
- A 25 MW solar farm in Dapaong, which is expected to be operational within 12-16 months from mid-2024.
- A 64 MW solar power plant in Sokodé, set to begin construction in mid-2024, which aims to provide electricity to over 700000 people.

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

Average monthly salary in Togo overall ranges from around $100 to $250.
- Solar Energy Systems Engineers: the average monthly salary is approximately $919.
- Solar Energy Installation Manager: the average monthly salary is approximately $1344.

Population of the country

The current population of Togo is 9275379.

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

Estimate for Factory Rent
- The prices for development land typically range from 500 to 5000 $/m2, depending on the location and type of land.
- Industrial Electricity Rates: The average wholesale electricity price in Togo is approximately $171.36 per MWh as of 2022.

- Water Costs: The average cost of industrial water per cubic meter in Lomé, Togo, is approximately $0.65 per cubic meter.
- Salaries and Wages: Workers of solar industry in Togo averagely earn between $919 and $1344 monthly, depending on the position.
- Rent for Office Space: In Lomé, the capital of Togo, commercial space is available for rent at prices starting from around $2.75/m2 per month.
- Insurance: The average spending per capita in the property insurance market in Togo is estimated to amount to $26.75 in 2024.

A summary of the energy infrastructure

Togo's installed electricity generation capacity is around 400 MW, comprising hydroelectric, thermal, and solar power plants.
- Primary Sources:
- Hydropower: The Nangbeto Dam is a significant hydropower source, providing a substantial portion of domestic electricity.
- Thermal Power: Thermal plants, such as the Lomé thermal power station, contribute to the energy mix using heavy fuel oil and natural gas.
- Solar Power: Solar energy is increasingly utilized, with projects like the 50 MW Blitta solar plant.
- Togo has a national grid managed by the Compagnie Energie Electrique du Togo (CEET). The grid infrastructure is aging and relatively underdeveloped, with ongoing efforts to improve reliability and coverage.
- The government is working towards increasing rural electrification through initiatives like the Rural Electrification and Renewable Energy Agency (AT2ER).

Some of the government regulations surrounding solar panel production

The Togolese government has established legal regulations governing the installation, equipment, and materials necessary for solar energy production.
- The Ministry of Energy and Mines plays a crucial role in overseeing the implementation of solar projects.
- Togo is part of the Scaling Solar program, which aims to facilitate the development of grid-connected solar projects through a streamlined process that includes legal, regulatory, and technical support.
- Since March 2019, the government has offered subsidies to households for off-grid solar power systems. This initiative is designed to reduce the high upfront costs associated with solar installations.

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

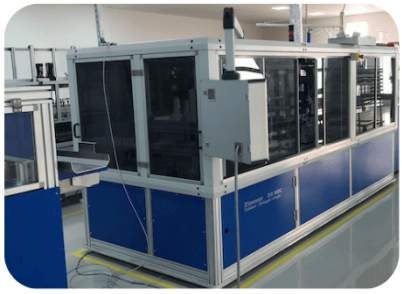
Launched in 2017, the CIZO program is a major initiative aimed at increasing electricity access in rural areas through off-grid solar solutions. The program plans to deploy 555000 Solar Home Systems (SHS), 300 mini-grids, and 400000 on-grid connections by 2030, with the goal of achieving universal electrification.
- Scaling Solar Initiative: Togo is part of the Scaling Solar initiative, which involves collaboration with the International Finance Corporation (IFC) to develop grid-connected solar projects.
- The government has initiated the construction of a 50 MW solar power plant in Blitta, which is expected to improve the overall quality of the national electricity supply.
- Togo has engaged with various international partners and development finance institutions to secure funding for solar initiatives.

Notable solar projects in the country (installed and projected)

Current Projects
- Sheikh Mohammed Bin Zayed Solar Power Plant
- Capacity: 50 MW
- Location: Blitta, Togo
- Details: Inaugurated in June 2021, this plant is one of the largest solar installations in West Africa. It provides electricity to approximately 160000 homes and small businesses.
- Sokodé Solar Power Plant
- Capacity: 64 MW
- Location: Sokodé, central Togo
- Details: Meridiam has signed a 25-year concession agreement to design, construct, finance, and operate this plant, which is expected to start construction in mid-2024.

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

AMEA Power
- Headquarters: Dubai, United Arab Emirates
- Website: https://ameapower.com/
- Notable Project: Sheikh Mohammed Bin Zayed Solar Power Plant (50 MW) located in Blitta, Togo.
- Meridiam
- Headquarters: Paris, France
- Website: https://www.meridiam.com/
- Notable Project: 64 MW solar power plant in Sokodé, under a 25-year concession agreement with the Togolese government.
- BBOXX
- Headquarters: London, United Kingdom
- Website: https://www.bboxx.com/
- Notable Project: Broxx installs solar systems for communities and small businesses in Togo.



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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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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