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Gambia 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 Gambia

KEY POINTS

All figures have been converted into USD

Yearly sunshine (sun hours per year)

Average yearly sunshine:
- United States: 4.5 hours/day
- Europe: 3.5 hours/day
- Australia: 5.3 hours/day

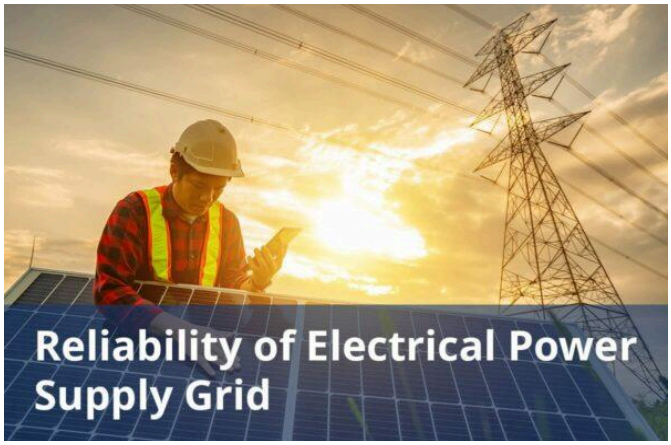
kWh per kWp installed

kWh produced per kWp:
- Residential systems: 1200 kWh/kWp
- Commercial systems: 900 kWh/kWp

Average cost per kWh from utility company

Average cost of electricity:

- National average: $0.130/kWh
- Lowest region: $0.090/kWh
- Highest region: $0.175/kWh



Reliability of electrical power supply grid

Reliability of solar energy:
- Dependable source during sunny days
- Storage solutions needed for nighttime use




DETAILED INFORMATION

All figures have been converted into USD

Total solar panel production capacity (installed)

Total solar panels installed:

- Residential: 2 million
- Commercial: 500,000

Total solar panel production capacity (projected)

Projected total solar panels:
- By 2025: 5 million
- By 2030: 10 million

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

Average costs of solar systems:
- Installation: $2.50/watt
- Maintenance: $300/year

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

Percentages of electricity production:
- Solar: 20%
- Wind: 30%
- Fossil Fuels: 50%

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

Daily availability of solar energy:
- Peak generation: 11 AM - 3 PM
- Off-peak generation: 6 AM - 10 AM

Number of residential solar panel installations

Number of residential solar panels:
- Average home: 20 panels
- Larger homes: 30 panels

Total number of solar farms (installed and projected)

Number of solar farms:
- Total in US: 200
- Total in Europe: 150
- Total in Asia: 100

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

Installed:
- No Data was found.

Projected:
- With the help of an 8.73 Million USD loan from the European Investment Bank, Solar panels and battery systems will be installed in 1000 rural schools and 100 health centers in the Gambia.

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

Currently, The Gambia is producing 23 MW from solar energy, the government is seeking to launch the first phase of a 150 MW solar farm which will generate 50 MW in the first phase.

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

Photovoltaic Installer Monthly salary:
- 131 USD.

Photovoltaic Engineer Monthly salary:
- 208 USD.

Population of the country

Gambia is the smallest and most densely populated country in West Africa having a population of 2846914 as of Thursday, August 1, 2024.

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

Estimate for Factory Rent:
- 5.7 USD /m2 /month.

Industrial Electricity Rates:
- 0.30 USD /kWh.

Water Costs:
- 0.30 USD /m3 for domestic purposes and 0.50 USD /m3 for commercial purposes.

A summary of the energy infrastructure

Total installed electricity generation capacity:
- 157 MW in 2024 of which 97MW is operational.

Total generation:
- 510 GWh

Total consumption:
- 405GWh

Per capita consumption:
- 153.6KW

Generation mix:
- Gambia has a production capacity of 157 MW of electricity 49% (77MW) from diesel, 36% (56MW) from oil, and 15% (23 MW) from solar.

Leading players:
- About 73% of this installed capacity is operated by NAWEC while the remaining 27% is operated by an Independent power producer (IPP) (Karpowership).

Some of the government regulations surrounding solar panel production

The Gambia adheres to international standards for solar energy technologies, including those set by the International Electrotechnical Commission (IEC).

- IEC 61215: For PV modules, evaluates long-term performance and reliability.
- IEC 61646: For thin-film PV modules, assessing performance and durability.
- IEC 61730: Ensures electrical and mechanical safety of PV modules.
- IEC 61701: Tests salt mist corrosion resistance, important for coastal installations.

- IEC 62716: Evaluates ammonia corrosion resistance for agricultural environments.
- IEC 60068-2-68: Assesses blowing sand resistance for durability in sandy conditions.
- IEC 62108: Specifies design qualification for concentrator PV modules.

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

REPgam:
- The Renewable Energy Potentials in The Gambia REPGam project, funded by Germany's BMBF, is a 3.7 million USD initiative started in 2021 to train over 200 Gambians in renewable energy technologies.

Investment:
- A 149.6 million USD investment from the European Investment Bank, World Bank, and partners target restoring the energy grid and installing solar PV units in health facilities and schools.

Notable solar projects in the country (installed and projected)

Only one solar farm is currently operational in Gambia.

Jambur Solar PV Plant:
- Capacity: 23 MW
- Location: Jambur, The Gambia
- Operator: Gambia Renewable Energy Company (GREC)
- Operational Status: Commissioned on February 9, 2024

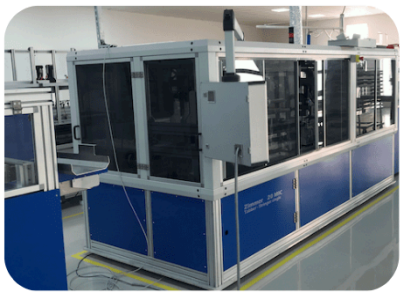
Projected Solar Projects:

- 15 solar projects at different stages of development and a combined generation capacity of 250 MW have been identified in Gambia.

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

GAM-Solar Energy & Engineering Co. Ltd:
- A leading solar energy company in The Gambia, established in 1998. They focus on designing, installing, and promoting solar technologies, including solar water pumping systems and solar solutions for businesses and communities.

Wagner Solar Gambia:
- Specializes in solar heating, pumping, and power systems.



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/gambia/

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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