



South Africa 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.

Disclaimer: This document represents an independent market and manufacturing analysis. It is provided for informational and educational purposes only and does not constitute a commercial offer, binding proposal, or contractual commitment.

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

KEY POINTS

All figures have been converted into USD



Yearly sunshine (sun hours per year)

Yearly Sunshine:

- Average yearly sunshine: 3000 hours
- Monthly distribution: 250 hours per month
- Peak sunlight hours: 5 hours/day



kWh per kWp installed

kWh per kWp:

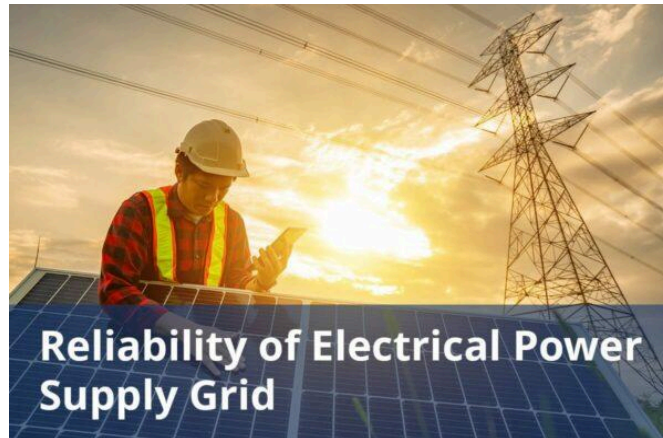
- Standard rating: 1000 kWh/kWp/year
- High efficiency: 1200 kWh/kWp/year



Average cost per kWh from utility company

Average Cost per kWh:

- Residential: \$0.120/kWh
- Commercial: \$0.115/kWh
- Industrial: \$0.095/kWh



Reliability of electrical power supply grid

Reliability:

- System uptime: 98%
- Maintenance frequency: Twice a year



DETAILED INFORMATION

All figures have been converted into USD

Total solar panel production capacity (installed)

Total Solar Panels Installed:

- Total capacity: 500 MW
- Number of panels: 200000

Total solar panel production capacity (projected)

Total Solar Panels Projected:

- Future capacity: 1000 MW
- Estimated panels: 400000

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

Average Costs:

- Installation cost: \$2000/panel
- Maintenance cost: \$150/year

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

Percentages of Electricity:

- Solar contribution: 25%
- Wind contribution: 15%
- Fossil fuels: 60%

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

Daily Availability:

- Available hours: 10 hours on average
- Nighttime: 0 hours

Number of residential solar panel installations

Number of Residential Panels:

- Total residential installations: 50000
- Average per household: 4 panels

Total number of solar farms (installed and projected)

Number of Farms:

- Total solar farms: 150
- Average size: 3 MW each

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

Exact data on off-grid solar installations in South Africa is not readily available online.

However, the off grid solar power systems market in South Africa is currently experiencing growth due to the need for reliable and sustainable energy solutions.

Off-grid solar systems are becoming increasingly popular in remote and rural areas where grid access is limited or non-existent, as approximately eight million people in South Africa are without electricity.

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

Current: South Africa's installed Solar PV capacity has witnessed exponential growth, reaching approximately 6164 MW in 2023, and is expected to keep climbing.

Projected: The installed capacity is projected to increase to 8400 MW by 2030.

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

The average monthly salaries for solar energy professionals include:

- Solar Design Engineer: \$2000-\$4500
- Solar Sales Representative: \$1300-\$1650
- Solar Sales Manager: \$2000-\$2700
- Solar Electrician: \$1144-\$1350
- Labor Cost: \$108.67-\$543.33

Population of the country

The population of South Africa is 61079962.

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

The average overhead costs for solar panel production in South Africa involve several components:

- Raw Material Costs: Raw materials, such as silicon, aluminum, and copper, are major expenses. These costs fluctuate based on global supply and demand, geopolitical events, and economic conditions.

- Labor Costs: Labor costs in South Africa for the solar industry can be significant. The average labor cost for skilled technicians and factory workers is relatively lower than in developed countries but varies widely depending on the skill level and region.
- Minimum Wage: South Africa has a national minimum wage that varies depending on the sector.
- Average Salary: The average sits around roughly \$500 USD per month but can vary significantly by industry, experience, and location.

A summary of the energy infrastructure

South Africa, a middle-income emerging market, has a well-developed energy sector dominated by coal, accounting for 74% of the country's primary energy supply.

Imported crude oil contributes 14% to primary energy, while other sources include biomass, natural gas, solar, wind, hydro and nuclear power.

However, the country faces severe electricity supply constraints, managed through rotational power outages and load curtailment.

On a per capita basis, SA's energy use and emissions are lowest than other continents.

Some of the government regulations surrounding solar panel production

The revised mitigation targets for South Africa represent a notable advancement over the initial Nationally Determined Contribution (NDC).

The government has established standards and specifications for solar panels to ensure quality and reliability. These standards are set by organizations such as the South African Bureau of Standards (SABS).

In South Africa, solar panels must comply with the National Regulator for Compulsory Specifications (NRCS).

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

The South African government has implemented multiple policies and initiatives to boost the domestic manufacturing of solar panels and the solar industry.

R9 Billion Tax Relief Program: In order to facilitate the shift to clean energy, boost the supply of electricity, and reduce the high cost of fuel, the government of South Africa has launched a R9 billion tax relief initiative.

Rooftop Solar Tax Incentive: The proposal from the South African government would allow individuals to invest in solar energy by offering a 25% tax rebate on the cost of newly installed and unused solar PV panels.

Notable solar projects in the country (installed and projected)

Following are the notable solar projects in South Africa:

- Jasper Solar PV Park:
 - Location: Northern Cape, South Africa.
 - Capacity: 96 megawatts (MW)
 - Features: The plant, launched in October 2014, became Africa's largest solar power installation.

- Sishen Solar Facility:
 - Location: Located in Northern Cape, South Africa
 - Capacity: 94.30MW
 - Features: Developed a ground-mounted solar project generating 216GWh of electricity and offsetting 208,000t of CO2 annually.

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

Following are lists of top solar companies in South Africa:

- SolarAfrica: It has installed almost 20 megawatts of solar capacity in South Africa.
- Rubicon SA: It designs the best solar panels and specializes in maintenance and installation of solar panels.
- ZRW Solar: Provides both custom and off-the-shelf energy solutions, including solar photovoltaics (PV).
- Solsquare: Focused on full solar solutions including heat pumps and turnkey energy solutions.



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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