



Zimbabwe 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 Zimbabwe

KEY POINTS

All figures have been converted into USD



Yearly sunshine (sun hours per year)

Average yearly sunshine in hours:

- Region A: 1500 hours
- Region B: 1600 hours
- Region C: 1700 hours
- Region D: 1800 hours



kWh per kWp installed

kWh produced per kWp:

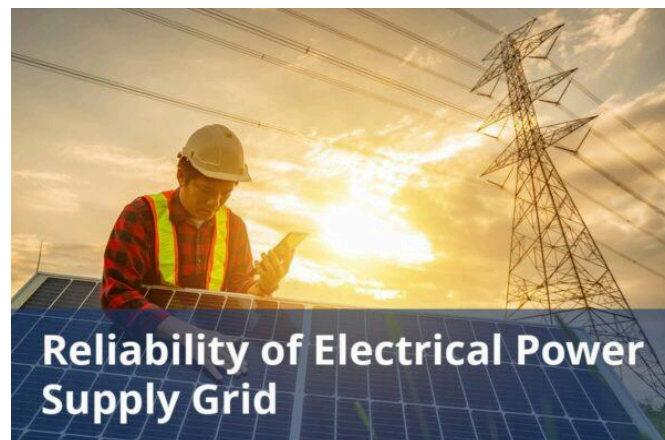
- Region A: 1200 kWh/kWp
- Region B: 1300 kWh/kWp
- Region C: 1400 kWh/kWp
- Region D: 1500 kWh/kWp



Average cost per kWh from utility company

Average cost of electricity:

- Residential: \$0.120/kWh
- Commercial: \$0.130/kWh
- Industrial: \$0.140/kWh



Reliability of electrical power supply grid

Reliability factors:

- Solar: 75%
- Wind: 85%
- Hydro: 90%



DETAILED INFORMATION

All figures have been converted into USD

Total solar panel production capacity (installed)

Total solar panels installed:

- Region A: 5000 panels
- Region B: 6000 panels
- Region C: 7000 panels

Total solar panel production capacity (projected)

Projected total solar panels:

- Year 2025: 10000 panels
- Year 2030: 15000 panels

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

Average costs for installation:

- Type A: \$1500/panel
- Type B: \$1700/panel

- Type C: \$1800/panel

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

Percentage of total electricity generation:

- Solar: 20%
- Wind: 30%
- Hydro: 50%

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

Daily electricity availability:

- Peak hours: 8 hours
- Off-peak hours: 16 hours

Number of residential solar panel installations

Number of residential solar panels:

- Region A: 3000 panels
- Region B: 3500 panels

Total number of solar farms (installed and projected)

Number of solar farms:

- Region A: 10 farms

- Region B: 15 farms

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

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

- 5300 schools and clinics could potentially be served by off grid solar power systems.
- Another 10000 facilities such as community water points remain un-electrified and have potential to install off grid system.

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

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

- Current: By the end of 2022, Zimbabwe was estimated to have 41 MW of installed PV (solar) capacity.
- Projected: This market is expected to reach 1100 MW by 2025.

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

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

- Technicians / Other skilled workers (Electricians): USD 20,900 per year (\$1,742/month)
- Engineers : USD27,800 to USD 35,800 per year (\$2,317 – \$2,983 per month)
- Solar Photovoltaic Installer :USD 422

- Solar Energy Engineer: Typically earns between \$15,000 to \$25,000 per year, depending on experience and qualifications.
- Solar Project Manager: Can expect an annual salary ranging from \$20,000 to \$35,000.
- Sales Manager in Solar Industry: Generally earns between \$18,000 and \$30,000 per year

Population of the country

Population of the country:

- The current population of Zimbabwe is 16,973,307.

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

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

- Raw Material Costs: Raw materials such as silicon, silver, and aluminum constitute about 40% of the production costs.
- Energy Costs: The energy required for various production stages, like melting and shaping silicon, is considerable.
- Electricity Cost: On average, energy costs can range from \$0.10 to \$0.13 per kWh.
- Water Charges: Here's a breakdown of the customer categories and their corresponding price ranges (per cubic meter):
 - Domestic: \$1.04 – \$2.15
 - Government: \$1.66 – \$2.21
 - Parastatals (government-owned businesses): \$1.66 – \$2.21
 - Business: \$1.52 – \$2.77
 - Industry: \$2.77 (flat rate)

- Institutions, Schools and Churches: \$1.52 – \$2.21
- Mines: \$2.77 (flat rate)
- Labor Costs: Labor costs in Zimbabwe are relatively lower compared to Western countries.
- Facility Maintenance: The costs for maintaining manufacturing facilities, including rent, equipment maintenance, and repairs.
- Administrative Expenses: These include the salaries of administrative staff, office supplies, and other general expenses.
- Quality Control: Ensuring the solar panels meet performance and safety standards involves additional expenses for testing and inspections.

A summary of the energy infrastructure

A summary of the energy infrastructure:

- As of 2021, total electricity generation capacity was 2.540 W, thermal power plants accounted for about 1400 MW of Zimbabwe's installed electricity generation capacity.
- Hydropower units, such as the Kariba Dam, accounted for the remaining.
- Power outages and load shedding occur when real electricity generation is significantly less than this capacity.
- The Zimbabwean government has been investigating the possibility of importing electricity from neighboring countries in addition to investing in renewable energy sources like solar power in order to ease the country's electricity shortfall.

Some of the government regulations surrounding solar panel production

Some of the government regulations surrounding solar panel production:

- Operating a power plant above 100kW requires a generation license (except for personal use).
- The license permits the construction, ownership, and operation of a generation station for the delivery and production of electricity.
- With permission, license holders are able to sell power to distributors, resellers, or even direct customers.
- Within 60 days after purchase, personal generators must be reported to ZERA, the power regulator.
- The ZERA Act, the Electricity Act, the Licensing Regulations, and their revisions are the important statutes.
- When their own use is high, net metering enables producers of renewable energy to put extra power back into the grid and receive credit for it.

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

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

- The Zimbabwean government has been investigating the possibility of importing electricity from neighboring countries in addition to investing in renewable energy sources like solar power in order to ease the country's electricity shortfall.
- The United Arab Emirates-based energy company SkyPower and the Zimbabwe Electricity Transmission and Distribution Company (ZETDC) have signed a power purchase deal. It is known as the Green Giant project and is intended to provide 500 megawatts (MW) of solar energy.

- Ten independent power producer (IPP) projects have received approval from the government to begin producing electricity within the next two years.
- The government also developed important tax incentives in a bid to lure investors into the renewable energy space.

Notable solar projects in the country (installed and projected)

Notable solar projects in the country (installed and projected):

- Riverside Solar Power Station:
 - Installed Capacity: 2.5 MW
 - Location: Mutoko, Zimbabwe
- Nyabira Solar Power Plant:
 - Installed Capacity: 5 MW
 - Location: Mashonaland West Province, Zimbabwe.
- The government of Zimbabwe approved six solar projects of 116 MW to meet renewable energy target.
- Mutorashanga Indo Africa Solar plant (Capacity: 10 MW)
- Guruve Solar array (Capacity: 5.5 MW)
- De Green Rhino Solar plant (Capacity: 50 MW)
- Equinox Solar project (Capacity: 10 MW)
- Murombedzi Solar array (Capacity: 10.5 MW)
- Energywise Vungu Solar project (Capacity: 30 MW)
- Gwanda Solar PV Park (Capacity 100 MW)
- Green Giant project (Capacity: 500 MW)

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

Some of the notable solar companies:

- Global Solar (Pvt) Ltd:

This company was incorporated in Zimbabwe in February 2014 and commenced offering solar products and services in March 2014. Their mission is to reduce poverty and improve the quality of life for people throughout rural Zimbabwe through the promotion of affordable technology powered by renewable energy.

- Cool Solar Africa:

This company helps homeowners, businesses, and farmers across Zimbabwe reduce their carbon footprint and save on energy bills with custom-designed solar solutions.

- Nyangani Renewable Energy (Pvt) Ltd:

Based in Harare, this company designs, builds, and operates both run of river hydroelectric power schemes and solar PV power schemes to deliver electricity into the Zimbabwe and Malawi national grids. They have built 44MW of generation capacity.

- Zimbabwe Power Company (ZPC):

ZPC was incorporated in 1996 as an investment vehicle in the generation of electricity and became operational in 1999. The organization has been authorized to construct, own, operate and maintain power generation stations for the supply of electricity.

- Iskraemeco Group:

Iskraemeco supports its customers in mastering their digital transformation journey toward a more sustainable and efficient future. They provide solutions for energy, water, eMobility, and digital platforms.



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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For a detailed list of references and additional information, please visit our website with the current report at:

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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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