

Ghana Solar Energy - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2026 - 2031)

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Report description:

Ghana Solar Energy Market Analysis

Ghana Solar Energy Market size in 2026 is estimated at 0.3 gigawatt, growing from 2025 value of 0.22 gigawatt with 2031 projections showing 1.48 gigawatt, growing at 37.42% CAGR over 2026-2031.

Falling photovoltaic (PV) module prices, a four-year government target to add 2 GW of new solar capacity, and expanded access to concessional finance have collectively pushed solar levelized costs below thermal alternatives even without subsidies. Utility-scale developers benefit from duty and value-added-tax waivers on imported equipment, while commercial-industrial (C&I) customers are accelerating adoption to hedge against frequent grid outages and rising tariffs. Off-grid solutions, mini-grids, and solar-home systems are advancing fastest as rural electrification agencies target the remaining 11% of households without grid access. Execution risks, however, persist around grid-absorption limits, cedi depreciation, and a moratorium on new power-purchase agreements that favors well-capitalized sponsors with development-finance-institution backing.

Ghana Solar Energy Market Trends and Insights

Falling PV Module Prices and Tax Exemptions

Global factory-gate module prices dropped to USD 0.10-0.12 per watt in 2024, down 60% from 2022 as Chinese oversupply hit

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export channels. Ghana's Exemptions Act 2022 (Act 1083) keeps import duties at 0%-5%, cutting landed system costs 15%-20% compared with pre-2022 levels. Lower capex has reduced payback periods for C&I rooftop arrays in Tema and Kumasi from seven to under five years. More than 100 IEC-aligned PV standards adopted by the Ghana Standards Authority in 2024 have shortened lender due diligence cycles, improving bankability. The upside is partially offset by a 14% year-to-date slide in the cedi that inflates local-currency equipment costs and highlights the importance of hedging and local-content strategies.

Concessional Financing from World Bank and IFC

Development-finance institutions committed over USD 400 million to Ghanaian solar deals between 2024 and early 2025, including a USD 130 million IFC facility for the 200 MW Dawa Solar Park and a USD 250 million World Bank energy-sector efficiency loan that bundles transmission upgrades. Interest rates are 300-500 basis points below domestic benchmarks of 28%-32%, lifting internal rates of return for utility-scale projects. AfDB's USD 85 million Scaling-up Renewable Energy Program is underwriting 35 mini-grids and 12,000 net-metered systems, while AFD's SUNREF Ghana line channels subordinated debt through local banks to broaden SME access. The Green Climate Fund injected USD 16.2 million into Ecobank's Affirmative Solar Action Program for 10 MW of distributed installations on public facilities.

Grid Congestion and Limited Transmission Capacity

Electricity Company of Ghana (ECG) distribution losses stood at 30% in 2024, reflecting aging assets, theft, and undersized transformers. Transmission constraints in Ashanti and Northern regions force developers to cluster near coastal substations, elevating curtailment risk during off-peak demand. A 2024 moratorium on new power-purchase agreements, imposed to address USD 1.6 billion in payables, has frozen much of the utility-scale pipeline. Although the World Bank has allocated USD 80 million for grid upgrades, procurement delays may push commissioning into 2027. Net-metering rules adopted in 2023 allow export up to 1 MW, yet fewer than 500 systems had been certified by end-2024 owing to ECG's limited metering capacity.

Other drivers and restraints analyzed in the detailed report include:

Rural Electrification Through Mini-Grids and Solar-Home Systems Cedi Depreciation Raising Import Costs

For complete list of drivers and restraints, kindly check the Table Of Contents.

Segment Analysis

Solar PV retained 100.00% share of the Ghana solar energy market in 2025 and is projected to grow at a 37.42% CAGR to 2031. Crystalline-silicon modules, mainly monocrystalline PERC and TOPCon, accounted for more than 85% of procurement tenders, reflecting developer focus on higher efficiency and reduced land footprint. Concentrated Solar Power remains absent because Ghana's direct-normal irradiance averages 4.5-5.5 kWh/m²/day, below the 6.0 threshold needed to justify tower or trough plants. Bifacial modules, deployed at the Dawa Solar Park, raise yields 10%-15% but carry a 15%-20% price premium. Thin-film accounts for less than 5% of shipments, confined to building-integrated facades where aesthetics outweigh output.

Inverters show a split between string units for C&I rooftops and central units for utility-scale fields. Hybrid inverters with battery-management systems are gaining traction in off-grid and mini-grid schemes. Single-axis trackers can add 15%-20% energy but cost 25%-30% more than fixed-tilt racking, limiting adoption to large projects. Legislative Instrument 2449 sets minimum module efficiencies at 16% for monocrystalline and 15% for polycrystalline panels, filtering out sub-standard imports and aligning local installations with global Tier-1 quality benchmarks.

The Ghana Solar Energy Market Report is Segmented by Technology (Solar Photovoltaic and Concentrated Solar Power), Grid Type

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(On-Grid and Off-Grid), and End-User (Utility-Scale, Commercial and Industrial, and Residential). The Market Sizes and Forecasts are Provided in Terms of Installed Capacity (GW).

List of Companies Covered in this Report:

Trina Solar Ltd Abengoa SA Chint Power Systems Ghana PEG Africa Yingli Solar Ghana JinkoSolar Holding Co Ltd Engie SA Meinergy Ghana Ltd Daystar Power Ghana Jos. Hansen & Soehne GmbH SunPower Innovations Ghana REC Solar Holdings AS Bui Power Authority AxEnergy Ltd Ecosolar & Partners

Additional Benefits:

The market estimate (ME) sheet in Excel format
3 months of analyst support

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