

Global Distributed Solar Power Generation Market Size Study & Forecast, by Product Type (Monocrystalline, Polycrystalline, Amorphous Silicon, Concentrated PV Cell) and Installation (Ground-Mounted & Roof-Top) and Application (On-Grid, Off-Grid) and Regional Forecasts 2025-2035

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Abstracts

The Global Distributed Solar Power Generation Market, valued at approximately USD 116.3 billion in 2024, has been advancing at a robust pace and is forecasted to expand steadily at a CAGR of 5.81% throughout the period of 2025-2035. Distributed solar systems—deployed across rooftops, residential clusters, commercial establishments, and community solar farms—have emerged as the vanguard of modern energy transformation. These systems harness sunlight at or near the point of consumption, drastically reducing transmission losses while enhancing grid resilience. As industries and households increasingly pivot toward clean energy commitments, distributed solar has evolved into a key enabler of decentralized electrification, helping countries accelerate their net-zero ambitions. The rise in electricity tariffs, supportive policy frameworks, and declining module prices further propel the adoption of distributed solar technologies globally.

The rapid escalation of clean energy targets, combined with widespread recognition of solar power's cost competitiveness, has helped the market gain incredible traction. Increasing government incentives, net metering policies, and renewable portfolio standards have compelled utilities and consumers alike to integrate distributed solar more assertively into energy planning frameworks. Technological improvements—spanning high-efficiency cells, smart inverters, and AI-enabled energy management—continue to amplify the sector's potential. Nonetheless, intermittent solar

generation and the upfront investment barriers persist as challenges across several emerging economies. Despite these constraints, the rising integration of distributed solar into microgrids and hybrid renewable systems, along with growing investment in energy storage solutions, is poised to create vast opportunities across the assessment period of 2025-2035.

The detailed segments and sub-segments included in the report are:

By Product Type:

Monocrystalline (Mono-SI)

Polycrystalline (p-Si)

Amorphous Silicon (A-Si)

Concentrated PV Cell (CVP)

By Installation:

Ground Mounted

Roof-Top

By Application:

On-Grid

Off-Grid

By Region:

North America

U.S.

Canada

Europe

UK

Germany

France

Spain

Italy

Rest of Europe

Asia Pacific

China

India

Japan

Australia

South Korea

Rest of Asia Pacific

Latin America

Brazil

Mexico

Middle East & Africa

UAE

Saudi Arabia

South Africa

Rest of Middle East & Africa

Monocrystalline solar modules are expected to dominate the global market over the forecast horizon. Their superior efficiency, long operational life, and strong performance under varied climatic conditions have positioned them as the preferred choice for both residential and commercial projects. As consumers increasingly prioritize energy density and long-term return on investment, monocrystalline cells have steadily garnered higher adoption rates across advanced and emerging economies. Although competing technologies such as polycrystalline or thin-film variants continue to evolve, monocrystalline solutions are anticipated to retain their leading position due to continuous improvements in cell architecture and manufacturing scalability.

In terms of current revenue leadership, on-grid distributed solar systems command the largest market share. Urbanization, rising commercial development, and utility-driven renewable integration programs have spurred rapid deployment of on-grid installations, particularly in regions pursuing aggressive decarbonization mandates. These systems offer substantial economic advantages, including the ability to sell excess electricity back to the grid and leverage policy incentives. Off-grid systems, while smaller in contribution, are accelerating quickly, supported by rural electrification initiatives and the expanding use of solar plus storage systems in remote communities.

Across the geographical landscape, Asia Pacific stands at the epicenter of global market expansion, underpinned by massive solar deployment initiatives in China, India, Japan, and South Korea. Large-scale government programs, falling manufacturing costs, and strong public-private investment ecosystems have enabled the region to maintain its leadership. North America continues to demonstrate substantial potential, driven by robust federal tax incentives, state-level renewable mandates, and heightened corporate sustainability commitments. Europe's market expansion is fueled by stringent emissions targets, energy security strategies, and an accelerated shift toward decentralized renewable energy models. Meanwhile, Latin America and Middle East &

Africa are emerging as promising markets, as nations increasingly embrace distributed solar to offset grid limitations and enhance energy access.

Major market players included in this report are:

Canadian Solar

First Solar, Inc.

SunPower Corporation

JinkoSolar Holding Co., Ltd.

Trina Solar Co., Ltd.

JA Solar Technology Co., Ltd.

Hanwha Q CELLS Co., Ltd.

LONGi Green Energy Technology Co., Ltd.

SMA Solar Technology AG

REC Group

Enphase Energy

ABB Ltd.

Schneider Electric

Huawei Technologies Co., Ltd.

Yingli Solar

Global Distributed Solar Power Generation Market Report Scope:

Historical Data – 2023, 2024

Base Year for Estimation – 2024

Forecast period – 2025-2035

Report Coverage – Revenue forecast, Company Ranking, Competitive Landscape, Growth factors, and Trends

Regional Scope – North America; Europe; Asia Pacific; Latin America; Middle East & Africa

Customization Scope – Free report customization (equivalent to up to 8 analysts' working hours) with purchase. Addition or alteration to country, regional & segment scope*

The objective of the study is to define market sizes of different segments and countries in recent years and to forecast the values for the coming years. The report is designed to incorporate both qualitative and quantitative aspects of the industry within the countries involved in the study. The report also provides detailed information about crucial factors such as driving forces and restraints that will determine the market's future trajectory. Additionally, it integrates potential opportunities in micro-markets for stakeholders to capitalize on, along with an in-depth analysis of the competitive landscape and product offerings of key companies. The detailed segments and sub-segments of the market are explained below:

Key Takeaways:

Market Estimates & Forecast for 10 years from 2025 to 2035.

Annualized revenues and regional-level analysis for each market segment.

Detailed analysis of the geographical landscape with country-level market insights.

Competitive landscape with information on major players in the market.

Evaluation of key business strategies and recommendations for future market positioning.

Assessment of the competitive structure of the market.

Demand-side and supply-side analysis of the market.

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