

Distributed Solar Power Generation Market Size & Share Analysis - Growth Trends & Forecasts (2025 - 2030)

Industry: Renewable Energy (Solar & Wind)

URL: <https://www.mordorintelligence.com/industry-reports/global-distributed-solar-power-generation-market-industry>

Distributed Solar Power Generation Market Size and Share Study Period | 2020 - 2030 |

Market Size (2025) | USD 160.16 Billion |

Market Size (2030) | USD 224.31 Billion |

CAGR (2025 - 2030) | 6.97% |

Fastest Growing Market | Asia Pacific |

Largest Market | Asia Pacific |

Market Concentration | Low |

Major Players*Disclaimer: Major Players sorted in no particular order

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Distributed Solar Power Generation Market Analysis by Mordor IntelligenceThe Distributed Solar Power Generation Market size is estimated at USD 160.16 billion in 2025, and is expected to reach USD 224.31 billion by 2030, at a CAGR of 6.97% during the forecast period (2025-2030).

The market was negatively impacted by COVID-19 in 2020. Presently the market has now reached pre-pandemic levels.

* Over the medium term, rising environmental concerns and government policies for incentives and tax benefits for solar panel installation, high cost of grid expansion are also expected to drive the growth of the market studied.

* On the other hand in ability of distributed solar to serve as a prime power source may negatively impact the market's growth and is one of the major restraints for the market.

* Nevertheless, Technological advancements such as perovskite-based PV cells which offers high ease of manufacture, high efficiency, and excellent semiconductor behaviour, are expected to provide growth opportunities in the forecast period.

* The Asia-Pacific region dominates the market and is also likely to witness the highest CAGR during the forecast period. The growth is mainly driven by the majority of the demand coming from the countries such as the China and India, over rising environmental concerns.

Global Distributed Solar Power Generation Market Trends and Insights Declining Price of Solar PV Systems and Installations Cost Expected to Drive the Market* Since the last decade, the average cost of a solar PV panel has dropped by nearly 90% worldwide. Prices of other components have also fallen significantly since 2011, reducing the levelized cost of electricity (LCOE) for distributed and utility-scale solar PV generation.

* Due to a combination of techno-economic and geopolitical factors, it is estimated that the cost of solar PV panels prices will reduce slightly. Still, solar PV panel prices will continue to decline during the forecast period.

* According to the United States National Renewable Energy Laboratory (NREL), since 2010, there has been a 64%, 69%, and 82% reduction in the cost of residential, commercial-rooftop, and utility-scale PV systems in the United States, respectively. The decline in the prices of solar panels in Europe and the United States is primarily due to the drop in solar panel prices. This scenario will positively impact the market and drive the demand for solar panels in these regions.

* Due to the price decline, many residential and commercial consumers opted for rooftop solar PV systems to reduce energy costs and recovery time. Further, till 2020, the prices of solar PV modules declined by approximately 90%. However, this changed in 2021, when for the first time in the last decade, the prices went significantly up by 18%.

* According to National Renewable Energy Laboratory (NREL), the average selling price of the Mono C-Si solar PV module was 0.25 USD/watt in Q2 2022, lower than 0.26 USD/watt in Q1 2022. The declining module price has increased the demand for distributed solar power generation.

* The industrialization of these highly modular technologies has yielded impressive benefits from economies of scale and greater competition to improved manufacturing processes and competitive supply chains. The overall decline in solar PV system costs can also be attributed to the effective feed-in tariff programs in countries like Germany.

* The decline in the cost of solar PV and the declining cost of batteries have been significant drivers of the distributed solar energy market in recent years. This trend is expected to continue during the forecast period.

* Prices of lithium-ion batteries have declined by over 86%, from 1,000 USD/kWh in 2010 to 132 USD/kWh in 2021.

* Thus, the improved cost-effectiveness of batteries and solar PV modules will benefit the distributed solar energy market during the forecast period.

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Asia Pacific Expected to Dominate the Market* Asia-Pacific dominated the distributed solar power generation market in 2022 and is expected to continue its dominance in the coming years. The region holds vast potential for expanding distributed energy systems (DES), notably off-grid and residential solar. Inefficiencies in the power grid infrastructure, power supply shortages, and the scalability of decentralized technology pave the way for the deployment in the region, particularly in China and India.

* The electricity demand in China has been increasing due to economic growth and urbanization. Since 2015, the country's power demand has risen by 7% per year. The power demand rose by 3.6% in 2022, reaching 8,637 TWh.

* According to International Renewable Energy Agency, China had a total installed solar PV capacity of about 3924.4 GW in 2022, witnessing an increase of 28% compared to 2021. According to China's National Energy Administration (NEA), China's 20.37 GW new solar PV capacity to have been installed in January 2023 and February 2023, taking the country's total solar fleet to exceed 413 GW, out of which the majority came from distributed solar power generation projects, and the remaining share came from large-scale solar plants accounting for the remaining share.

* China has been focusing on increasing distributed solar power generation by encouraging residential and commercial end-users to install rooftop solar panels for quite some time.

* The solar power capacity in Singapore has risen over the past several years. A

According to the International Renewable Energy Agency, Singapore's total installed solar PV capacity reached 572 MW in 2022, recording a 15% growth compared to 2021. Furthermore, the country aims to generate at least 2 GWp of solar energy by 2030.

* India is another country in Asia-Pacific where distributed solar power generation has a noticeable development. India's cumulative installed solar power capacity reached about 62.8 GW in 2022, adding around 13 GW in 2022.

* The Ministry of New and Renewable Energy is implementing the Rooftop Solar Programme Phase-II for the country's accelerated deployment of solar rooftop systems. The scheme provides financial assistance of up to 4 GW of solar rooftop capacity to the residential sector. There is a provision to incentivize the companies for incremental achievement over the previous year.

* Therefore, owing to the above points, Asia-Pacific is expected to dominate the distributed solar power generation market during the forecast period.

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Competitive Landscape The distributed solar power generation market is fragmented. Some of the major players in the market (in no particular order) include Suntech Power Holdings Co. Ltd, First Solar Inc., Tesla Inc., and Canadian Solar Inc., Sharp Energy Solutions Corporation, among others.

Distributed Solar Power Generation Industry Leaders* Suntech Power Holdings Co. Ltd

* Sharp Energy Solutions Corporation

* Tesla Inc.

* Canadian Solar Inc.

* First Solar Inc

* *Disclaimer: Major Players sorted in no particular order

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Recent Industry Developments* In May 2022, GreenYellow was awarded a contract to build 8.03 MWp of solar distributed generation (DG) plants to supply power to a pharmacy chain Grupo DPSP in Brazil. It has signed the agreement with Brazil's Grupo DPSP to install 25,000 PV at five locations, three in Sao Paulo, one in Rio de Janeiro, and one in the Federal District. The contract has a term of ten years, during which GreenYellow will supply 15 GWh of power annually to Grupo DPSP. GreenYellow will provide the entire initial investment and take care of the plant's construction, operation, and maintenance (O&M) for the duration of the contract.

* In March 2022, Smart Power India (SPI) announced partnering with Adani Solar to promote solar energy usage in rural areas of Uttar Pradesh, Bihar, Jharkhand, and Odisha. Furthermore, SPI signed a memorandum of understanding (MoU) with Adani Solar to ensure equitable access to last-mile electricity and encourage energy transition. The MoU aims to boost the usage of solar rooftop panels and achieve five MW of solar deployment through Adani Solar and partners in rural and peri-urban areas of the Indian states.

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7. MARKET OPPORTUNITIES AND FUTURE TRENDS

**Subject to Availability

Global Distributed Solar Power Generation Market Report ScopeSolar energy is one of the significant renewable power sources offering clean energy to the world in replacing fossil fuels in electricity generation. Solar power installations have witnessed a massive rise over the past decade globally.

The distributed solar power generation market is segmented by geography. The report covers the market size and forecasts for the distributed solar power generation market across major regions. For each segment, the market sizing and forecasts have been done based on revenue (USD Billion).

GeographyNorth America |
Europe |
Asia-Pacific |
South America |
Middle-East and Africa |
Geography | North America |
| Europe |
| Asia-Pacific |
| South America |
| Middle-East and Africa |

Key Questions Answered in the ReportHow big is the Distributed Solar Power Generation Market? The Distributed Solar Power Generation Market size is expected to reach USD 160.16 billion in 2025 and grow at a CAGR of 6.97% to reach USD 224.31 billion by 2030.

What is the current Distributed Solar Power Generation Market size? In 2025, the Distributed Solar Power Generation Market size is expected to reach USD 160.16 billion.

Who are the key players in Distributed Solar Power Generation Market? Suntech Power Holdings Co. Ltd, Sharp Energy Solutions Corporation, Tesla Inc., Canadian Solar Inc. and First Solar Inc are the major companies operating in the Distributed Solar Power Generation Market.

Which is the fastest growing region in Distributed Solar Power Generation Market? Asia Pacific is estimated to grow at the highest CAGR over the forecast period (2025-2030).

Which region has the biggest share in Distributed Solar Power Generation Market? In 2025, the Asia Pacific accounts for the largest market share in Distributed Solar Power Generation Market.

What years does this Distributed Solar Power Generation Market cover, and what was the market size in 2024? In 2024, the Distributed Solar Power Generation Market size was estimated at USD 149.00 billion. The report covers the Distributed Solar Power Generation Market historical market size for years: 2020, 2021, 2022, 2023 and 2024. The report also forecasts the Distributed Solar Power Generation Market size for years: 2025, 2026, 2027, 2028, 2029 and 2030.

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Distributed Solar Power Generation Market ReportStatistics for the 2025 Distributed Solar Power Generation market share, size and revenue growth rate, created by Mordor Intelligence™ Industry Reports. Distributed Solar Power Generation analysis includes a market forecast outlook for 2025 to 2030 and historical overview. Get a sample of this industry analysis as a free report PDF download.

Distributed Solar Power Generation Report Snapshots* Distributed Solar Power Generation Companies