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

Market Report | 2025-04-28 | 195 pages | Mordor Intelligence

AVAILABLE LICENSES:

- Single User License $4750.00
- Team License (1-7 Users) $5250.00
- Site License $6500.00
- Corporate License $8750.00

Report description:

The 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.

Key Highlights
- 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 solarto serve as aprime 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.

Distributed Solar Power Generation Market Trends

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.

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. 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.

Distributed Solar Power Generation Industry Overview

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.

Additional Benefits:

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

Table of Contents:

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

Market Report | 2025-04-28 | 195 pages | Mordor Intelligence

To place an Order with Scotts International:

- - Print this form
- - Complete the relevant blank fields and sign
- - Send as a scanned email to support@scotts-international.com

ORDER FORM:

Select license	License	Price
	Single User License	$4750.00
	Team License (1-7 Users)	$5250.00
	Site License	$6500.00
	Corporate License	$8750.00
	VAT	
	Total	

*Please circle the relevant license option. For any questions please contact support@scotts-international.com or 0048 603 394 346.

** VAT will be added at 23% for Polish based companies, individuals and EU based companies who are unable to provide a valid EU Vat Numbers.

Email*		Phone*	
First Name*		Last Name*	
Job title*			
Company Name*		EU Vat / Tax ID / NIP number*	
Address*		City*	
Zip Code*		Country*	
		Date	2026-03-04
		Signature