# India Solar Rooftop Market Assessment, By Capacity [1-10 kW, 11-100 kW, 101 - 1000 kW, >1000 kW], By Grid Type [On-grid, and Off-grid], By End-user [Industrial, Commercial, and Residential], By Region, Opportunities and Forecast, FY2017-FY2031F

Market Report | 2024-04-19 | 127 pages | Market Xcel - Markets and Data

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**Report description:**

India solar rooftop market is projected to witness a CAGR of 12.45% during the forecast period FY2024-FY2031. The total net additions in FY2023 were 2.2 GW, expected to reach 5.62 GW in FY2031. The benefits of solar rooftops in India are significant, contributing to the country's goal of achieving 100 GWs of solar energy by 2022, with 40 GWs from rooftop solar systems. These benefits include cost savings, increased access to electricity in remote areas, and utilization of existing space. Solar rooftops play a key role in helping distribution companies, reduce transmission and distribution losses, and act as a consistent, long-term, and reliable power source for consumers. Factors accelerating the growth of the solar rooftops market in India include increasing awareness and consumer demand, net metering, financial incentives and subsidies from the government, and the country's ample solar power potential.

Net metering is a policy that allows consumers to sell excess energy generated by their solar rooftop systems to the grid and earn credits, accelerating the adoption of solar rooftops in India. The net metering policy is one of the vital policy drivers for rooftop solar adoption and has witnessed a series of revisions in India over the past few months.

In August 2023, The Maharashtra Electricity Regulatory Commission (MERC) raised the net metering cap for rooftop solar power projects to 5 MW or the sanctioned load, whichever is lower, from less than 1 MW. The increase is expected to encourage the adoption of solar rooftops in India, allowing consumers to opt for group net metering, gross metering, or behind-the-meter connections.

Higher Prices of Diesel Amplifies the Market Growth

The rise in the adoption of solar rooftops over the utilization of diesel power generators is driven by several factors, including anticipated electricity cost savings. Additionally, increasing environmental awareness, declining prices of PV systems, and the

availability of innovative financing models have contributed to the growth of solar rooftops. As a result, many households and businesses have turned to solar energy to offset higher electricity prices, further driving the expansion of the market.
For instance, in December 2023, Mercom stated that in the first nine months of 2023, India experienced a significant upsurge in rooftop solar installations, surpassing 1.3 GW in total capacity, reflecting a 12% year-over-year increase. The third quarter witnessed the addition of 431 MW, indicating a substantial 34.7% year-over-year growth. Notably, the residential segment dominated the total installations, accounting for 43% of the share. The growth indicates the rising popularity and adoption of rooftop solar systems nationwide.
Frequent Utilization of On-Grid Rooftop Systems are Expediting the Market Significantly
The frequent use of on-grid solar rooftop systems expedites growth in India due to the country's rich solar energy potential, with 3000 sunshine hours annually in most places. The installation of on-grid rooftop solar PV systems is currently supporting the national grid and due to awareness and favorable government schemes, many residential, commercial, industrial, and agricultural buildings have installed rooftop solar plants. The Indian government offers a 30% subsidy to install grid-connected rooftop solar power plants, and the recovery period is greatly reduced, thereby making the system profitable for the next 20 years.
For example, in July 2023, KSolare Energy introduced the 7G Infinity On-Grid Inverter, a pioneering solar inverter with unique features and a 25-year warranty, designed and developed in India. The inverter is a part of the company's efforts to revolutionize solar power and contribute to India's energy security goals. Moreover, the 7G Infinity is available in residential series, with models ranging from 2kW to 6.2kW for single-phase/single MPPT and 3kW to 10kW for three-phase systems, catering to a wide range of solar energy needs.
Government Initiatives Acting as Catalyst
The government of India's policies help incentivize rooftop solar installations in individual households and provide financial assistance and subsidies to encourage the adoption of solar rooftops nationwide. For instance, in 2024, The Indian Ministry of New and Renewable Energy (MNRE) introduced various Central Financial Assistance (CFA) schemes to promote the use of solar energy in India and achieve the target of 100 GW of electricity usage. The government will provide subsidies on solar panels to the enterprises contributing to the growth, with a total CFA distribution of USD 27.09 million for 100 MW for a maximum of two years. Additionally, state subsidies of 40% are available for solar rooftop systems of up to 3 kW and 20% for systems between 3 kW to 10 kW, to be installed by private residential consumers. The subsidy on a solar panel may be limited to a maximum capacity of 10 kW. The applicable CFA will be transferred directly to the consumer's account after successful installation.
Implementation of Solar Rooftops in the Non-Residential Sector
The usage of solar rooftops in non-residential sector is influencing the growth of India's solar industry. The Indian government has introduced community solar rooftops to involve residents who do not have space to install the system at the household level. Moreover, the growing awareness about climate change, environmental sustainability, and the benefits of renewable energy has fueled consumer demand for rooftop solar systems in India and is expected to do so over the upcoming years.
For instance, in January 2023, the Delhi government proposed the concept of community solar rooftops in its latest draft solar policy to encourage renewable growth. The initiative aims to aid individuals living in apartments, multistoried buildings, or places with limited roof space to benefit from solar energy. Moreover, the policy targets an installed capacity of solar rooftops to 750 megawatts and aims to increase the share of solar energy in annual electricity to 25% by the end of 2025.
Western India Comprehensively Led the Market in All Aspects
Western India is comprehensively spearheading the solar rooftops in all aspects and is expected to continue to do so for a longer timeframe in the future, owing to factors, including policy alignment, awareness, financial support, and policy implementation. Gujarat emerged as the leading market in 2023, accounting for 26.7% of the overall installed rooftop solar capacity. The noteworthy inclusion of Madhya Gujarat Vij Company's 1 GW tender played a substantial role, comprising 24.2% of the installations in the state. Impressively, more than 65% of the tendered capacity has already been commissioned.
Future Market Scenario (FY2024 - FY2031F)
-The Grid Connected Solar Rooftop Programme provides Central Financial Assistance (CFA)/Subsidy to residential electricity consumers to avail the installation of Grid Connected Rooftop Solar (RTS) projects in India. It in turn, is expected to lead to ample opportunities in the future for market prosperity over the country.
-The Indian government provides a significant subsidy for the installation of grid-connected rooftop solar power plants,

significantly reducing the recovery period and ensuring the system's profitability for the next 20 years, thereby catering to myriad opportunities for growth in future.
-The rooftop solar industry can fulfill India's green energy mission by making solar panels more affordable and accessible to a broader segment of the population, improving solar panel efficiency and storage technologies, which, in turn, can result in an exponential market growth over the upcoming years.
-Moreover, the key players in the industry are constantly thriving to develop highly advanced technologies, such as microinverters, to increase the performance efficacy, safety, and reliability of their respective rooftop systems and gain a competitive edge in the market. It in turn, is anticipated to result in a massive level of market growth over the years to come.
Key Players Landscape and Outlook
Key participants in India Solar Rooftop market have prioritized technological advancements and strategic partnerships to strengthen their market position, driven by the market's steady growth and increasing competition.
In December 2023, Tata Power Solar signed a contract with NTPC Limited to supply 152 MWp DCR Solar PV Modules for its Nokh Solar Park in Rajasthan. The project is expected to generate about 14.9 lakh units of electricity per year, meeting 15% of the institute's electricity requirements and reducing carbon dioxide emissions by 1,060 tonnes annually. The project is part of NVVN's diversification into renewables and its commitment to the RESCO model. The contract is valued at approximately USD 50 million.
In October 2023, Jindal Steel Works (JSW), entered a partnership with Confirmware for a 1.3 GW turnkey solar PV module line. The collaboration, formalized through a Letter of Intent (LOI), which was a significant move in the solar energy sector. The initiative is poised to contribute to the company's growth and market positioning, reflecting the industry's focus on technological advancements and expansion through partnerships.

**Table of Contents:**

*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work.

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