ROOFTOP SOLAR IN INDIA 2019
Growth Trends, Regulatory Barriers and Addressable Market

- Report (PDF)
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Growth Trends, Regulatory Barriers and Addressable Market

The rooftop solar segment grew by 86.91 per cent in 2018 to reach 3.4 GW as of September 2018. The annual capacity addition in 2018 is estimated to be 1.6 GW, the highest so far. Growth in 2018 has been led by states including Maharashtra (233 MW), Rajasthan (153 MW) and Karnataka (140 MW).

The majority of these installations are concentrated in the commercial and industrial (C&I) sector, followed by the government and institutional sectors. Owing to the high difference (Rs 2.47 to Rs 3.51 per kWh) between the average grid tariff across C&I segments and average rooftop solar tariff, project returns for rooftop solar projects are highly attractive in most states. Enabling policies and growth of OPEX model are also contributing in this endeavor. However, discom reluctance is still constricting growth in many parts of the country.

The residential sector has been the slowest to adopt these systems owing to various challenges. In a significant development, in February 2019, the Indian government approved the second phase of its grid-connected rooftop solar programme to achieve 40 GW of rooftop solar by 2022 and announced Rs 118 billion in central government subsidies to support residential solar systems and incentivise discoms. This is expected to provide the necessary push to all consumer segments.

Supported by such enabling policies and competitive business models, the rooftop solar market is expected to expand significantly. The total market size is estimated between 12 GW to 36 GW by 2024-25 with a total cumulative investment of Rs 376 to 1,127 billion.

The key objectives of this report are to analyse the growth trajectory and demand outlook, supportive policy and regulatory regime and the key emerging trends in the rooftop solar segment in India. The report carries out an in-depth analysis for each of the sub-segments in rooftop solar segment in India. It explains in detail the business models and financing options for rooftop solar projects. It discusses the project costs, tariffs and cost economics of rooftop solar projects and its cost-competitiveness with grid power. The report also talks about the likely impact of rooftop solar on the distribution companies and the grid. It highlights the recent completed and upcoming tenders along with the key developments and plans of existing players in the rooftop solar space. Finally, the report presents the addressable market for rooftop solar and its sub-segments along with the demand outlook for various equipments used in rooftop solar projects.
Executive Summary

1. Market Overview
   - Size and Growth
     - By Year
     - By Segment
     - By State
   - Key Stakeholders
   - Rooftop Policies and Incentives
     - Central Level
     - State Level
   - Growth Drivers
   - Barriers and Challenges
   - Future Outlook

2. Segment-Wise Analysis
   - Introduction
   - Commercial and Industrial
     - Commercial
     - Industrial
   - Government and Institutions
   - Residential

3. Project Pipeline
   - Tender Results: Issued by SECI and Other Agencies
   - Ongoing and Announced Tenders by Central Level Agencies
   - Ongoing and Announced Tenders by State Level Agencies

4. Metering Regulations and their Implementation
   - Emerging Metering Arrangements
   - Implementation Experience
   - Key Features of Metering Policies across States
   - Key Issues and Challenges

5. Tariffs, Cost Economics and Business Models
   - Capital cost breakdown
   - Solar Equipment Price Trends
   - Capital cost trends
   - O&M Price Trends
   - Rooftop Solar Tariffs
   - Rooftop Solar Tariffs vs. Grid tariffs
   - Project Cost Economics
     - Project Returns
   - Business Models
     - Developer-led Business Models
     - Utility-led Business Models
   - Case Studies

6. Impact on Discoms
   - Impact on Demand
   - Impact on Revenue
   - Impact on Grid
   - State Discom’s Approach
   - Case Studies

7. Financing Trends, Instruments and Structures
   - Debt and Equity Options
   - Emerging Financing Models for Rooftop Solar
   - Recent Financings
     - Equity Deals
     - Green, Masala and Municipal Bonds
     - Domestic Commercial Loans/ NBFCs
     - Funding by Government and Development Institutions
     - Multilateral/Bilateral Financing
     - IPOs
     - Others
   - Risks and Challenges
   - Future Investment Requirement

   - Power Demand Outlook
   - Growth in Share of Rooftop Solar
   - Addressable Solar Market
     - By Segment
     - By State
   - Solar Demand Outlook
     - Low Scenario
     - Medium Scenario
     - High Scenario

   - Modules
   - Solar Inverters
   - Mounting Structures
   - Other Key BoS equipment

10. Key Players
    - Azure Power
    - Fourth Partner Energy
    - CleanMax Solar
    - Amplus Solar
    - Cleantech Solar
    - SunSource Energy
    - ReNew Power
    - Tata Power Solar
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