

SOLAR POWER MARKET IN INDIA (2020-2030)

Sector Trends, Risk Mapping, Segment Analysis and Growth Outlook

❖ Report (PDF)

The report will help you to:

- ❖ Provide a top-level view of the growth trends and road ahead for the solar power sector
- ❖ Map the risks perceived by project developers and investors
- ❖ Assess emerging and future-oriented themes like energy storage and open access
- ❖ Give a comprehensive view of upcoming projects and associated market opportunities
- ❖ Compare various states in terms of policies, challenges and opportunities
- ❖ Include capacity growth and investment projections upto 2030
- ❖ Help develop strategies based on current scenario and future requirements

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The Solar segment power has entered a new era of growth. Technological innovation and falling solar-panel prices have helped solar power compete with other fuel sources. LCOE for solar PV has plummeted as much as 400 per cent in the past five years, beating coal and gas. Driven by these factors, India has increased its installed solar power capacity tenfold in the past five years, to 34 GW, and the government is hoping to triple that in the next few years, one of the fastest growth rates anywhere. However, the year 2018-19 saw questions being raised about India's ability to achieve the 100 GW solar milestone by 2022. This was a time when a spate of issues related to tariff ceilings, land acquisition, PPA credibility and import duty on solar cells and modules had started slowing down the pace of capacity addition in the segment. Of the 11 GW target set for 2018-19, only 6.5 GW (59 per cent) was achieved. Due to these risks, the sector is likely to miss the 2019-20 targets. Moreover, the recent onset of Coronavirus has put the target for the next year at risk. The report on the Solar Power Market in India will provide a top-level view of the road ahead for the sector under both broader and future-oriented themes, while also examining the underlying risks and market fundamentals.

Summary and Key Insights

- ❖ By PSUs
- ❖ Others

SECTION I: MARKET ANALYSIS, DEVELOPMENTS AND INVESTMENTS

(This will include tenders for utility-scale, rooftop, solar-wind hybrids, floating solar, storage-based, and EV+ solar projects)

1. Current State of the Sector

- ❖ Solar Installation Trends
- ❖ Solar Power Generation Trends
- ❖ Emerging Energy Mix
- ❖ New Industry Landscape
- ❖ Solar RPO Targets and Achievements
- ❖ Annual Capacity Addition Targets
- ❖ Key Issues and Concerns

2. Recent Developments

- ❖ Provisions under Budget 2020
- ❖ PPA Orders and Regulations
- ❖ Development-linked Manufacturing
- ❖ Market Consolidation
- ❖ GST and Safeguard Duties
- ❖ Changing Technology Mix (Mono and Bifacial)
- ❖ Tariffs Determined in Recent Auctions

3. State-Wise Analysis

- ❖ Andhra Pradesh
- ❖ Gujarat
- ❖ Haryana
- ❖ Karnataka
- ❖ Maharashtra
- ❖ Madhya Pradesh
- ❖ Punjab
- ❖ Rajasthan
- ❖ Uttar Pradesh
- ❖ Tamil Nadu
- ❖ Telangana

(This will include key state profiles covering factors such as capacity addition trends, policy targets, RPO compliance, recent tender results, upcoming capacities, 5-year project performance analysis, state-specific concerns and outlook)

4. Tender Pipeline and Analysis

- ❖ By SECI
- ❖ By NTPC
- ❖ By State-level Agencies

5. Financing and Investment Trends

- ❖ Current Funding Sources
- ❖ Investment Requirements
- ❖ Recent Deals (Mergers, Acquisitions, Private Equity, etc.)
- ❖ Recent Lines of Credits
- ❖ Solar-focused Funds and their Portfolios
- ❖ Emerging Sources of Finance (Municipal Bonds, InVITs, IPOs, etc.)

SECTION II: RISK MAPPING AND MITIGATION

6. Impact of Coronavirus

- ❖ Supply-side Impact
- ❖ Demand-side Impact
- ❖ Impact on Equipment Prices
- ❖ Most Affected Manufacturers
- ❖ Alternate Options Available
- ❖ Recovery Cycle and Period
- ❖ Case for Make in India

7. Off Takers' Credibility and Financials

- ❖ Credit Ratings of Discoms
- ❖ Roadmap Post UDAY
- ❖ Payment Guarantee Mechanisms and Defaults
 - SECI
 - NTPC
 - State Discoms
- ❖ Mitigation Measures

8. PPA Terms and Conditions

- ❖ Tariff Structures
- ❖ Payment Security
- ❖ Project Development Timelines
- ❖ Default and Termination
- ❖ Termination Compensation
- ❖ Setting up Power Evacuation Infrastructure
- ❖ Mitigation Measures

9. Solar Grid Integration and Management

- ❖ Solar Power Integration Needs
- ❖ Key Grid-related Challenges
- ❖ Current Status of Green Energy Corridors Status
- ❖ Mitigation Measures
- ❖ State-wise Forecasting and Scheduling Regulations
- ❖ State-wise Deviation Settlement Mechanism

SECTION III: SEGMENT ANALYSIS**10. Utility-scale Solar PV**

- ❖ Size and Growth
- ❖ State-wise Capacity Addition Analysis
- ❖ Project Development Models
 - Solar Parks (Key Features)
 - Individual Set-ups
- ❖ Emerging Policy and Regulatory Framework
- ❖ Recent Tender Results
 - SECI
 - NTPC
 - State-level
 - Other PSUs
- ❖ Key Risks and Concerns
- ❖ Future Outlook

11. Commercial & Industrial PV

- ❖ Size and Growth
- ❖ State-wise Capacity Addition Analysis
- ❖ Project Development Models
 - Capex
 - Opex
 - Lease
 - EPC-Financing
- ❖ Emerging Policy and Regulatory Framework
- ❖ State-wise Net Metering Regulations
- ❖ Key Risks and Concerns
- ❖ Future Outlook

12. Residential PV

- ❖ Size and Growth
- ❖ State-wise Capacity Addition Analysis
- ❖ Project Development Models
 - Capex
 - Opex
 - Lease
 - EPC-Financing
- ❖ Emerging Policy and Regulatory Framework
- ❖ State-wise Net Metering Regulations
- ❖ Key Risks and Concerns
- ❖ Future Outlook

13. Solar Plus Storage

- ❖ Market Potential
- ❖ Key Policy Promotions
- ❖ State-level Developments
- ❖ Cost Economics
- ❖ Case Studies of Existing Projects
- ❖ Key Risks and Concerns
- ❖ Future Outlook

14. Solar Open Access Market

- ❖ Solar Open Access Potential
- ❖ Open Access Business Model
- ❖ Current State-wise Solar Open Access Projects
- ❖ Policy and Regulatory Framework
- ❖ State-wise Charges and Waivers
- ❖ Risks and Concerns
- ❖ Future Outlook

SECTION IV: OUTLOOK AND PROJECTIONS (till 2030)**15. Capacity Projections (2022, 2025 and 2030)**

- ❖ Total Capacity Requirement Projections
- ❖ Solar Power Share in Capacity Mix
- ❖ Utility-scale
- ❖ Rooftop Solar
- ❖ Solar Power Share in Power Generation Mix
- ❖ Utility-scale
- ❖ Rooftop Solar

16. Investment and IRR Projections (2022, 2025 and 2030)

- ❖ Tariff Projections
- ❖ Cost Projections
 - Cost of Capital
 - Equipment Costs
 - BoS Cost
 - Land Cost
- ❖ IRR Projections
 - Utility-scale
 - C&I Solar
 - Residential Solar
 - Open Access
- ❖ Investment Projections
 - Utility-scale
 - C&I Solar
 - Residential Solar
 - Open Access
- ❖ Financing Requirements
 - Equity
 - Debt

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