SOLAR QUARTER

VOLUME 18 | ISSUE 3

India

MAY JUNE 2026

COVER STORY

INDIA'S SOLAR MANUFACTURING REVOLUTION:

Building A Global PV Hub Under The Make In India Mission

In Focus

The Next Frontier in Indian Solar Manufacturing:

Opportunities in Wafer, Ingot, and Polysilicon Production

MUST READ

Rooftop Solar Demand Driving Domestic Manufacturing:

How Distributed Energy Is Reshaping Factory Expansion Plans

read more.....

www.solarquarter.com

PUBLISHING

Firstview Media
Ventures Pvt. Ltd.

EDITING

Sadhana Shenvekar
Mohan Gupta
editorial@firstviewgroup.com

CONTENT

Sangita Shetty
Sadhana Shenvekar
Mohan Gupta
publishing@firstviewgroup.com

DESIGNING

Radha Buddhadev
design@firstviewgroup.com

ADVERTISING

Smriti Charan
Sangeeta Sridhar
Shalini Tandon
advertise@firstviewgroup.com

CIRCULATION

Sadhana Shenvekar

PRINTING

Vaibhav Enterprises

CONT

LEADERSHIP VOICES

Sunil Panigrahi
Country Manager - India
Hopewind

COVER STORY

TENDER ARTICLE

INDIA SOLAR NEWS

ENT

KNOWLEDGE BYTE

COMPANY FEATURE

SOLARQUARTER RESEARCH

THE CHAMPIONS CORNER

ORGANIZED BY FirstVIEW Intelligent Business | POWERED BY SOLAR QUARTER

SOLAR & STORAGE EXPO SERIES

INDIA SOLAR NEWS

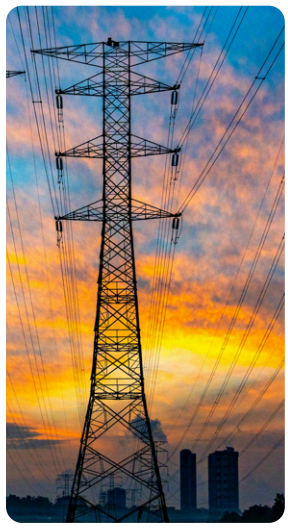
POLICY & REGULATIONS >

MNRE Retains June 2026 ALMM List-II Deadline With Conditional Relief For Solar Developers

The Ministry of New and Renewable Energy (MNRE) has confirmed that the ALMM List-II implementation deadline will remain June 1, 2026, with no blanket extension. The decision supports policy stability and domestic solar manufacturing growth. However, developers who have already made substantial investments may receive conditional relief if they meet specified criteria related to project progress, land acquisition, financing, connectivity approvals, and module installation status. Applications must be submitted online by June 30, 2026.

MNRE Mandates Online Submission Of Renewable Energy Project Extension Requests Via DCR Portal

MNRE has introduced a mandatory online process for renewable energy developers seeking commissioning deadline extensions beyond June 1, 2026. All requests must now be submitted through the DCR Portal, while offline applications will no longer be accepted. The advisory aligns with recent ALMM List-II compliance guidelines and aims to streamline project extension requests through a transparent and centralized digital mechanism.



Ministry Of Power Implements Jan Vishwas Act Reforms In Power Sector From June 1, 2026

The Government of India has begun implementing power sector reforms under the Jan Vishwas (Amendment of Provisions) Act, 2026. The legislation focuses on decriminalizing minor offenses and rationalizing penalties to improve ease of doing business and promote trust-based governance. Following the Act's notification, the Ministry of Power has initiated administrative measures and regulatory changes aimed at simplifying compliance and improving sector governance.

Ministry Of Power Phases Local Content Norms For HVDC Projects To Boost Domestic Manufacturing

The Ministry of Power has revised local content requirements for Line Commutated Converter (LCC)-based HVDC substations to encourage domestic manufacturing while providing industry flexibility. Under the phased approach, local content requirements will be 30% until March 2028, rising to 40% in 2028, 50% in 2030, and reaching 60% by April 2032. The move supports the government's Make in India initiative and strengthens the domestic power equipment ecosystem.

CERC Proposes Major Reforms To ISTS Connectivity And GNA Regulations 2026

CERC has proposed the Fourth Amendment to the ISTS Connectivity and GNA Regulations to improve flexibility for renewable energy and energy storage projects. Key proposals include refund of connectivity bank guarantees in case of prolonged delays, new norms for Energy Storage Systems, non-solar hour connectivity access, and streamlined procedures for multi-location renewable projects. The reforms aim to enhance operational efficiency and reduce project development challenges.

INDIA SOLAR NEWS

POLICY & REGULATIONS >

CERC Approves Standardized Time Slots For Power Trading Across Indian Exchanges

CERC has approved standardized time slots for electricity trading across power exchanges, including IEX, PXIL, and HPX. The new framework introduces fixed trading blocks such as Morning Peak, Evening Peak, Day Off-Peak, and Night Off-Peak periods. Separate solar and non-solar trading windows have also been defined. The reform is designed to improve transparency, market efficiency, and liquidity while creating a uniform trading structure nationwide.

CERC Approves New Green Power Trading Framework For IEX Under Revised Renewable Consumption Obligation (RCO) Rules

CERC has approved a revised green power trading framework for IEX to align with the updated Renewable Consumption Obligation (RCO) structure. Renewable energy procurement will now be categorized into Wind, Hydro, Distributed Renewable Energy, and Other Renewable Energy segments. The framework enhances transparency, introduces category-specific compliance mechanisms, reduces minimum bid sizes, and supports more efficient renewable energy trading and accounting across India's power market.

CERC Grants Transmission License To POWERGRID Subsidiary For Karnataka Renewable Energy Evacuation Project

CERC has granted a transmission license to a wholly owned subsidiary of POWERGRID for the implementation of a renewable energy evacuation project in Karnataka. The project is designed to strengthen transmission infrastructure for integrating renewable energy generation into the national grid. Awarded through the tariff-based competitive bidding process, the project will support renewable energy expansion and improve power evacuation capabilities in the state.

CERC Initiates License Revocation Proceedings Over Repeated Power Trading Compliance Failures

CERC has initiated proceedings to revoke the inter-state trading license of a power trading company over repeated non-compliance with regulatory requirements. The Commission observed multiple violations related to operational and reporting obligations despite previous directions and opportunities for corrective action. The move highlights CERC's commitment to maintaining regulatory discipline, transparency, and accountability within India's electricity trading market.

CERC Proposes Faster Real-Time Power Market To Support India's Renewable Energy Growth

CERC has proposed significant changes to the Real-Time Market (RTM) framework by reducing the gate closure timeline from one hour to 30 minutes before power delivery. The proposal aims to improve grid flexibility, enhance renewable energy integration, and enable more accurate scheduling closer to real-time operations. The reforms are expected to support India's growing renewable energy capacity while improving overall market efficiency.

CERC Moves Ahead On Transmission License For 2,500 MW Khavda Renewable Energy Evacuation Project In Gujarat

CERC has advanced the transmission licensing process for a major renewable energy evacuation project linked to the 2,500 MW Khavda Renewable Energy Park in Gujarat. The project includes critical transmission infrastructure for evacuating renewable power from one of India's largest clean energy hubs. Developed through a competitive bidding route, the project will strengthen grid connectivity and support large-scale renewable integration.

INDIA SOLAR NEWS

POLICY & REGULATIONS >

CERC Reviews Dispute Between Renewable Developers And CTUIL Over Transmission Charges

CERC has reviewed a dispute involving renewable energy developers and the Central Transmission Utility of India Limited (CTUIL) regarding transmission charge liabilities. The case focuses on the applicability of transmission charge waivers and related regulatory provisions for renewable energy projects. The Commission examined submissions from both parties and considered regulatory interpretations that could influence future transmission cost treatment for renewable energy developers.

Andhra Pradesh Electricity Regulatory Commission Proposes New Rules On Electricity Connections And Dedicated DTR Charges

The he Andhra Pradesh Electricity Regulatory Commission (APERC) has issued draft regulations proposing revised procedures for electricity connections and the recovery of Dedicated Distribution Transformer (DTR) charges. The proposal aims to improve transparency in service connections, streamline consumer application processes, and establish clear guidelines for cost-sharing and infrastructure development. Stakeholders have been invited to provide feedback before the regulations are finalized.

Gujarat Approves GIREP-2025 SOP To Accelerate Renewable Energy And Battery Storage Projects

The Government of Gujarat has approved the Standard Operating Procedure (SOP) under the Gujarat Integrated Renewable Energy Policy (GIREP)-2025. The framework aims to expedite approvals and implementation of renewable energy and battery energy storage projects across the state. The SOP outlines procedures for land allocation, connectivity, project development, and regulatory clearances, supporting Gujarat's ambition to expand clean energy capacity.

CERC Proposes New Mechanism To Free Stranded Renewable Energy Grid Connectivity

CERC has proposed amendments to grid connectivity regulations aimed at addressing the issue of stranded renewable energy connectivity. The proposal introduces a mechanism that would allow unused connectivity capacity to be surrendered and reallocated more efficiently. The initiative seeks to optimize transmission infrastructure utilization, reduce project delays, and facilitate faster integration of renewable energy projects into the national grid.

MSERC Notifies DRES Regulations 2026 To Boost Grid-Connected Renewable Energy Adoption In Meghalaya

The he Meghalaya State Electricity Regulatory Commission (MSERC) has notified the Distributed Renewable Energy Systems (DRES) Regulations, 2026, to encourage grid-connected renewable energy deployment across the state. The regulations provide a framework for installation, connectivity, operation, and energy accounting of distributed renewable systems. The move is expected to promote clean energy adoption, enhance consumer participation, and support Meghalaya's renewable energy transition.

INDIA SOLAR NEWS

POLICY & REGULATIONS >

West Bengal Electricity Regulatory Commission Approves 600 MW Wind-Solar Hybrid Power Procurement For CESC At Competitive Tariffs

The West Bengal Electricity Regulatory Commission (WBERC) has approved CESC Limited's procurement of 600 MW of wind-solar hybrid power through a competitive bidding process. The approved tariffs were found to be reasonable and beneficial for consumers. The procurement will help diversify CESC's energy portfolio, strengthen renewable energy adoption, and support long-term clean energy supply requirements in the state.

MPERC Proposes Second Amendment To Align Captive Power Verification Rules With National Regulations In Madhya Pradesh

The Madhya Pradesh Electricity Regulatory Commission (MPERC) has proposed the Second Amendment to its captive power verification regulations to align state rules with national regulatory provisions. The draft amendment seeks to standardize verification procedures for captive generating plants and captive users, ensuring compliance with ownership and consumption criteria. The move aims to improve regulatory clarity and consistency for captive power projects in Madhya Pradesh.

HERC Imposes ₹1.37/Unit Additional Surcharge On Open Access Consumers In Haryana

The Haryana Electricity Regulatory Commission (HERC) has approved an additional surcharge of ₹1.37 per unit on open access consumers in the state. The surcharge is intended to compensate distribution licensees for fixed costs arising from stranded power capacity when consumers procure electricity through open access. The order will apply to eligible consumers and reflects HERC's efforts to balance consumer choice with utility cost recovery.

DERC Notifies Terms And Conditions For Determination Of Tariff (Second Amendment) Regulations, 2026 With Automatic Fuel Surcharge Mechanism

The Delhi Electricity Regulatory Commission (DERC) has notified the Second Amendment to its tariff regulations, introducing an automatic Fuel and Power Purchase Cost Adjustment mechanism. The amendment allows periodic recovery of fuel and power procurement cost variations without requiring separate regulatory approval each time. The framework is designed to improve financial sustainability for distribution companies while ensuring a transparent tariff adjustment process.

Bihar Electricity Regulatory Commission Invites Public Feedback On Renewable Energy Tariffs For FY 2026-27

The Bihar Electricity Regulatory Commission (BERC) has released a draft proposal on renewable energy tariffs for FY 2026-27 and invited comments from stakeholders and the public. The consultation covers tariff determination for various renewable energy technologies operating within the state. The initiative aims to ensure transparent tariff setting while promoting renewable energy development and balancing the interests of developers and consumers.

BERC Proposes New SOP Rules To Improve Consumer Power Services In Bihar

The Bihar Electricity Regulatory Commission (BERC) has issued draft Standard of Performance (SOP) regulations aimed at improving electricity services for consumers across the state. The proposed rules define timelines and service quality standards for activities such as new connections, billing, complaint resolution, and supply restoration. The framework seeks to enhance consumer satisfaction, strengthen accountability, and improve overall power distribution service delivery in Bihar.

INDIA SOLAR NEWS

POLICY & REGULATIONS >

Andhra Pradesh Electricity Regulatory Commission Proposes New Electricity Connection Rules For Residential And HT-LT Consumers

The Andhra Pradesh Electricity Regulatory Commission (APERC) has released draft regulations proposing revised procedures for electricity connections across residential, Low Tension (LT), and High Tension (HT) consumer categories. The proposed framework outlines application requirements, infrastructure responsibilities, timelines, and service conditions for new connections. The initiative aims to improve transparency, streamline connection processes, and ensure efficient service delivery across the state's electricity distribution network.

APTEL Upholds TNERC Orders In TSMA-TANGEDCO Power Tariff And Subsidy Dispute

The Appellate Tribunal for Electricity (APTEL) has upheld orders issued by the Tamil Nadu Electricity Regulatory Commission (TNERC) in a dispute involving the Tamil Nadu Spinning Mills Association (TSMA) and TANGEDCO. The case concerned power tariff determination and subsidy-related issues affecting industrial consumers. APTEL found no grounds to interfere with TNERC's decisions, reinforcing the regulatory framework governing electricity tariffs and subsidy administration in Tamil Nadu.

MNRE Tightens Serial Number Verification Rules Under PM-Surya Ghar Scheme

The Ministry of New and Renewable Energy (MNRE) has strengthened serial number verification requirements under the PM-Surya Ghar: Muft Bijli Yojana. The revised guidelines aim to improve transparency, prevent misuse of subsidies, and ensure that only approved solar equipment is deployed under the rooftop solar program. Implementing agencies and vendors must comply with stricter verification procedures to facilitate accurate monitoring and subsidy disbursement.

APRAPL Seeks APERC License to Supply Solar Power For Andhra Pradesh Agriculture Sector

Andhra Pradesh Rural Agriculture Power Limited (APRAPL) has approached APERC seeking a distribution license to supply solar power to the state's agriculture sector. The proposal forms part of Andhra Pradesh's efforts to expand renewable energy use in agricultural power supply. APRAPL plans to procure and distribute solar energy for farm consumers, supporting clean energy adoption, reducing conventional power dependence, and improving long-term sustainability in agricultural electricity consumption.

TNERC Draft BESS Regulations 2026 To Accelerate Energy Storage Deployment In Tamil Nadu

The Tamil Nadu Electricity Regulatory Commission (TNERC) has issued draft Battery Energy Storage System (BESS) Regulations, 2026, to support large-scale energy storage deployment in the state. The proposed framework covers grid connectivity, tariff mechanisms, scheduling, operation, and participation in electricity markets. The regulations aim to strengthen renewable energy integration, improve grid reliability, and promote investment in energy storage infrastructure across Tamil Nadu.

APERC Draft 2026 Rules Introduce Strict Procurement And Cost Control Framework For Power Utilities In Andhra Pradesh

APERC has released draft regulations for 2026, introducing stricter procurement and cost management guidelines for power utilities in Andhra Pradesh. The framework proposes tighter monitoring of power purchase activities, competitive procurement practices, and measures to control operational expenses. The regulations are intended to improve financial discipline, enhance transparency, and ensure efficient electricity procurement while protecting consumer interests within the state power sector.

INDIA SOLAR NEWS

POLICY & REGULATIONS >

MNRE Approves ZAM Alloy For Rooftop Solar Structures Under PM Surya Ghar Scheme

MNRE has approved Zinc-Aluminium-Magnesium (ZAM) alloy-coated steel for rooftop solar module mounting structures under the PM Surya Ghar Scheme. The approval recognizes ZAM alloy as a suitable material for rooftop solar installations due to its corrosion resistance and durability. The move is expected to improve structural performance, support standardization, and encourage the adoption of advanced materials in India's rooftop solar sector.

CERC Grants License For 2.5 GW KPS III HVDC Renewable Energy Transmission Project In Gujarat

CERC has granted a transmission license for the KPS III HVDC renewable energy transmission project in Gujarat with a planned capacity of 2.5 GW. The project will facilitate the evacuation of renewable power from Gujarat's growing clean energy zones and strengthen interstate transmission infrastructure. Awarded through a tariff-based competitive bidding process, the project supports India's expanding renewable energy integration objectives.

"The initiative aims to enhance grid discipline, reduce disruptions, and ensure stable electricity distribution across the state."

CSERC Approves Revised Load Management Plan To Strengthen Grid Stability In Chhattisgarh

The Chhattisgarh State Electricity Regulatory Commission (CSERC) has approved a revised load management plan aimed at improving grid stability and power system reliability across the state. The updated framework outlines operational measures for demand management, load shedding prioritization, and emergency response during supply constraints. The initiative is designed to ensure better grid discipline, minimize disruptions, and support stable electricity distribution operations.

BERC Invites Applications For Part-Time Advisor Role In Tariff And Regulatory Work In Bihar

The Bihar Electricity Regulatory Commission (BERC) has invited applications for the position of Part-Time Advisor to support tariff determination and regulatory functions. The engagement aims to strengthen the Commission's technical and regulatory capabilities in handling electricity sector matters. Eligible professionals with expertise in power sector regulation, tariff analysis, and policy issues are encouraged to apply in accordance with the terms specified by BERC.

TNERC Approves ₹1545.14 Crore Subsidy As Tamil Nadu Expands Free Electricity Benefit Up To 500 Units

The Tamil Nadu Electricity Regulatory Commission (TNERC) has approved a subsidy of ₹1,545.14 crore to support the state government's decision to extend free electricity benefits up to 500 units for eligible consumers. The approval enables compensation to the distribution utility for the financial impact of the scheme. The initiative aims to provide consumer relief while ensuring continued financial support for electricity distribution operations.

TNERC Proposes Draft Forecasting And Deviation Regulations 2026 For Wind, Solar And Hybrid Projects In Tamil Nadu

TNERC has issued Draft Forecasting, Scheduling, and Deviation Settlement Regulations, 2026, covering wind, solar, and hybrid renewable energy projects. The proposed framework establishes forecasting responsibilities, scheduling requirements, and deviation settlement mechanisms for renewable generators. The regulations are intended to improve grid management, enhance renewable energy integration, and reduce operational uncertainties associated with variable power generation across Tamil Nadu.

INDIA SOLAR NEWS

POLICY & REGULATIONS >

Telangana Electricity Regulatory Commission Cancels DSM Charges Based On Faulty Solar Meter Data

The Telangana Electricity Regulatory Commission (TSERC) has set aside Deviation Settlement Mechanism (DSM) charges imposed on a solar power generator after determining that the charges were based on faulty meter data. The Commission observed discrepancies in the metering information used for deviation calculations. The decision reinforces the importance of accurate meteringet purchases during shortages.

HPERC Proposes New Renewable Energy Amendment To Align State Tariff Regulations With CERC 2024 Framework In Himachal Pradesh

The Himachal Pradesh Electricity Regulatory Commission (HPERC) has proposed amendments to its renewable energy tariff regulations to align them with the Central Electricity Regulatory Commission's 2024 framework. The draft changes cover tariff determination principles and regulatory provisions applicable to renewable energy projects. The amendment aims to create regulatory consistency, improve clarity for developers, and support renewable energy growth within Himachal Pradesh.

APERC Sets New Reliability Targets For Urban Power Supply Across Andhra Pradesh

The Andhra Pradesh Electricity Regulatory Commission (APERC) has introduced revised reliability standards for urban electricity distribution networks across the state. The new framework establishes performance benchmarks for power supply continuity, outage management, and service quality. Distribution companies will be required to meet stricter reliability targets to improve consumer experience, reduce interruptions, and strengthen accountability in urban electricity service delivery.

Tripura Electricity Regulatory Commission Approves Power Tariff For FY 2026-27 With Consumer-Friendly Measures

The Tripura Electricity Regulatory Commission (TERC) has approved electricity tariffs for FY 2026-27 while incorporating measures aimed at protecting consumer interests. The tariff order balances utility revenue requirements with affordability considerations and includes provisions intended to minimize the financial impact on consumers. The decision supports sustainable utility operations while ensuring a reliable and cost-effective electricity supply across the state.

CERC Sets Aside Connectivity Revocation In 400 MW Rajasthan Renewable Energy Project Dispute

CERC has set aside the revocation of grid connectivity associated with a 400 MW renewable energy project in Rajasthan. The Commission reviewed the circumstances surrounding the cancellation and concluded that the connectivity withdrawal was not justified under the applicable regulatory framework. The order provides relief to the project developer and underscores the importance of regulatory consistency in renewable energy project implementation.

INDIA SOLAR NEWS

POLICY & REGULATIONS >

Telangana Introduces New Electricity Billing Rules With 18% Interest On Consumer Refunds

Telangana has introduced revised electricity billing regulations that require distribution companies to pay 18% annual interest on delayed consumer refunds. The new framework strengthens consumer protection by establishing clear billing procedures, refund timelines, and accountability measures for utilities. The regulations are intended to improve transparency in electricity billing practices and ensure the timely resolution of consumer claims and disputes.

Andhra Pradesh Standardizes Grid Connectivity Through New Connection Agreement Framework

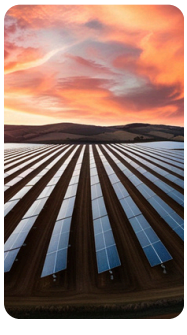
Andhra Pradesh has introduced a standardized Connection Agreement framework to streamline grid connectivity procedures across the state. The new mechanism establishes uniform contractual terms and technical requirements for entities seeking network access. The initiative aims to improve transparency, reduce procedural inconsistencies, facilitate faster project implementation, and strengthen coordination between applicants and power sector utilities.

UERC Proposes Resource Adequacy Framework 2026 For Reliable Power Supply In Uttarakhand

The Uttarakhand Electricity Regulatory Commission (UERC) has proposed a Resource Adequacy Framework, 2026, to ensure long-term reliability of electricity supply in the state. The draft framework requires utilities to assess future demand and maintain sufficient generation and procerement resources to meet consumer needs. The proposal aims to strengthen power planning, reduce supply risks, and support sustainable electricity sector development in Uttarakhand.

THINK TANK >

India's Solar Power Generation Hits Record 20,899.61 MU, Contributes Over 70% of RE Generations in April 2026



India's renewable energy sector recorded strong growth in April 2026, with renewable electricity generation excluding large hydro reaching 29,377.91 million units (MU), reflecting a 23.2% year-on-year increase. Solar power emerged as the dominant contributor, generating a record 20,899.61 MU and accounting for over 71% of total renewable energy generation during the month. The growth was supported by expanding utility-scale solar parks, rooftop solar installations, and rising adoption of open-access solar projects. Wind energy generated 6,848.65 MU, while biomass, bagasse, and small hydro contributed the remaining share. The data highlights solar and wind as the backbone of India's clean energy transition, contributing nearly 94.45% of renewable electricity generation.

India Adds 18,426 MW Solar Capacity As Renewables Reach 42.2% Of Total Power Mix In 2026

India's renewable energy sector continued its rapid expansion in 2026, with solar power leading the transition. During the first four months of the year, the country added nearly 18,426 MW of new solar capacity across utility-scale and rooftop segments. By April 2026, India's total installed power capacity had crossed 537 GW, growing at an annual rate of over 13.7%. Renewable energy sources now account for approximately 42.2% of the nation's installed power mix, reflecting significant progress toward clean energy goals. The market is also witnessing strong growth in hybrid projects, battery energy storage systems, green hydrogen, and round-the-clock renewable energy solutions. However, challenges such as grid integration, transmission infrastructure, land acquisition, and financing remain critical concerns.

INDIA SOLAR NEWS

THINK TANK >

Rajasthan Can Save ₹57,000 Crore By Replacing New Coal Plants With Solar And Battery Storage—Report

A report by Climate Risk Horizons suggests Rajasthan can save nearly ₹57,000 crore over the next decade by replacing a proposed 3,200 MW coal power project with solar energy and battery storage systems. Rajasthan already contributes over 27% of India's installed solar capacity but faces renewable energy curtailment rates of up to 51.5%, leaving nearly 4 GW of clean power unused during peak generation periods. The report highlights that rising coal transportation and construction costs are making thermal power increasingly expensive. Electricity from new coal plants could cost around ₹10.27 per kWh by 2031, while a proposed 7.1 GW solar-plus-storage system could deliver power at ₹5.48–₹5.87 per kWh, offering significant economic and environmental benefits.

India's Power Distribution Sector Shows Recovery, But Privatization Seen As Key To Long-Term Stability—SBICAPS Report

India's power distribution sector has shown notable improvement over the past decade, according to a report by SBICAPS. Aggregate Technical and Commercial (AT&C) losses have declined from over 25% in FY15 to nearly 15% in FY25, while the ACS-ARR gap narrowed from 89 paise per unit in FY21 to just 6 paise in FY25. As a result, DISCOMs collectively reported a net profit of ₹27 billion in FY25. Despite these gains, performance remains uneven across states, with several eastern regions lagging behind. The report attributes much of the financial recovery to private utilities and government subsidies. It recommends wider privatization, citing Odisha's success in reducing AT&C losses after privatizing distribution companies.

"Hybrid renewable energy systems combining solar, wind, and battery storage are emerging as a reliable solution for delivering stable and continuous clean energy."

Hybrid Solar And Wind Systems With Battery Storage Redefine Reliable Clean Energy Supply—Report

Hybrid renewable energy systems combining solar and wind power with battery storage are emerging as a key solution for ensuring a reliable and stable clean energy supply. The report highlights that integrating multiple renewable sources helps balance variability in generation, as solar and wind often complement each other across different time periods. Battery energy storage systems further enhance grid stability by storing excess power and supplying it during peak demand or low generation periods. This integrated approach is increasingly seen as essential for large-scale renewable adoption, supporting grid flexibility, reducing dependence on fossil fuels, and improving overall power system reliability.

India Adds Over 18 GW Solar Capacity In 2026 As Total Installed Solar Base Crosses 154 GW

India's solar energy sector continues its strong expansion trajectory, with over 18 GW of new solar capacity added in 2026. With this addition, the country's cumulative installed solar capacity has crossed 154 GW, reinforcing India's position as one of the fastest-growing solar markets globally. The growth is driven by utility-scale solar parks, rooftop installations, and hybrid renewable projects. The report highlights that policy support, competitive tariffs, and strong private sector participation are accelerating deployment. This rapid capacity addition is also contributing significantly to India's clean energy transition and supporting its broader renewable energy and climate goals.

INDIA SOLAR NEWS

THINK TANK >

India's State-Owned Energy Firms Can Accelerate Clean Energy Shift Through Strategic Capital Reallocation: Report

A recent report suggests that India's state-owned energy companies can play a transformative role in accelerating the country's clean energy transition through strategic capital reallocation. It emphasizes that redirecting investments from conventional fossil fuel-based projects toward renewable energy assets, grid modernization, and storage infrastructure can significantly improve long-term sustainability. The report highlights the importance of policy alignment, financial restructuring, and institutional reforms within public sector undertakings. By optimizing capital deployment, state-owned enterprises can support faster renewable integration, enhance energy security, and strengthen India's progress toward achieving its decarbonization and net-zero targets.

CEA Flags Systemic Insulator Failures, Recommends Urgent Reforms For Grid Reliability—Report

The Central Electricity Authority (CEA) has raised concerns over systemic insulator failures affecting India's power transmission infrastructure. The report highlights that recurring equipment failures pose risks to grid reliability, operational efficiency, and power supply stability. It recommends urgent reforms, including stricter quality control standards, improved maintenance practices, and enhanced monitoring systems for transmission assets. Strengthening manufacturing and procurement standards is also emphasized to prevent recurring technical faults. The findings underline the need for proactive infrastructure upgrades and regulatory interventions to ensure a more resilient and reliable national power grid capable of supporting rising electricity demand and renewable integration.

TENDER >

- SECI Invites Bids For 5.5 MW Rooftop Solar Project At Delhi University North Campus
- SECI Invites Bids For 12.25 MW Rooftop Solar Projects Across Jawahar Navodaya Vidyalayas
- SECI Invites Bids For Major Digital Systems Upgrade Project
- Mahagenco Renewable Energy Limited Invites Bids For 8×25 MW Solar Hybrid Project Consultancy In Maharashtra
- NGEL Invites Bids For 100 MW Solar PV Project Under EPC Mode In Jhansi, Uttar Pradesh
- RRECL Invites EoI For 45 MW Solar Power Project For Rajasthan's Industrial Consumers
- Airports Authority Of India Invites Tender For 1.5 MW Rooftop Solar PV Plant O&M At Chennai Airport
- Andhra Pradesh Invites Bids For 4.5 MW Solar PV Projects Under BOOT Model In Rajamahendravaram
- Telangana Floats Tender For 19 MW Solar Power Plants Across 18 Substations
- NBCC Invites Consultancy Bids For 15 MW Rooftop Solar Project At SAIL Bokaro Steel Plant
- Gwalior Municipal Corporation Floats ₹9.98 Crore Tender For 2 MW Solar Power Plant At Manpur
- NLC India Limited Floats Tender For 1500 Acres Land Leasing In Gujarat For Large Solar PV Projects
- KIOCL Limited Floats Tender For 2.7 MW Floating Solar Power Project In Mangaluru, Karnataka
- EESL Invites EOI For Solar Project DPR And Feasibility Study Agencies Across India
- NTPC Vidyut Vyapar Nigam Limited Invites Bids For Rooftop Solar Project At AIIMS Bilaspur
- NTPC Limited Invites Bids For Andaman Solar Repowering EPC Project

INDIA SOLAR NEWS

TENDER >

- Southern Railways Invites ₹378 Crore Tender For Solar Power Plants Under RESCO Model
- NTPC Renewable Energy Invites Bids For Solar PV Module Supply At 1200 MW Khavda RE Project
- SECI Floats Tender For 88 MW Solar PV Balance Of System Project In Karnataka
- SECI Invites Bids For 5.5 MW Rooftop Solar Project At Delhi University North Campus
- SECI Invites Bids For 12.25 MW Rooftop Solar Projects Across Jawahar Navodaya Vidyalayas
- SECI Invites Bids For Major Digital Systems Upgrade Project
- Mahagenco Renewable Energy Limited Invites Bids For 8×25 MW Solar Hybrid Project Consultancy In Maharashtra
- NGEL Invites Bids For 100 MW Solar PV Project Under EPC Mode In Jhansi, Uttar Pradesh
- RRECL Invites EoI For 45 MW Solar Power Project For Rajasthan's Industrial Consumers
- Airports Authority Of India Invites Tender For 1.5 MW Rooftop Solar PV Plant O&M At Chennai Airport
- Andhra Pradesh Invites Bids For 4.5 MW Solar PV Projects Under BOOT Model In Rajamahendravaram
- Telangana Floats Tender For 19 MW Solar Power Plants Across 18 Substations
- NBCC Invites Consultancy Bids For 15 MW Rooftop Solar Project At SAIL Bokaro Steel Plant
- Gwalior Municipal Corporation Floats ₹9.98 Crore Tender For 2 MW Solar Power Plant At Manpur
- NLC India Limited Floats Tender For 1500 Acres Land Leasing In Gujarat For Large Solar PV Projects
- KIOCL Limited Floats Tender For 2.7 MW Floating Solar Power Project In Mangaluru, Karnataka
- EESL Invites EOI For Solar Project DPR And Feasibility Study Agencies Across India
- NTPC Vidyut Vyapar Nigam Limited Invites Bids For Rooftop Solar Project At AIIMS Bilaspur
- NTPC Limited Invites Bids For Andaman Solar Repowering EPC Project
- Southern Railways Invites ₹378 Crore Tender For Solar Power Plants Under RESCO Model
- NTPC Renewable Energy Invites Bids For Solar PV Module Supply At 1200 MW Khavda RE Project
- SECI Floats Tender For 88 MW Solar PV Balance Of System Project In Karnataka

BESS TENDER >

- RUMSL Unveils Solar Plus Storage Projects for Reliable Peak Power Supply in Madhya Pradesh
- PGCIL Invites Bids For 150 MW/300 MWh BESS Project In Andhra Pradesh
- NTPC Green Energy Floats EPC Tender For 3,300 MWh BESS Project At Khavda Solar Plant In Gujarat
- NTPC Green Energy Invites Bids For 7,800 MWh Battery Energy Storage Project At Bikaner Solar Plant In Rajasthan
- NTPC Green Energy Invites Bids For 7,800 MWh Battery Energy Storage Project At Bikaner Solar Plant In Rajasthan
- SECI Invites Bids For Supply Of Five 160 MVA Power Transformers For Gujarat Project
- NTPC Green Energy Limited Invites Bids for 800 MW/3200 MWh BESS Project at Khavda Solar Park

INDIA'S SOLAR MANUFACTU

Building A Global PV Hub Under The

India is rapidly transforming itself into a global solar manufacturing powerhouse under the ambitious Make in India mission. Over the last few years, the country has moved beyond being only a major solar power installer and is now focusing strongly on building a complete domestic solar PV manufacturing ecosystem. This transformation is playing a crucial role in strengthening India's energy security, reducing dependence on imports, generating employment, and supporting the nation's clean energy goals.

India's solar sector has witnessed remarkable growth due to rising electricity demand, government incentives, supportive policies, and large-scale renewable energy targets. With the government aiming to achieve 500 GW of non-fossil fuel energy capacity by 2030, solar power remains at the center of the country's energy transition strategy. To support this expansion, India has recognized the importance of developing a strong local manufacturing base for solar cells, modules, wafers, and related components.

The Make in India initiative has significantly encouraged domestic and international companies to invest in solar manufacturing facilities across the country. Several Indian manufacturers are expanding production capacities, while global players are also entering the Indian market through partnerships and joint ventures. States such as Gujarat, Tamil Nadu, Rajasthan, and Andhra Pradesh are emerging as major solar manufacturing hubs due to favorable industrial policies and infrastructure support.

Government programs such as the Production Linked Incentive (PLI) scheme have provided a major boost to the sector. The PLI scheme offers financial incentives to companies establishing high-efficiency solar PV manufacturing facilities in India. This initiative is helping create an integrated supply chain, from polysilicon and wafers to solar cells and modules. In addition, the imposition of Basic Customs Duty (BCD) on imported solar products has further encouraged local manufacturing and reduced dependence on imports.

RING REVOLUTION:
Make In India Mission

India's solar manufacturing revolution is also creating thousands of new jobs in engineering, production, research, logistics, and project development. The sector is attracting investments worth billions of dollars and contributing to economic growth in both urban and rural regions. New manufacturing plants are bringing advanced technologies, automation, and innovation into the Indian renewable energy market.

Another important aspect of this transformation is India's growing focus on exports. Indian-made solar modules are now reaching markets in the United States, Europe, the Middle East, and Africa. As global demand for clean energy technologies increases, India has the opportunity to become a reliable alternative manufacturing destination in the global solar supply chain.

Despite the strong momentum, challenges remain. The industry continues to face issues related to raw material availability, technology upgrades, financing, and global price competition. However, continuous policy support, investment in research and development, and infrastructure improvements are helping the sector overcome these barriers.

India's solar manufacturing revolution reflects the country's long-term vision of becoming self-reliant in clean energy technologies. Under the Make in India mission, the nation is steadily positioning itself as a leading global PV hub while accelerating the transition toward a sustainable and energy-secure future.

SOLAR QUARTER

DIVE DEEP INTO SOLAR INSIGHTS WITH EVERY PAGE

Join India's Leading Solar Energy Community with SolarQuarter Magazine

Subscribe Today &
Illuminate Your Knowledge

Get access to:

- In-Depth Analysis of Solar Trends
- Interviews with Leaders & Innovators
- Latest in Solar Technology
- Detailed Market Reports
- Highlights on Sustainability & Projects

www.solarquarter.com

What Recent Bidding Activity Reveals About The Next Phase Of The Energy Transition

From Multi-Gigawatt-Hour Battery Storage To Grid Infrastructure And Green Hydrogen, India's Renewable Energy Procurement Landscape Is Undergoing A Fundamental Transformation

India's renewable energy sector is entering a new era.

For over a decade, the country's clean energy story was largely defined by one metric: installed capacity. Success was measured by how many megawatts of solar and wind power could be deployed, how rapidly renewable energy tariffs could decline, and how quickly states could attract investments into utility-scale projects.

Today, however, the market is evolving beyond generation capacity alone.

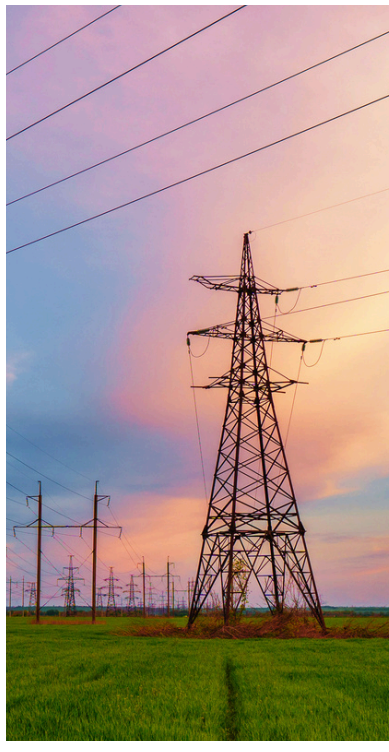
A review of more than 40 renewable energy tenders issued during May and June 2026 by organizations including **NTPC Green Energy, NTPC Renewable Energy Limited (NTPC REL), NTPC Vidyut Vyapar Nigam Limited (NVVN), NGEL, SECI, PGCIL, RECPDCL, Mahagenco Renewable Energy Limited, RUMSL, BHEL, NLC India, NBCC, Airports Authority of India, Southern Railways,** and multiple state agencies reveals a significant shift in priorities.

The latest procurement activity demonstrates that India's renewable energy ambitions are no longer focused solely on adding solar capacity. Increasingly, the emphasis is shifting toward battery storage, transmission systems, grid flexibility, forecasting, reactive power management, floating solar, institutional rooftop solar, and green hydrogen infrastructure.

This evolution signals a deeper transformation.

India is moving from a renewable energy expansion phase to a renewable energy integration phase.

The tenders issued over the past two months provide perhaps the clearest indication yet of how the next decade of clean energy development will unfold.



"The next phase of renewable growth is defined by integration, flexibility, and grid resilience."

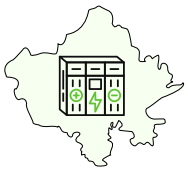
Battery Energy Storage Emerges As The Dominant Investment Theme

The single biggest trend emerging from recent tender activity is the rapid rise of utility-scale battery energy storage systems (BESS).

For years, storage was viewed as a future requirement. Today, it is becoming a present-day necessity.

Leading this transition is **NTPC Green Energy,** which has floated some of the largest battery storage tenders ever seen in the Indian market.

Among the most significant projects are:



7,800 MWh Battery Energy Storage System Project

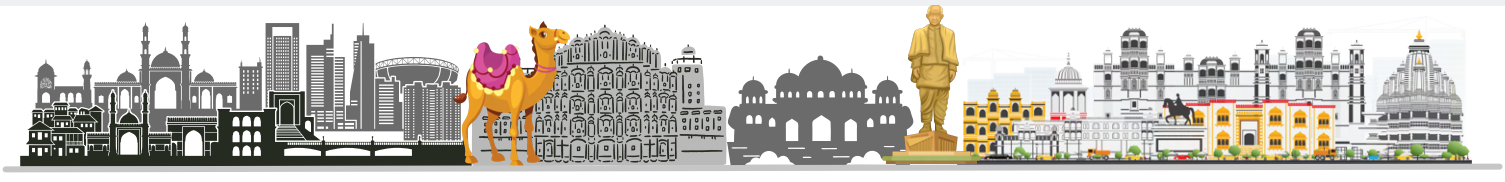
at the NTPC REL Bikaner Solar Plant, Rajasthan

3,300 MWh Battery Energy Storage System Project

at Khavda, Gujarat

800 MW / 3,200 MWh Battery Energy Storage System Project

at Khavda Solar Park, Gujarat



"The future of renewable energy will be measured not only in megawatts generated but also in megawatt-hours stored, making battery storage a cornerstone of India's evolving power system."

These projects alone represent over **14,000 MWh of planned battery storage capacity,** underscoring the scale at which storage is now being incorporated into India's renewable energy strategy.

The **7,800 MWh Bikaner BESS Project** is particularly noteworthy. Structured as an EPC package, the project includes multiple storage blocks integrated with NTPC Renewable Energy's solar assets. Such a configuration demonstrates how future renewable parks are likely to combine generation and storage infrastructure from the outset.

The momentum extends beyond NTPC.

Power Grid Corporation of India Limited (PGCIL) has invited bids for a **150 MW / 300 MWh Battery Energy Storage System Project in Andhra Pradesh,** aimed at enhancing grid reliability and renewable integration.

Meanwhile, **Lakshadweep Administration** has invited bids for **2,107 kW of Rooftop Solar Capacity coupled with 5,525 kWh of Battery Storage,** demonstrating how storage is becoming essential not only for utility-scale projects but also for island and remote-area energy systems.

Similarly, **BHEL** has invited bids for a **1.13 MW Rooftop Solar Project integrated with 4.52 MWh of Battery Energy Storage in Hyderabad,** showcasing the increasing convergence of distributed solar and storage technologies.

Collectively, these projects indicate that storage is no longer a niche technology. It is becoming a foundational component of India's future electricity system.

"India's clean energy transition is entering a new phase where storage stands alongside generation as a core pillar of the power system."

FirstVIEW — Where the World Connects

POWERING THE WORLD'S MOST INFLUENTIAL EVENTS – EVERYWHERE.

FirstVIEW
Intelligent Business

From Asia to Europe, the Middle East to the Americas, FirstVIEW connects industries, brands, and audiences across continents through a powerful portfolio of global event experiences.

At FirstVIEW, we don't just manage events — We shape industries.

Our brands bring together **thought leaders, innovators, and decision-makers** under one vision

PUBLICATIONS

SOLAR QUARTER | EMobility+ | WIND INSIDER | ENERGY STORAGE PRO

GLOBAL INITIATIVES

INDIA NET ZERO ALLIANCE | GREEN FINANCE ALLIANCE | FUTURE ENERGY Leadership ALLIANCE | DRE

EXHIBITIONS

Bharat 2026 Renewable Expo | UTTAR PRADESH ENERGY XPO 2026 | Andhra Pradesh Clean ENERGY XPO 2026

GLOBAL EVENT SERIES

SOLAR CONTRACTORS MEET 2026 | CLEAN ENERGY WEEK 2026 | SOLAR & STORAGE EXPO 2026

FLAGSHIP CONFERENCES

RE ASSETS 2026 | FUTURE ENERGY Leadership SUMMIT 2026 | GREEN FINANCE WEEK 2026 | DISTRIBUTED ENERGY SHOW 2026

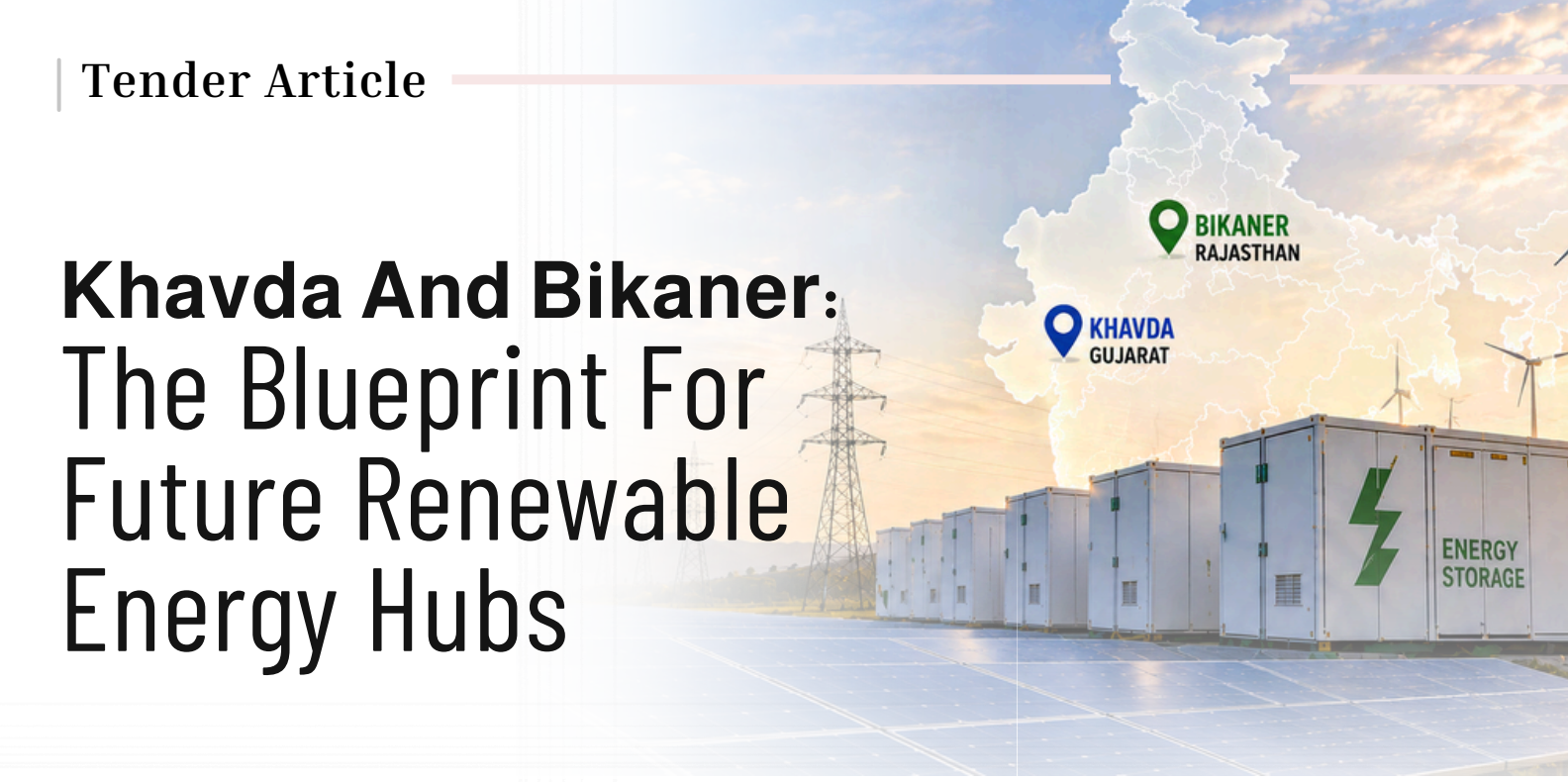
FirstVIEW — *Global Vision. Local Impact*

100+ Events

40+ Countries

Scan the QR code to explore our exciting upcoming events and be a part of the experience!

Khavda And Bikaner: The Blueprint For Future Renewable Energy Hubs



Two locations dominate India's current renewable energy procurement landscape: **Khavda in Gujarat and Bikaner in Rajasthan.**

Both regions are evolving into integrated renewable energy ecosystems rather than conventional solar parks.

AT KHAVDA, RECENT TENDERS INCLUDE:

- **3,300 MWh** BESS Project
- **800 MW/3,200 MWh** BESS Project
- **1,200 MW** Solar PV Module Supply Package
- Associated transmission and grid integration infrastructure

SIMILARLY, BIKANER IS EMERGING AS A MAJOR SOLAR-PLUS-STORAGE CLUSTER

Beyond the landmark **7,800 MWh** BESS Project

NTPC Renewable Energy has invited bids for **Forecasting and Scheduling Services for the 500 MW Solar PV Project at Kalasar, Bikaner.**

> Together, these projects illustrate a new model of renewable energy development—one where **generation, storage, and transmission are planned simultaneously.**

While forecasting contracts may appear less visible than large EPC packages, they are becoming increasingly important as renewable penetration grows. Accurate forecasting helps improve grid management, optimize dispatch schedules, and reduce deviations.

The combination of large-scale storage and forecasting services indicates that India's renewable energy hubs are becoming significantly more sophisticated.

Rajasthan Strengthens Its Position As A Renewable Energy Powerhouse

Rajasthan continues to consolidate its position as one of India's most important renewable energy destinations.

Several major tenders issued during the review period reinforce the state's growing importance.

Among them is **NTPC Green Energy's 130 MVAR Static Var Generator (SVG) Package for the 240 MW Devikot Solar PV Project in Rajasthan.**

This project highlights an important industry trend: grid support infrastructure is becoming as important as generation capacity itself.

SVG systems provide reactive power compensation and voltage regulation, helping maintain grid stability as renewable penetration increases.

> *"Rajasthan is proving that the future of renewable energy will be shaped not only by adding generation capacity but also by strengthening grid infrastructure to ensure reliability, stability, and seamless renewable integration."*

Additional Rajasthan-based opportunities include:

- **7,800 MWh BESS Project at Bikaner**
- **500 MW Kalasar Solar Forecasting and Scheduling Services Contract**
- **45 MW Solar Power Project for Industrial Consumers by RRECL**
- Multiple land and infrastructure packages associated with utility-scale solar development

These projects demonstrate that Rajasthan is no longer merely a solar generation state. It is becoming a comprehensive renewable energy ecosystem encompassing generation, storage, forecasting, and grid management.

Grid Infrastructure Becomes A National Priority

One of the strongest themes emerging from recent procurement activity is the growing focus on transmission and grid infrastructure.

India's renewable energy challenge is no longer limited to generating electricity. Increasingly, the challenge lies in transmitting, balancing, and integrating that electricity effectively.

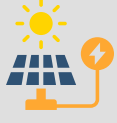
Among the most notable examples is **RECPDCL's Renewable Energy Transmission System Project in Gujarat,** designed to support approximately **14 GW of renewable energy capacity.**

The project is linked to major renewable energy zones such as **Lakadia Renewable Energy Zone,** which itself is expected to support around **7,500 MW of renewable generation capacity.**

Similarly, **SECI** has invited bids for the supply of **Five 160 MVA Power Transformers** for a Gujarat-based renewable energy project.

Other grid-related opportunities include:

130 MVAR SVG Package for the 240 MW Devikot Solar PV Project



Renewable energy evacuation systems

Grid integration infrastructure

Reactive power management systems

Forecasting and scheduling services

Transmission network expansion projects

The message is clear: India's next renewable energy investment cycle will be driven as much by transmission and grid infrastructure as by generation capacity.

ORGANIZED BY FirstVIEW intelligent business

POWERED BY SOLAR QUARTER | ENERGY STORAGE PRO

SOLAR & STORAGE EXPO 2026 GOA

ENERGY EXCELLENCE AWARDS

TECHNOLOGY EXCELLENCE

Best Solar Panel Brand of the Year

SASA ENERGY LLP

AI-Driven Solar Module Manufacturer of the Year

PAHAL SOLAR PRIVATE LIMITED

TOP SOLAR CONTRACTORS

Solar EPC Company of the Year– Residential

KUNDE SOLAR SOLUTIONS

Emerging Solar Contractor of the State - Residential

POWER PRO SOLUTIONS "SOLAR DE GOA"

Emerging Solar Contractor of the State - C&I

Raymagic Green Energy Pvt Ltd

Best Rooftop Solar Installer – Residential

Solstar Ultima LLP

Emerging Solar Rooftop Company

Rama Solar

SERVICE EXCELLENCE

State Solar Distributor of the Year

WATTMAISTER ENERGY LLP

PROJECT SHOWCASE

Best Solar Project of the Year- Residential

Solstar Ultima LLP

INDIVIDUAL LEADERSHIP

Women-Driven Solar Business Excellence Award

ANJALI KAMAT
HEAD BUSINESS OPERATIONS
GRK ENTERPRISES.

Institutional Rooftop Solar Gains Momentum

While utility-scale projects continue to dominate headlines, rooftop solar is experiencing strong growth through public-sector institutions.

Recent projects include:

- SECI's 5.5 MW Rooftop Solar Project at Delhi University North Campus
- SECI's 12.25 MW Rooftop Solar Programme Across Jawahar Navodaya Vidyalayas
- NVVN's 320 kW Rooftop Solar Project at AIIMS Bilaspur
- AAI's 1.5 MW Rooftop Solar PV Plant at Chennai International Airport
- Jharkhand's 6 MW Rooftop Solar Maintenance and Operation Project
- NEEPCO's Stage-II Rooftop Solar Programme under the PM Surya Ghar Scheme in Northeast India
- BHEL's 1.13 MW Rooftop Solar Project with 4.52 MWh BESS in Hyderabad

These projects highlight the increasing role of educational institutions, healthcare facilities, airports, and government infrastructure in driving distributed renewable energy adoption.

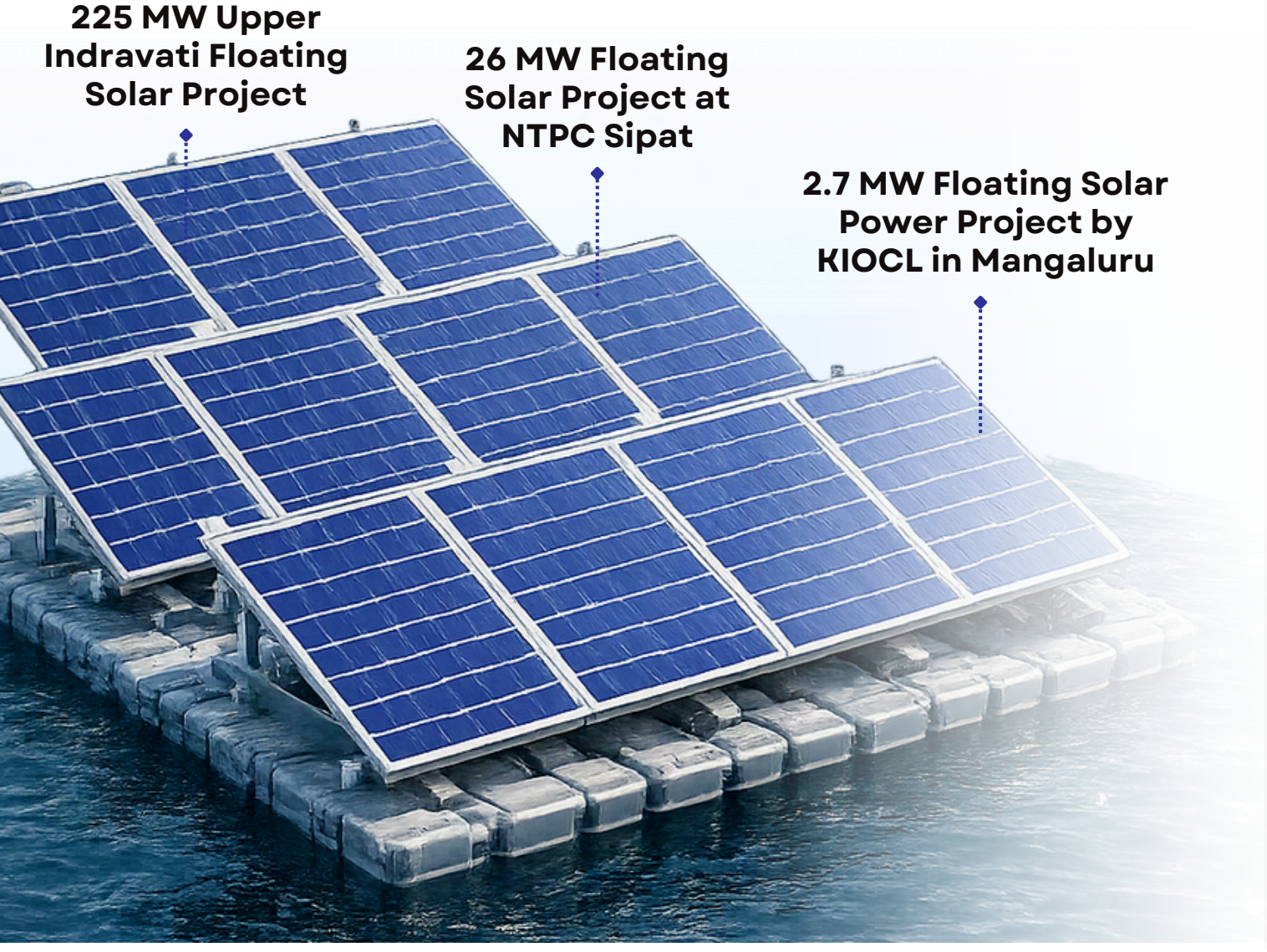
Unlike utility-scale projects, rooftop installations reduce transmission losses, lower electricity expenditure for public institutions, and support decentralized energy generation.

The sector is gradually becoming an important complement to India's large-scale solar expansion.

Floating Solar Moves Into The Mainstream

Another emerging theme is the rise of floating solar projects.

Recent opportunities include:



"Floating solar is turning water surfaces into the next frontier of renewable energy."

These projects demonstrate growing confidence in floating solar technology as land availability becomes increasingly constrained.

By utilizing reservoirs and water bodies, floating solar offers an attractive pathway for expanding renewable energy capacity without competing for land resources.

Green Hydrogen Infrastructure Begins To Emerge

Although still at an early stage, green hydrogen infrastructure is beginning to appear within India's renewable energy procurement landscape.

Key projects include:

- ₹71.70 Crore Green Hydrogen Road Connectivity Project at Old Kandla by Deendayal Port Authority

- Captive Jetty DPR Consultancy for the 240 MW NGEL Green Hydrogen Hub at Pudimadaka

These projects highlight an important shift in thinking.

The industry is beginning to move beyond hydrogen production alone and toward building the logistics, transportation, and export infrastructure necessary to support a future hydrogen economy.

> *"India is no longer just building renewable projects it is building the foundation of a new energy system."*

Conclusion: Building The Architecture Of India's Next Energy System

The recent tender pipeline provides a compelling snapshot of India's renewable energy future.

Projects such as the **7,800 MWh Bikaner BESS, 3,300 MWh Khavda BESS, 800 MW / 3,200 MWh Khavda Storage Project, 14 GW Gujarat Renewable Energy Transmission System, 225 MW Upper Indravati Floating Solar Project, 12.25 MW Jawahar Navodaya Vidyalaya Rooftop Solar Programme, and 240 MW Pudimadaka Green Hydrogen Hub Infrastructure** reveal an industry that is becoming increasingly integrated and sophisticated.

If the previous decade was defined by solar deployment, the next decade will be defined by integration.

Storage, transmission, grid stability, forecasting, distributed generation, floating solar, and green hydrogen infrastructure will increasingly determine the success of India's clean energy transition.

The country's renewable energy sector is no longer simply building projects.

It is building the architecture of a new energy system.

> *"The next phase of renewable growth belongs to the infrastructure that connects, stores, and optimizes clean power."*

Solar Manufacturing And Energy Storage Convergence: Opportunities For Integrated Clean Energy Factories In India

India's clean energy transition is entering a new phase where solar PV manufacturing and energy storage systems are becoming closely connected. As the country rapidly expands renewable energy capacity, the need for integrated clean energy factories is growing stronger. These factories combine solar module, cell, wafer, battery, and energy storage manufacturing within one ecosystem. This convergence is creating major opportunities for India to strengthen domestic manufacturing, reduce import dependence, generate employment, and support long-term energy security.

India has already emerged as one of the world's fastest-growing solar markets. Government initiatives such as the Production Linked Incentive (PLI) scheme, Approved List of Models and Manufacturers (ALMM), basic customs duty on imported solar equipment, and supportive renewable energy policies have encouraged domestic manufacturing growth. At the same time, the country is witnessing increasing investments in Battery Energy Storage Systems (BESS) because energy storage has become essential for managing intermittent renewable power generation.

Solar power generation depends on sunlight availability, while battery storage ensures stable electricity supply during non-solar hours. This technical relationship is encouraging manufacturers to build integrated facilities where solar PV products and battery systems can be produced together. Such integrated factories can reduce logistics costs, improve supply chain efficiency, and enhance product innovation through better coordination between technologies.

India's target of achieving 500 GW of non-fossil fuel capacity by 2030 has further accelerated the need for energy storage. According to several industry studies, India may require hundreds of gigawatt-hours of battery storage capacity over the next decade to support grid stability and renewable energy integration. This creates a strong business case for companies investing simultaneously in solar and storage manufacturing.

Large Indian companies and global investors are now exploring giga-factory models that combine solar cells, modules, battery cells, and storage solutions under one manufacturing cluster. States such as Gujarat, Tamil Nadu, Andhra Pradesh, and Odisha are becoming key destinations for such investments due to port connectivity, industrial infrastructure, and policy support. Integrated manufacturing parks can also attract ancillary industries including glass, aluminum frames, inverters, battery chemicals, and electronics manufacturing.

Another important advantage of integrated clean energy factories is technological collaboration. Advanced solar technologies such as TOPCon, HJT, and perovskite tandem cells are increasingly being linked with smart storage systems, artificial intelligence, and energy management software. Manufacturers that develop expertise in both solar and storage technologies may gain stronger competitiveness in global export markets.

The convergence also supports India's larger economic goals. Integrated factories can generate thousands of skilled and semi-skilled jobs across engineering, automation, research, assembly, logistics, and maintenance. Educational institutions and skill development agencies may also benefit through specialized training programs focused on renewable manufacturing technologies.

However, several challenges remain. India still depends heavily on imports for battery raw materials such as lithium, cobalt, and nickel. Domestic supply chains for advanced solar wafers and battery chemicals are also underdeveloped. High capital costs, technology transfer barriers, and global competition from established manufacturing countries continue to create pressure on Indian manufacturers. To address these issues, long-term policy stability, research funding, recycling infrastructure, and international partnerships will be critical.

Despite these challenges, the convergence of solar manufacturing and energy storage presents a transformational opportunity for India. Integrated clean energy factories can help the country move beyond being only a renewable energy market and become a global manufacturing hub for next-generation clean energy technologies. As solar and storage increasingly work together, India's industrial future may be shaped by factories that produce not just power equipment, but complete clean energy ecosystems.

UPPCL Concludes 375 MW/1500 Mwh BESS Auction; KCC Buildcon, Agastya Green Energy, And MKC Green Energy Secure Projects At ₹6.45–6.46/Kwh

Uttar Pradesh Power Corporation Limited (UPPCL) has concluded the auction for **375 MW/1500 MWh** of standalone Battery Energy Storage Systems (BESS) under **VGF Phase II**. The project features a **4-hour storage system** with one cycle per day over **15 years**. Tariffs were discovered between **₹6.45/kWh and ₹6.46/kWh.**

KCC Buildcon secured the largest share with **187.5 MW/750 MWh at ₹6.45/kWh**, while **Agastya Green Energy** won **62.5 MW/250 MWh** at the same tariff. **MKC Green Energy** received **45 MW/180 MWh at ₹6.46/kWh.** Developers must secure grid connectivity and sign the **BEDPA within 30 days** of the LoA, with **financial closure required within 12 months.**

UPPCL 375 MW/1500 MWH STANDALONE BESS AUCTION RESULTS

Bidder Name	Capacity (MW)	Tariff (₹/kWh)
KCC Buildcon	187.5	6.45
Agastya Green Energy	62.5	6.45
MKC Green Energy	45	6.46

SOLARQUARTER RESEARCH

SECI Awards 5.6 MW Rooftop Solar Projects Across 14 Government Buildings Under RESCO Model

The Solar Energy Corporation of India (SECI) has finalized an auction for **5,665 kW (5.6 MW)** of rooftop solar capacity across **14 government buildings** under its **Tranche-VIII RESCO tender. Seven developers,** including **Mateshwari Bus Operations, GH2 Solar, GP Eco Solutions India, Solaris Electrical Services, Alcon India, and Kaho Solar,** were selected for project execution.

The projects will be installed at institutions such as **NIFT, NIT Jamshedpur, IISER, the Ministry of External Affairs, and the Textile Committee.** Tariffs discovered ranged from **₹2.97/kWh to ₹3.97/kWh,** highlighting the growing competitiveness of rooftop solar. Developers will manage project design, installation, and **25 years of operation and maintenance** under the RESCO model

JAKEDA Allocates 45.75 MW Rooftop Solar Projects Across Government Buildings In J&K Under 152.75 MW Tender

The Jammu and Kashmir Energy Development Agency (JAKEDA) has awarded **45.75 MW** of rooftop solar capacity under its 152.75 MW RESCO-model tender covering **6,613 government buildings** across **12 clusters.** Under the model, developers will finance, install, operate, and maintain the systems for **25 years**, while government departments purchase power at fixed tariffs.

A consortium of **Photon Surya Urja and Horizon Renewable Power** secured the largest allocation of **36 MW** for the Health and Medical Education Department in Jammu at **₹4.19/kWh. Fujiyama Power Systems** won **4 MW** at **₹5.25/kWh**, while **Kruti Power Projects** secured multiple projects. Developers must maintain a **13.5% CUF** and use **ALMM-compliant components.**

NLC India Awards 250 MW/500 MWh BESS EPC Contract To Pace Digitek In Tamil Nadu

NLC India, through its subsidiary NLC India Renewables, has awarded a **250 MW/500 MWh Battery Energy Storage System (BESS)** project to **Pace Digitek** under an EPC contract worth **₹709.919 crore (including GST).** The turnkey project will be deployed at **Ottapidaram, Annupankulam, and Kayathar** substations operated by TANTRANSCO in Tamil Nadu. Pace Digitek's Lineage Power division will handle the complete design, engineering, supply, installation, testing, and commissioning of the storage facilities.

The company will also provide **12 years of operation and maintenance services** after commissioning. The entire project is scheduled for completion within **12 months** from the award date. The storage system will enhance **grid stability,** support **peak demand management,** and improve integration of **solar and wind energy** across Tamil Nadu.

SECI Awards 10 MW Solar And 20 MWh BESS Project In Odisha To BNC Power Projects

The Solar Energy Corporation of India (SECI) has awarded a renewable energy project in Odisha featuring a **10 MW grid-connected solar power plant** coupled with a **10 MW/20 MWh Battery Energy Storage System (BESS). BNC Power Projects** emerged as the successful bidder for the contract. The integrated battery storage system will store surplus solar energy during peak generation periods and supply power when demand rises or solar output declines, enhancing **grid stability** and reliability.

BNC Power Projects will undertake the complete project scope, including design, engineering, supply, construction, commissioning, and **10 years of operation and maintenance.** The project supports India's clean energy goals, improves **peak load management,** and promotes wider adoption of solar-plus-storage technologies.

The Next Frontier In Indian Solar Manufacturing: Opportunities In Wafer, Ingot, And Polysilicon Production

India has rapidly emerged as one of the world's fastest-growing solar energy markets, driven by ambitious renewable energy targets, supportive government policies, and rising electricity demand. While the country has achieved significant growth in solar module and cell manufacturing, the next major frontier lies deeper in the solar value chain — wafer, ingot, and polysilicon production. These upstream components are essential for building a fully integrated domestic solar manufacturing ecosystem and reducing India's heavy dependence on imports.

At present, India imports a large share of its solar wafers, ingots, and polysilicon, mainly from China, which dominates the global solar supply chain. Although Indian companies have expanded module manufacturing capacity in recent years, the absence of large-scale domestic upstream production creates a major supply chain gap. This dependency exposes manufacturers to price fluctuations, geopolitical tensions, and supply disruptions. As global demand for solar products continues to rise, India now sees a strategic opportunity to strengthen energy security through backward integration.

Government initiatives are playing an important role in encouraging this transition. The Production Linked Incentive (PLI) scheme for high-efficiency solar PV modules has already attracted billions of dollars in planned investments. Several Indian companies are now exploring integrated manufacturing facilities that include polysilicon, ingots, wafers, cells, and modules under one roof. Policies such as Approved List of Models and Manufacturers (ALMM), Basic Customs Duty (BCD), and domestic content requirements are further supporting local manufacturing growth.

The opportunity in polysilicon production is particularly significant. Polysilicon is the raw material used to manufacture solar wafers and is considered one of the most technology-intensive segments of the solar supply chain. Establishing domestic polysilicon manufacturing can help India reduce import dependence and create long-term industrial competitiveness. However, this segment requires massive capital investment, access to affordable electricity, advanced technology, and strong infrastructure support. Since energy consumption in polysilicon manufacturing is very high, the availability of low-cost renewable power can become a competitive advantage for India in the future.

Similarly, wafer and ingot manufacturing present strong growth potential as solar deployment accelerates across utility-scale, rooftop, and industrial sectors. Domestic production of wafers can help reduce logistics costs, improve supply chain reliability, and increase value addition within the country. Indian manufacturers are also expected to benefit from rising global demand as many countries seek alternatives to concentrated supply chains. With increasing international focus on supply chain diversification, India has an opportunity to position itself as a reliable global manufacturing hub.

Despite the opportunities, several challenges remain. High initial investment costs, technological barriers, lack of skilled manpower, and limited access to advanced manufacturing equipment may slow progress. Competition from established global players, especially Chinese manufacturers with economies of scale, also remains intense. To overcome these barriers, India will require long-term policy stability, financial incentives, research and development support, and strategic international partnerships.

The future of Indian solar manufacturing will depend not only on expanding module production but also on building a strong upstream ecosystem. Developing wafer, ingot, and polysilicon capabilities can transform India from a solar consumption market into a global solar manufacturing powerhouse. As the country moves toward its clean energy and net-zero ambitions, upstream solar manufacturing could become one of the most important industrial growth stories of the coming decade.

Critical Role Of Solar Glass, EVA, And Backsheets In Strengthening India's Domestic PV Ecosystem

India's solar power sector is growing rapidly, supported by ambitious renewable energy targets, policy support, and increasing investments in domestic manufacturing. While solar modules and cells often receive the most attention, the development of a strong domestic ecosystem also depends heavily on key supporting materials such as solar glass, EVA (Ethylene Vinyl Acetate), and backsheets. These components play a crucial role in improving module efficiency, durability, and long-term reliability. Strengthening local manufacturing of these materials is becoming essential for India's goal of building a self-reliant solar PV industry.

Solar glass is one of the most important components in a solar module. It protects solar cells from environmental damage while allowing maximum sunlight transmission. High-quality solar glass improves module performance, reduces reflection losses, and increases energy generation. India currently depends significantly on imports for solar glass, especially from China and Southeast Asian countries. This dependence exposes the domestic industry to price volatility, supply chain disruptions, and trade-related risks. Expanding domestic solar glass manufacturing can help reduce import dependence and create a more secure supply chain for module manufacturers. It can also support the government's "Make in India" initiative and generate employment opportunities in the manufacturing sector.

EVA sheets are another critical component used in solar modules. EVA acts as an encapsulant that binds solar cells together and protects them from moisture, dust, and mechanical stress. The quality of EVA directly affects the lifespan and performance of solar modules. As India's solar installations continue to rise, the demand for EVA materials is expected to increase significantly. However, the domestic production capacity for EVA remains limited. Building a strong local EVA manufacturing base will help reduce costs, improve supply availability, and encourage technological innovation within India's renewable energy industry.

Backsheets are equally important in ensuring the safety and durability of solar modules. They provide electrical insulation and protect modules from harsh environmental conditions such as heat, humidity, and ultraviolet radiation. Poor-quality backsheets can lead to module failures, reduced efficiency, and higher maintenance costs. India's growing climate diversity, ranging from deserts to coastal regions, requires highly durable backsheets suitable for different environmental conditions. Developing domestic expertise in backsheet manufacturing can help Indian companies produce customized solutions for local market requirements while improving overall module reliability.

The government's Production Linked Incentive (PLI) scheme and supportive renewable energy policies are encouraging investments in integrated solar manufacturing. However, focusing only on module assembly without strengthening upstream materials may limit the long-term competitiveness of the Indian solar sector. A fully integrated ecosystem that includes solar glass, EVA, backsheets, wafers, and cells is necessary to achieve energy security and reduce import dependency.

In addition to strengthening supply chains, domestic manufacturing of these materials can also improve quality control, encourage research and development, and support exports. Indian manufacturers can benefit from rising global demand for diversified solar supply chains as many countries seek alternatives to overdependence on a single market. Investments in advanced manufacturing technologies, skilled workforce development, and raw material supply infrastructure will further enhance India's position in the global solar industry.

As India moves toward becoming a global clean energy leader, the importance of solar glass, EVA, and backsheets cannot be overlooked. These supporting materials form the backbone of reliable and efficient solar modules. Strengthening their domestic production will play a vital role in creating a resilient, competitive, and sustainable PV manufacturing ecosystem for the future.

PLI Scheme Impact Assessment: How Incen Integrated Solar Manufacturing Ecosystem

India's Production Linked Incentive (PLI) Scheme has emerged as one of the most important policy tools driving the growth of the domestic solar PV manufacturing industry. Introduced by the Government of India to reduce dependence on imported solar equipment, especially from China, the scheme is now playing a major role in building a strong and integrated solar manufacturing ecosystem across the country. With India targeting 500 GW of non-fossil fuel energy capacity by 2030, the need for local manufacturing of solar cells, wafers, modules, and related components has become strategically important for energy security, employment generation, and industrial development.

The PLI Scheme for High Efficiency Solar PV Modules was launched with a financial outlay of more than ₹24,000 crore. Unlike earlier policies that mainly encouraged solar deployment, the PLI scheme directly supports manufacturing by offering incentives linked to production performance, efficiency levels, and local value addition. This has encouraged companies to invest not only in module assembly but also in backward integration, including solar cells, wafers, ingots, and polysilicon manufacturing. As a result, India is gradually shifting from being a solar module importer to becoming a global manufacturing destination.

Several leading Indian companies, including Reliance Industries, Tata Power Solar, Adani Solar, Waaree Energies, Vikram Solar, and ReNew, have announced large-scale investments under the PLI program. These investments are creating a new industrial ecosystem that includes manufacturing plants, ancillary suppliers, logistics support, and research facilities. According to industry estimates, India's solar module manufacturing capacity is expected to cross 150 GW within the next few years, while solar cell manufacturing is also witnessing rapid expansion.

tives Are Accelerating India's

One of the biggest achievements of the PLI scheme is its focus on integrated manufacturing. Earlier, many Indian manufacturers were dependent on imported solar cells and raw materials. The current policy structure rewards companies that develop complete value chains within India. This reduces import dependence, strengthens supply chain resilience, and improves the competitiveness of Indian manufacturers in global markets. It also supports the government's "Make in India" and "Atmanirbhar Bharat" initiatives.

The scheme is also generating significant employment opportunities. Large solar manufacturing parks are creating direct and indirect jobs in engineering, operations, transportation, installation, and maintenance. States such as Gujarat, Tamil Nadu, Andhra Pradesh, and Rajasthan are emerging as key manufacturing hubs due to favorable policies, port connectivity, and industrial infrastructure. This regional industrial growth is expected to contribute to long-term economic development.

However, some challenges still remain. India continues to depend heavily on imports for upstream materials such as polysilicon and wafers. The high capital cost of integrated manufacturing facilities and technology limitations also create barriers for smaller players. In addition, global price fluctuations and competition from established international manufacturers remain key concerns for the domestic industry. Industry experts believe that long-term policy stability, research support, and financial incentives for advanced technologies such as TOPCon and HJT modules will be essential for sustaining growth.

Overall, the PLI Scheme has significantly accelerated India's transition toward a self-reliant solar manufacturing ecosystem. It has improved investor confidence, strengthened industrial capabilities, and aligned renewable energy goals with domestic economic growth. As global demand for clean energy technologies increases, India's policy-driven manufacturing expansion could position the country as a major global supplier of high-efficiency solar PV products in the coming decade.

Rooftop Solar Demand Driving Domestic Manufacturing: How Distributed Energy Is Reshaping Factory Expansion Plans

India's rooftop solar market is emerging as a major force behind the expansion of domestic solar manufacturing. As residential, commercial, and industrial consumers increasingly adopt distributed solar systems, Indian manufacturers are reshaping their factory expansion strategies to meet rising demand for locally produced modules, cells, inverters, and energy storage systems. The shift is not only supporting India's renewable energy goals but also strengthening the country's ambition to become a global solar manufacturing hub.

Over the last few years, rooftop solar installations in India have witnessed significant growth due to falling system costs, rising electricity tariffs, and supportive government policies. Programs such as the PM Surya Ghar Muft Yojana and state-level net-metering policies have encouraged households and small businesses to invest in rooftop systems. Unlike utility-scale solar projects that depend heavily on large developers and imported equipment, rooftop solar creates direct demand from millions of individual consumers and enterprises across urban and semi-urban regions.

This distributed demand pattern is influencing how manufacturers plan their production capacities. Earlier, most Indian manufacturers focused on supplying utility-scale solar parks where price competition was extremely high. Today, rooftop customers are demanding high-efficiency modules, aesthetically designed panels, smart inverters, and reliable after-sales support. This change is pushing manufacturers to invest in advanced technologies such as TOPCon and HJT solar cells, smart energy management systems, and integrated battery storage solutions.

Domestic manufacturers are also expanding their factories closer to regional demand centers. Several companies are setting up module assembly units, inverter production facilities, and battery manufacturing plants in states with strong rooftop solar adoption such as Gujarat, Maharashtra, Rajasthan, Tamil Nadu, and Karnataka. The aim is to reduce logistics costs, improve supply chain efficiency, and provide faster product delivery to installers and distributors.

Another important factor reshaping factory expansion plans is the growing demand for residential energy storage. Consumers are increasingly looking for backup power solutions due to grid instability and rising power outages in some regions. As rooftop solar systems become more common, battery manufacturers are scaling up lithium-ion and advanced chemistry storage production in India. This is creating a new ecosystem where solar modules, batteries, inverters, and software platforms are being manufactured together under integrated facilities.

> **"THE FUTURE OF INDIA'S SOLAR MANUFACTURING SECTOR WILL BE SHAPED NOT ONLY BY UTILITY-SCALE PROJECTS, BUT BY MILLIONS OF ROOFTOPS DRIVING DEMAND, INNOVATION, AND INVESTMENT."**

The rooftop solar segment is also supporting the rise of smaller and medium-scale manufacturing companies. Unlike utility-scale projects that are dominated by large suppliers, distributed solar markets allow regional manufacturers to participate through customized products and localized service networks. This is helping create jobs across manufacturing, installation, operations, and maintenance sectors.

However, challenges remain. Domestic manufacturers still face dependence on imported wafers, polysilicon, and advanced production equipment. Price competition from cheaper imports also continues to pressure margins. In addition, policy uncertainty and delays in subsidy disbursement can affect rooftop solar demand growth.

Despite these challenges, rooftop solar is steadily transforming India's solar manufacturing landscape. Distributed energy adoption is no longer just about electricity generation at the consumer level. It is now driving industrial investments, encouraging technology upgrades, and shaping the future expansion strategies of India's domestic clean energy manufacturing sector.

Can India Build A Polysilicon-To-Module Value Chain? Opportunities And Risks In Upstream Manufacturing

India"s ambition to become a global clean energy powerhouse is no longer limited to installing solar power projects. The country is now focusing on building a complete solar PV manufacturing ecosystem, from polysilicon and wafers to cells and modules. As India targets over 500 GW of non-fossil fuel capacity by 2030, strengthening domestic solar manufacturing has become both an economic and strategic priority. The key question, however, remains whether India can successfully build a full polysilicon-to-module value chain while competing with established global giants, especially China.

Currently, India has made significant progress in module and solar cell manufacturing. Domestic module manufacturing capacity has crossed 170 GW, while cell manufacturing is also rapidly expanding under government support schemes such as the Production Linked Incentive (PLI) program. Several Indian companies are investing heavily in integrated manufacturing facilities that include wafers and cells. However, the upstream segment, particularly polysilicon and ingot-wafer manufacturing, remains largely underdeveloped.

The opportunity for India is enormous. A strong domestic value chain can reduce dependence on imports, improve energy security, create thousands of skilled jobs, and attract foreign investment. The global solar industry is expected to witness massive demand growth over the next decade as countries accelerate decarbonization efforts. India can position itself as an alternative manufacturing hub for global markets seeking diversification beyond China. In addition, local manufacturing can support the government's "Make in India" and "Atmanirbhar Bharat" initiatives while strengthening export competitiveness.

> "The race for solar leadership will be won not only through installations, but through the strength, scale, and resilience of domestic manufacturing."

Investment in upstream manufacturing also offers long-term economic benefits. Polysilicon and wafer production are high-value segments that can improve profit margins and reduce supply chain risks for Indian manufacturers. If India succeeds in creating integrated solar manufacturing clusters with reliable infrastructure, logistics, and policy support, it can significantly reduce production costs over time. States such as Gujarat, Tamil Nadu, Andhra Pradesh, and Odisha are already emerging as potential manufacturing hubs due to land availability, ports, and industrial infrastructure.

Despite these opportunities, the risks and challenges remain substantial. Polysilicon production is highly capital-intensive and energy-intensive. China dominates more than 80 percent of the global polysilicon and wafer market because of its economies of scale, lower costs, and well-established supply chains. Indian manufacturers may struggle to compete on pricing during the initial years. High electricity costs in India also pose a major concern because polysilicon manufacturing requires continuous and affordable power supply.

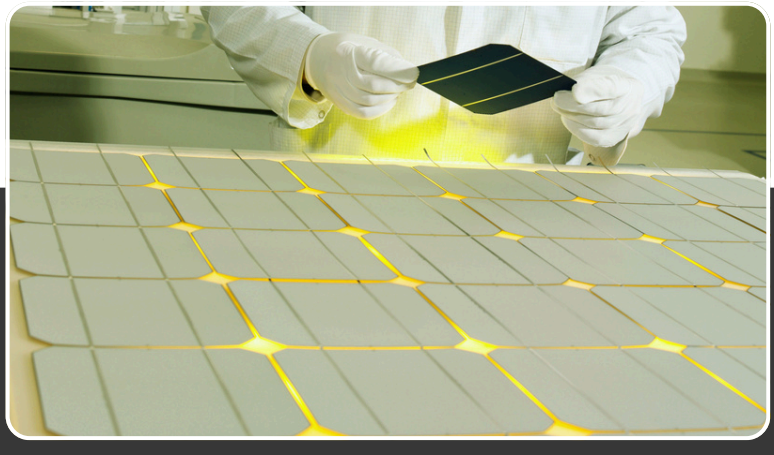
Technology dependency is another challenge. Advanced manufacturing processes and equipment for upstream solar production are still controlled by a few international players. India will need strong technology partnerships, research investments, and skilled manpower to close this gap. In addition, fluctuating global solar module prices and market oversupply could impact profitability for new Indian investments.

Policy stability will play a critical role in determining success. Investors require long-term visibility on import duties, incentives, financing support, and domestic procurement policies. Sudden policy changes could discourage large-scale investments. Access to low-cost green financing will also be necessary because upstream manufacturing projects require billions of dollars in capital.

India has the potential to build a competitive polysilicon-to-module value chain, but the journey will require patient investment, policy consistency, and technological advancement. While challenges are significant, the strategic importance of solar manufacturing in the global energy transition makes this a crucial investment opportunity for India's future.

Recycling And Circular Economy In Solar Manufacturing: Managing End-Of-Life PV Modules In India

India's solar manufacturing sector is expanding rapidly as the country moves toward its ambitious renewable energy goals and strengthens domestic production under initiatives such as the Production Linked Incentive (PLI) scheme and the Approved List of Models and Manufacturers (ALMM). However, alongside this growth, a new challenge is emerging that cannot be ignored — the management of end-of-life solar photovoltaic (PV) modules. As millions of solar panels installed during the first phase of India's solar boom approach the end of their operational life over the next two decades, recycling and circular economy practices are becoming critical for the long-term sustainability of the industry.



Solar PV modules generally have a lifespan of 25 to 30 years, but factors such as weather conditions, transportation damage, manufacturing defects, and early replacements can generate waste much earlier. According to various industry estimates, India is expected to generate several million tonnes of solar waste by 2050. This creates both an environmental challenge and an economic opportunity for the country's solar manufacturing ecosystem.

Most PV modules contain valuable materials such as glass, aluminum, silicon, copper, and silver. If these materials are recovered efficiently through recycling, they can reduce dependence on imported raw materials and lower manufacturing costs for domestic solar companies. This is especially important for India, where the majority of solar manufacturing inputs are still imported from global markets. Recycling can therefore support resource security while promoting a more self-reliant manufacturing ecosystem.

At present, India's solar recycling industry is still in its early stage. The country lacks a dedicated regulatory framework specifically focused on solar PV waste management. Existing e-waste regulations provide limited coverage for solar panels, and large-scale recycling infrastructure is yet to be fully developed. Many developers and manufacturers are still exploring cost-effective collection, dismantling, and recovery systems for damaged or expired modules.

One of the biggest challenges is the complex structure of solar panels. Recovering high-value materials from PV modules requires advanced technologies and specialized processing methods. Traditional recycling methods mainly recover glass and aluminum, while valuable materials such as silver and high-purity silicon are often difficult and expensive to extract. Without efficient recovery technologies, recycling businesses may struggle to achieve commercial viability.

Despite these challenges, the circular economy model is gaining momentum in India's solar sector. Several startups and recycling companies are investing in innovative recycling technologies that can improve material recovery rates and reduce environmental impact. Manufacturers are also beginning to explore eco-design strategies, where solar modules are designed for easier disassembly and recycling in the future. Such approaches can significantly improve sustainability across the entire product lifecycle.

The growing focus on sustainability among investors and global buyers is also pushing Indian manufacturers to adopt circular economy principles. International markets are increasingly emphasizing ESG compliance, carbon reduction, and responsible waste management. Companies that establish robust recycling systems may gain a competitive advantage in export markets while strengthening their environmental credentials.

Government support will play a major role in accelerating this transition. Industry experts believe India needs a dedicated solar waste management policy that encourages recycling investments, defines producer responsibility obligations, and supports research in advanced recovery technologies. Financial incentives for recycling facilities and collaboration between manufacturers, recyclers, and policymakers can further strengthen the ecosystem.

The future of India's solar manufacturing industry will depend not only on expanding module production capacity but also on managing the entire lifecycle of solar products responsibly. Recycling and circular economy practices can help reduce waste, recover critical materials, create green jobs, and improve supply chain resilience. As India moves toward becoming a global solar manufacturing hub, sustainable end-of-life PV management will become an essential pillar of the industry's long-term growth strategy.

Domestic Solar Cell Manufacturing Bottlenecks: Can India Bridge The Technology And Equipment Gap?

India's solar energy journey has entered a new phase where the focus is no longer limited to installing solar projects but also on building a strong domestic manufacturing ecosystem. Over the past few years, India has emerged as one of the world's fastest-growing solar markets. However, despite rapid growth in solar module manufacturing, the country still faces major bottlenecks in domestic solar cell manufacturing. The gap between module assembly and advanced solar cell production remains a key challenge for India's ambition to become self-reliant in the renewable energy sector.

India currently depends heavily on imports for high-efficiency solar cells, manufacturing equipment, wafers, and key raw materials. While several companies have announced large-scale investments in solar cell facilities under government incentive schemes such as the Production Linked Incentive (PLI) program, the industry still struggles with technology access, capital costs, and supply chain limitations. Most domestic manufacturers continue to rely on imported machinery from countries like China because India lacks a mature ecosystem for advanced solar manufacturing equipment.

One of the biggest challenges is the technology gap. Global solar manufacturing is rapidly shifting towards advanced technologies such as TOPCon, HJT, and back-contact cells, which offer higher efficiency and better performance. Indian manufacturers are still in the process of scaling these technologies commercially. Establishing advanced solar cell production lines requires high investment, skilled manpower, and continuous research and development. Many Indian firms face difficulties in competing with global manufacturers who already operate at much larger scales and benefit from established supply chains.

> "India's solar future will be defined not by how many panels it installs, but by how much of the solar value chain it can build at home."

Another major bottleneck is the absence of domestic wafer manufacturing. Wafers are the foundation of solar cell production, yet India imports most of its wafer requirements. Without an integrated manufacturing chain that includes polysilicon, ingots, wafers, cells, and modules, Indian manufacturers remain vulnerable to global price fluctuations and supply disruptions. Building this upstream ecosystem requires billions of dollars in investment and long-term policy support.

The equipment gap also remains a serious concern. Advanced solar cell manufacturing depends on precision machinery, automation systems, and testing technologies. India has limited domestic capability in producing such equipment. As a result, manufacturers often face delays, high import costs, and dependence on foreign suppliers for maintenance and technical support. This not only increases project costs but also impacts production timelines.

Despite these challenges, India has several advantages that can help bridge the gap in the coming years. Government policies promoting domestic manufacturing, import duties on solar components, and incentives for integrated manufacturing are encouraging investments across the value chain. Several Indian companies are now investing in gigawatt-scale facilities with plans to adopt next-generation technologies. The growing domestic demand for solar power also provides a strong market for locally manufactured products.

Research institutions and industry partnerships can play an important role in closing the technology gap. Greater collaboration between manufacturers, universities, and technology providers can support innovation, workforce development, and localization of equipment manufacturing. In addition, India's focus on energy security and clean energy transition is likely to accelerate policy support for domestic manufacturing.

India's solar manufacturing sector stands at a critical turning point. While the country has made significant progress in module production, achieving global competitiveness in solar cell manufacturing will require stronger technological capabilities, integrated supply chains, and domestic equipment development. If these bottlenecks are addressed effectively, India has the potential to become not only a major solar market but also a leading global manufacturing hub for advanced solar technologies.

India's Solar Manufacturing Capacity Crosses 193 GW As ALMM Expansion Drives Technology Shift And Regional Growth

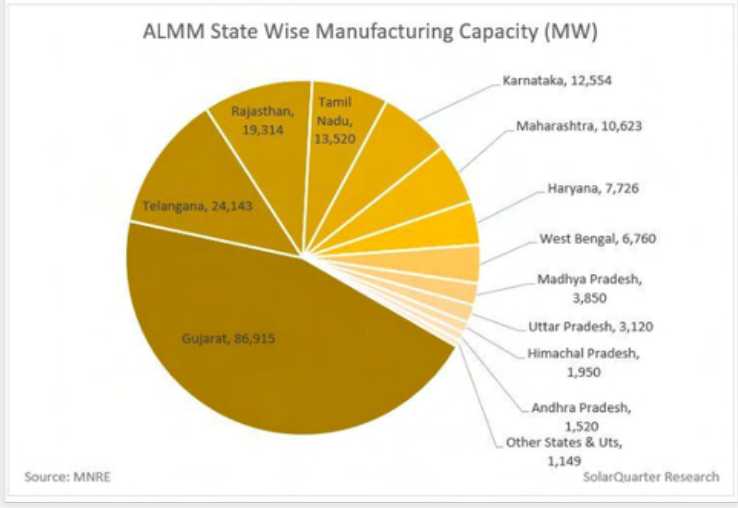
India's domestic solar manufacturing sector reached a major milestone in May 2026 after the Ministry of New and Renewable Energy (MNRE) updated its Approved List of Models and Manufacturers (ALMM) List-I. With nearly 20 GW of fresh additions and capacity optimizations, the country's total approved solar PV module manufacturing capacity has now touched 193,144 MW. Industry experts believe this rapid growth reflects India's strong policy push toward self-reliance in clean energy manufacturing and the increasing demand generated by large-scale rooftop and utility solar programs.

The latest ALMM data shows that India's solar manufacturing industry is rapidly shifting toward advanced technologies. Older polycrystalline modules are now being replaced by high-efficiency Mono PERC and n-type TOPCon technologies. Most manufacturers are also focusing on higher wattage modules above 540 Wp along with bifacial dual-glass designs, which are considered more efficient for large-scale projects.

Several new companies entered the ALMM list during the May 2026 update. Firms such as Sudarshan Saur Shakti, Nav-Yug Solar, and Silver Pumps and Motors added fresh manufacturing capacity using automated production lines. At the same time, leading manufacturers, including Waaree Energies, Reliance Industries, Rayzon Solar, Luminous, Novasys Greenergy, Redren Energy, and PIXON Green, expanded their existing capacities significantly. Industry analysts say this indicates rising investor confidence in India's domestic solar manufacturing ecosystem.

Research trends also show that India is witnessing a major transition from basic module assembly to advanced technology manufacturing. Many factories are now integrating automation, AI-based quality inspection, and high-efficiency cell processing technologies to improve performance and reduce production costs. According to market observers, this shift is helping Indian manufacturers compete with global suppliers, especially in export-focused markets.

The geographic distribution of manufacturing capacity reveals strong industrial clustering across certain states. Gujarat continues to dominate the sector with nearly 45 percent of the country's total ALMM-listed capacity, estimated at around 86.9 GW. Mega projects led by Reliance and Adani Solar, along with large expansions by Rayzon Solar in Surat, have strengthened Gujarat's position as India's solar manufacturing hub.



Southern states are also emerging as major centers for advanced solar production. Telangana and Tamil Nadu together account for a significant share of high-efficiency manufacturing facilities. Premier Energies' large-scale operations in Telangana are among the notable examples driving the region's growth.

At the same time, states such as Rajasthan, Karnataka, Maharashtra, and Haryana are building regional manufacturing ecosystems supported by rising rooftop and commercial solar demand. Emerging states, including Uttar Pradesh, Madhya Pradesh, Andhra Pradesh, and Himachal Pradesh, are also gradually attracting investments.

However, researchers point out that India still faces a major supply-chain challenge. While module manufacturing capacity has crossed 193 GW, domestic solar cell capacity remains around 30.5 GW under ALMM List-II. Experts believe India must now focus on expanding ingot, wafer, and solar cell manufacturing to reduce import dependence and achieve full supply-chain integration.

SUNIL PANIGRAHI

Country Manager – India, **Hopewind**

Building High-Performance Energy Storage Solutions for India's Renewable Future

As India accelerates its clean energy transition, energy storage is emerging as a critical enabler of grid stability, renewable integration, and long-term energy security. In this exclusive interview, ***Sunil Panigrahi, Country Manager – India, Hopewind,*** *shares his perspective on the evolving battery energy storage landscape and the technologies shaping its future.*

He discusses the role of advanced power conversion systems, liquid-cooling innovations, hybrid solar-plus-storage architectures, and grid-forming capabilities in addressing India's unique operational challenges while enhancing project performance, reliability, and economic viability. Panigrahi also offers insights into the opportunities and priorities that will define the next phase of India's energy storage growth.

Q How does Hopewind's liquid-cooled PCS operating at 51°C redefine project viability and LCOE in India?

Hopewind's liquid-cooled PCS, capable of continuous full-load operation at 51°C without derating, addresses one of the biggest challenges for battery energy storage projects in India—maintaining performance during extreme heat. In regions such as Rajasthan and Gujarat, where temperatures frequently exceed 50°C, conventional systems may lose output just when energy demand and market value are highest.

By delivering full rated power under these conditions, Hopewind helps maximize energy availability and project revenues.This capability improves project viability by reducing performance risks, eliminating the need for equipment oversizing, and enabling reliable deployment in high-temperature environments. It also enhances investor confidence through more predictable energy delivery and cash flows.

From an LCOE perspective, higher energy throughput, reduced thermal losses, improved efficiency, and lower maintenance requirements contribute to lower lifecycle costs. The result is a more bankable, efficient, and profitable energy storage project, helping developers achieve stronger returns while supporting India's growing renewable energy ambitions.

Q How does the centralized PCS architecture improve EPC execution and reduce commissioning timelines?

Hopewind's centralized PCS architecture simplifies system design and integration by reducing the number of power conversion units, interconnections, and control interfaces required in a battery energy storage project. This streamlined approach minimizes engineering complexity, lowers installation effort, and reduces the potential for integration issues during project execution.

For EPC contractors, the centralized design enables faster deployment through standardized layouts, simplified cabling, and fewer on-site installation activities. The factory-tested and pre-engineered solution also reduces commissioning risks, allowing quicker system validation and grid synchronization.

As a result, projects can achieve shorter commissioning timelines, lower labor requirements, and faster commercial operation dates, helping developers accelerate revenue generation while reducing overall project execution costs.

Q How does liquid cooling improve performance and lifecycle in India's hot and dusty conditions?

Liquid cooling significantly enhances PCS performance and reliability in India's hot and dusty operating environments by providing more effective and uniform temperature control than conventional air-cooled systems. By efficiently removing heat from critical components, it enables stable operation at high ambient temperatures while preventing thermal derating during peak demand periods.

The closed-loop cooling design also minimizes exposure to dust, sand, and other airborne contaminants that can accumulate inside equipment and degrade performance over time. This reduces component stress, lowers maintenance requirements, and improves system availability.

By maintaining optimal operating temperatures and protecting sensitive electronics from harsh environmental conditions, liquid cooling extends equipment lifespan, improves energy conversion efficiency, and helps ensure consistent performance throughout the project lifecycle, ultimately reducing operating costs and enhancing project returns.

Q How does the 385kW utility inverter integrate with your storage solutions for hybrid solar-plus-storage projects?

Hopewind's 385kW utility-scale inverter is designed to integrate seamlessly with battery energy storage systems, creating a highly efficient and flexible solution for hybrid solar-plus-storage projects. Through coordinated control between the inverter and PCS, the system can intelligently manage solar generation, battery charging and discharging, and grid interactions from a unified platform.

This integration enables developers to maximize renewable energy utilization by storing excess solar generation during low-demand periods and dispatching it when demand or electricity prices are higher. The combined solution also supports applications such as peak shaving, energy arbitrage, renewable smoothing, and grid support services.

By leveraging compatible control architectures, communication protocols, and energy management systems, Hopewind's solar and storage solutions simplify system integration, improve operational efficiency, and help project owners maximize asset utilization and project returns.

Q How important are grid-forming features like VSG and black-start for India's future storage tenders?

Grid-forming capabilities such as Virtual Synchronous Generator (VSG) functionality and black-start support are expected to become increasingly important as India expands renewable energy and battery storage deployment. As the share of inverter-based resources grows, maintaining grid stability, frequency control, and system resilience becomes more challenging, creating a greater need for storage systems that can actively support grid operations rather than simply follow grid signals.

VSG technology enables battery energy storage systems to emulate the behavior of conventional synchronous generators by providing synthetic inertia, voltage support, and fast frequency response. This helps strengthen grid stability, particularly in regions with high renewable penetration and weaker grid infrastructure.

Black-start capability is equally valuable, allowing storage systems to help restore power following major grid disturbances or outages without relying on conventional generation. As utilities and grid operators place greater emphasis on resilience and reliability, these advanced functions are likely to become key differentiators—and potentially mandatory requirements—in future storage tenders.

For developers and utilities, grid-forming storage solutions offer greater operational flexibility, improved grid support, and enhanced long-term value, positioning them as a critical component of India's evolving power system.

Sun-AP ECOPOWER
"SMART CHOICES, EMPOWERING FUTURE"

SunAP Ecopower Strengthens Installer Ecosystem with Focus on Solar, Hybrid and Energy Storage Solutions

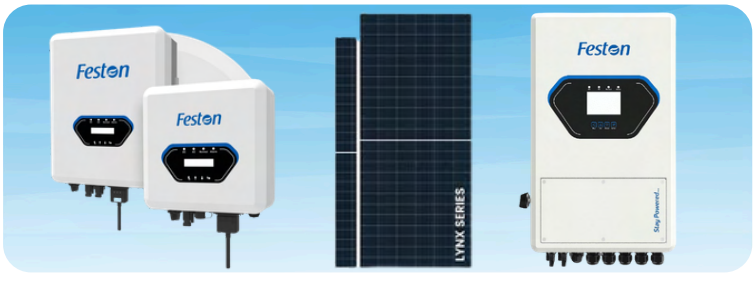
India's renewable energy sector is evolving rapidly, with solar power increasingly complemented by hybrid energy systems and Battery Energy Storage Systems (BESS) to meet the growing demand for reliable, efficient and sustainable power solutions. As the industry moves towards integrated energy management, knowledge sharing and technical capability building have become critical for installers and EPC companies delivering projects across residential, commercial and industrial segments.

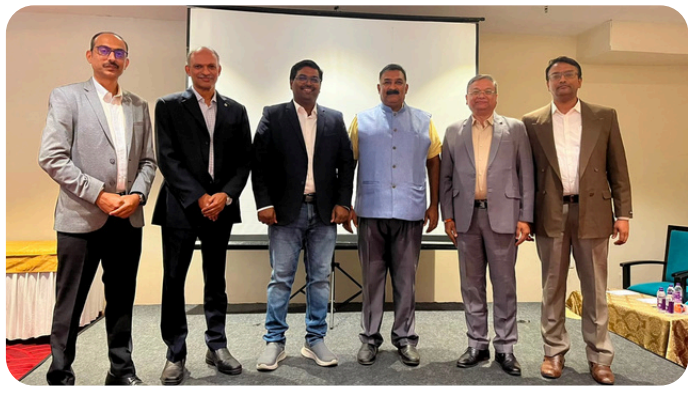
Reflecting this industry shift, Bengaluru-based **SunAP Ecopower** recently hosted **Solar Installers Meet 2026** in Bengaluru in association with **Novasys Greenergy** and **Feston SEV Pvt Ltd.** The event brought together solar installers, EPC contractors, channel partners, consultants and renewable energy professionals to discuss technology advancements, policy developments and practical applications that are shaping the next phase of India's clean energy transition. Guests were welcomed by Mr. Hrishikesh Manian, Director & COO, SunAP Ecopower, and Mr. Girish, Sr. General Manager, Novasys Greenergy.

The programme underscored SunAP Ecopower's role beyond product distribution. As a renewable energy distribution and channel development company, SunAP works closely with installers and EPC partners by providing technical guidance, engineering support, product selection assistance, commissioning support and after-sales services. Through regular training programmes and industry engagement initiatives, the company aims to strengthen the installer ecosystem and enable partners to confidently adopt emerging renewable energy technologies.

A major focus of the discussions was the growing convergence of solar generation and energy storage. With changing electricity tariff structures, increasing emphasis on energy resilience and evolving regulatory frameworks, Battery Energy Storage Systems are emerging as a key enabler for optimizing energy consumption, improving power reliability and reducing dependence on conventional backup systems. Sessions explored practical applications such as diesel generator replacement, peak demand management, time-of-day tariff optimization and solar-plus-storage integration, highlighting how these solutions are creating new opportunities across residential, commercial and industrial markets.

The event also highlighted advancements in solar module technology through presentations by **Novasys Greenergy. Ashok Kumar Singh, President, Novasys Greenergy,** addressed participants on the evolution of high-efficiency photovoltaic technologies and the importance of domestic manufacturing in supporting India's renewable energy ambitions. The





technical session by the Novasys team provided insights into N-Type TOPCon technology and its role in enhancing energy yield, long-term performance and project efficiency.

Representing Feston SEV private limited, Sampath Kumar, Managing Director & CEO, discussed the growing role of hybrid inverters and Battery Energy Storage Systems (BESS) in improving energy reliability and optimizing power costs. The Feston team also shared insights into hybrid energy solutions for residential, commercial and industrial applications.

The event also featured a session by **Mr. Raghunandan, President, KREA, Karnataka,** who provided updates on renewable energy policy developments and ongoing discussions with government stakeholders. His presentation highlighted the importance of staying abreast of evolving regulations governing energy storage and hybrid power systems.

Adding a practical dimension to the programme, installers and project partners shared customer experiences and case studies, highlighting successful project implementations, operational benefits and key learnings from real-world solar and hybrid energy deployments.

The event concluded with an interactive question-and-answer session led by **Srinivas Kumar, Managing Director & CEO, SunAP Ecopower**, who addressed technical, commercial and application-related queries from participants. The open dialogue reflected the collaborative nature of the programme and provided installers with an opportunity to seek expert guidance on technology selection, system integration and emerging market opportunities.

As India's renewable energy sector continues its transition towards smarter, more integrated energy systems, collaboration between manufacturers, distributors, technology providers and installers will be essential to sustain market growth. By bringing together industry stakeholders on a common platform, **Solar Installers Meet 2026** highlighted the growing importance of technical education, policy awareness and knowledge exchange in accelerating the adoption of advanced solar and energy storage solutions across the country.

FLIPCAB®
WIRES & CABLES
शानदार दमदार असरदार

FLIPCAB: Powering India's Sustainable Electrical Future

In an era where infrastructure growth, renewable energy, and industrial expansion are reshaping India's economic landscape, the demand for reliable, safe, and technologically advanced wiring solutions has never been greater. Rising to meet this challenge is FLIPCAB Cable Pvt. Ltd., a Surat-based manufacturer that has steadily established itself as a trusted name in the Indian wires and cables industry through its unwavering commitment to quality, innovation, and sustainability.

Founded by Vijay Akbari with a vision to deliver dependable and customized cable solutions, FLIPCAB has evolved into a comprehensive provider of high-performance electrical products catering to residential, industrial, agricultural, and renewable energy applications. Backed by more than 25 years of combined industry experience from its founders, the company has built a strong reputation on the pillars of safety, durability, consistency, and affordability.

What truly distinguishes FLIPCAB is its relentless focus on quality assurance. Every product undergoes rigorous testing throughout the manufacturing process—from raw material selection to final inspection—ensuring adherence to national and international standards. The company's advanced testing procedures include copper testing, PVC testing, high-voltage testing, tensile and flexibility evaluation, spark and insulation testing, and conductor resistance checks. This meticulous approach guarantees that each cable delivers optimal performance, reliability, and long-term operational safety.

FLIPCAB's diverse product portfolio reflects its adaptability to evolving market demands. The company manufactures house wires, round flexible cables, submersible cables, aluminium flexible cables, multicore cables, and low-voltage aluminium unarmoured cables. In addition,

FLIPCAB has made significant strides in the renewable energy sector with specialized solar DC cables, AC cables, and earthing solutions engineered for long service life and superior weather resistance. These products are designed to support India's ambitious clean energy goals, including the national target of achieving 500 GW of renewable energy capacity by 2030.

Sustainability remains deeply embedded in FLIPCAB's operational philosophy. The company emphasizes eco-friendly materials, energy-efficient manufacturing practices, and environmentally responsible processes aimed at reducing industrial impact while delivering world-class electrical solutions.

Strengthening its engagement with India's fast-growing renewable energy sector, FLIPCAB will also mark its presence at the Maharashtra Urja Expo 2026, scheduled to be held in Nagpur on 5th-6th June 2026. The participation reflects the company's commitment to supporting India's clean energy transformation while showcasing its advanced solar and energy-efficient cable solutions to industry stakeholders, EPC companies, and renewable energy professionals.

Today, FLIPCAB's growing market presence is reinforced by partnerships with prominent organizations such as Reliance Industries, Waaree, Mahindra, NHAI, SBI Jaipur, Tata Jamshedpur, and Maharashtra Railways. As the company continues expanding its technological capabilities and dealer network, its vision remains clear: to emerge as a globally recognized brand synonymous with trust, safety, innovation, and sustainable progress in the electrical industry.

For more details about FLIPCAB's innovative wire and cable solutions, visit: **www.flipcab.com**

ORGANIZED BY

FirstVIEW Intelligent Business

POWERED BY

SOLAR QUARTER | ENERGY STORAGE PRO

SOLAR & STORAGE EXPO 2026 KERALA

ENERGY EXCELLENCE AWARDS

TECHNOLOGY EXCELLENCE

State Technology Leadership Award - Inverter

Ningbo Deye Inverter International Trade Co., Ltd

State Technology Leadership Award - Modules

SAEL Industries Limited

AI-Driven Solar Module Manufacturer of the Year

Pahal Solar Pvt. Ltd.

State Market Leader Award - Modules

Saatvik Green Energy Limited

Fastest Growing Solar Module Brand

ASOT Solar

Smart Technology Innovation of the Year - Solar Dryers

KRAFTWORK SOLAR PVT LTD

Best Technology-Enabled Solar Solutions Provider

Flarize Technologies Pvt. Ltd.

TOP SOLAR CONTRACTORS

Best Residential EPC in Solar + Storage

Solarbase Luxeon Pvt. Ltd.

SOLAR & STORAGE EXPO 2026 KERALA

ENERGY EXCELLENCE AWARDS

SUSTAINABILITY LEADERSHIP

Sustainable Smart Inverter Brand of the Year

Polycab India Limited

Excellence in Rural Development - Urjabandhu Program

ESAF Foundation

SOLAR & STORAGE EXPO 2026 KERALA

ENERGY EXCELLENCE AWARDS

RISING STAR/ STARTUP

Emerging Company in Measurement & Testing Solutions

Bumblebee Instruments Pvt. Ltd.

Rising Star in Solar Distribution Box Manufacturing

MS TECH ENGINEERING INDUSTRIES

SOLAR & STORAGE EXPO 2026 KERALA

ENERGY EXCELLENCE AWARDS

SERVICE EXCELLENCE

State Distributor of the Year

Almiya Engineering Consultants Pvt. Ltd.

State Channel Partner of the Year

Green Factory

SOLAR & STORAGE EXPO 2026 KERALA

ENERGY EXCELLENCE AWARDS

PROJECT SHOWCASE

Best Commercial Project of the Year

EVM Cleantech LLP

SOLAR & STORAGE EXPO 2026 KERALA

ENERGY EXCELLENCE AWARDS

TEAM PERFORMANCE EXCELLENCE

Best Project Team of the Year

Solarbase Luxeon Pvt. Ltd.

SOLAR & STORAGE EXPO 2026 KERALA

ENERGY EXCELLENCE AWARDS

INDIVIDUAL LEADERSHIP

Business Leader of the Year

Alnishan Shahul
CEO
Almiya Engineering Consultants Pvt. Ltd

Visionary Leader of the Year

Harikrishnan K.R
CEO
Flarize Technologies Private Limited

Congratulations to all the winners!!!

ORGANIZED BY

FirstVIEW Intelligent Business

POWERED BY

SOLAR QUARTER | ENERGY STORAGE PRO

SOLAR & STORAGE EXPO 2026 ODISHA

ENERGY EXCELLENCE AWARDS

TECHNOLOGY EXCELLENCE

State Market Leader Award - Modules

Saatvik Green Energy Limited

Fastest Growing Solar Module Brand

Adani Solar

AI-Driven Solar Module Manufacturer of the Year

PAHAL SOLAR PRIVATE LIMITED

High Performing Solar PV Module (N-TOPCON Bifacial Modules)

Credence solar Panels Pvt Ltd

Best High-Efficiency Solar Inverter Manufacturer

Polycab India Ltd.

TOP SOLAR CONTRACTORS

Solar EPC Company of the Year – Residential

5S ENERGY

Solar EPC Company of the Year – Commercial

SMARTGEN SOLUTIONS

SOLAR & STORAGE EXPO 2026 ODISHA

ENERGY EXCELLENCE AWARDS

SERVICE EXCELLENCE

Service Excellence in Integrated Industrial Solutions

I PEEP SOLUTIONS PVT. LTD.

Service Excellence in Solar EPC & Project Delivery

HCK Solar Energy Limited

SOLAR & STORAGE EXPO 2026 ODISHA

ENERGY EXCELLENCE AWARDS

RISING STAR/ STARTUP

Emerging Solar Contractor of the Year - Commercial

Riraj International

Emerging Solar Contractor of the Year - Residential

SEN COMMUNICATION

SOLAR & STORAGE EXPO 2026 ODISHA

ENERGY EXCELLENCE AWARDS

INDIVIDUAL LEADERSHIP

Renewable Energy Technology Leader of the Year

Dr. Rajkumar, Sahu

Head - Process & Technology

World Green Energy

SOLAR & STORAGE EXPO 2026 ODISHA

PM SURYA GHAR EXCELLENCE AWARDS

ORGANIZED BY FirstVIEW Intelligent Business

POWERED BY SOLAR QUARTER | ENERGY STORAGE PRO

Congratulations to all the winners!!!

SOLAR & STORAGE EXPO 2026 ODISHA

ENERGY EXCELLENCE AWARDS

TECHNOLOGY EXCELLENCE

SOLAR & STORAGE EXPO 2026 ODISHA

ENERGY EXCELLENCE AWARDS

SERVICE EXCELLENCE

SOLAR & STORAGE EXPO 2026 ODISHA

ENERGY EXCELLENCE AWARDS

INDIVIDUAL LEADERSHIP

SOLAR & STORAGE EXPO 2026 ODISHA

ENERGY EXCELLENCE AWARDS

RISING STAR/ STARTUP

SOLAR & STORAGE EXPO 2026 ODISHA

ENERGY EXCELLENCE AWARDS

TOP SOLAR CONTRACTORS

SOLAR & STORAGE EXPO 2026 ODISHA

PM SURYA GHAR EXCELLENCE AWARDS

FirstVIEW
Intelligent Business

PRESENTS

SOLAR & STORAGE EXPO 2026 NORTH EAST
ENERGY EXCELLENCE AWARDS

TOP SOLAR CONTRACTORS

Best Solar EPC Company of the Year - North East

Natsakee Incorporation

Solar EPC Excellence in Sustainable Projects

Fender Vertex Solutions Pvt Ltd

Solar EPC Company of the Year (Residential) - Platinum

ADNAN ENTERPRISE

Solar EPC Company of the Year (Residential) - Diamond

Prime Tech Enterprise

Fastest Growing EPC Company of the Year

SOLARLOGIX PVT. LTD.

RISING STAR/ STARTUP

Emerging Solar Contractor of the Year

NJD TECHNOLOGIES LLP

Emerging Solar Module Manufacturer of the Year

GREENPOWER SOLUTIONS

Emerging Solar EPC Company of the Year - Residential

N E ELECTRICAL ENTERPRISE

SERVICE EXCELLENCE

Excellence in Utility-Scale and C&I Solar EPC Execution

Renergy Solutions Pvt. Ltd.

Excellence in End-to-End Rooftop Solar EPC Services

Adree Energy Systems Pvt. Ltd.

Best Turnkey Service Provider – EPC

SOLARLOGIX PVT. LTD.

SOLAR & STORAGE EXPO 2026 NORTH EAST
ENERGY EXCELLENCE AWARDS
SUSTAINABILITY LEADERSHIP

Company of the Year: Sustainable Technology Integration (String Inverter)

Polycab India Limited

Company of the Year: Innovative RE Initiative

Renergy Solutions Pvt. Ltd.

SOLAR & STORAGE EXPO 2026 NORTH EAST
ENERGY EXCELLENCE AWARDS
PROJECT DEVELOPMENT EXCELLENCE

Project Development Excellence - C&I Projects

GREENPOWER SOLUTIONS

Project Development Excellence - Chengmari Tea Estate

SOLARLOGIX PVT. LTD.

SOLAR & STORAGE EXPO 2026 NORTH EAST
ENERGY EXCELLENCE AWARDS
PROJECT SHOWCASE

Best Commercial Project of the Year - Health Care

Renergy Solutions Pvt. Ltd.

Best Utility Project of the Year

SAEL Industries Limited

SOLAR & STORAGE EXPO 2026 NORTH EAST
ENERGY EXCELLENCE AWARDS
TECHNOLOGY EXCELLENCE

Smart Technology Innovation of the Year - Modules

Pahal Solar Pvt. Ltd.

State Market Leader Award - Modules

Saatvik Green Energy Limited

Leading Made-in-India Solar Inverter Brand

Selec Controls Pvt. Ltd.

SOLAR & STORAGE EXPO 2026 NORTH EAST
ENERGY EXCELLENCE AWARDS
TEAM PERFORMANCE EXCELLENCE

Sales & Marketing Team of the Year

Adani Solar

SOLAR & STORAGE EXPO 2026 NORTH EAST
ENERGY EXCELLENCE AWARDS
INDIVIDUAL LEADERSHIP

Solar Leadership Icon of the Year

Dr. Akash Garg
Proprietor
Natsakee Incorporation

Congratulations to all the winners!!!

FirstVIEW
Intelligent Business

PRESENTS

SOLAR & STORAGE EXPO 2026 RAJASTHAN

ENERGY EXCELLENCE AWARDS

TECHNOLOGY EXCELLENCE

Solar PV Module Manufacturing Excellence Award
Grew Energy Private Limited

Excellence in Solar Module Solutions Supporting India's Clean Energy Mission
Novasys Greenergy Limited

AI-Driven Solar Module Manufacturer of the Year
Pahal Solar Private Limited

Business Growth Excellence in Solar Module Manufacturing
Saatvik Green Energy Limited

High Efficiency Solar Module Mounting Structure Manufacturer of the Year
NAKODA SOLAR INFRASTRUCTURE PVT. LTD.

Excellence in Solar Integrated Battery Energy Storage Systems
Loom Solar Pvt. Ltd

TOP SOLAR CONTRACTORS

Best Solar EPC Company of the Year- Ground Mount (Commercial)
RAGHAV RENEWABLE ENERGY INDUSTRIES PRIVATE LIMITED

Best Solar EPC Company of the Year- Ground Mount

Best Solar EPC Company of the Year- Kusum Projects
Adhiraj Technocrats Pvt. Ltd.

Shree Solar Venture

Planck Power Pvt. Ltd.

Atri Sun Power

Vidyut Energy Systems Pvt. Ltd.

Kasliwal Trading Corporation

Infinite Tech Service Pvt. Ltd.

SERVICE EXCELLENCE

Service Excellence in Outstanding EPC, O&M, Consulting & Support Services.
Ultravibrant Integrated Energy Ltd.

Excellence in After-Sales Service & Technical Support in Solar EPC

Solars4u (An Intiative of Sachet Advisory Services P Ltd)

Excellence in Customer-Centric Solar Project Delivery

Sunthrix Solar Energy Pvt Ltd

Best Industrial IoT Solution for Renewable Energy

Genex Technocrats

Best Renewable Energy Consultant of the Year

M/s Shree Kalyan Enterprises

Solar Energy Logistics Service Provider of the Year

Harishyam India Logistics Pvt Ltd

SOLAR & STORAGE EXPO 2026 RAJASTHAN
ENERGY EXCELLENCE AWARDS
RISING STAR/ STARTUP

Emerging Solar and BESS Engineering Consulting Company of the Year

Solar Plug Consultants

Emerging Solar EPC Company of the Year

Sunthrix Solar Energy Pvt Ltd

Emerging Solar EPC Company of the Year- Residential Projects

Sky FinCorp

SOLAR & STORAGE EXPO 2026 RAJASTHAN
ENERGY EXCELLENCE AWARDS
SUSTAINABILITY LEADERSHIP

Sustainability Leadership in Solar PV Technology & Manufacturing

Adani Solar

Sustainability Consulting Company of the Year

Design2Occupancy Services LLP

SOLAR & STORAGE EXPO 2026 RAJASTHAN
ENERGY EXCELLENCE AWARDS
INDIVIDUAL LEADERSHIP

Renewable Energy Industry Influencer of the Year

Nitin Agarwal
CEO
Rajasthan Solar Association (RSA)

Outstanding Engineering Leadership Award

Manish Gupta
Chief Engineer
Doubletree by Hilton Jaipur Amer

Outstanding Regional Sales Performer of the Year

Harsh Lakhwani
RSM
Feston Sev Pvt Ltd

Excellence in Hydrogen Storage Technology

Bharat P Shivnani
Technical Assistant (Chemistry)
Ground Water Department of Rajasthan, Government of Rajasthan

---

Congratulations to all the winners!!!

FirstVIEW Intelligent Business

PRESENTS

SOLAR & STORAGE EXPO 2026 TELANGANA

ENERGY EXCELLENCE AWARDS 2026

TECHNOLOGY EXCELLENCE

Technology Excellence Award for Integrated Solar Solutions (Atum Solar)

Visaka Industries Limited

Best Solar Module Manufacturing Practices Award

Novasys Greenergy Ltd.

AI-Driven Solar Module Manufacturer of the Year

Pahal Solar Pvt. Ltd.

State Market Leader Award - Modules

Saatvik Green Energy Limited

Advanced Sensor Technology Excellence Award

SuryaLogix Pvt. Ltd.

Technology Excellence Award for Power Plant Controller (PPC) Solutions

iPLON India Private Limited

State Market Leader Award - Mounting Structures

Purshotam Profiles Pvt. Ltd.

Technology Excellence in AI-Powered Renewable Energy Management

Purelight Energy Pvt. Ltd. (Paradigm Solar Group)

TOP SOLAR CONTRACTORS

Technology Excellence Award for Integrated Solar Solutions (Atum Solar)

TRUZON SOLAR

Solar EPC Company of the Year - C&I

WHITECAPSOLAR

Excellence in Best-in-Class EPC Services

BRIGHT SOLAR SOLUTIONS PVT LTD

Solar EPC Company of the Year - PM Kusum Yojana

Jayram Industries India Pvt. Ltd.

SUSTAINABILITY LEADERSHIP

Sustainability Leadership in Greenhouse Gas Emissions

Mars International India Pvt. Ltd.

Company of the Year: Green Manufacturing (Transformers)

Kanyaka Parmeshwari Engineering Pvt. Ltd.

STARTUP/ RISING STAR

Technology Excellence Award for Integrated Solar Solutions (Atum Solar)

SAEL Industries Limited

Best Renewable Energy Initiative for Rural Development

Amasia Solar & Infra Pvt Ltd

Emerging Solar Distributor of the State

BHASU ENERGY SYSTEMS LLP

Emerging Solar EPC Company of the Year

VARAHI ENERGIES

Rising Star Company of the Year – Battery Energy Storage Systems (BESS)

Midwest Energy Devices Pvt. Ltd. (Division of Midwest Energy Ltd.

Fastest Growing Solar EPC Company of the Year

Solar Apex Private Limited

Young Solar Entrepreneur of the Year

Shaik Mahafooz
Founder & Director
SSMS ENERGY PVT LTD

SERVICE EXCELLENCE

Service Excellence in Solar EPC & Project Execution

SunWorks Energy Private Limited

Excellence in Energy Management & Monitoring Services

BEST INFRA PRIVATE LIMITED

PROJECT SHOWCASE

Best Ground Mount Project of the Year

Perpetual Renewable Energies Pvt Ltd

TEAM PERFORMANCE EXCELLENCE

Best Design and Engineering Team of the Year

SunWorks Energy Pvt. Ltd.

INDIVIDUAL LEADERSHIP

Visionary Sales and Marketing Leader of the Year

Bharat Singh
Director - Sales & Marketing
Ningbo Deye Inverter International Trade Co., Ltd.

Renewable Energy Entrepreneur of the Year

Sandeep Reddy Chillakuri
Co-Founder and Director
SunWorks Energy Private Limited

CEO of the Year

Ranjan Kumar Roy Chowdhury
Managing Director & CEO
Abja Power Private Limited

Strategic Growth Leader of the Year

Tanmay Parakala
Chief Strategy Officer
Purelight Energy Pvt. Ltd. (Paradigm Solar Group)

Congratulations to all the winners!!!

Organized By FirstVIEW | Powered By SOLAR QUARTER | ENERGY STORAGE PRO

NEPAL CLEAN ENERGY WEEK 2026 AWARDS

Technology & Innovation Excellence

Advanced Inverter & Battery Storage Technology Excellence Award
SUNGROW

Utility-Scale Solar Inverter Technology Excellence Award
Solplanet

Company of the Year - Solar Modules – Nepal
JA Solar

Nepal's Leading Solar Module Brand of the Year
Trina Solar

BUSINESS EXCELLENCE

Solar Developer Company of the Year

Solar EPC Company of the Year
REnergo Developers Pvt. Ltd.

Clean Energy Company of the Year
Quality Renewable Energy Pvt. Ltd.

Sustainability, ESG & Impact

Company of the Year: Sustainability & Green Technology Innovation
SUNGROW

Company of the Year: Sustainable Development & Climate Action
Enviroleap Switch Pvt. Ltd.

Finance, Investment & Market Development

Renewable Energy Finance & Investment Leadership Award
Golyan Group Limited

Project Excellence & Execution

Project of the Year (Utility-Scale)
REnergo Developers Pvt. Ltd.

SERVICE EXCELLENCE

Best Solar Consulting Company of the Year
Eco Inertia Pvt. Ltd.

Sustainable Infrastructure Services Excellence Award
GREAT Nepal Pvt. Ltd.

Team & Functional Excellence

Best Project O&M Team of the Year
Pure Energy Limited

Organized By FirstVIEW Intelligent Business | Powered By SOLAR QUARTER | ENERGY STORAGE PRO

FUTURE ENERGY Leadership AWARDS 2026 — NEPAL

BEST FUTURE ENERGY CEOs NEPAL 2026

CEO of the Year – Hydropower Company

Karan Chand
CEO
Makari Gad Hydropower Limited

CEO of the Year – Clean Energy Infrastructure Company

Imtiyaz Ali
CEO
Hulas Infra Limited

CEO of the Year - Renewable Energy Development Company

Bijendra M.S. Basnyat
CEO
Mountain Solar Holdings Pvt. Ltd.

Organized By FirstVIEW Intelligent Business | Powered By SOLAR QUARTER | ENERGY STORAGE PRO

FUTURE ENERGY GRAND MASTERS NEPHL AWARDS 2026

Excellence in Business Management Leadership

Prawin Aryal
CEO - Energy Business
Pure Energy Limited

Excellence in Solar Project Development & Management

Shubham Gupta

Excellence in Finance & Investment Leadership

Sanjay Kumar Sah
Vice President, Group CFO
Golyan Group Limited

Organized By FirstVIEW Intelligent Business | Powered By SOLAR QUARTER | ENERGY STORAGE PRO

40 FUTURE ENERGY LEADERS UNDER 40 2026 NEPAL

Tuphan Gautam
COO
Quality Renewable Energy Pvt. Ltd.

Ritavrat Joshi

Organized By FirstVIEW Intelligent Business | Powered By SOLAR QUARTER | ENERGY STORAGE PRO

BEST CLEAN ENERGY TEAM NEPAL 2026

GOLYAN

Golyan Group Limited

Congratulations to all the winners!!!

FirstVIEW
Intelligent Business

PRESENTS

MAHARASHTRA urja EXPO AWARDS

HONORING LEADERS. INSPIRING IMPACT.

Best Solar Cable Brand
Flipcab Cables Pvt Ltd.

Best Mounting Structure Provider
SG MART LIMITED

State Market Leader of the Year - Inverter

Advanced Inverter & Battery Storage Technology Excellence Award
SUNGROW INDIA PVT LTD

Innovation Excellence in Hybrid Inverter Technology
Deye New Energy

Fastest Growing Inverter Brand of India
Selec Controls Pvt Ltd

Excellence in Distributed Energy Storage Solutions
Voltra Technologies Pvt. Ltd.

Green Technology Leadership in Solar Inverters Award
Feston Sev Pvt Ltd

Business Growth Excellence in Solar Module Manufacturing
Saatvik Green Energy Ltd

AI-Driven Solar Module Manufacturer of the Year
Pahal Solar Pvt. Ltd.

Sustainability Champion in Green Module Manufacturing
GREW Energy Private Limited

Novasys Greenergy Ltd
SG MART LIMITED

Outstanding Women-led Solar Business
Roshani Thakare
Proprietor, PRIME TECH

Renewable Energy Professional of the Year
Sushil Shivkumar Rangari
Director
INDIAN SOLAR HYBRID POWER SOLUTION PVT LTD

Emerging Business Leader of the Year
Kamlesh Santosh Umbarkar Founder & Director
Aaple Solar Solutions

Best EPC Company of the Year – Commercial & Industrial (Platinum)

Best EPC Company of the Year – Ground-Mount Solar Projects

Innovation in Project Execution through Integrated Technology Solutions
Chirayu Power Pvt. Ltd.

Best EPC Company of the Year – Commercial & Industrial (Diamond)
Alligator Energies Pvt Ltd.

Best EPC Company of the Year Commercial or Industrial (Gold)
Tech Force Services

Best EPC Company of the Year –Industrial
BIJLEE SOLAR

Emerging Rooftop Solar Company
SURYAAN ENERGY PVT LTD

Emerging C&I Solar Company
PKS TECHNOLOGY

Emerging Residential Solar Company
ICDI MULTITRADE PVT. LTD.

Excellence in Safety Management for Solar EPC Projects

Best Solar O&M Service Provider
Chirayu Power Pvt. Ltd.

Emerging Residential Solar Company
Real Solar World

Excellence in Solar Asset Management
Inspire Clean Energy Pvt Ltd.

Excellence in Renewable Energy-Led Urban Governance
Navi Mumbai Municipal Corporation

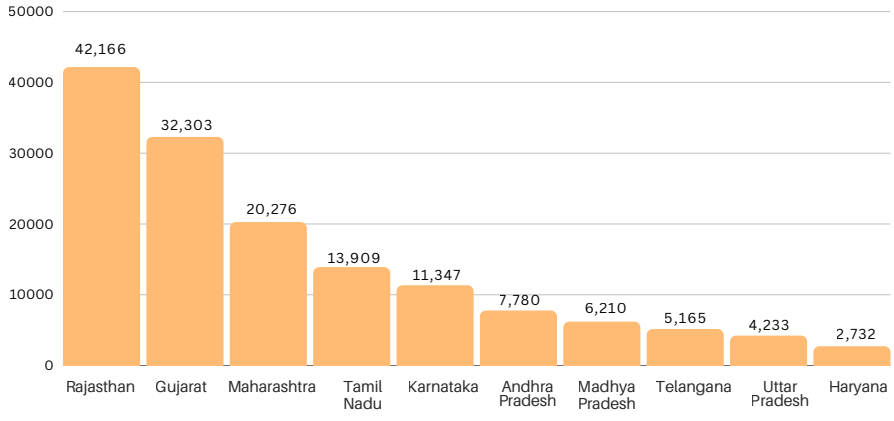
Developer of the Year (Solar & Wind) — Maharashtra
Powerica Renewable Infra Private Limited

Renewable Energy Logistics Service Provider of the Year
Super Carrying Corporation

Congratulations to all the winners!!!

Solar Installations by State

TOTAL SOLAR PV INSTALLATIONS AS OF MAY 2026 (MW)

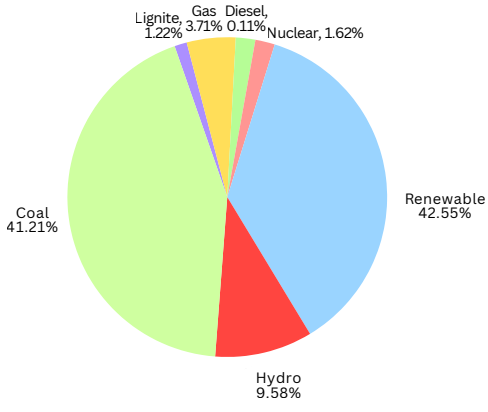


SOURCE: MNRE **SOLARQUARTER RESEARCH**

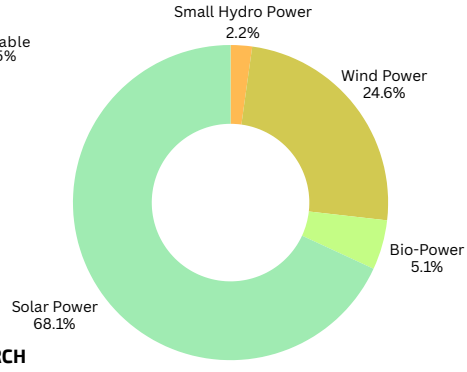
India achieved a remarkable milestone by installing an unprecedented 21,236.40 MW of Solar PV capacity in the calendar year 2026. By the end of May 2026, the country's total Solar PV installations surpassed 157 GW. During this period, rooftop Solar PV installations reached approximately 27.88 GW. Rajasthan led the way, with 42,166 MW installed, accounting for 26.85% of the nation's total Solar PV capacity. The county also added around 21 GW in the first five months of the calendar year 2026. Rajasthan, Gujarat, Maharashtra, Tamil Nadu, and Karnataka together contributed over 76.41% of the total installed Solar PV capacities across the country. All leading states retained their positions in May 2026 compared to their installed solar PV capacity rankings in May 2025. The overall Solar PV installations saw a growth of over 41.7% compared to the 110.83 GW recorded by the end of May 2025.

In the pie chart, Renewable capacity additions continue to increase at a rapid pace in India, accounting for approximately 42.6% of India's total power capacity at the end of May 2026. India's total installed power capacity stood at over 542 GW at the end of May 2026 from all the sources, with renewables accounting for 230.78 GW, compared to cumulative renewable energy installations of 178.82 GW at the end of May 2025, which represented a growth of over 33.9% year-over-year. Solar power accounted for approximately 157.046 GW of installations, which represents 29% of the total installed power capacity. Among the renewable, Wind and Solar constitute over 92.7% of the total renewable (excluding large hydro), Wind Power installed capacity at the end of May 2026 was over 56.8 GW, which represents 10.5% of the total power capacity installed.

INDIA POWER MIX

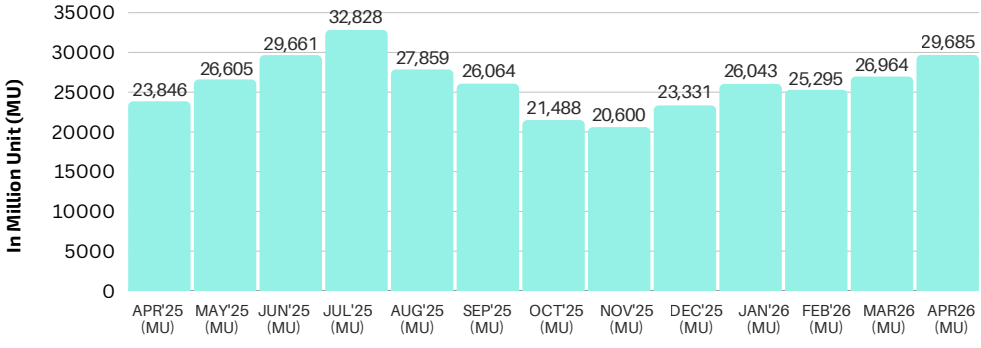


INDIA RENEWABLE MIX



SOURCE: CEA MAY 2026 | SOLARQUARTER RESEARCH

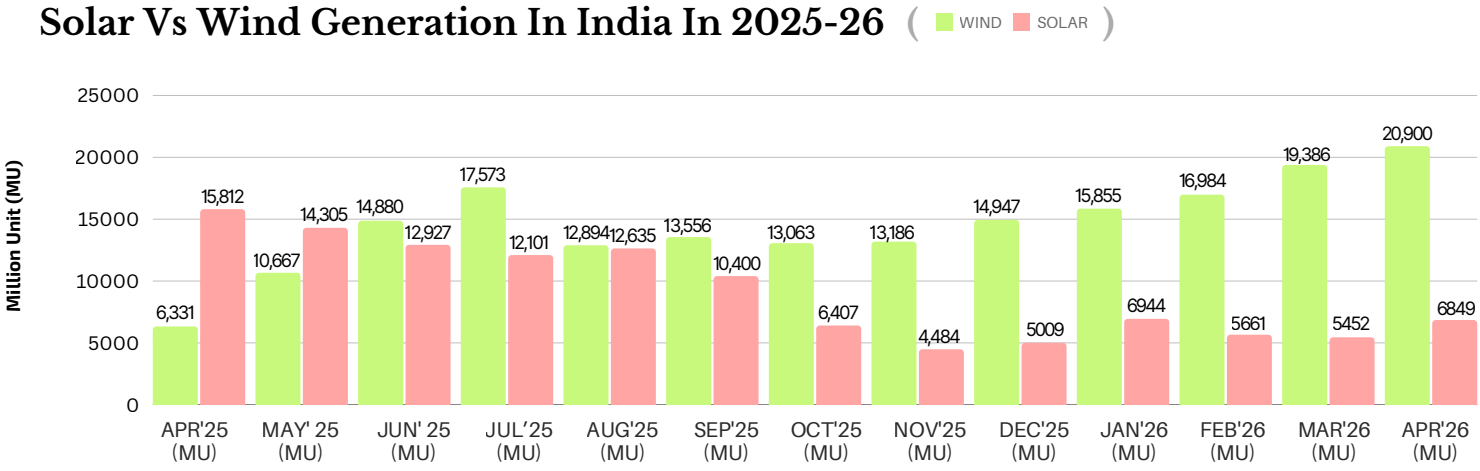
Monthly RE Generaton in India



SOURCE: CEA **SOLARQUARTER RESEARCH**

Total renewable energy generation in April 2026 reached 29,685.36 million units, which is an increase of RE generation by around 24.5% year-over-year from April 2025, when the RE generation was 23,846.08 million units. Solar Power generation has also increased by around 32.17% year-over-year from April 2025 (15,811.82 million units) to April 2026 (20,899.61 million units). Wind Power generation has increased by almost 8.18% in the same period and reached 6,848.65 million units in April 2026.

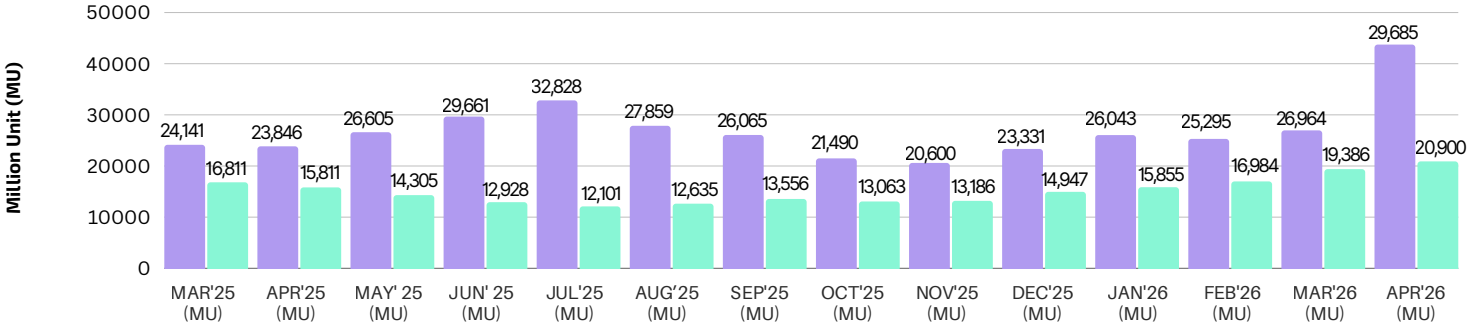
Solar Vs Wind Generation In India In 2025-26



SOURCE: CEA

SOLARQUARTER RESEARCH

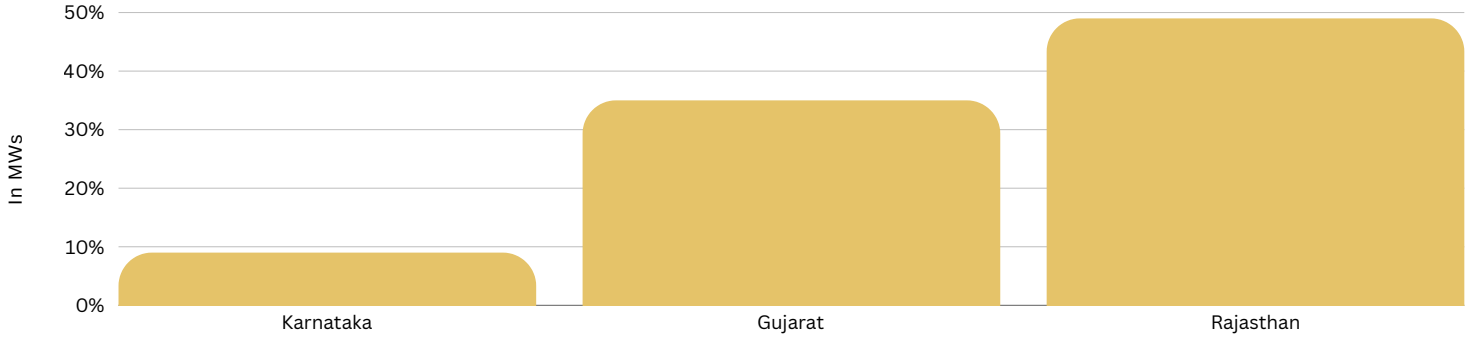
Renewable Energy Vs Solar Generation



SOURCE: CEA

SOLARQUARTER RESEARCH

Hybrid Projects (Solar Component)



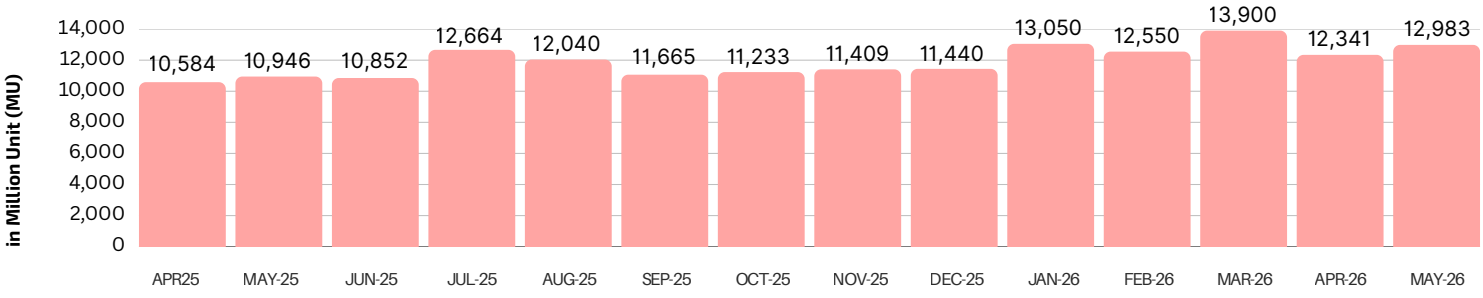
SOURCE: MNRE (MAY 2026)

SOLARQUARTER RESEARCH

As of May 2026, India's installed hybrid projects capacity reached 4059.29 MW, contributing around 2.58% to the country's total solar PV capacity. This is part of the overall renewable energy capacity of 230 GW, excluding large hydro. Hybrid projects, which combine solar and wind power, are currently limited to just three states: Rajasthan, Gujarat, and Karnataka. Among these, Rajasthan leads with the highest installed capacity of 1,980 MW. This is mainly because the state has strong potential for both solar and wind energy. Rajasthan receives high solar irradiation and also experiences strong wind speeds, making it ideal for hybrid energy generation. The installed capacity of hybrid projects has shown a year-on-year growth of about 34.33% compared to May 2025, when it stood at 3021.82 MW. This steady growth highlights the increasing focus on hybrid projects as a solution to improve grid stability and renewable energy utilization.

Electricity Market

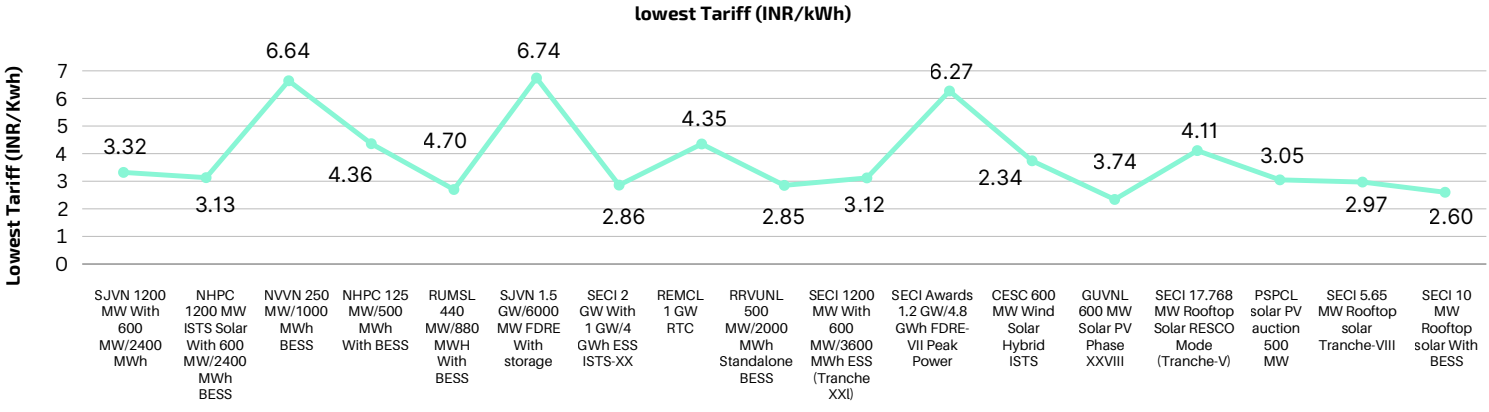
IEX ELELCTRICITY MONTHLY TRADED VOLUME IN 2025-2026



SOURCE: IEX **SOLARQUARTER RESEARCH**

Indian Energy Exchange (IEX) reported a strong performance in May 2026, with total electricity traded volume reaching 12,983 million units (MU), reflecting an 18.6% year-on-year growth. The increase was driven by rising electricity demand across the country. According to government data, India's energy consumption stood at 164.98 billion units (BU) during the month, marking an 11.5% increase compared to May 2025. The country also recorded an all-time high peak power demand of 270.82 GW. In the Day-Ahead Market (DAM), robust demand pushed buy bids up by 77% year-on-year, while sell bids increased by 30%. The higher demand-supply pressure resulted in an average market-clearing price of ₹4.88 per unit, up 18.3% from the previous year. Similarly, the Real-Time Market (RTM) recorded an average clearing price of ₹4.16 per unit, representing a 21.2% year-on-year rise. Renewable Energy Certificate (REC) trading totaled 6.10 lakh certificates in May 2026, down 65% year-on-year. Trading sessions held on May 13 and May 29 cleared at ₹400 per REC. A sharp 85.3% decline in sell bids contributed to the increase in REC clearing prices during the month.

Lowest Tariff (₹/kWh) in 2025 - 2026



SOURCE: SOLARQUARTER RESEARCH

India's solar sector is undergoing a significant transition as new regulatory measures and global market uncertainties reshape project economics and tariff trends. The phased implementation of the Approved List of Models and Manufacturers (ALMM) framework—covering modules under List-I, cells under List-II, and now wafers and ingots under the newly introduced List-III effective from June 2028—has increased compliance requirements for solar developers participating in government and utility-scale projects. Under the revised framework, modules must increasingly be sourced from approved domestic supply chains, strengthening India's manufacturing ecosystem but also adding procurement and compliance costs.

At the same time, global supply chain disruptions caused by geopolitical tensions, trade restrictions, shipping uncertainties, currency fluctuations, and evolving tariff policies continue to influence component prices. These factors have contributed to fluctuations in solar bid tariffs during 2025 and 2026, despite government support through commissioning timeline extensions and policy interventions. A key recent policy development affecting solar PV module pricing is the expansion of ALMM requirements to upstream components such as wafers and ingots, which is expected to further promote domestic sourcing while potentially increasing near-term costs until local manufacturing scales adequately.

However, India's rapidly growing manufacturing base, with module capacity exceeding 190 GW and cell capacity surpassing 27 GW, along with increasing domestic inverter production and supportive tax measures, is improving supply security and reducing long-term import dependence. Going forward, solar tariffs will largely depend on the pace of domestic manufacturing expansion, cost competitiveness, and the industry's ability to absorb policy-driven localization requirements while maintaining affordable project economics.

SOLAR QUARTER INDIA

AD BOOKINGS ARE OPEN!

KEY PUBLISHING STATISTICS

10,000+
ANNUAL PRINT & E-MAGAZINE READERS

4000,000+
ANNUAL WEB PORTAL READERSHIP

100,000+
SOCIAL MEDIA FOLLOWERS

100,000+
E-NEWSLETTER SUBSCRIBERS

Why Choose Us?

Ensures best delivery of the marketing needs

Customizable Product Layout

Well Researched Editorial Content

SolarQuarter is one of the world's largest global solar energy sector media with an annual reach to 1,000,000+ industry professionals. We bring to you the most exciting, insightful, and engaging content in the form of daily news updates, market research & insights, trend analysis, and, digital & in-person business events.

Book your Space now!

GET IN TOUCH

Smriti Charan
Sangeeta Sridhar

+91 77188 77514
+91-9372788472

smriti@firstviewgroup.com
sangeeta@firstviewgroup.com

SUNGROW

Clean power for all

MAKE IN INDIA

GLOBAL LEADING PV & ESS PROVIDER

29	660GW+	100GWh	270GW	NO.1	75GWh
Years of innovation in solar technology	PV Inverter Global Installation	Annual Production Capacity of ESS	PV Inverter Annual Production Capacity	Largest PV Inverter R&D Team	Cumulative Shipment of Energy Storage System

WHY SUNGROW?

India's Largest Inverter Factory

75 GW+

Supplied Across India

50+

Experts in Service Team

Compliant With Latest Grid Regulations

10+

Warehouse & Repair Centre

Long Term Spare Parts Support for All Models

Email: info-sgin@in.sungrowpower.com Website: ind.sungrowpower.com