ISMA

INDIAN SOLAR MANUFACTURERS ASSOCIATION

REPORT

VOLUME 1, ISSUE 1



INDEX

1	Introduction	3
2	India’s Solar PV Supply Chain Transition	5
3	Projected Solar PV Cell Manufacturing Capacity in India	6
4	Solar PV Manufacturing Executive Snapshot	7
5	Solar Manufacturing Policy: Developments and Directions	8
6	Manufacturing and Industry Updates	12
7	Global Updates	15
8	India’s Solar Backward Integration	16




THE SUN
WAS
ALWAYS
THERE.
WE JUST
FIGURED
IT OUT.

INTRODUCTION

India's solar manufacturing sector is at a defining inflection point. With module manufacturing capacity exceeding 170 GW and cell capacity rapidly approaching 30 GW, India has firmly established itself as a serious global force in solar PV production. The policy and investment focus is now decisively shifting upstream - toward ingot, wafer, and polysilicon - the segments where India's manufacturing ecosystem is yet to achieve the scale and competitiveness that the downstream has demonstrated.

The cost differential between China and Indian wafer production is not a transient pricing phenomenon - it is structural, driven by polysilicon feedstock economics, scale of operations, yield maturity, wire technology ecosystems, and access to operating subsidies that Indian manufacturers do not enjoy. Resolving this requires a calibrated policy response spanning demand creation through procurement mandates, ecosystem enablement across ancillary inputs, and a targeted incentive architecture that makes upstream investment financially viable at the required scale.

Trade policy is emerging as one of the most active and consequential areas of focus. Anti-dumping remedy proceedings, duty structure treatment across FTA and non-FTA trade partners, import misclassification, and countervailing duty determinations in major export markets are collectively reshaping the competitive landscape - demanding coordinated engagement across the Ministry of Finance, the Directorate General of Trade Remedies, and MNRE.

Standards, quality assurance, and the integrity of domestic content frameworks are forming another critical pillar. Efficiency threshold revisions under the ALMM framework are being engaged with through technical submissions addressing reliability, bankability, and end-of-life considerations - going beyond efficiency alone. The accurate monitoring of material consumption norms and prevention of misuse within the DCR ecosystem is receiving focused technical attention. Investment facilitation for solar PV capital goods, export obligation relief for manufacturers impacted by changing international market conditions, sustainability and circularity frameworks for end-of-life solar PV, and industry-academia research and development linkages are each emerging as distinct and substantive areas of engagement.

The picture is one of an industry that has won the downstream battle - and is now mobilising to win upstream.



POWERING PROGRESS THROUGH SOLAR MANUFACTURING EXCELLENCE.

INDIA'S SOLAR PV SUPPLY CHAIN TRANSITION

(Import Trends and Evolving Market Dynamics)

2.1 Solar cells and Modules imports in India

India's solar PV supply chain has witnessed notable shifts in import trends across recent financial years. Aggregate import data for solar cells (HSN 85414200) and solar modules (HSN 85414300) highlights variations in sourcing patterns and procurement cycles, reflecting market conditions and project execution timelines.

Year	Solar Cell Import (US$ Million)	Solar Module Import (US$ Million)
FY 2022 - 2023	1310.28	943.50
FY 2023–2024	1853.05	4353.51
FY 2024–2025	1641.25	2151.75
2025–2026 (Jan–Dec, Calendar Year)	2673.34	1416.24

SOURCE: MINISTRY OF COMMERCE & INDUSTRY, GOVERNMENT OF INDIA (TRADESTAT PORTAL)

KEY OBSERVATIONS:

• Solar module imports peaked in FY 2023-24, followed by a moderation in subsequent periods, indicating changes in procurement patterns and market conditions.

• Solar cell imports have remained consistently significant across all periods, with elevated import values continuing into CY 2025-26 (January-December).

• The divergence in import trends between cells and modules suggests varying supply-side dynamics across different segments of the solar PV value chain.

DISCLAIMER:

This analysis is based on aggregate import data sourced from the Ministry of Commerce & Industry, Government of India (TradeStat Portal). The information is presented solely for indicative and analytical purposes.

PROJECTED SOLAR PV CELL MANUFACTURING CAPACITY IN INDIA

Domestic Solar PV Cell Manufacturing Capacity Outlook (MW)

Company Name	Current capacity Jan'26 (MW)	Projected capacity – Jun'26 (MW)	Projected capacity – Dec'26 (MW)
Alpex	–	1,400	12,200
Emmvee	1,500	3,000	3,000
First Solar	3,400	3,400	3,400
Jupiter	1,800	6,000	6,000
Adani Solar	4,000	10,000	10,000
Premier Energies	3,200	8,400	10,600
Reliance	–	10,000	10,000
ReNew	2,400	2,400	6,400
RenewSys	–	3,100	3,100
Tata Power	4,400	4,400	4,400
Jakson Engineers	–	–	3,000
Waaree	5,400	5,400	11,400
GREW Solar	–	3,000	8,000
Saatvik Solar	–	–	4,800
Avaada	–	6,000	6,000
Websol	300	300	1,000
Indosol	–	2,000	10,000
Total	26,400	68,800	103,300

SOURCE: INDIVIDUAL COMPANIES' PUBLIC ANNOUNCEMENTS.

Key Observations

• India's solar PV cell manufacturing capacity is set to nearly quadruple, rising from 26.4 GW (Jan'26) to 103.3 GW by Dec'26.

• Capacity expansion is front-loaded in 2026, with over 40 GW expected to come online by mid-2026, indicating an aggressive commissioning pipeline.

• Large integrated players drive the bulk of additions, highlighting industry consolidation and scale-led manufacturing growth.

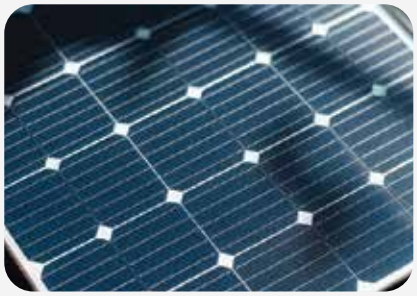
• Timely commissioning and yield stabilisation remain critical, as any delays could prolong reliance on imported solar cells despite headline capacity growth.

SOLAR PV MANUFACTURING EXECUTIVE SNAPSHOT

India's solar PV manufacturing ecosystem witnessed accelerated capacity expansion in 2025, supported by ALMM implementation, PLI-driven investments, and fiscal rationalisation measures.



ALMM Module Manufacturing:
Indigenous solar module manufacturing capacity under ALMM reached approximately 144 GW per annum, with nearly 81 GW added in 2025 alone, representing an estimated 99% year-on-year increase compared to 2024. This reflects strong alignment between policy signals and domestic manufacturing investments.



ALMM List-II for Solar Cells:
On 31 July 2025, MNRE notified ALMM List-II for Solar Cells, enabling deeper domestic value addition. Around 24 GW of solar cell manufacturing capacity has been enlisted under the list to date.



PLI-Driven Capacity Additions:
Under the PLI Scheme for High-Efficiency Solar PV Modules, beneficiaries commissioned approximately 11 GW of module capacity and 5 GW of cell capacity during 2025, strengthening integrated manufacturing capabilities.



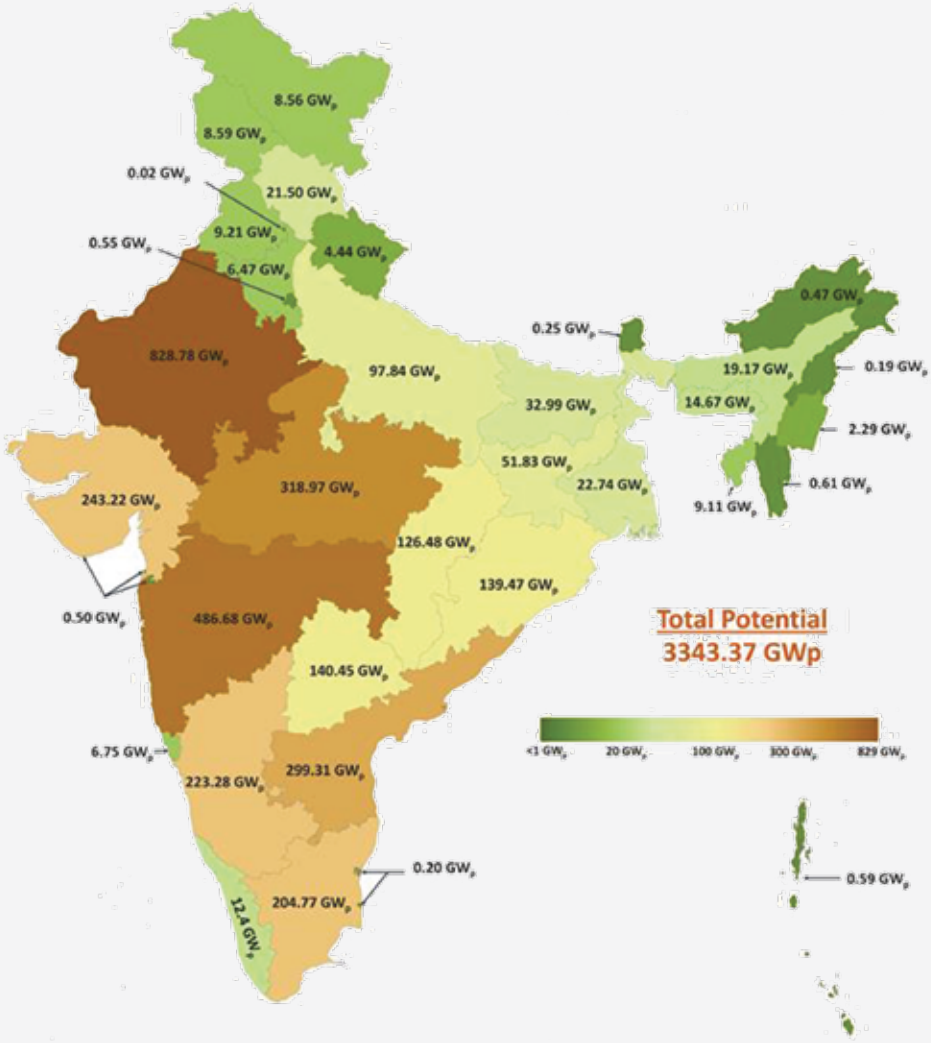
GST Rationalization:
With effect from 22 September 2025, GST on key solar devices and components - including photovoltaic cells and modules - was reduced from 12% to 5%, improving cost competitiveness and easing working-capital pressures.

SOURCE: MNRE PRESS RELEASE (29 DEC 2025 4:46PM BY PIB DELHI)

SOLAR MANUFACTURING POLICY: DEVELOPMENTS & DIRECTIONS

National Assessment of Ground-Mounted Solar PV Potential in India

The Ministry of New and Renewable Energy (MNRE), through the National Institute of Solar Energy (NISE), has scientifically assessed India's ground-mounted solar photovoltaic (PV) potential. The updated GIS - based mapping identifies a total feasible potential of 3,343.37 GW_P across Indian states and union territories as of September 2025, underscoring a major expansion horizon for utility-scale solar deployment. Highest potentials include Rajasthan (828.78 GW_P), Maharashtra (486.68 GW_P), Madhya Pradesh (318.97 GW_P), Karnataka (299.31 GW_P), and Tamil Nadu (204.77 GW_P), with extensive capacities also in Gujarat, Uttar Pradesh, and other regions. This comprehensive solar resource assessment provides a data-driven foundation for national clean energy planning, strategic investment, and policy formulation to accelerate India's energy transition



SOURCE:** SOLAR PV POTENTIAL OF INDIA (GROUND MOUNTED). NATIONAL INSTITUTE OF SOLAR ENERGY (NISE), MINISTRY OF NEW AND RENEWABLE ENERGY (MNRE), GOVERNMENT OF INDIA, SEPTEMBER 2025.

Government Advisory on Bid Timelines in Renewable Energy Tenders

The Ministry of New & Renewable Energy took note of recent trends in renewable energy procurement, particularly the issuance of tenders with compressed bid submission timelines by certain implementing agencies. The advisory highlights that bid windows as short as 7-10 days may constrain effective participation, limit competition, and impact bid quality. Emphasis has been placed on the need for adequate and realistic timelines in the tendering process to ensure fair price discovery, improved project planning, and smoother implementation. The intervention reflects the government's intent to strengthen procurement frameworks and maintain investor confidence while continuing to accelerate the addition of renewable energy capacity. Such guidance aims to promote transparency, competitive bidding, and long-term sectoral stability in India's renewable energy ecosystem.

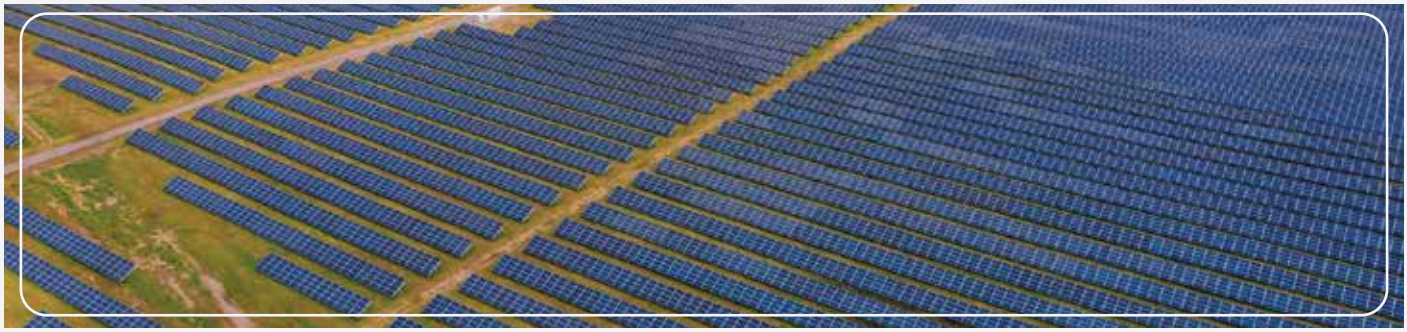
Import Policy Amendment and REEIMS Implementation for Solar Energy Equipment

During the quarter, the Directorate General of Foreign Trade (DGFT), Department of Commerce, Ministry of Commerce and Industry, issued Notification No. 40/2025–26 dated 10 October 2025, amending the import policy conditions for specific items covered under Chapters 70, 73, 84, and 85 of ITC (HS) 2022, Schedule-I (Import Policy). The notification mandates compulsory registration on the Renewable Energy Equipment Import Monitoring System (REEIMS) for selecting renewable energy components, including items under HS Codes 70071900, 85414200, and 85414300, which are exclusively used for solar energy projects, before import.

Subsequently, the Ministry of New and Renewable Energy (MNRE), through an Office Memorandum dated 24 October 2025, directed monitoring of renewable energy equipment imports through REEIMS in line with the DGFT notification. MNRE, in coordination with NIC, has developed an online REEIMS portal for the implementation of the revised import policy. Importers are required to register using their IEC issued by DGFT, submit import details, and generate a REEIMS certificate.

MNRE Guidance to Financial Institutions on Responsible Financing of Solar PV Manufacturing

The Ministry of New & Renewable Energy issued an Office Memorandum in November 2025 advising financial institutions to adopt a calibrated approach while financing new solar PV manufacturing capacities. Noting that module manufacturing capacity significantly exceeds current domestic demand, and that cell capacity is projected to follow a similar trajectory, MNRE has requested the Department of Financial Services to direct banks, NBFCs, and financial institutions to prioritise financing for integrated manufacturing and upstream segments - including polysilicon, ingots, wafers, solar glass, and aluminium frames - over standalone downstream capacity additions.



MNRE Draft Notification on Enhanced Efficiency Norms for Solar PV Modules under ALMM

The Ministry of New & Renewable Energy (MNRE) has issued a draft order dated 28 November 2025, inviting stakeholder comments on the proposed increase in minimum efficiency thresholds for solar PV modules eligible for inclusion in the Approved List of Models & Manufacturers (ALMM) List-I. Currently, utility-scale solar PV modules require minimum efficiencies of 20.0% for crystalline silicon and 19.0% for CdTe thin-film technologies. The draft proposes revised efficiency thresholds to be implemented in phases from 1 January 2027 to 1 January 2028 across various application segments, including utility-scale, rooftop, off-grid, and distributed solar systems.

Update on ALMM List-I for Solar PV Modules

The Ministry of New and Renewable Energy (MNRE) has been actively expanding the Approved List of Models and Manufacturers (ALMM) List-I for Solar PV Modules. Revision-XLV issued on 22 December 2025 took cumulative enlisted manufacturing capacity to approximately 144.8 GW. Subsequent revisions have continued at pace, with cumulative ALMM List-I capacity reaching approximately 162.1 GW in February 2026 and further expanding to approximately 173.1 GW in March 2026, reflecting the continued growth of India's domestic solar module manufacturing base.

Update on ALMM List-II for Solar PV Cells

The Ministry of New and Renewable Energy (MNRE) issued Revision-3 of the Approved List of Models and Manufacturers – II (ALMM-II) for solar photovoltaic (PV) cells on 15 December 2025, with cumulative enlisted cell manufacturing capacity reaching approximately 23.7 GW. Following two further revisions in February 2026, total ALMM-II enlisted cell capacity has reached approximately 27.2 GW, with mandatory sourcing of ALMM-II listed cells for all government-backed projects coming into force from June 1, 2026.

Economic Survey 2025-26 - Key Highlights for Solar Manufacturing

The Economic Survey 2025-26, tabled in January 2026, provides important macroeconomic context for India's solar manufacturing sector. Solar PV is identified as among the fastest-growing PLI sectors by export performance, recording an average annual export growth of 23.9% between FY21 and FY25. However, the Survey also flags that solar PV recorded the steepest import growth among all PLI sectors at 155.4% over the same period - a structural signal of India's continued upstream dependency on imported cells, wafers, and components that reinforces the urgency of deepening the domestic value chain. On the deployment side, India's cumulative on-grid solar capacity reached 135.81 GW by December 2025 - a forty-five-fold increase from 3 GW in 2014 - underlining the scale of domestic demand that Indian manufacturers are positioned to serve.





MANUFACTURING & INDUSTRY UPDATES

The domestic solar manufacturing sector remains dynamic, with multiple companies announcing expansion plans, fund-raising initiatives, and new supply agreements. Key developments span technology upgrades, upstream integration, and sustainability initiatives. Highlights of major industry announcements are outlined below.



Alpex Solar raises ₹2.6 billion through a preferential issue of e quity shares.

- Raised ₹2.6 billion via 2.15M equity shares & warrants.
- Funds to support expansion into integrated manufacturing.
- Plans to triple module capacity to 3.6 GW by FY 2027



Premier Energies announces acquisition of inverter manufacturer Ksolare and transformer company Transcon.

- Strengthens presence across power electronics and grid solutions
- Expands portfolio beyond modules into balance-of-system components
- Supports integrated renewable energy manufacturing and EPC capabilities



Alpex Solar plans to manufacture 2.2 GW of TOPCon solar cells at its Uttar Pradesh facility.

- Marks entry into high-efficiency TOPCon solar cell manufacturing
- Facility to support backward integration beyond module production
- Aligns with domestic manufacturing and import substitution goals



Jakson Solar inaugurates in-house reliability testing.

- Enables in-house quality assurance and long-term reliability testing
- Supports compliance with global and domestic certification standards
- Enhances product durability and performance validation capabilities



First Solar India wins SECI's 260 MW solar module supply auction.

- Secures major public-sector module supply contract from SECI
- Reinforces thin-film module demand in government-backed projects
- Strengthens company's market position in utility-scale segment



EMMVEE Photovoltaics' ₹30 billion IPO closes with 97% subscription.

- IPO sees strong investor response across subscription categories
- Capital to support manufacturing expansion and capacity scaling
- Reflects market confidence in the domestic solar manufacturing sector



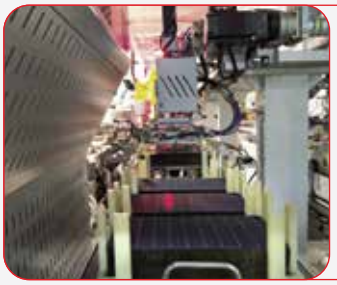
Premier Green Aluminium plans to raise ₹600 million for solar module frame manufacturing.

- Funds to expand aluminium frame manufacturing capacity
- Supports localisation of critical solar module components
- Addresses growing demand from domestic module manufacturers



Jakson Solar commences work on Phase I of its 6 GW integrated ingot-to-module solar manufacturing facility in Madhya Pradesh.

- Enables in-house quality assurance and long-term reliability testing
- Supports compliance with global and domestic certification standards
- Enhances product durability and performance validation capabilities



Adani New Energies Limited reports 2.4 GW of solar module sales in the first half of FY 2026.

- Reports strong module sales momentum
- Reflects rising domestic and export market demand
- Highlights scale advantages of integrated manufacturing operations



EMMVEE signs for 4.5 GW TOPCON Cells supply agreement.

- Long-term supply agreement for high-efficiency TOPCon cells
- Ensures stable access to advanced cell technology
- Supports module manufacturing and project pipeline requirements



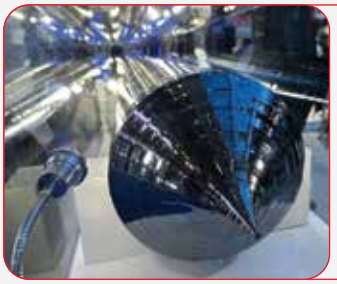
RenewSys signs an agreement to supply 1.1 GW of POE encapsulants to KOSOL Energies.

- Strengthens domestic supply chain for encapsulant materials
- Long-term agreement supports module manufacturing requirements
- Reflects growing demand for POE-based module technologies



Jakson Group announces plans to establish a solar module recycling facility in partnership with a European firm.

- Focus on end-of-life management and circular economy
- European partnership brings advanced recycling expertise
- Supports sustainability and ESG goals in solar manufacturing



Tata Power outlines plans to set up a 10 GW solar ingot and wafer manufacturing facility.

- Targets large-scale entry into upstream solar manufacturing
- Facility to reduce reliance on imported wafers
- Strengthens domestic value chain under integrated manufacturing vision



RenewSys inks 125 MWp TOPCon module supply deal with ENGIE

- Agreement strengthens RenewSys global module supply
- TOPCon technology deployment for upcoming ENGIE projects



Jupiter International doubles solar cell manufacturing capacity to 2 GW

- Manufacturing capacity doubled to support market demand
- Expansion strengthens domestic solar supply chain
- Strengthens domestic value chain under integrated manufacturing vision



Premier Energies introduces India's first zero-busbar TOPCon solar cell

- New design enhances efficiency and power output
- Marks technological milestone in Indian PV manufacturing

GLOBAL UPDATES

The global solar landscape is evolving rapidly, shaped by changes in costs, technology innovation, and market expansion. The updates below highlight key international developments relevant to the solar manufacturing and deployment ecosystem.



Silver prices reach a record high of $83 per ounce.

- Rising silver prices increase input costs for solar cells
- Potential margin pressure for module and cell manufacturers



Solar modules in Europe can be manufactured at costs as low as €0.15 per watt.

- Study indicates competitive module manufacturing costs in Europe
- Reflects impact of scale, automation, and policy support
- Highlights cost convergence with global solar manufacturing hubs



Study highlights the impact of transparent conductive electrodes on perovskite–silicon tandem solar cell performance.

- Electrode materials significantly influence tandem cell efficiency
- Optical and electrical properties affect overall device performance
- Findings support optimisation of perovskite–silicon tandem designs



Small islands emerge as high-impact markets for solar PV deployment in tropical regions.

- Solar PV offers cost-effective power for islanded grids
- Reduces dependence on diesel-based electricity generation
- Strong potential for rooftop and microgrid deployments



Sweden supports advancements in indoor solar cell technology.

- Government backing accelerates development of indoor photovoltaics
- Supports innovation in emerging photovoltaic applications



UK solar sector on track for record deployment under Contracts for Difference (CfD) in 2026.

- Contracts for Difference driving large-scale solar deployment
- Record capacity expected to be awarded in 2026

INDIA'S SOLAR
BACKWARD INTEGRATION

The Emerging Demand for Capital Goods in the Ingot & Wafer Era - as India's downstream manufacturing achieves global scale, the upstream pivot becomes the defining challenge of the decade.

173 GW ALMM-I Module Capacity (Mar 2026)	**27 GW** ALMM-II Cell Capacity (Feb 2026)	**~4¢/W** Structural Cost Gap India Vs China Wafer	**2028** ALMM-III Target Domestic Wafer Mandate

Introduction

India has made remarkable progress in expanding its solar module and cell manufacturing capacities, supported by the Production Linked Incentive scheme and the Approved List of Models and Manufacturers framework. Module manufacturing capacity has crossed 173 GW under ALMM List-I, while enlisted cell capacity under ALMM List-II is approaching 27 GW ahead of the June 2026 mandatory compliance date. These achievements have strengthened domestic supply chain resilience and accelerated the deployment of domestically manufactured PV modules across rooftop, distributed, and utility-scale segments. Yet the very success of the downstream has sharpened a structural question that can no longer be deferred: without indigenous ingot, wafer, and ultimately polysilicon capacity, India's solar manufacturing ecosystem remains exposed to supply concentration risk, cost disadvantage, and strategic dependency in its most foundational inputs.

2.0 The structural cost Gap

A detailed cost analysis comparing Chinese and Indian wafer production reveals that the cost differential is not a transient pricing phenomenon - it is structural, driven by six compounding factors:

INGOT / WAFER COST STACK · CHINA VS INDIA		
CHINA TODAY	**INDIA TODAY**	**INDIA (2028-29)**
1.5 ¢ - 2.5 per watt	**1.5 ¢ - 2.5** per watt	**4.5 ¢ - 6.6 ¢** per watt

KEY ENABLING FACTORS

- **POLYSILICON**
  India pays ~$7-9/kg vs China's $5-7/kg; near-total reliance on virgin polysilicon with no recycling ecosystem

- **SCALE**
  China operates at 25-30 GW per ingot site; India's proposed investments of 5-10 GW remain below economic scale

- **WIRE TECHNOLOGY**
  India lacks tungsten wire manufacturing and closed-loop recycling, creating a 15-18% wafer yield disadvantage

- **YIELD MATURITY**
  Chinese plants operate at stabilised yields above 90-92%; India's ramp-up period is 18-24 months

- **HOT-ZONE CONSUMABLES**
  Isostatic graphite costs in India are ~3x the China landed cost; domestic supply is nascent

The Capital Challenge

Upstream integration is fundamentally a capital goods and ecosystem challenge. At Rs 1,000 crore per GW, the investment required for a commercially viable ingot-wafer facility is substantial - and the equity component alone places it well beyond the reach of internal accruals from downstream manufacturing operations. Even a well-capitalised module or cell manufacturer generating healthy returns cannot self-finance the upstream leap without a material shortfall, and that shortfall only widens when working capital, maintenance, and R&D requirements are factored in. External financing, targeted incentives, and demand certainty are therefore prerequisites, not accelerants, for upstream investment at the required scale.

Capital Goods as the Key Enabler

Backward integration into ingot and wafer production is fundamentally a capital goods and ecosystem challenge. While advanced machinery is critical, equal importance must be given to building a robust supporting ecosystem - including consumables, materials, automation, and process technologies. India's domestic manufacturing base in these areas is currently nascent, making access to

high-quality, competitively priced capital equipment essential during the scaling phase. The major equipment categories span crystal growth furnaces, hot zone assemblies, precision ingot pullers, multi-wire saw machines, tungsten and diamond wire systems, defect detection and wafer cleaning lines, and comprehensive recycling and recovery systems. Beyond core machinery, a production consumables ecosystem covering quartz crucibles, isostatic graphite components, and tungsten wire with closed-loop recycling infrastructure is equally critical to long-term competitiveness. The policy framework is progressively aligning with this imperative. With ALMM-II for cells effective from June 2026 and ALMM-III for wafers expected from 2028, the demand signal for domestic upstream manufacturing is becoming increasingly concrete - creating the investment case that capital goods suppliers and equipment financiers need to commit to India's upstream solar ecosystem at scale.



STRUCTURAL COST GAP DRIVERS

01 POLYSILICON FEEDSTOCK

India $7.8/kg vs China $5.6/kg; no recycling ecosystem; import controls inflate cost by 3-4x

02 SCALE OF OPERATIONS

China at 25-30 GW/site; India proposals at 5-10 GW - below economic scale threshold

03 WIRE TECHNOLOGY

India lacks 24µm tungsten wire + recycling; 15-18% wafer yield disadvantage vs China

04 HOT-ZONE CONSUMABLES

Isostatic graphite at ~3x China landed cost; quartz crucible supply nascent

05 COST OF CAPITAL

India 8.5-9.5% vs China 1.5–2.0%; structural disadvantage on all capital-intensive plants

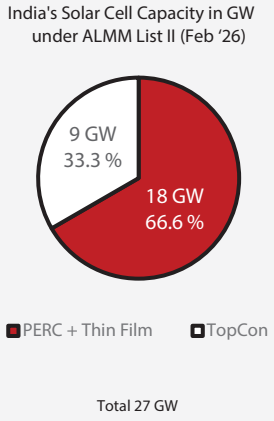
CAPITAL GOODS REQUIREMENT

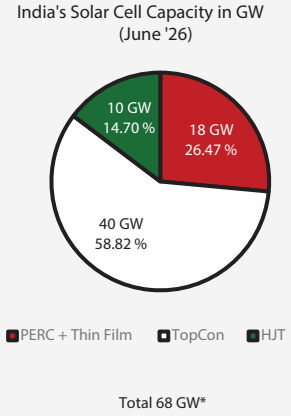
Ingot	Wafer
Crystal Growth Furnaces	Multi-Wire Saw Machines
Hot Zone Assemblies	Multi-Wire Saw Machines
Ingot Pullers	Defect Detection
Thermal Management Systems	Wafer Cleaning Lines
Quartz Crucibles	Recycling & Recovery
Process Controls	Slicing Automation

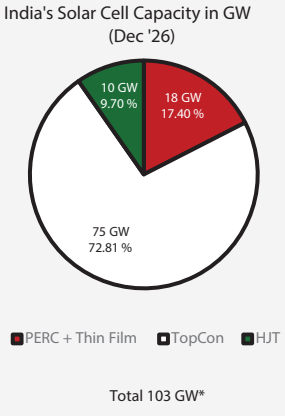
CONSUMABLE ECOSYSTEM

1. Quartz Crucibles (supply currently nascent)
2. Isostatic Graphite Components
3. Tungsten Wire + Recycling Infrastructure
4. Polysilicon Recycling System

INDIA'S SOLAR CELL MANUFACTURING CAPACITY BY TECHNOLOGY (2026 OUTLOOK)







UPSTREAM IMPLICATION

With enlisted cell capacity projected to reach 103 GW by December 2026 - nearly four times the current ALMM-II listed base - the absence of a domestic wafer supply chain will become an acute operational constraint, not merely a strategic gap. Every gigawatt of cell capacity commissioned without a domestic wafer source is a gigawatt dependent on imports. At this scale, building ingot and wafer manufacturing capacity is no longer a future priority - it is an immediate industrial necessity.

POLICY ROADMAP - FIVE PILLARS FOR INGOT-WAFER COMPETITIVENESS

01

CAPITAL EQUIPMENT ACCESS

Facilitate globally competitive capital equipment; ease import restrictions on ISO graphite and hot-zone consumables during build-out phase.

02

SCALE ALIGNED INVESTMENT

Avoid fragmented sub-scale capacity; promote minimum 6 GW+ integrated ingot-wafer facilities to achieve cost efficiency at production scale.

03

CAPITAL EQUIPMENT ACCESS

CPSU procurement 15–25 GW indicative volume; mandatory domestic wafer usage post cut-off; import monitoring linked to project award.

04

ECOSYSTEM ENABLEMENT

Domestic tungsten wire manufacturing with closed-loop recycling; polysilicon price parity mechanisms; quartz crucible and graphite supply development.

05

SCALE ALIGNED INVESTMENT

Concessional debt; capex subsidy at COD; electricity support; prioritised upstream financing from banks and financial institution.



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