

SPECIAL ARTICLE

FINANCING THE GREEN SUPPLY CHAIN

How IREDA's IPO Strengthens India's Renewable Energy Ecosystem

Abstract

India's renewable energy transition is entering a more execution-intensive phase. Capacity additions remain strong, and the policy direction is clear; the next wave of growth will depend on whether domestic manufacturing, storage, transmission, project development and finance can move in sync. Supply-chain management in renewable energy is therefore no longer limited to equipment procurement. It now includes manufacturing readiness, vendor liquidity, EPC mobilization, storage procurement, transmission access, contract bankability and long-tenor capital. Against this backdrop, IREDA's IPO in November 2023 is significant because it strengthened a specialized green-finance platform at a time when India's renewable ecosystem is becoming larger, more integrated and more capital intensive. This article examines how IREDA's post-listing capital-market access can support the renewable supply chain through financing for developers, manufacturers, EPC contractors, storage providers and grid-linked infrastructure, while also improving discipline in appraisal, procurement and project execution.



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From capacity addition to supply-chain readiness

India's renewable energy story has moved from aspiration to infrastructure scale. As of 30 April 2026, the country had 279.26 GW of renewable energy capacity and

288.04 GW of non-fossil capacity. The formal 2030 target of 500 GW non-fossil capacity therefore implies another large wave of generation, storage, transmission and manufacturing build-out over the rest of the decade.

The scale-up is already visible. India added 55.29 GW of non-fossil capacity in FY 2025-26, its highest annual addition so far. Solar crossed 150 GW and wind crossed 56 GW. Equally important, official government updates show that the supply chain behind this capacity is expanding: solar module manufacturing capacity rose from 2.3 GW in 2014 to about 172 GW by 31 March 2026, while wind-turbine manufacturing capacity reached about 24 GW.

These numbers change the nature of the discussion. Renewable energy supply-chain management is now a system-wide agenda. It covers upstream manufacturing of modules, cells, inverters, batteries,

electrolyzers and wind components; midstream EPC, logistics, warehousing and port movement; downstream offtake, grid integration and O&M; and the financial architecture that keeps each link moving. A delay in financing can affect equipment ordering; a change in technology cost can alter project viability; and a transmission timeline can influence the entire procurement schedule.

Government policy has also started reflecting this shift. The FY26 MNRE update pointed to supply-chain transparency and localization measures, including the Renewable Energy Equipment Import Monitoring System, import-duty support for battery-energy-storage-cell manufacturing, GST rationalization and Green Energy Corridor funding. These measures indicate that India is treating renewable energy not only as a generation target, but also as an industrial, manufacturing and logistics ecosystem that requires coordinated policy and finance support.

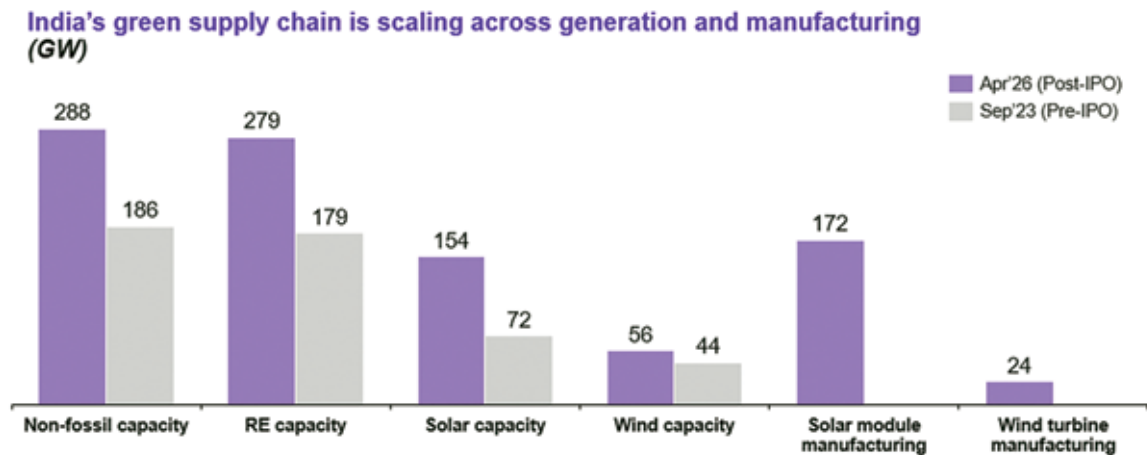


Figure 1: India's renewable transition has become a generation-and-manufacturing scale-up challenge

Supply-chain readiness is now central to renewable growth

The earlier renewable supply chain was dominated by plain solar and wind projects with relatively standardized equipment, contracts and appraisal models. The next wave is more integrated. Hybrid projects, round-the-clock (RTC) renewable power, firm and dispatchable renewable energy (FDRE), battery storage (BESS), pumped storage (PSP), offshore wind and green Hydrogen-linked projects require more careful coordination between generation assets, storage systems, transmission capacity, offtake contracts, technology suppliers

and financing structures.

Recent market research corroborates this transition. IEEFA and JMK Research reported that India issued a record 73 GW of utility-scale renewable energy tenders in 2024, up from 58 GW in 2023. Nearly half of the capacity tendered in 2024 was no longer plain solar or wind, but hybrid or storage-linked. That is a fundamental supply-chain signal: offtakers are increasingly procuring reliability, firmness and flexibility, not only the cheapest unit of energy.

The same study also highlighted the conversion agenda that now requires policy and financing

attention. About 8.5 GW of tendered capacity in 2024 was undersubscribed, more than 40 GW of awarded capacity was awaiting power sale agreements, and 38.3 GW of capacity was cancelled during 2020-24. These figures are best read as focus areas for the next phase of market design: tender volumes are strong, but the sector must also ensure that awarded capacity is supported by offtake certainty, transmission readiness, financing closure and supplier confidence.

Storage is the clearest example of this evolution. The CEA's National Electricity Plan, cited by MNRE, projects India's storage requirement at 82.37 GWh in 2026-27 and 411.4 GWh by 2031-32. IEEFA and JMK's 2026 review of standalone BESS tenders noted that storage tendering has scaled rapidly, while tariff assumptions, financial closure, procurement timelines and commissioning schedules require careful lender scrutiny. This underlines the need for financing models that are

technology-specific rather than generic.

IREDA's IPO and the financing backbone of the supply chain

The significance of IREDA's IPO lies not only in the capital it raised, but in the timing of the listing. India's renewable energy sector is entering a phase where growth will depend on financing domestic manufacturing, storage, transmission, EPC execution and emerging technologies with the same urgency with which generation capacity was financed in the past decade.

The IPO brought IREDA into the discipline of public markets and widened its capital base. It was followed by further capital-market access, including a qualified institutions placement of Rs 2,005.90 crore in June 2025. By 31 March 2026, IREDA's loan book had reached Rs 93,075 crore, with FY26 sanctions of Rs 51,883 crore and disbursements of Rs 34,946 crore.

IREDA's listed platform has greater financing reach (INR '000 Cr.)

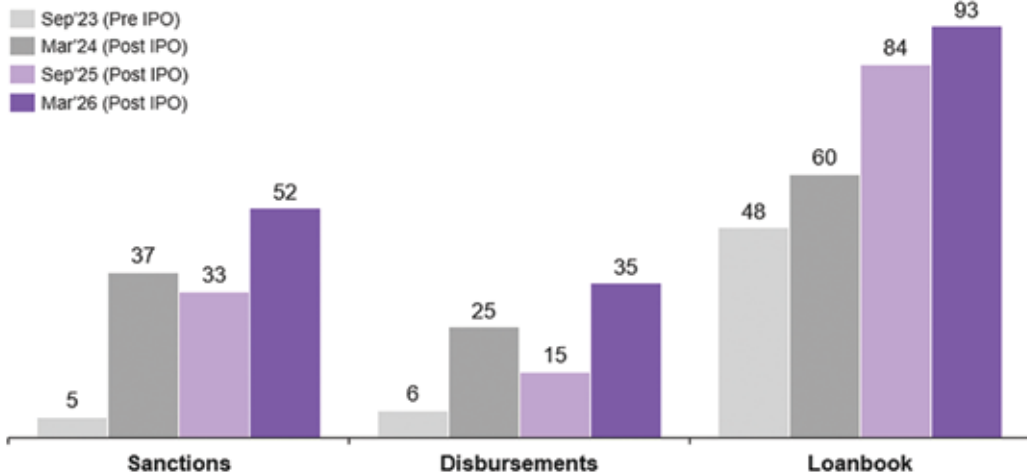


Figure 2: IREDA's post-listing platform can support a wider renewable supply chain

This scale matters because every rupee of long-tenor green finance can support a wider chain of developers, manufacturers, EPC contractors, storage integrators and grid-linked assets.

The timing is important. Recent market research indicates that the sector's focus areas have shifted from simple capacity demand to bankability, supply-chain confidence and execution readiness. A listed IREDA can help address these areas by combining capital access with sector-specialist appraisal, stronger disclosure discipline and the

ability to crowd in co-lenders and institutional investors.

Finance as the operating capital of renewable supply chains

In renewable energy, finance does not sit outside the supply chain. It is part of the operating architecture. Debt sanction affects module ordering. Working-capital lines affect EPC mobilisation. Guarantees influence tender participation. Payment-security structures affect supplier confidence.

Refinancing improves balance-sheet recycling. For capital-intensive projects, the flow of finance often determines the flow of equipment, people and contracts.

This is where the role of financiers is changing. The IEEFA-JMK tender work indicates that tender awards need supporting conditions to convert smoothly into projects. The BESS analysis points to tariff, procurement and commissioning assumptions that require careful financial appraisal. IEEFA’s work on critical minerals also notes the need for risk-sharing capital and midstream capex support. These independent assessments point to the same conclusion: financiers have to become supply-chain enablers, not merely providers of debt.

For IREDA, this means a broader role than funding completed project structures. The institution can support manufacturing capex, vendor liquidity, EPC working capital, receivable discounting, guarantee support, equipment procurement and blended-finance structures for early-stage technologies. These instruments can help reduce friction between tender award, procurement, financial closure and commissioning.

The critical-minerals issue reinforces this point. India is building resilience in battery-linked value chains, but lithium, cobalt, nickel and related midstream processing remain areas where global supply concentration can influence cost and delivery. Financing structures will be needed not only for solar and wind projects, but also for processing, recycling, inventory buffers, domestic component manufacturing and supplier-risk mitigation.

Where financing changes supply-chain outcomes

Supply-chain pressure point	Financing intervention	Expected supply-chain effect
Module / equipment procurement	Supplier credit, LC/BG support, milestone-linked debt	Better ordering confidence and improved procurement timing
EPC and contractor liquidity	Working-capital lines, receivable discounting, escrow-based payments	Faster mobilization and smoother payment cycles

BESS / PSP / hybrid projects	Technology-specific appraisal, blended finance, longer tenor	Improved financial-closure and commissioning confidence
Domestic manufacturing	Capex finance, inventory finance, offtake-backed lending	Local capacity creation and reduced import exposure
Critical minerals and midstream assets	Risk-sharing capital, processing/ recycling finance	Greater resilience for storage and EV-linked supply chains
Transmission-linked assets	Long-tenor debt and payment-security structures	Better grid-integration readiness and project bankability

The evolving role of financiers

The next phase of renewable financing will require a more specialised playbook. First, financiers will need to build technology-specific appraisal models. Plain solar and wind lending frameworks cannot simply be extended to BESS, pumped storage, green hydrogen, offshore wind or RE manufacturing. Each segment has different technology curves, degradation profiles, offtake structures, construction timelines and supplier dependencies.

Second, financiers will need to assess bankability before funding volume. The conversion agenda identified in recent tender studies shows that bid victory, PPA signing, PSA execution, transmission readiness and project procurement must be read together. A project that appears attractive on tariff alone may require additional assessment of storage sizing, supplier quality, logistics timelines, payment security and regulatory exposure.

Third, financiers will need to support the manufacturing and vendor ecosystem. Government policy is encouraging localisation, but domestic manufacturers and component suppliers require capital for technology, inventory, automation, certification, quality systems and working capital. Without such support, domestic capacity may grow more slowly than project demand.

Fourth, financiers can use covenants to improve supply-chain discipline. ESG-linked covenants,

supplier disclosure requirements, safety and quality standards, milestone-linked disbursements, insurance conditions and digital monitoring can help ensure that financed projects are not only viable on paper, but also better prepared for execution.

Supply-chain finance priorities for IREDA

IREDA is well placed to play this role because it combines sector focus, government ownership, public-market visibility and a growing balance sheet. The opportunity is not only to increase the volume of lending, but to deepen the quality and design of green-finance products for a more complex renewable ecosystem.

The first priority is a dedicated supply-chain finance window for renewable energy. This could cover approved manufacturers, EPC contractors, O&M providers, storage integrators

and transmission-linked suppliers.

The second priority is product innovation: vendor finance, capex loans for domestic manufacturing, green equipment lines, receivable discounting, bid-bond support and partial credit enhancement for emerging technologies.

The third priority is appraisal depth. IREDA can create sector playbooks for BESS, PSP, green hydrogen, offshore wind, smart meters and RE manufacturing. These playbooks should include technology benchmarks, supply-chain indicators, counterparty standards, offtake treatment and stress scenarios. The fourth priority is capital mobilisation. As a listed entity, IREDA can use its market credibility to crowd in institutional investors, multilateral institutions and global capital through co-lending, green bonds, ECBs and blended-finance structures.

IREDA’s supply-chain finance toolkit

Segment	Need	Possible instrument	IREDA role
Manufacturers	Capex, automation, quality systems	Manufacturing capex loans; equipment finance	Finance localization and scale-up
EPC contractors	Working capital and payment timing	Receivable discounting; escrow-linked credit	Improve execution readiness
Developers	Procurement and financial closure	Project debt; LC/BG support; refinancing	Improve bid-to-commissioning conversion
Storage providers	Technology and tariff appraisal	Blended finance; longer-tenor debt	Build bankability for BESS / PSP
Critical minerals / recycling	High capex and price exposure	Risk-sharing capital; midstream loans	Support upstream resilience
Transmission / grid assets	Long-tenor infrastructure capital	Take-out finance; bond refinancing	Improve evacuation readiness

Focus areas and safeguards

A stronger financing platform also calls for sharper safeguards. Global commodity cycles, concentrated mineral supply, transmission timelines, aggressive tender pricing, DISCOM offtake exposure and technology maturity will remain important factors in project appraisal. The purpose of green finance should therefore be to support growth while ensuring that capital is deployed into projects with sound contracts, credible suppliers and realistic execution assumptions.

This means capital should be supported by clear sector limits, risk-adjusted pricing, stronger due diligence and continuous monitoring. For emerging sectors, lenders will need to differentiate between policy ambition, commercial readiness and project-level bankability. This discipline will protect both financiers and the wider renewable ecosystem.

The real contribution of IREDA and other financiers will therefore be two-fold: expanding capital availability while improving the quality of capital allocation. The sector needs more financing,

but it also needs financing that strengthens the supply chain, improves project discipline and supports long-term resilience.

Conclusion: from project finance to supply-chain resilience

IREDA's IPO marked an important shift in India's renewable energy financing architecture. It strengthened a specialised green-finance institution at a time when India's renewable ecosystem is moving from generation-led capacity creation to supply-chain-led execution. The IPO and subsequent capital-market access have improved IREDA's ability to support not only project developers, but also the wider ecosystem that enables renewable projects to be built, connected and operated.

Recent government updates and independent market studies point in the same direction. India's renewable supply chain is becoming larger, more complex and more finance-dependent. Tendering has scaled, domestic manufacturing is expanding, storage is moving into the mainstream, and critical-mineral resilience is becoming a strategic priority. Each of these developments requires financing that is timely, patient and technically informed.

In this context, IREDA's post-listing platform can be a meaningful enabler. By combining capital-market access with sector-specialist knowledge, IREDA can help convert renewable ambition into commissioned projects, domestic manufacturing capability and resilient supply chains. The larger implication of the IPO is therefore not only financial. It is institutional: India now has a listed, specialised green-finance platform that can help build the supply-chain depth required for the next phase of the energy transition. **MA**



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