April 09, 2026

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THEMATIC RESEARCH

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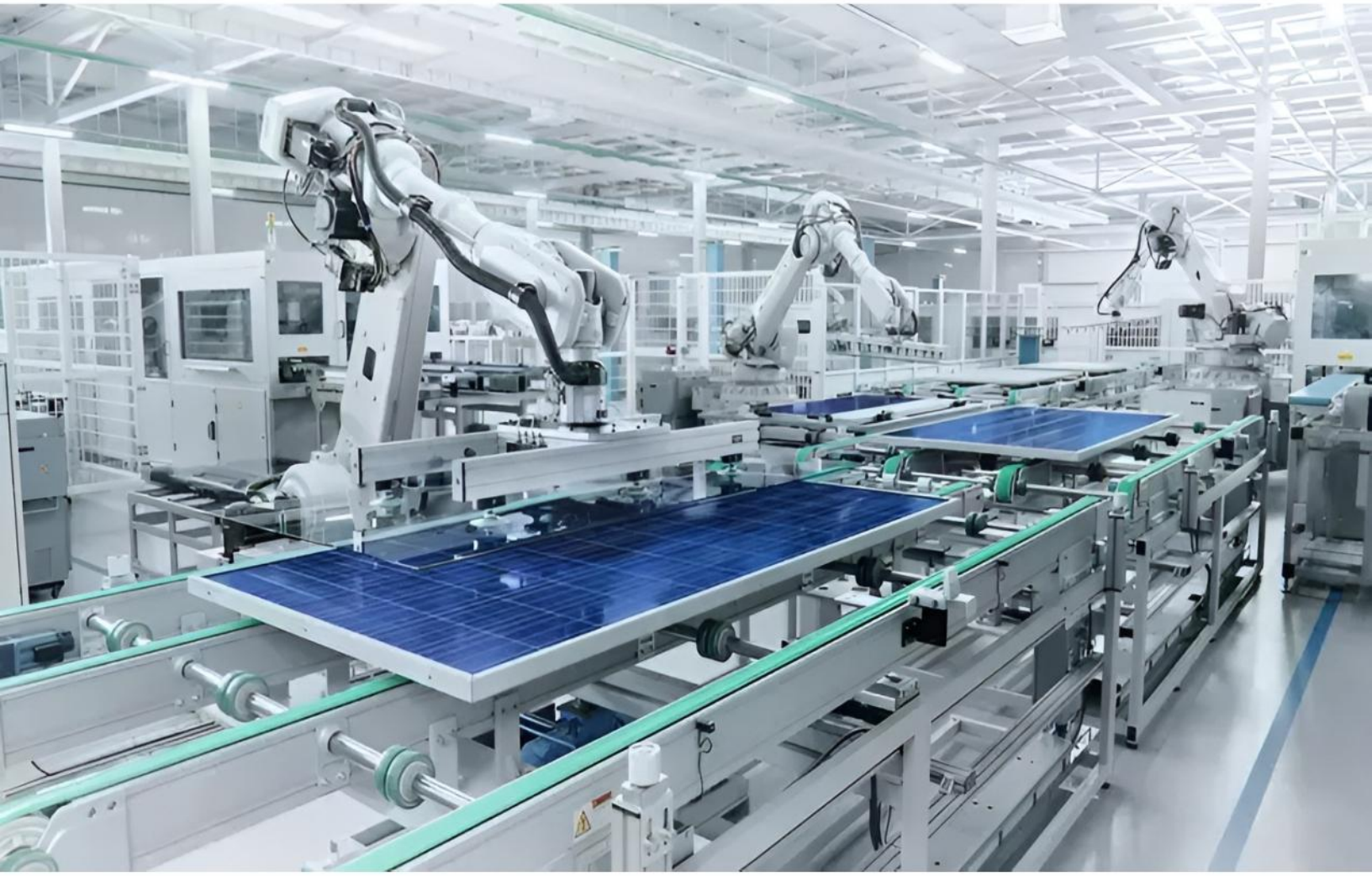
Solar PV Manufacturing

Clouds Cyclical, Sunlight Secular



Growth in solar unstoppable

Current phase just a pause, not an end

Time to relook and re-enter

JM Financial Institutional Securities Limited

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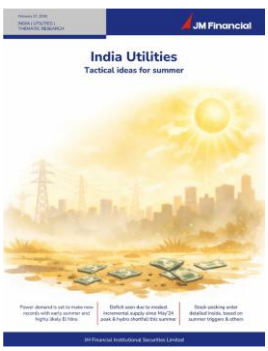

Tactical ideas for summer

Solar PV Manufacturing

Clouds Cyclical, Sunlight Secular

India is gifted with one of the world's richest solar resources, with avg solar irradiance of 3.5–5.5 kWh/m²/day and 300–330 sunny days/year. Recognising the vast potential, India has implemented a series of policies to accelerate solar addition from 2.8GW in 2014 to 100GW in 2025. However, as solar generation faces a reality check (intermittency, demand-supply mismatch), we expect 130–140GW of solar capacity additions over FY27–30E (versus 40–45GW in FY26E and a narrative of 50/60GW annual run rate FY26 onwards) creating only 45-50GW of annual modules requirement up to 2030.

Recognising this opportunity, module manufacturing has become crowded with 100+ players and 170+GW capacity. As policy focus shifts to quality from quantity, we believe 40% of the current capacity will soon get obsolete owing to the technology shift to TOPCon and higher efficiency modules. Currently, the crowded Indian solar industry can be classified under three baskets: potentially large integrated players (Waaree Energies, Premier Energies); technologically strong domestic players (Emmvee Photovoltaics, high potential scalers); and policy-dependent assemblers (survival depends heavily on import duties and ALMM protection).

Amid this backdrop, a classic solar manufacturing transition story is playing out in India: Phase 1: Volume growth (up to FY26E); Phase 2: Margin expansion via integration (FY27–29E); and Phase 3: Platform play with BESS and other adjacencies (FY30E onwards). For context, Chinese manufacturers too went through similar phases, beginning with volume expansion and exports during 2000–08, then switched from an export-only model to promoting domestic demand during (2000–12), and then to technology leadership (full integration) and global dominance (2013–23). All along, companies such as Trina Solar, JA Solar, Longi Green and Jinko Solar have enjoyed RoEs of 20%+ and 2Y forward EV/EBITDA of 20x.

That said, bogged down by overcapacity resulting in price wars and localisation drives across countries, their RoEs compressed substantially to about 10%; valuation multiples took a beating and have derated to 7–8x currently. Indian players too have entered similar phase with sharp correction in anticipation of RoE dilution beginning FY27.

In this thematic, we scope out and analyse India's fast-charging solar industry, and initiate coverage on the following four companies.

Waaree Energies: India's largest module manufacturer (5.4/22.8GW cell/modules) is expanding its module/cell/ingot & wafer capacity to 28GW/15.4GW/10GW by FY28E. Its net-cash of INR 68bn supports expansion and diversification (electrolyser, BESS, inverters, transformers, developer). We estimate Waaree's revenue/EBITDA/PAT would compound at 34%/42%/40% to INR 351bn/78bn/52bn over FY26–28E. Initiating coverage with a **REDUCE and TP of INR 2,815 (-10% downside potential)**, valuing the stock at 9x FY28E EV/EBITDA, reflecting its leadership that may offset by diversification-related execution risks.

Premier Energies: is one of India's leading integrated solar PV players with capacity of 3.6/5.4GW for cells/modules. Under construction 7GW TOPCon cell and 10GW ingot–wafer facilities are slated for commissioning by Dec'28E. We expect PEL to sustain growth momentum led by continued expansion, deeper integration (cell-to-module ratio of 95% by FY27) and an order book of INR 137bn (9.4GW, 60% cells, 100% domestic). Initiating coverage with a **REDUCE and TP of INR 865 (-10% downside potential)**, valuing the stock at 10x FY28E EV/EBITDA.

Emmvee Photovoltaic: Emmvee has manufacturing capacity of 2.9/10.3GW of solar cell/modules, with expansion planned to 8.9/16.3GW by FY28E. It has many firsts to its credit—first to be listed in ALMM for both TOPCON modules/cells, which enables it to consistently command an industry-best 31% EBITDA margin. We estimate its EBITDA would expand at a CAGR of 60% and RoE would normalise from 105% in FY25 to 29% in FY28E. Initiating coverage on Emmvee with a **BUY and TP of INR 291 (31% upside potential)** based on 7.5x FY28E EV/EBITDA, reflecting its strong technology credentials and re-rating potential

Vikram Solar: The company has a module capacity of 9.5GW, which is under expansion to 15.5GW along with 12GW cell capacity. Despite being an early mover, it has lagged on technology adaptation and integration vis-à-vis industry peers by at two-plus years. Sector concerns have led to a sharp correction in the stock (48% since listing versus <20% for peers), making it a value pick even when we build in delays in commissioning and utilisation. We value Vikram Solar at 5x EV/EBITDA FY28E, reflecting its lagging technology readiness. Initiating coverage with an **ADD and TP of INR 202 (5% upside potential)**.

Exhibit 1: Valuation table

Stock	EBITDA			RoE		EV/ EBITDA	TP	CMP	%	Rating	Remark
	FY25	FY28	CAGR % FY25-28	FY25	FY28						
Waaree Energies	27,216	78,444	42%	28%	25%	9	2,815	3,125	-10%	REDUCE	Potentially largest integrate player, but subject to excessive diversification
Premier Energies	17,809	38,628	29%	54%	31%	10	865	960	-10%	REDUCE	Potentially largest integrated player
Emmvee PV	7,219	29,443	30%	105%	29%	7.5	291	223	31%	BUY	Most experienced integrated player with high re-rating potential
Vikram Solar	4920	19714	65%	17%	21%	5	202	192	5%	ADD	2-3 years behind industry leaders

Source: Company, JM Financial

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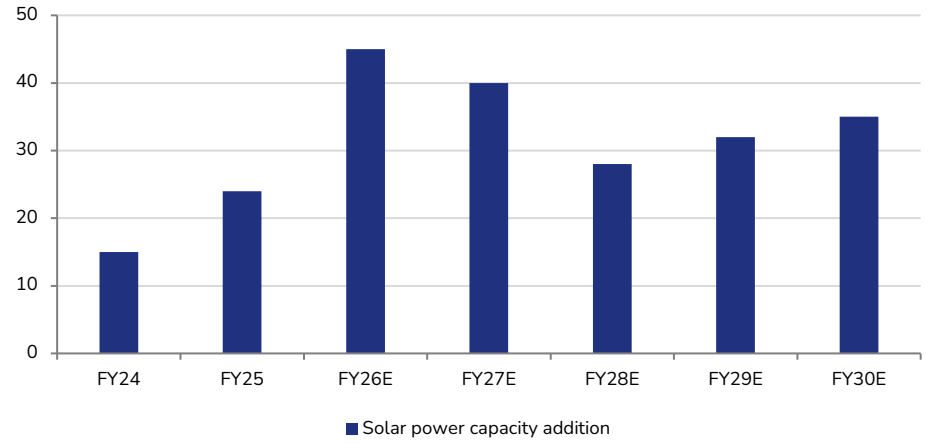
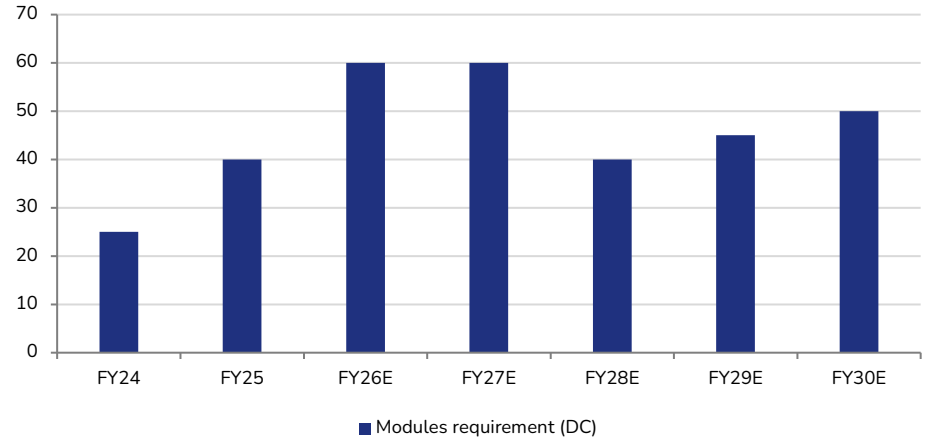
Focus Charts

Exhibit 2: We estimate annual solar additions of 35-40 GW up to 2030



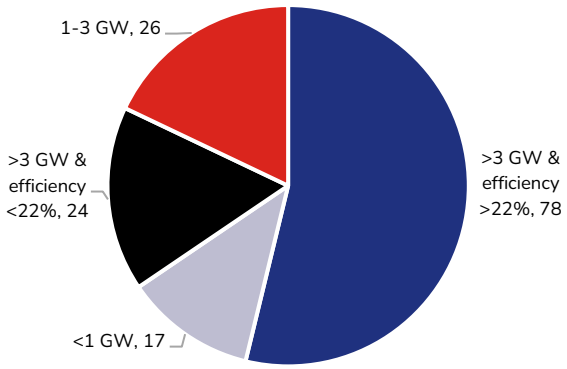
Source: MNRE, JM Financial

Exhibit 3: Resulting in 45-55 GW of annual modules' requirement



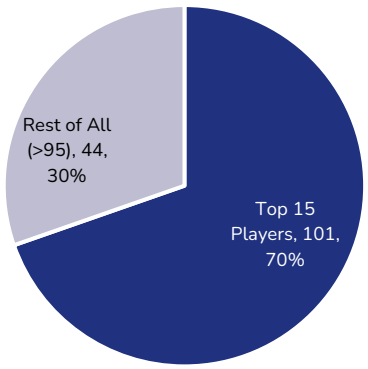
Source: MNRE, JM Financial

Exhibit 4: Majority of the manufacturing capacity is sub scale and <22% efficiency



Source: MNRE, JM Financial

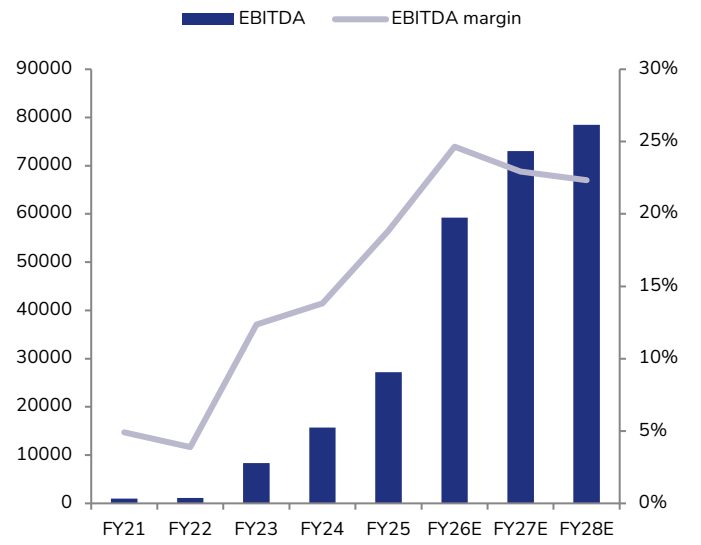
Exhibit 5: Industry is fragmented limiting their capabilities and hence, backward integration



Source: MNRE, JM Financial

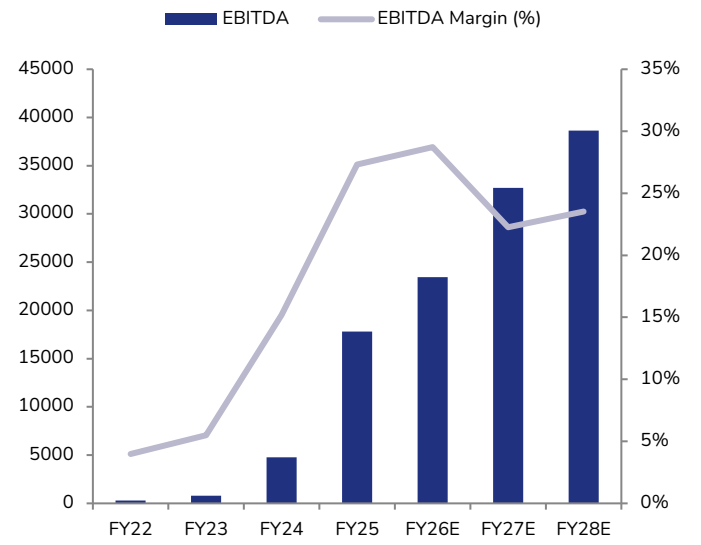
Annual demand is largely in line with capacities with large and integrated manufacturers resulting in sustained growth and but with moderate profitability.

Exhibit 6: Waaree's EBITDA (INR mn) and EBITDA margin (%)



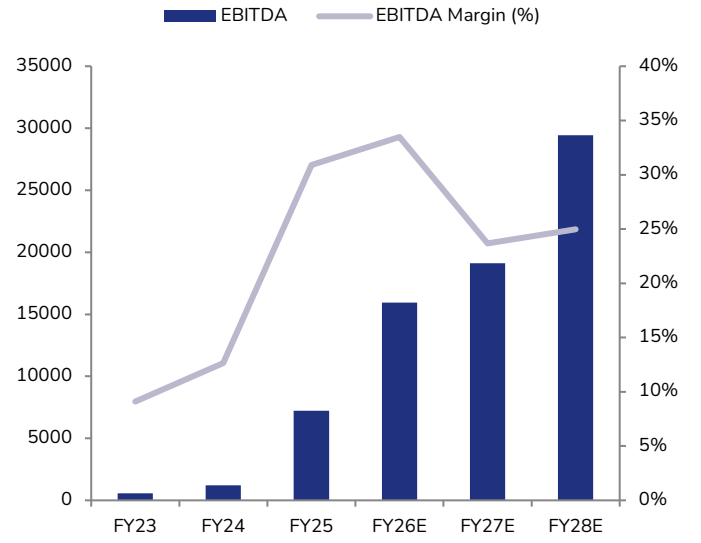
Source: Company, JM Financial

Exhibit 7: Premier EBITDA (INR mn) and EBITDA margin (%)



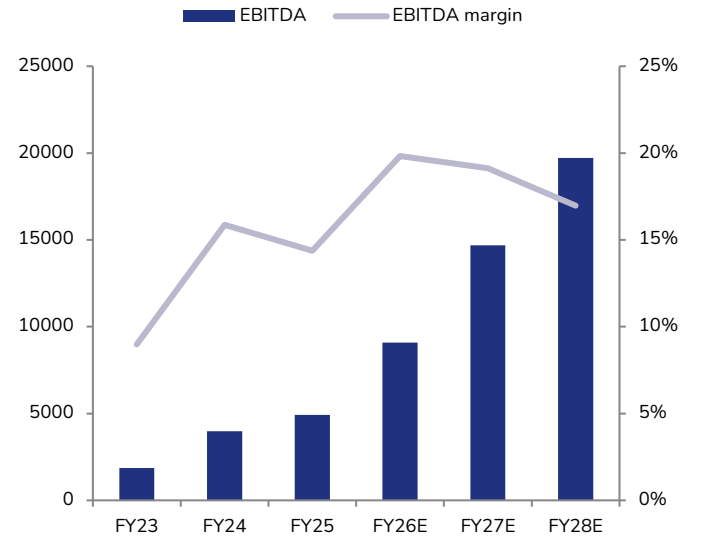
Source: Company, JM Financial

Exhibit 8: Emmvee's EBITDA (INR mn) and EBITDA margin (%)



Source: Company, JM Financial

Exhibit 9: Vikram's EBITDA (INR mn) and EBITDA margin (%)



Source: Company, JM Financial

Investment Thesis

- **Sunlight is secular:** India is gifted with one of the world's richest solar resources, with avg solar irradiance of 3.5–5.5 kWh/m²/day and 300–330 sunny days/year. Recognising the vast potential, India has implemented a series of policies to accelerate solar addition from 2.8GW in 2014 to 100GW in 2025. However, as solar generation faces a reality check (intermittency, demand-supply mismatch), we expect 130–140GW of solar capacity additions over FY27–30E (versus 40–45GW in FY26E and a narrative of 50/60GW annual run rate FY26 onwards) creating only 45-50GW of annual modules requirement up to 2030.

- **Effective manufacturing capacity not as large:** Growth momentum in solar-led 100+ players venturing into solar modules manufacturing has resulted in 150+GW capacity, which is likely to exceed 200GW in FY27E. Now, industry is structurally moving toward overcapacity (2–3x supply surplus) and consolidation risking medium-term pressure on pricing. However, 25% of this 150GW+ solar PV module manufacturing capacity will soon get obsolete due to the ongoing technology shift to cutting-edge TOPCon and an industry transitioning towards higher efficiency modules. Imminent integration of modules with cell, wafers and ingots, beginning Sep'25, has made scale and technology important for survival. While numerous integrated (cell+module) facilities have been announced, we believe a large number will either face delays or be shelved due to lack of capital and capabilities, thereby nudging the market towards oligopoly.

- **High capex an entry barrier:** Over next five years, substantial capex needs to build a competitive and integrated solar manufacturing ecosystem in India which shall act as a key barrier to entry and a differentiator among players. Typical capital intensity is USD 60–80mn/GW for cell manufacturing, USD 70–80mn/GW for wafer and ingot capacity, and additional investments for module lines and upstream polysilicon. For India to develop even 50–60GW of integrated cell–wafter–ingot capacity, the industry may require USD 7–8bn of cumulative capex over the next five years. Individual large players scaling up toward 10–20GW integrated facilities could each deploy USD 2–4bn over this period, particularly if they venture into ingots and wafers.

- **Fast-changing technology another entry barrier:** This potential capex cycle though comes with significant execution and return risks as technology transitions (PERC → TOPCon → Tandem) require continued reinvestment every three–four years, increasing the risk of asset obsolescence. Amid this, we believe companies that successfully combine scale (>10GW), vertical integration, export competitiveness, sustained R&D investment (>2–3% of sales) and strong balance sheet will be rewarded. Consequently, despite strong demand growth, India's solar manufacturing sector is likely to consolidate into five–six large integrated players, whereas smaller, policy-dependent assemblers face a high risk of margin erosion and eventual exit.

- **Integration key to success:** Currently, the Indian solar industry is crowded and can be broadly classified into three baskets: potentially large integrated players (Waaree Energies, Premier Energies), technologically strong domestic players (Emmvee Photovoltaics, high potential scalers) and policy-dependent assemblers (survival depends heavily on import duties and ALMM protection). Presently, the story playing out in India is classic solar manufacturing transition, which can be further subdivided into three phases:
  - **Phase 1:** Volume growth (up to FY26)
  - **Phase 2:** Margin expansion via integration (FY27–29E)
  - **Phase 3:** Platform play with BESS and other adjacencies (FY30E onwards)

- **China too had a similar cycle:** Chinese solar manufacturers too went through similar phases, beginning with volume expansion and exports during 2000–08, then switched from an export-only model to promoting domestic demand during 2000–12, and then to technological leadership (full integration) and global dominance during 2013–23. During these years, companies such as Trina Solar, JA Solar, Longi Green and Jinko Solar have generated 20%+ in RoEs and commanded a 2Y forward EV/EBITDA of 20x. However, bogged down by overcapacity resulting in price wars and localisation drives across countries, their RoEs compressed to about 10%, resulting in multiples' de-rating to around 8x currently (Exhibit 10).

- **Are Indian solar players staring at a similar future?** Manufacturers in India have prematurely passed their peak earnings due to overcapacity and sectoral headwinds. As industry heads towards aggressive pricing (even a 1% change in cost/Wp can hurt) from assemblers, the potential future leaders are prone to margin compression, which we argue would inevitably spur industry consolidation and finally force out weaker manufacturers. Recent diversification attempts, mostly in energy storage (BESS assembly and the like, which again are at risk of crowding) rather than strengthening fundaments (investment in R&D), perhaps may not be significantly value-accretive in our view.

Valuation

We value our solar coverage universe on EV/EBITDA, reflecting each company's growth visibility, returns profile, extent of backward integration and execution track record. Our target multiples are benchmarked against expected earnings growth, RoE trajectory and relative positioning within the domestic solar manufacturing ecosystem.

Waaree Energies – REDUCE (TP: INR 2,815 Downside: 10%)

We expect Waaree to deliver steady growth supported by capacity expansion and strong order visibility, with revenue/EBITDA/PAT projected to expand at a CAGR of 34%/42%/40% over FY26–28E. However, blended EBITDA/Wp is expected to peak in FY26E and gradually moderate thereafter due to increasing competition and pricing pressures. The company's strong balance sheet, with net cash of INR 68bn at end-FY25, provides adequate funding support for its expansion plans. Despite healthy growth prospects, we believe current valuations adequately reflect its scale advantages and expansion visibility while incremental risks from aggressive diversification and capital deployment limit near-term upside. All in all, we are initiating coverage with a REDUCE and TP of INR 2,815, valuing the company at 9x FY28E EV/EBITDA.

Premier Energies – REDUCE (TP: INR 865, Downside: 10%)

We expect PEL to sustain strong growth momentum led by continued capacity additions and deeper integration across the value chain. Production is thus expected to scale up to 8.2GW (modules) and 6.6GW (cells) by FY28E, lifting revenue/ EBITDA/ PAT to INR 164bn/ 39bn/ 23bn, a CAGR of 36%/29%/35% over FY26–28E. We expect EBITDA margin to peak at 29% in FY26E supported by operating leverage and scale benefits from recently commissioned capacities, before gradually moderating to 24% by FY28E amid intensifying industry competition and spread normalisation. Similarly, blended EBITDA/Wp is expected to peak at INR 6.35/W in FY26E and moderate to INR 4.68/W by FY28E. We value PEL at 10x FY28E EV/EBITDA, recognising its potential to emerge as one of the largest integrated solar manufacturers, yielding a TP of INR 816; initiate at REDUCE as current valuations limit near-term re-rating potential.

Emmvee Photovoltaic – BUY (TP: INR 291, Upside: 31%)

We expect cell/module production to increase to 4.7GW/7.9GW by FY28E, resulting in revenue/EBITDA/PAT CAGR of 83%/77%/87% over FY25–28E. However, EBITDA margin may peak at 33% in FY26 before moderating to 27%/28% in FY27E/28E, reflecting increasing competition and moderation in realisations. Similarly, blended EBITDA/Wp is expected to peak at INR 6.13/Wp in FY26E, before moderating to INR 5/Wp by FY28E. We assign Emmvee a 7.5x FY28E EV/EBITDA, reflecting its strong technology credentials and attractive re-rating potential waiting for scale expansion and visibility for ingots and wafers. We initiate coverage with a BUY rating and TP of INR 291, a 31% upside, supported by its deep integration experience, and meaningful potential for valuation re-rating as scale improves.

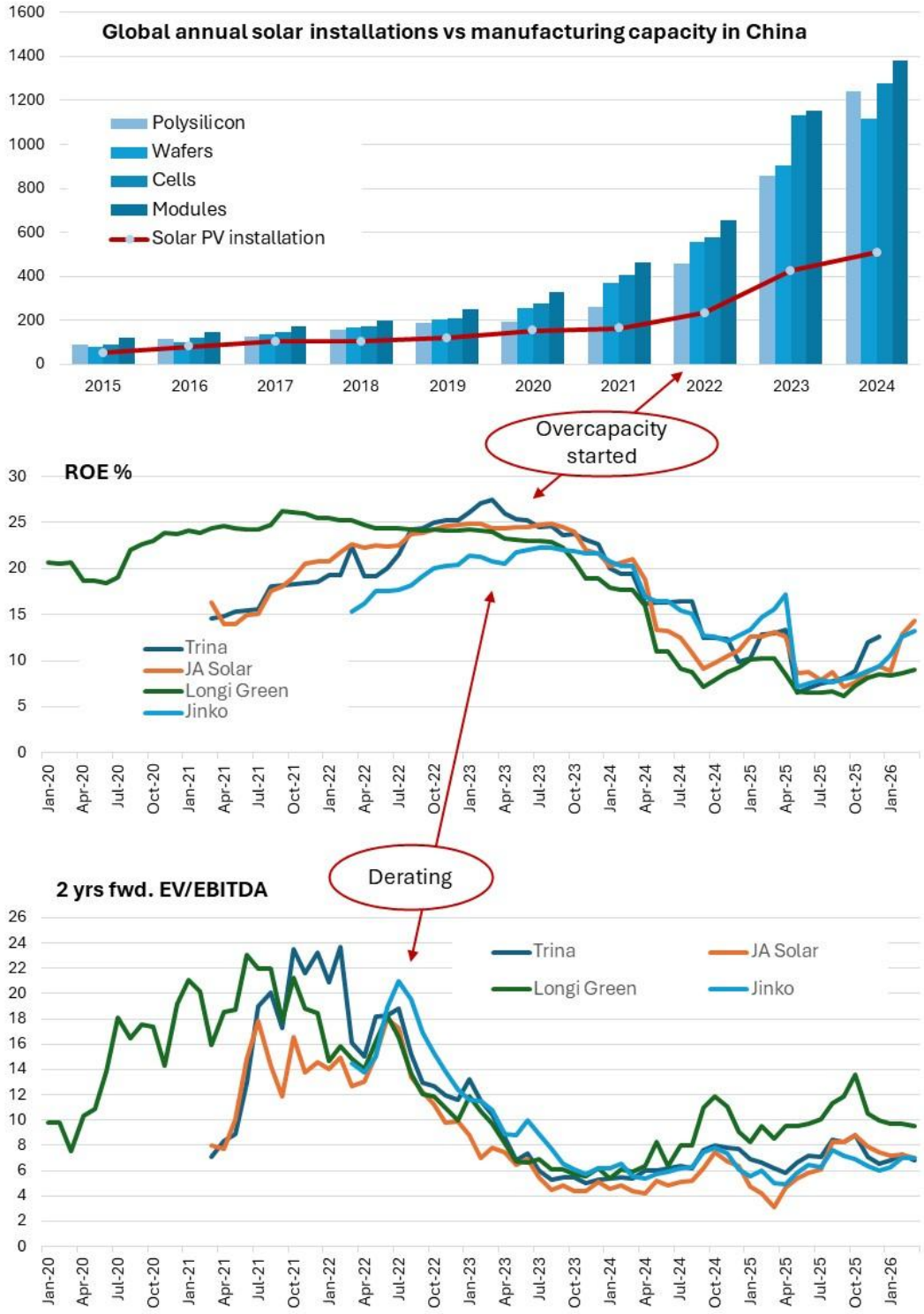
Vikram Solar – ADD (TP: INR 202, Upside: 5%)

We estimate module production to go up from 1,900MW in FY25 to 7,716MW by FY28. Consequently, Revenue/EBITDA/PAT can grow at a CAGR of 50%/59%/71% over FY25–FY28E, driven by higher utilisation and gradual integration. However, as Vikram Solar is a relatively late entrant into cell manufacturing, profitability is expected to remain comparatively lower than that of integrated peers during the initial ramp-up phase. We expect EBITDA margin to peak at 20% in FY26, supported by operating leverage from recent capacity additions, before moderating to 17% by FY28, reflecting increased competition. Similarly, blended EBITDA/Wp is expected to moderate from INR 3.0/W in FY26E to INR 2.6/W by FY28E. We value Vikram Solar at 6x EV/EBITDA FY28E, reflecting its relatively smaller scale and lag in technology readiness compared to industry leaders, balanced by strong growth visibility. We initiate coverage with a ADD rating and TP of INR 202, a 5% upside, as the company offers earnings growth potential despite currently trailing industry leaders by 2-3 years.

Risks: The abovementioned stocks are subject to upside risks of faster DCR adoption, export recovery (US/Europe) and faster cell ramp-ups. Downside risks include a sharp correction in module prices, delays in cell commissioning, policy uncertainty (US tariffs/ALMM changes) and strains on working capital.

China PV Manufacturing: Boom to Basics

Exhibit 10: Performance of Chinese companies and trend in demand (installations) – supply (production) of solar equipment (GW)



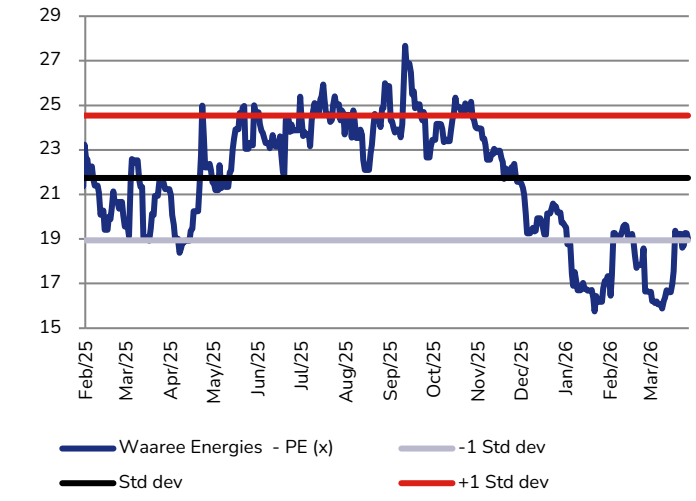
Source: IEA, S&P, Bloomberg, JM Financial

Exhibit 11: Valuation comparables

Company Name	Rating	Market Cap (USD mn)	CMP	TP (INR)	Up/ Dow (%)	P/E (x)				P/BV (x)				EV/EBITDA (x)			
						FY25A	FY26E	FY27E	FY28E	FY25A	FY26E	FY27E	FY28E	FY25A	FY26E	FY27E	FY28E
Utilities																	
NTPC	Buy	39,023	374	420	12%	15.0	14.1	12.2	11.4	2.0	1.8	1.6	1.5	11.0	10.1	8.8	8.2
Adani Power	Buy	35,088	169	177	5%	22.4	25.6	19.4	16.6	5.1	4.3	3.5	2.9	15.4	16.1	13.3	12.1
Coal India	Reduce	29,768	449	420	-7%	7.9	9.6	7.5	7.3	2.8	2.4	2.0	1.7	5.2	6.2	5.2	4.7
Power Grid Corp	Buy	29,488	295	314	6%	18.1	17.6	15.1	13.9	3.2	3.0	2.8	2.6	9.6	9.1	8.5	8.1
Adani Green	Buy	18,239	1,030	1,204	17%	63.4	54.2	29.5	21.6	11.0	6.2	5.4	4.6	24.1	20.0	15.6	12.8
Adani Energy	BUY	13,865	1,073	1,199	12%	106.0	56.1	38.6	31.1	5.1	4.7	4.2	3.7	17.7	18.8	16.4	14.9
Tata Power	Buy	13,569	395	429	9%	30.5	31.6	21.8	20.8	3.4	3.1	2.8	2.5	12.9	12.6	11.3	11.1
JSW Energy	Buy	9,484	502	614	22%	42.2	45.1	41.8	37.3	3.0	2.4	2.3	1.9	23.6	14.6	13.3	12.2
NHPC	Add	8,282	77	84	10%	24.6	23.7	15.6	12.6	1.9	1.8	1.7	1.6	20.4	18.5	12.5	10.7
Torrent Power	Reduce	7,847	1,448	1,410	-3%	22.0	23.9	19.8	17.4	3.7	3.2	2.8	2.4	13.7	12.5	9.7	8.5
SJVN	Sell	2,982	71	67	-5%	30.4	29.5	13.5	10.8	1.8	1.7	1.6	1.5	23.2	22.2	15.7	12.8
CESC	Buy	2,223	156	196	26%	14.5	13.9	13.0	11.7	1.7	1.6	1.4	1.3	8.5	8.2	7.7	7.3
ACME	Buy	1,782	274	289	6%	63.1	27.2	24.8	19.0	3.5	3.1	2.8	2.4	21.1	18.8	16.0	10.9
IEX	Add	1,241	129	145	12%	23.8	20.8	20.2	23.4	9.0	7.5	6.4	5.8	22.4	18.9	17.8	22.2
Power Equipment																	
Waaree Energies	REDUCE	9,666	3,125	2,815	-10%	47.9	20.9	18.9	17.3	9.4	6.5	4.8	3.8	30.4	13.7	11.4	10.4
BHEL	Buy	9,952	266	345	30%	160.1	65.0	27.3	21.3	3.5	3.4	3.2	2.9	69.8	43.3	21.2	17.3
Suzlon	Buy	6,526	44	64	45%	26.1	23.0	16.9	15.4	8.8	6.4	4.6	3.5	29.2	16.7	12.7	10.0
Premier Energies	REDUCE	4,677	960	865	-10%	43.1	27.6	21.0	17.6	14.3	9.4	6.5	4.7	22.6	17.1	12.5	10.9
Inox Wind	Add	2,019	87	120	39%	27.6	19.9	16.8	15.0	2.6	2.3	2.0	1.8	14.7	9.9	8.2	6.9
Emmvee	BUY	1,664	223	291	30%	40.8	16.9	10.0	6.3	28.0	4.2	3.0	2.0	23.1	10.6	7.2	4.1
Vikram Solar	ADD	746	192	202	5%	46.0	14.7	11.8	7.3	5.2	2.0	1.7	1.4	13.2	7.5	7.1	4.6

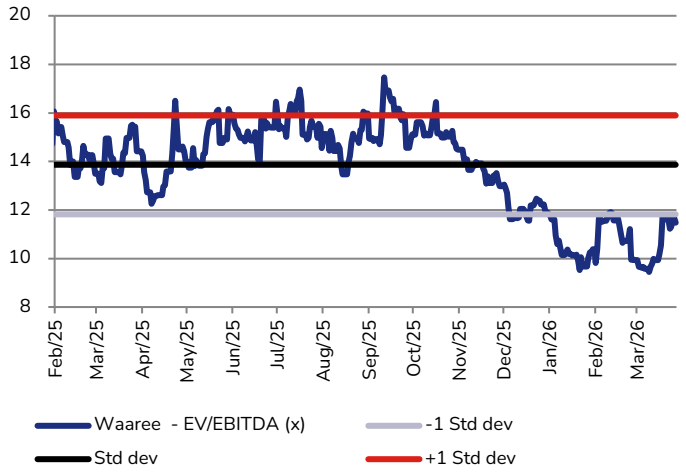
Source: JM Financial

Exhibit 12: Waaree P/E – 1 yr fwd



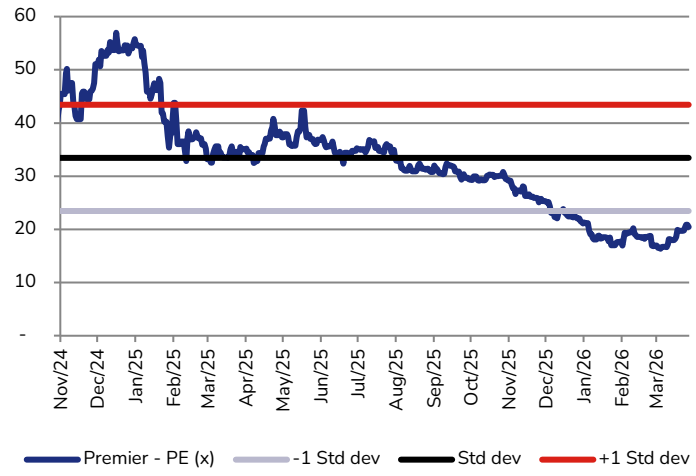
Source: Bloomberg, JM Financial

Exhibit 13: Waaree EV/EBITDA – 1 yr fwd



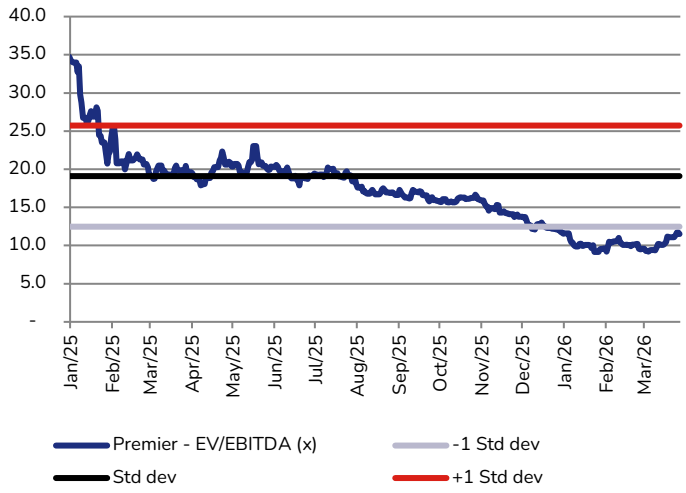
Source: Bloomberg, JM Financial

Exhibit 14: Premier P/E – 1 yr fwd



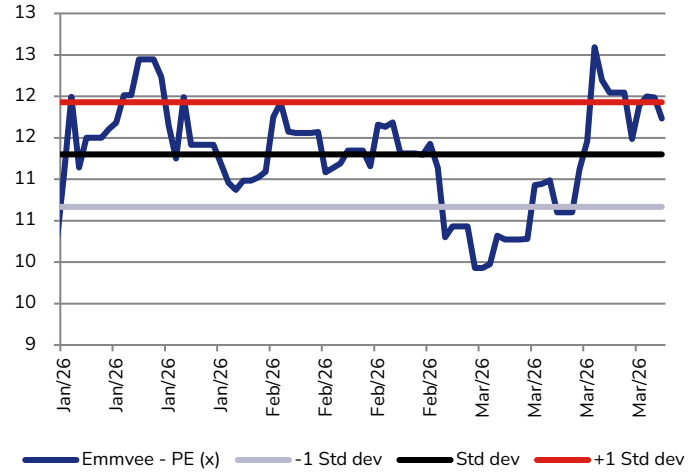
Source: Bloomberg, JM Financial

Exhibit 15: Premier EV/EBITDA – 1 yr fwd



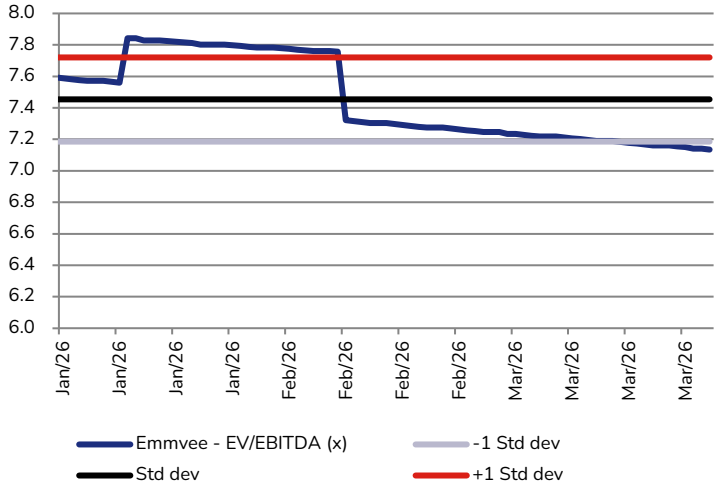
Source: Bloomberg, JM Financial

Exhibit 16: Emmvee P/E – 1 yr fwd



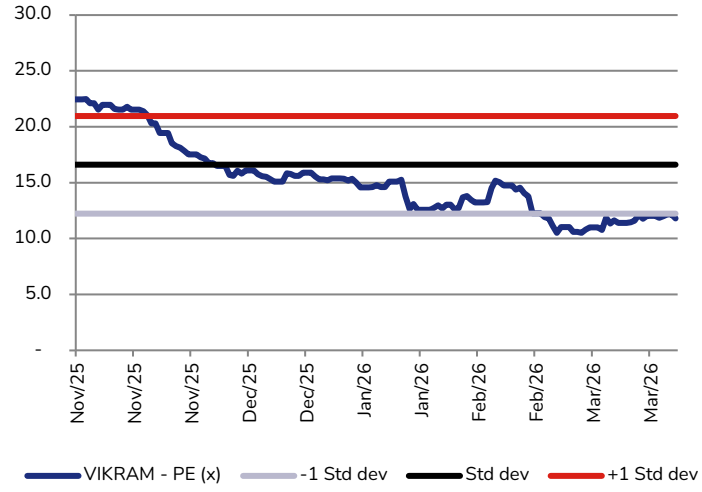
Source: Bloomberg, JM Financial

Exhibit 17: Emmvee EV/EBITDA – 1 yr fwd



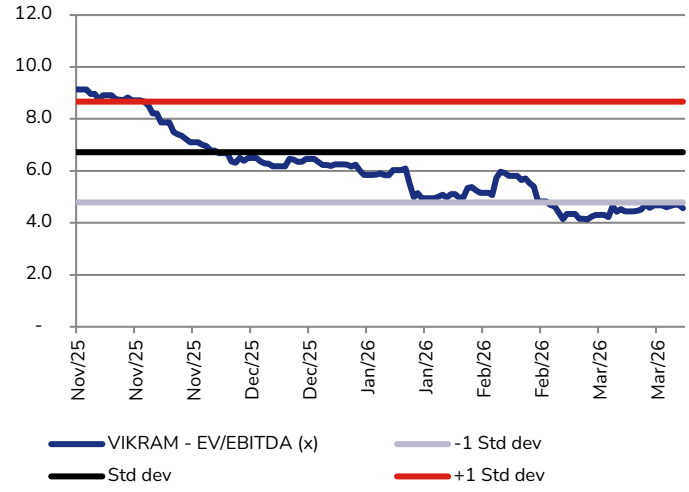
Source: Bloomberg, JM Financial

Exhibit 18: Vikram P/E – 1 yr fwd



Source: Bloomberg, JM Financial

Exhibit 19: Vikram EV/EBITDA -1 yr fwd



Source: Bloomberg, JM Financial

Industry Overview

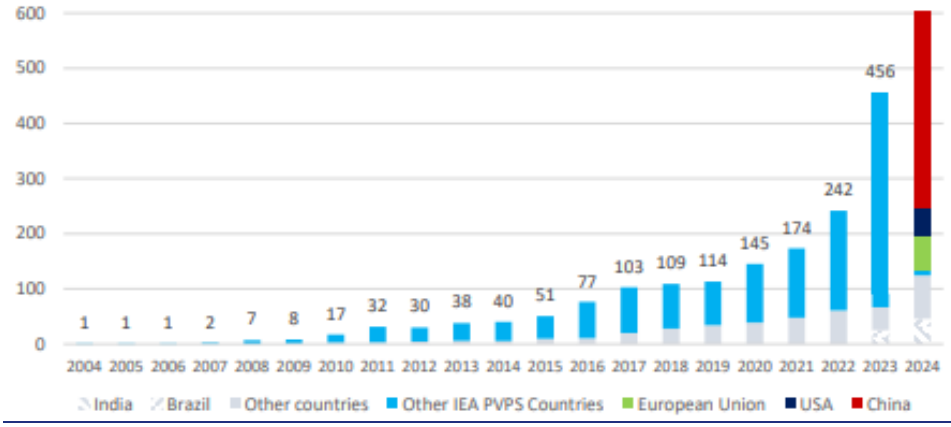
Solar growth unprecedented

The 2025 was a landmark year globally. For a first time, renewable energy (RE) generation (driven by solar and wind) surpassed coal in 1H2025. Solar power in particular grew rapidly to 8.8% of global electricity generation, up from 6.9% in 1H2024.

This was driven by consistently growing capacity additions over the years. Annual global solar installations reached 600GW in 2024, up 33% YoY—setting yet another record. Solar accounted for 81% of all new RE capacity added worldwide. While remaining a modest contributor to overall electricity generation for now, solar's share jumped to 7% in 2024, 2x growth in three years. The global installed solar capacity surpassed 2TW in 2024. It took nearly 70 years to reach the first terawatt, but only two more to double it!

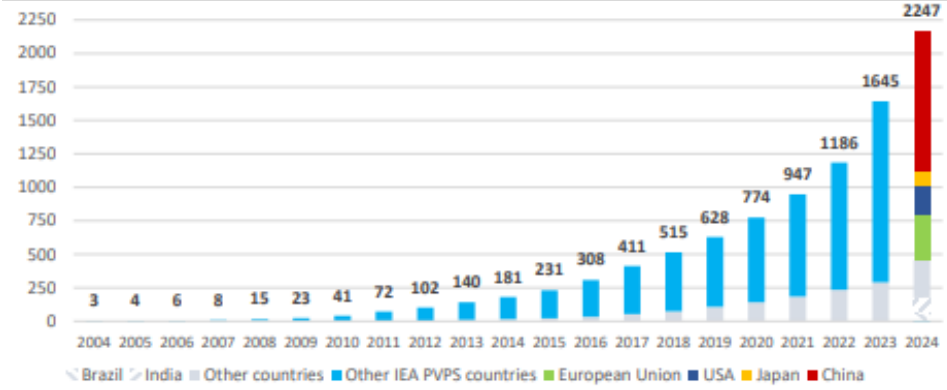
This remarkable progress has been fuelled by rapid technology advancements (efficiency improvement), unmatched versatility of solar execution (short execution time and less complexity) and low prices (manufacturing glut).

Exhibit 20: Evolution of annual PV installations (GWp)



Source: IEA PVPS

Exhibit 21: Evolution of cumulative PV installations (GWp)

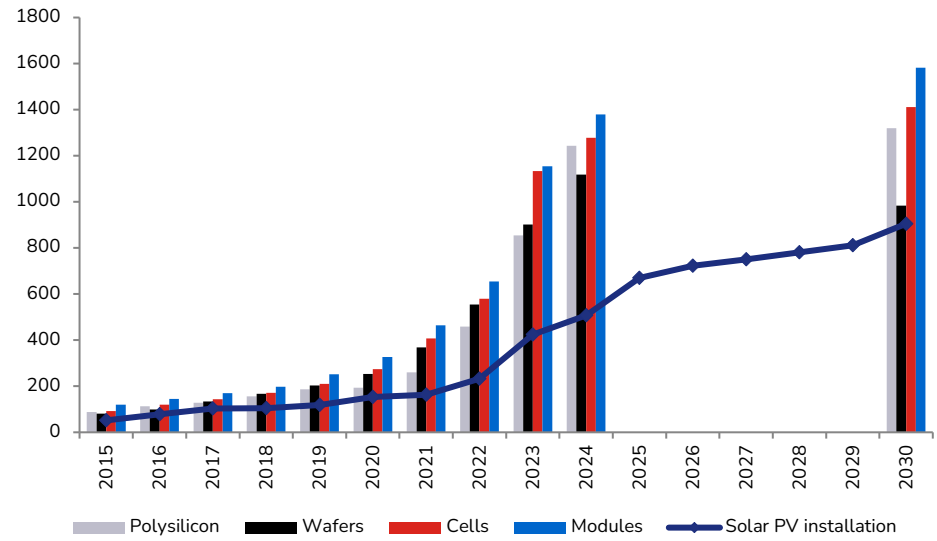


Source: IEA PVPS

Manufacturing overcapacity dragged down module prices

Falling solar module prices largely due to excess capacity in China have been one of the most important drivers of solar power adoption globally. Solar modules, which account for 55–60% of total solar project costs, have experienced a dramatic decline in prices over the past decade.

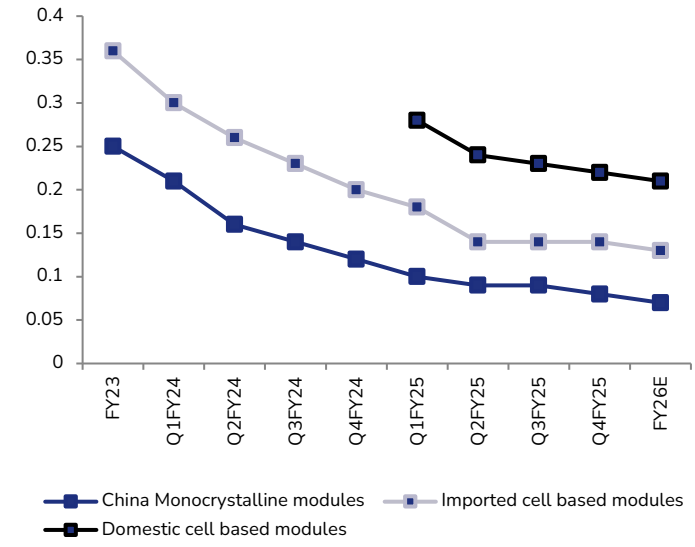
Exhibit 22: Manufacturing capacities and annual solar installations (GW)



Source: IEA, Bloomberg, JM Financial

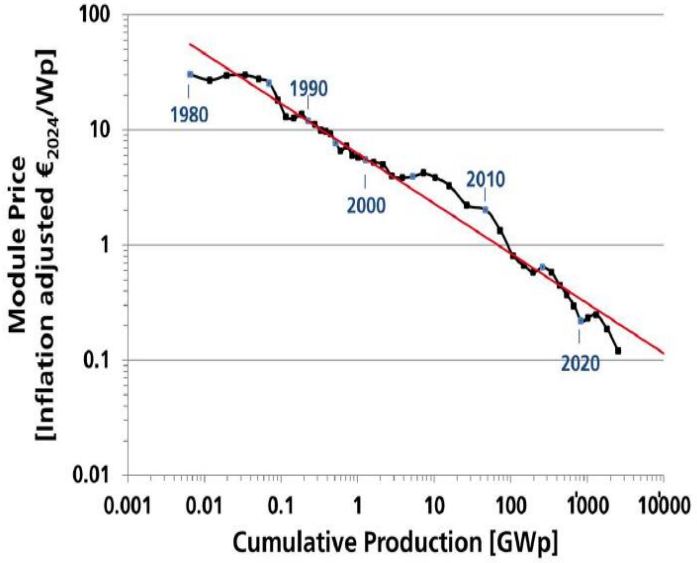
Each time, the cumulative PV module production doubled, the module price dropped about 25.7% over the past 44 years. For instance, the global average solar module price fell from USD1.78/Wp in 2010 to USD0.47/Wp in 2016, and further to USD0.22/Wp by 2019. Prices declined further to around USD0.15–0.20/Wp further in 2023, driven by explosive expansion of upstream manufacturing capacity in China. By FY25, the average module price had fallen to an estimated USD0.14/Wp, down 42% YoY, primarily due to a 54% plunge in cell prices.

Exhibit 23: Module prices (USD/Wp)



Source: Industry, JM Financial

Exhibit 24: Price experience curve

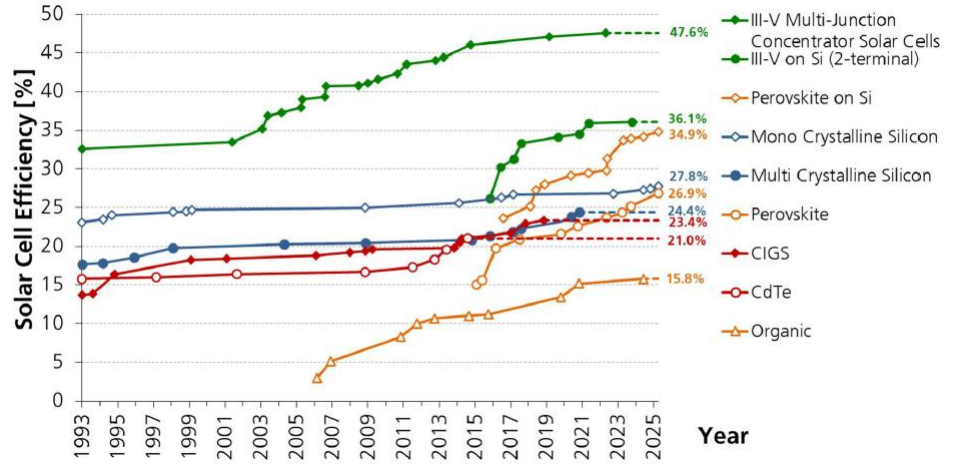


Source: Fraunhofer Institute

Improvement in efficiency powered better economics

Consistent improvements in PV efficiency – the efficiency at which panels convert sunlight into electricity – have been a primary driver in making solar energy a mainstream, cost-competitive energy source. Over the past decade, this trend has engendered superior economics by drastically reducing the levelised cost of electricity (LCOE) for solar PV.

Exhibit 25: Improvement in PV cell efficiency over years

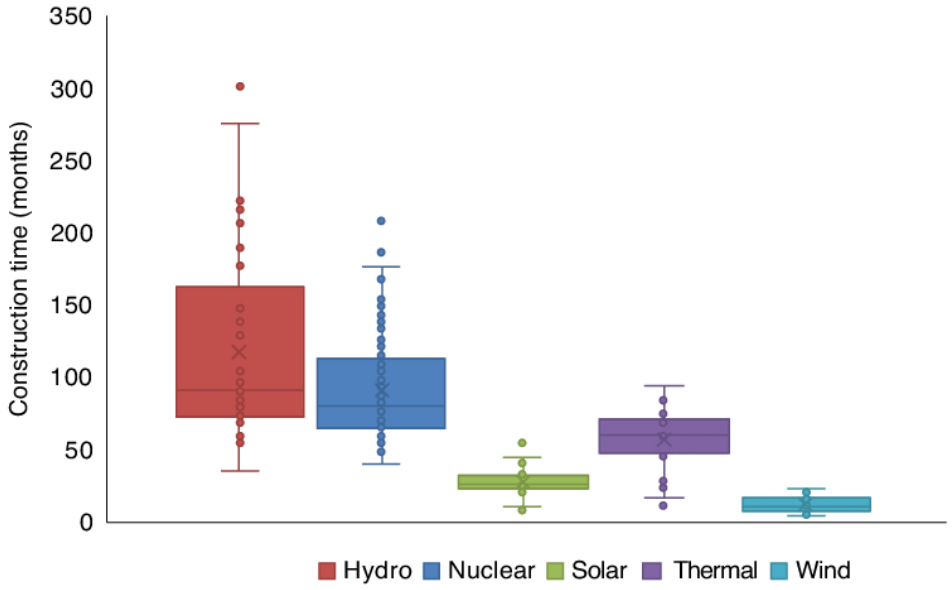


Source: Fraunhofer Institute

Ease of project execution expedites scale-up

Solar projects are known for one of the shortest construction times due to modularity, scalability and less technology complexity. While a coal or nuclear plant can take 5–15 years to build, a large-scale solar farm can be up and running in just under six months to two years.

Exhibit 26: Power projects' construction timelines: How various power sources stack up



Source: Nature Energy

Technology Developments

Evolution of solar PV technology

The first practical photovoltaic (PV) cell was developed in 1954 by researchers at US-based Bell Laboratories. The early device achieved efficiency of 6% and was primarily used for powering satellites and other specialised applications wherein reliability was more important than cost. Over the following decades, improvements in silicon purification, wafer manufacturing and surface coatings gradually increased cell efficiency while lowering production costs.

During the 1970s and 1980s, solar technology remained expensive and therefore limited to niche markets and applications. However, the industry began expanding more rapidly in the late 1990s and early 2000s as manufacturing capacity increased and government incentives supported RE deployment. A major turning point occurred during the 2000s when large-scale manufacturing expansion in Asia, particularly in China, significantly reduced production costs and allowed solar power to compete against conventional generation technologies.

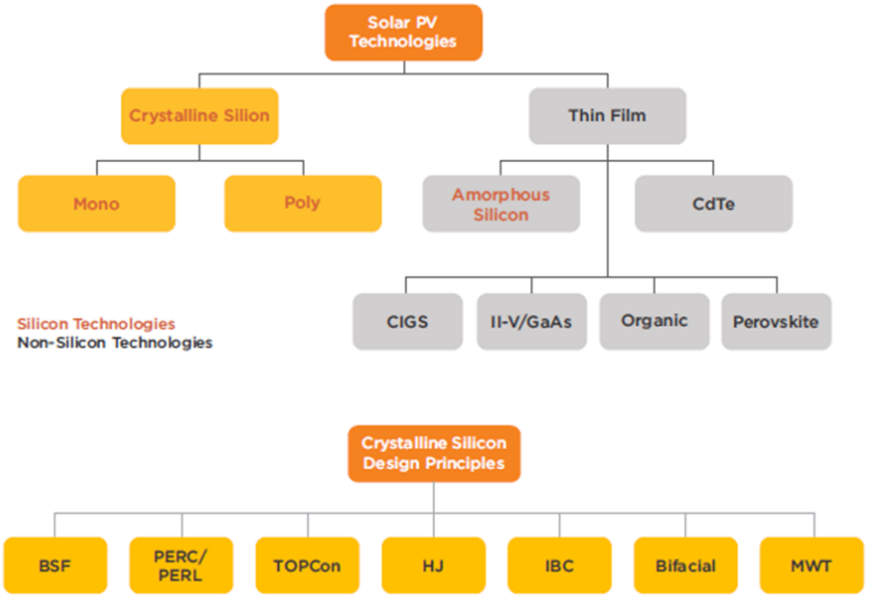
Current solar technology landscape

The solar industry is presently dominated by crystalline silicon technologies, which account for more than 90% of global module production. These modules are manufactured using silicon wafers, which convert sunlight to electricity through semiconductor processes. Two primary types of crystalline silicon modules are used in commercial applications: monocrystalline and polycrystalline silicon.

Monocrystalline silicon modules are produced from a single crystal structure, which allows electrons to move more efficiently and therefore results in higher power conversion efficiency. Polycrystalline modules, by contrast, are produced from multiple silicon crystals and generally exhibit slightly lower efficiency but historically offered lower manufacturing costs. Over the past decade, however, improvements in manufacturing technology have allowed monocrystalline modules to dominate the market due to their superior performance characteristics.

Recent innovation has focused on improving the architecture of silicon solar cells to reduce electrical losses and enhance light absorption. Passivated Emitter Rear Cell (PERC) technology represented the dominant industry standard during the last decade as it improved efficiency by adding a passivation layer to the rear surface of the cell. However, the PERC technology is now approaching its theoretical efficiency limits, and manufacturers are increasingly transitioning toward more advanced cell architectures.

Exhibit 27: Different solar PV technologies and design principles – A schematic representation



Source: ISA

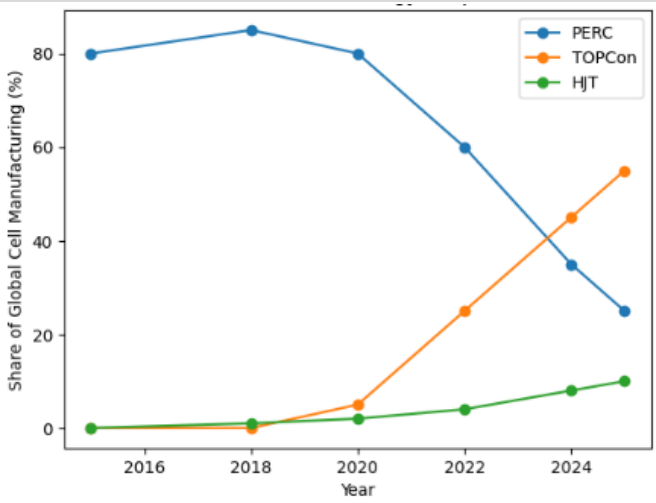
Transition to advanced cell architectures

The Tunnel Oxide Passivated Contact (TOPCon) technology is currently emerging as the next major step in solar cell evolution. TOPCon improves the passivation of electrical contacts and reduces recombination losses, thereby increasing the efficiency of solar cells beyond what is possible with conventional PERC technology. Many global manufacturers are actively converting their production lines from PERC to TOPCon in order to remain competitive as the industry moves toward higher-efficiency modules.

Another important innovation is heterojunction technology (HJT), which combines crystalline silicon wafers with thin amorphous silicon layers to improve energy conversion efficiency. HJT cells demonstrate excellent performance under high temperatures and lower degradation over time, making them attractive for large-scale solar installations. However, the manufacturing process for HJT cells is more complex and requires higher capital investment, which has slowed the pace of adoption compared with TOPCon.

At the module level, the industry has also introduced bifacial solar panels capable of generating electricity from both the front and rear surfaces. By capturing reflected sunlight from the ground, bifacial modules can increase total energy output by 5–20% depending on site conditions. This improvement in energy yield has made bifacial technology the preferred choice for many utility-scale solar projects.

Exhibit 28: Global solar cell technology adoption curve



Source: ISA

Thin-film solar technologies

Although crystalline silicon dominates global solar installations, thin-film technologies continue to play an important role in certain specialised applications. Thin-film modules are manufactured by depositing extremely thin layers of semiconductor materials onto substrates such as glass or metal. Major thin-film technologies include cadmium telluride (CdTe), copper indium gallium selenide (CIGS), and amorphous silicon.

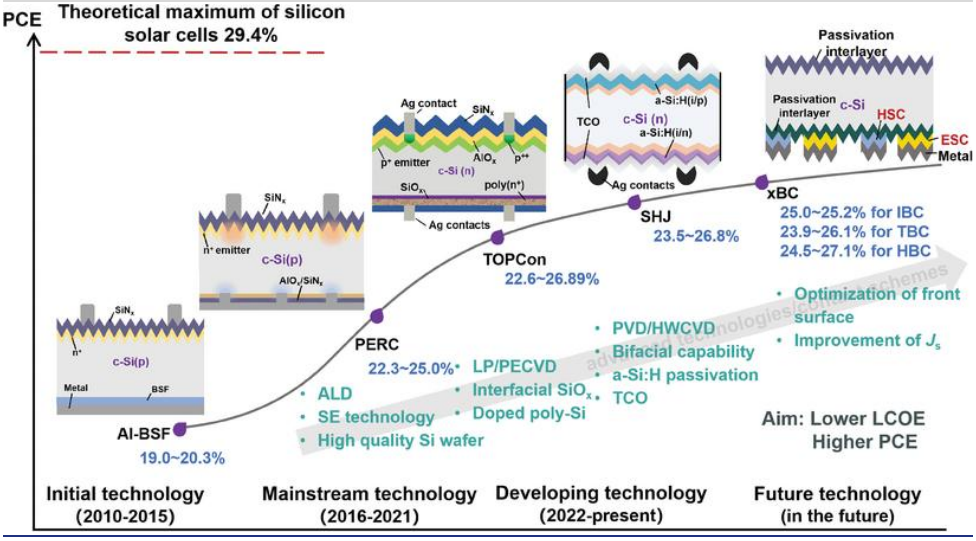
Thin-film solar modules generally require less semiconductor material and can be manufactured in flexible formats, making them suitable for applications such as building-integrated PVs and lightweight solar panels. However, their lower efficiency than crystalline silicon has limited their adoption in large-scale solar plants.

Emerging next-generation solar technologies

While silicon technologies are expected to remain dominant in the near term, several emerging technologies have the potential to significantly improve solar efficiency and also reduce costs further. Among these, perovskite solar cells (PSCs) have attracted significant attention in recent years. Perovskite materials exhibit exceptional light absorption properties and can be manufactured using relatively simple processes. Laboratory efficiencies for PSCs have increased rapidly from about 3% in early experiments to more than 25% today. Despite these promising characteristics, PSCs face commercialisation challenges, particularly related to long-term stability and sensitivity to moisture and heat.

Another promising development is the tandem solar cells, which combine multiple semiconductor materials to capture different portions of the solar spectrum. The most promising design combines a perovskite layer with a conventional silicon cell. This structure allows the device to convert sunlight more efficiently than a single material alone. Laboratory demonstrations have already achieved efficiencies exceeding 30%, significantly higher than the theoretical limits of traditional silicon cells.

Exhibit 29: Evolution of c-Si solar cells

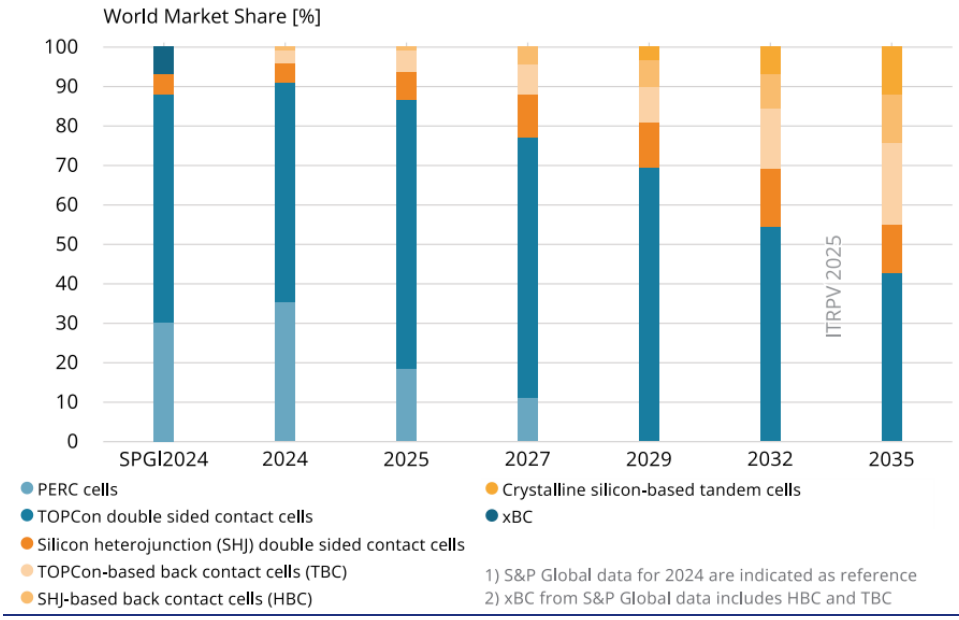


Source: https://www.researchgate.net/figure/Schematic-diagram-of-the-evolution-of-c-Si-solar-cells-The-efficiency-data-presented-is_fig1_379492638 [accessed 27 Mar 2026]

As per the 2025–35 ITRPV road map, N-type technology (TOPCon, HJT) are becoming the dominant standard, with P-type PERC likely to fade to under 5% market share by 2035E. Key trends include shifting to G12/G12R large wafer formats, thinner wafers (110–120m for N-type), 26%+ efficiency for N-type cells, and upcoming tandem cell commercialisation.

- **Cell technology:** N-type TOPCon has overtaken P-type PERC as the main technology. Heterojunction (HJT) and Back Contact (BC) technologies are also scaling up, with tandem cells, boasting 27%+ efficiency, expected in mass production by 2027E.
- **Wafer formats and thickness:** Larger formats (G12, G12R) are dominant. Wafer thickness is dropping towards 110–120m for N-type while P-type thickness is stalling around 130m.
- **Materials & metallisation:** To reduce silver (Ag) consumption, Cu-plating is projected for HJT and Back Contact technologies. Finger widths are expected to shrink from 25–30 m to 15 m by 2034E.
- **Module efficiencies:** Standard mono-Si modules are expected to reach 24% efficiency while Tandem-based modules are forecast to exceed 26%.

Exhibit 30: Trajectory of different cell technologies

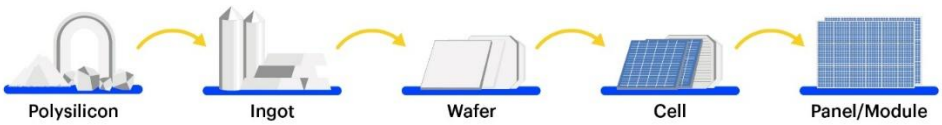


Source: ITRPV 2025, JM Financial

Solar Value Chain Manufacturing

High geographic concentration, rapid technology cycles, scale-driven cost reductions and policy-driven regional diversification are structural characteristics that define the global solar manufacturing industry.

Exhibit 31: Solar manufacturing value chain



Source: ISA

Manufacture of solar PV modules spans multiple stages including polysilicon production, ingot growth, wafer slicing, cell manufacturing and module assembly. Each stage has a different cost structure, capital intensity and geographic concentration.

Polysilicon production

Polysilicon is the fundamental raw material used in crystalline silicon solar cells. Production involves energy-intensive chemical processes that convert metallurgical-grade silicon into ultra-pure polysilicon suitable for semiconductor applications.

China dominates global polysilicon production with a market share of over 90%. Major producers are Tongwei Co., GCL Technology Holdings and Daqo New Energy. Low electricity costs in western China and massive scale have allowed these companies to significantly reduce production costs.

Wafer manufacturing

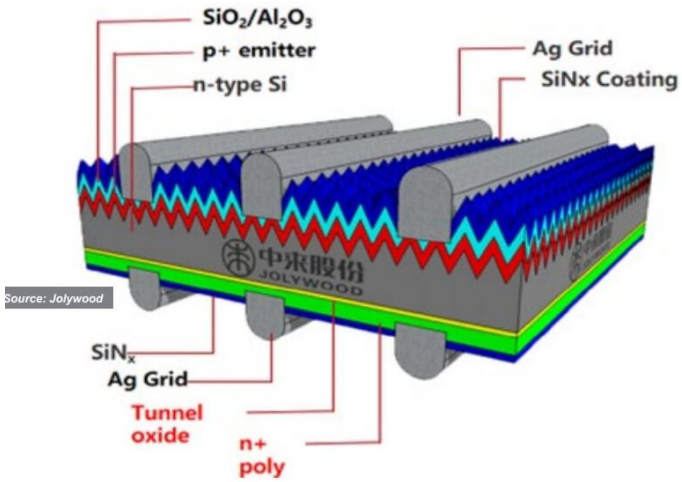
Solar-grade Si is then crystallised into ingots and doped with gallium (P-type) or phosphate (N-type) to cast massive monocrystalline silicon ingots (>300kg each). Ingots are cropped, then sawed into wafers of 160–180m (microns) with a diamond wire. These wafers are then further treated, through various chemical processes, to obtain PV cells.

First, they are cleaned and their surfaces treated, after the application of a doped layer, which creates the necessary P-N (or N-P) junction, followed by further cleaning, passivated and anti-reflecting layers, among others, depending on the technology considered. The largest global wafer producers include LONGi Green Energy Technology and TCL Zhonghuan Renewable Energy Technology.

Solar cell manufacturing

Solar cell manufacturing converts wafers into electricity-generating devices using semiconductor processing techniques. With 80–85% of global capacity, China again dominates this segment. Leading manufacturers include LONGi Green Energy Technology, Trina Solar and JinkoSolar. These companies are now rapidly upgrading production lines from PERC to TOPCon and HJT technologies.

Exhibit 32: TOPCon Solar cell layer structure



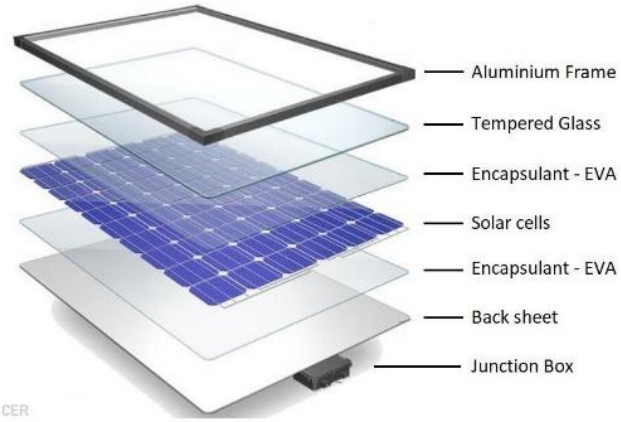
Source: SEC China

Module assembly

The cells are then laminated and connected to form a multi-cell string. Several multi-cell strings are encapsulated, i.e., assembled with a sheet of glass, two foils of EVA resin, and a back sheet to make a module that is consequently framed and equipped with a junction box to form a solar PV module. These modules can then be installed on the field, in combination with other key components such as mounting structures, inverters and other power electronics in order to obtain a solar PV system.

This segment has a more diversified geographic footprint, though China still dominates production. Major module manufacturers from China are JinkoSolar, Trina Solar and JA Solar.

Exhibit 33: Solar panel/ module structure



Source: Clean Energy Reviews

The India Solar Story

India is gifted with one of the world's richest solar resources, with avg solar irradiance of 3.5–5.5 kWh/m²/day and 300–330 sunny days/year. Recognising the vast potential, India has implemented a series of policies to accelerate solar addition from 2.8GW in 2014 to 100GW in 2025.

Policy support driving solar adoption

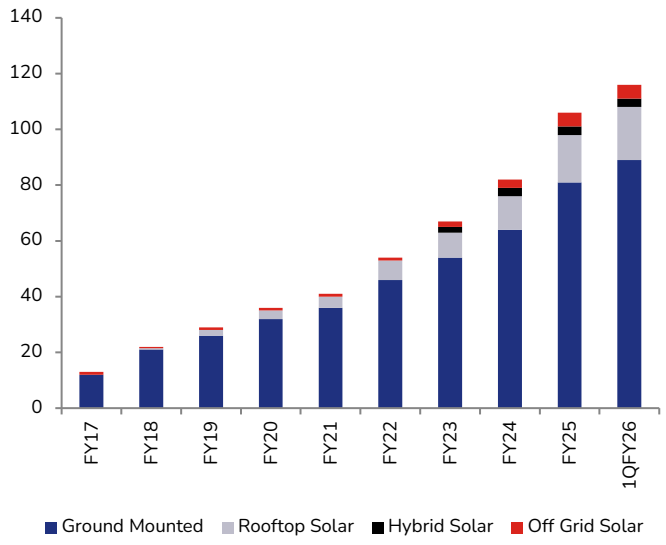
To accelerate RE deployment and support the target of 500GW non-fossil energy capacity by 2030, the Government of India has introduced a wide range of policy measures.

- Standard bidding guidelines for tariff-based competitive procurement of solar, wind, hybrid and Firm & Dispatchable Renewable Energy (FDRE) projects enabling smooth tendering across discoms and central procurers.
- Renewable Purchase Obligation (RPO) and Renewable Consumption Obligation (RCO) trajectories notified up to FY30, with penalties for non-compliance.
- Major government schemes including PM-KUSUM, PM Surya Ghar, National Programme on High Efficiency Solar PV Modules and the National Green Hydrogen Mission.
- Development of large-scale renewable capacity through the Solar Park and Ultra Mega Solar Power Projects scheme, which provides land and transmission infrastructure to developers.
- Waiver of Inter-State Transmission System (ISTS) charges for solar and wind projects commissioned before Jun'25 as well as for green hydrogen projects and offshore wind projects within specified timelines.
- Implementation of the Green Energy Corridor scheme to expand transmission infrastructure required for renewable power evacuation.
- Introduction of Green Energy Open Access Rules (2022), enabling consumers with demand above 100kW to procure renewable energy directly.
- Launch of the Green Term Ahead Market (GTAM) to facilitate RE trading through power exchanges.
- Additional regulatory reforms include consumer rights rules for net-metering up to 500kW, the National Repowering and Life Extension Policy for Wind Projects, and guidelines for offshore wind development and wind turbine model certification (ALMM-Wind).

As a result, India's solar power sector has witnessed an extraordinary 3,450% surge in capacity over the past decade, rising from 2.82GW in 2014 to 100GW in 2025. At end-Jan'25, India's total solar capacity installed achieved a historic milestone of 100GW, with installed base touching 100.33GW. Today, solar energy remains the dominant contributor to India's RE growth, accounting for 47% of the total installed RE capacity.

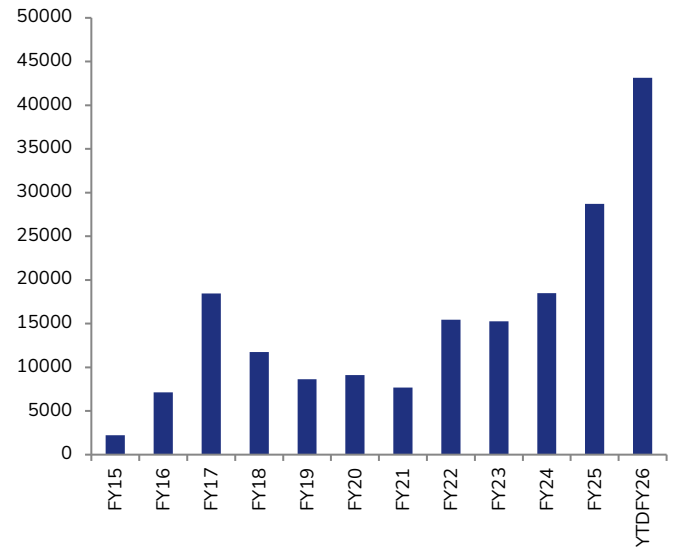
This also enabled India to achieve a major climate milestone ahead of schedule. In Jun'25, the country reached the target of 50% of its cumulative installed electricity capacity from non-fossil fuel sources, five years ahead of the 2030 commitment under its Nationally Determined Contribution (NDC) to the Paris Agreement. At end-Dec'25, India's total non-fossil power capacity stood at 266.78GW, including 135.81GW of solar capacity and 54.51GW of wind capacity.

Exhibit 34: Cumulative annual solar capacity addition (MW)



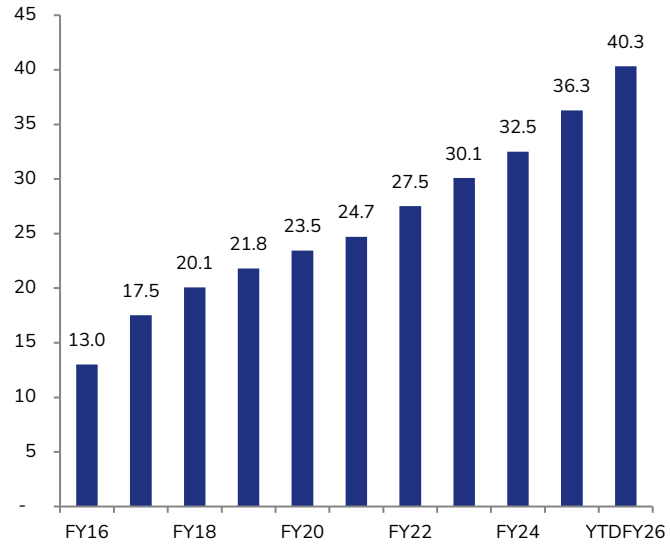
Source: CMIE, JM Financial

Exhibit 35: RE (solar + wind) capacity addition (MW)



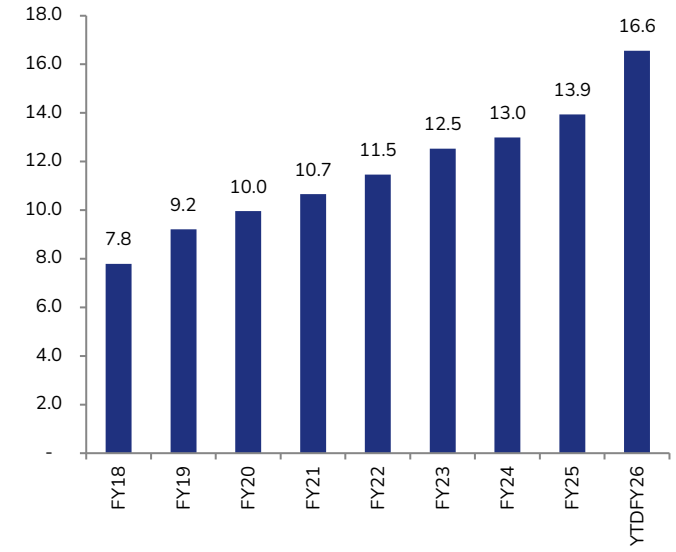
Source: CMIE, JM Financial

Exhibit 36: RE share in capacity (%)



Source: CMIE, JM Financial

Exhibit 37: RE share in generation (%)



Source: CMIE, JM Financial

Domestic Manufacturing

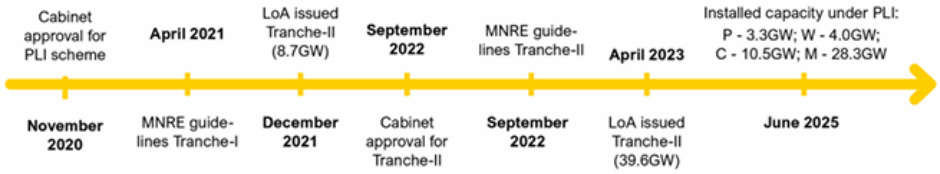
Production-Linked Incentive (PLI) scheme

To promote local, high-efficiency solar module manufacturing, the Production Linked Incentive (PLI) Scheme for High Efficiency Solar PV Modules with a total outlay of INR 240bn (including INR 195bn in Tranche-II) was launched in 2021 to build out 48,337MW of fully/partially integrated solar PV module manufacturing capacity. The scheme rewarded manufacturers for producing high-efficiency modules and integrating the supply chain (polysilicon to modules).

Tranche-I of the solar PLI, awarded in December 2021, focused on a smaller number of fully integrated manufacturing facilities (polysilicon-to-module). Its selection mechanism prioritised higher integration levels, greater capacity and local value addition (LVA). In contrast, Tranche-II (April 2023) adopted a broader, basket-based structure that distributed capacity across three integration categories: polysilicon-to-module, wafer-to-module and cell-to-module.

Under the scheme, about 30GW of solar PV module manufacturing capacity, about 10.5GW of solar PV cell manufacturing capacity, and about 2GW of ingot-wafer manufacturing capacity have been set up. About 3.4GW is fully integrated thin-film capacity.

Exhibit 38: Evolution of PLI scheme for solar PV



Source: Industry

Exhibit 39: Capacity awarded (MW) under PLI scheme (Tranches I and II)

Player	Polysilicon	Wafer	Cells	Modules
Shirdi Sai Electricals Ltd	4000	4000	4000	4000
Reliance New Energy Solar Ltd	4000	4000	4000	4000
Adani Infra Private Ltd	737	737	737	737
Total PLI Tranche I	**8737**	**8737**	**8737**	**8737**
Indosol (SPV of Shirdi Sai)	6000	6000	6000	6000
Reliance	6000	6000	6000	6000
First Solar	3400	3400	3400	3400
Waaree	0	6000	6000	6000
Avaada	0	3000	3000	3000
ReNew	0	4800	4800	4800
JSW	0	1000	1000	1000
Grew	0	2000	2000	2000
Vikram Solar	0	0	2400	2400
AMPIN	0	0	1000	1000
Tata Power Solar	0	0	4000	4000
Total PLI Tranche II	**15400**	**32200**	**39600**	**39600**
Total PLI Tranche I+II	**24137**	**40937**	**48337**	**48337**

Source: MNRE, SECI, IREDA

Basic Customs Duty on imported cells and modules

To safeguard domestic cells and modules against predatory pricing of Chinese counterparts, the GoI imposed a BCD of 25% and 40% on Chinese cells and modules, respectively, with effect from 1st Apr'22. While BCD increases the landed cost of modules by 4–5 cents/Wp and of cells by 1–2 cents/Wp, DCR modules are pricier than both imported and non-DCR modules on a landed basis. This is primarily due to a steep fall in global module prices over the last two years, partially offsetting the impact of BCD. Nonetheless, the BCD remains a key tool in enhancing cost-competitiveness of domestic modules.

Exhibit 40: Safeguard and customs duty trajectory

Year of imposition	July 30, 2018, to July 29, 2019	July 30, 2019, to January 29, 2020	January 30, 2020, to July 29, 2020	July 30, 2020, to January 29, 2021	January 30, 2021, to July 29, 2021	From April 1, 2022 (BCD)	From February 2, 2025 (BCD)
Duty rate	25%	20%	15%	14.9%	14.5%	Module – 40% Cell – 25%	Module – 20% Cell – 20%

Source: Industry, JM Financial

Approved List of Models and Manufacturers (ALMM)

Then India introduced ALMM-I effective 1st Apr'24, considering the strong module capacity growth in FY24. Under ALMM-I, domestic modules are compulsory for all solar projects in the country, except for utility-scale projects awarded before 10th Mar'21, and open access and net metering projects that had secured key approvals before 1st Oct'22. Moreover, the government has proposed to implement ALMM-II, which mandates the use of domestic cells in locally assembled modules, from Jun'26, effectively making DCR modules mandatory for all solar capacities.

The implementation of ALMM List-II for solar PV cells from Jun'26 has spurred the ongoing expansion of cell manufacturing capacity by module manufacturers in India.

Accelerating its push for creating domestic manufacturing capacities across the solar value chain, the GoI has now mandated the use of India-made wafers under the ALMM beginning 1st Jun'28.

ALMM timelines in a snapshot

- **Before April 2023:** Solar modules faced import restrictions under the ALMM to encourage domestic manufacturing.
- **April 2023:** The ALMM policy was deferred, coinciding with the Tranche-II PLI allocation. This allowed unrestricted imports during a period of global oversupply.
- **April 1, 2024:** The ALMM was reinstated for solar modules. However, imported cells remained exempt from these restrictions.
- **December 2024:** An amendment to the ALMM order was issued to implement restrictions for solar PV cells.
- **September 2025:** A draft order was issued for the implementation of ALMM (List-III) for ingots and wafers.
- **June 2026:** The Approved List of Cell Manufacturers (ALMM List-II) is scheduled to come into force.
- **June 2028:** The ALMM for ingots and wafer manufacturing is proposed to take full effect.

Push for distributed solar

The GoI has mandated the procurement of DCR modules for capacities under the following schemes: 12GW CPSU scheme, capital subsidy in PM Surya Ghar Muft Bijli Yojana and financial support for PM KUSUM Yojana.

PM Surya Ghar Muft Bijli Yojana

Muft Bijli Yojana, launched in Feb'24, aims to promote residential rooftop solar installations across the country. The scheme targets installation of rooftop solar systems in one crore households by FY27E with a total financial outlay of INR 750.21bn.

The scheme is demand-driven and enables residential consumers with grid-connected electricity connections to apply for rooftop solar installations through the national portal. The program has witnessed strong progress since implementation. Between January 2025 and Mar'26, nearly 32 lakh rooftop solar systems were installed, benefiting over 1.814mn households.

PM-KUSUM Scheme

The Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM) aims to promote solarisation of agriculture by enabling farmers to install solar pumps and decentralised solar plants.

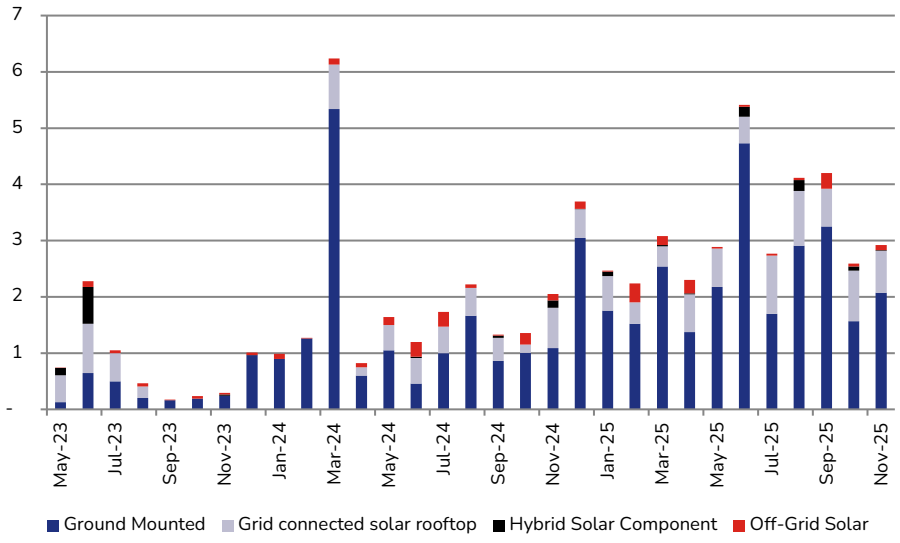
As on 30th Nov'25, the scheme has delivered significant progress across its three components:

- **Component-A:** Installed 667MW of solar capacity through decentralised solar power plants.
- **Component-B:** Installed over 0.942mn standalone solar agricultural pumps.
- **Component-C:** Solarised over 1.099mn grid-connected agricultural pumps.

During 2025 alone, about 270MW capacity was installed under Component-A, representing 107% growth over the previous year. Additionally, over 1.313mn agricultural pumps were installed or solarised, nearly three times the installations recorded in the previous year.

Cumulatively, the scheme has enabled the installation of 10,203MW of solar capacity, with 6,515MW (64%) commissioned during 2025. The "sunset date" for PM-KUSUM is currently set for 31st Mar'26, with a target to add 34,800MW of solar capacity.

Exhibit 41: Solar capacity addition across segments (MW)



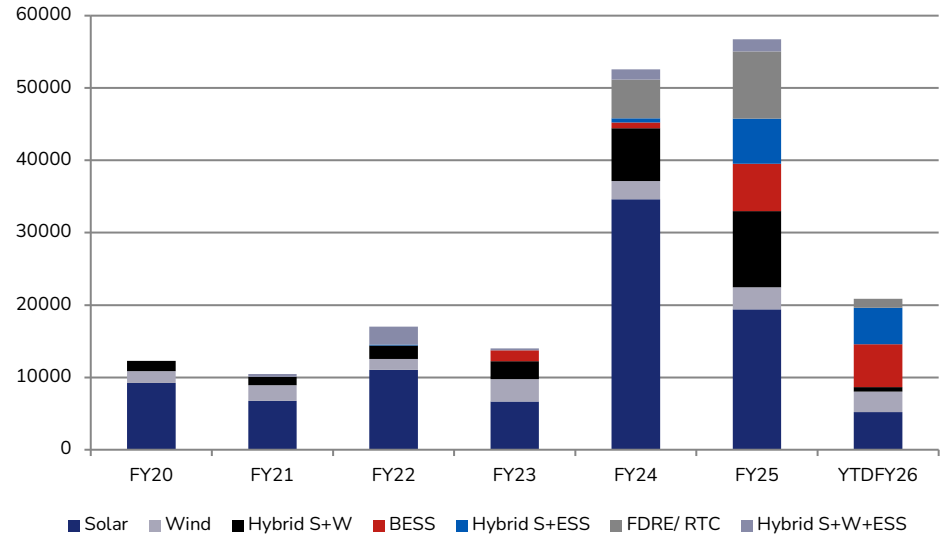
Source: Industry, MNRE, JM Financial

Energy Storage Systems (ESS)

Today, ESS projects have become the new driver of solar capacity addition.

To balance intermittent RE and ensure grid stability, India aims to develop 230GWh of BESS by 2030; this would require 55–60GW of solar generation capacity (assuming four hours' storage). Recent bids from Indian utilities also indicate increased focus on storage.

Exhibit 42: Renewables' tender trend (MW)

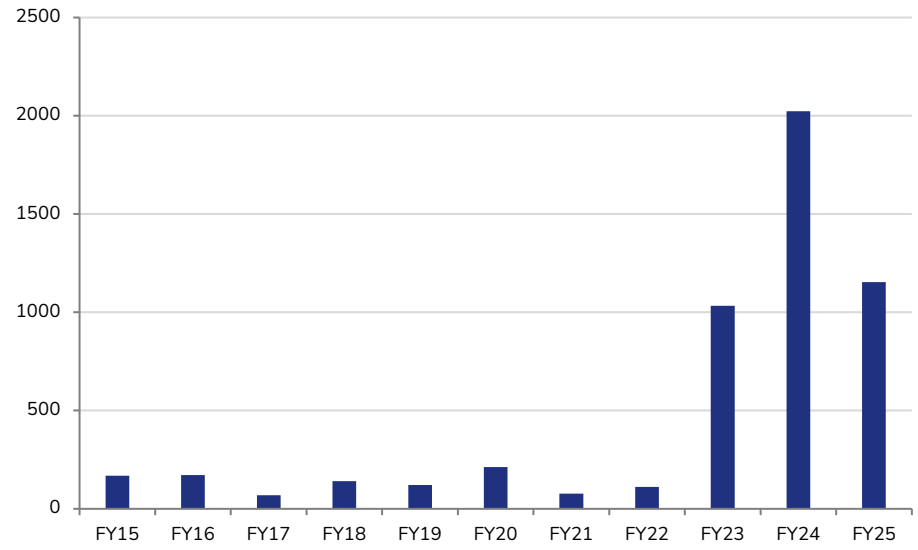


Source: JMK Research, JM Financial

Rise of exports opportunity, and risks

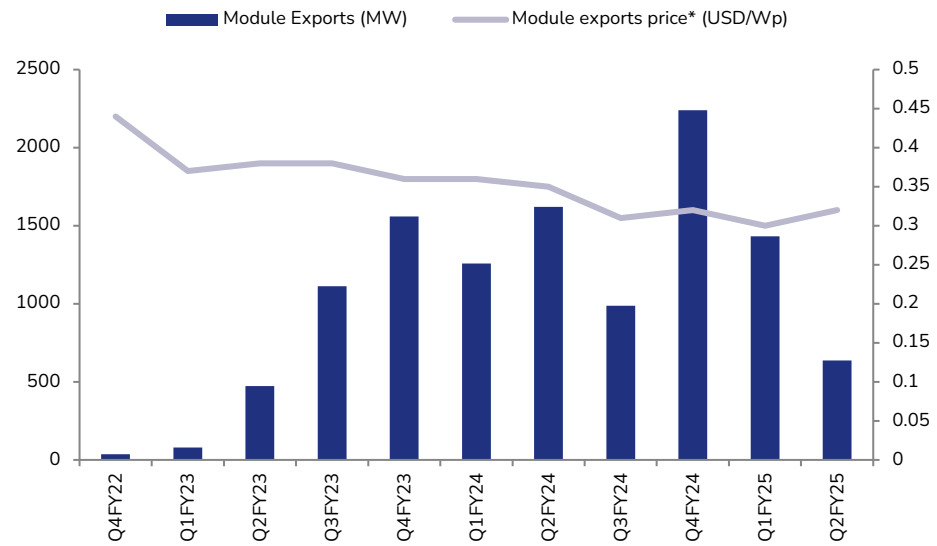
India's solar module exports have grown rapidly over the past two years with the US emerging as the dominant export destination (with share of over 95% in FY25). However, US trade and industrial policies are turning increasingly protectionist, creating material uncertainty for Indian exporters.

Exhibit 43: Exports of modules and cells from India by value (USD mn)



Source: Ministry of Commerce, JM Financial

Exhibit 44: Module exports (MW) and prices (USD/Wp)



Source: Crisil

Current trade tensions represent the latest phase of a prolonged restructuring of the global solar supply chain driven by trade disputes led by the United States against Asian manufacturers.

Exhibit 45: Percentage share of exports of solar modules by destination (USD mn)

Country	FY24 (USD mn)	Export Share (%)	FY25 (USD mn)	Export Share (%)
USA	1972.69	97.47%	1119.12	97.08%
Thailand	12.39	0.61%	0.47	0.04%
Somalia	9.86	0.49%	0	0.00%
Indonesia	7.85	0.39%	0	0.00%
South Africa	4.73	0.23%	0.12	0.01%
Canada	2.07	0.10%	1.76	0.15%
UAE	2	0.10%	0.37	0.03%
Tanzania	1.24	0.06%	0.17	0.01%
Cambodia	0.95	0.05%	0	0.00%
Afghanistan	0.91	0.04%	0	0.00%
Others	9.11	0.45%	30.77	2.67%
Total	**2023.8**	**100.00%**	**1152.78**	**100.00%**

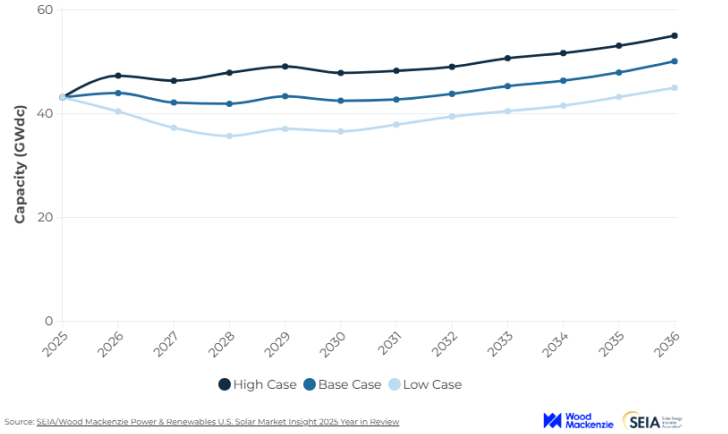
Source: Ministry of commerce, Crisil

The beginning

The first major shift occurred in 2012 when the US imposed anti-dumping duties (ADD) and countervailing duties (CVD) on Chinese solar modules, citing unfair subsidies and below-cost pricing. A major development occurred with the enforcement of the Uyghur Forced Labour Prevention Act (UFLPA), which bans the import of goods linked to forced labour in China's Xinjiang region (major hub for solar supply chain), effectively limiting US market access for many Chinese and Southeast Asian solar manufacturers.

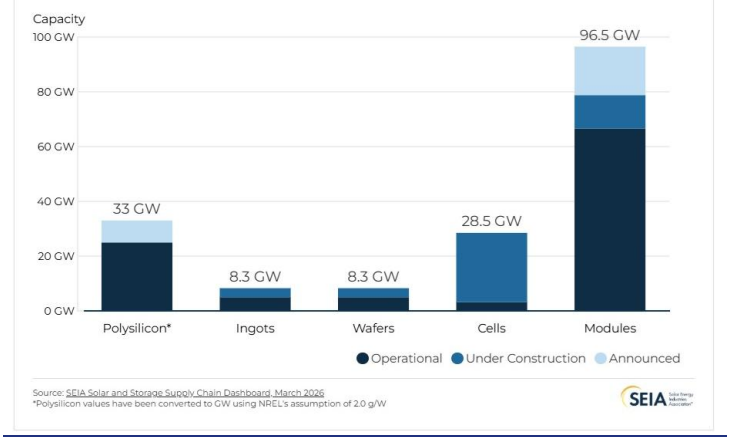
Besides trade restrictions, the US government introduced strong incentives for domestic manufacturing through the Inflation Reduction Act (IRA) passed in Aug'22. This law offers incentives such as capital subsidies up to 30% or production-linked tax credits for local manufacturing. Since the IRA's enactment, nearly 35GW of module manufacturing capacity has been added in the US as of October 2024, with about 41GW of module capacity and 43GW of cell manufacturing capacity currently under development. To further boost its domestic solar supply chain, the US government also announced a 25% capital subsidy for ingot and wafer manufacturing under Section 48D of the CHIPS and Science Act, applicable to projects starting construction before 2027.

Exhibit 46: US solar PV installation (GW)



Source: SEIA, USA

Exhibit 47: US solar module supply chain capacity



Source: SEIA USA

United States reached the manufacturing milestone of 50GW of domestic solar module production capacity in Feb'25. Furthermore, companies have announced plans for 56GW of new US solar cell production, as well as 24GW of wafers and 13GW of ingots.

Shift in global supply chain

Chinese manufacturers subsequently shifted significant production capacity to Southeast Asia – particularly Vietnam, Malaysia, Thailand and Cambodia – to circumvent these tariffs, which was objected by the US regulators. Consequently, additional trade measures were gradually introduced. In 2024 and 2025, the US imposed substantial duties on solar imports from Southeast Asia, effectively closing the primary route through which Chinese firms had been supplying the US market.

This restructuring of global supply chains created an opportunity for India. As manufacturing investments accelerated under domestic industrial policies such as PLI, Indian producers rapidly increased exports to the United States, benefiting from the absence of major trade restrictions and American developers' China+1 strategy.

Furthermore, US introduced new conditions under the One Big Beautiful Bill Act (OBBBA) in Jul'25. It broadened Foreign Entities of Concern (FEOC) restrictions to include solar components, BESS and other clean energy technologies. Under the revised framework, RE projects can access investment and production tax credits only if they begin construction before 4th Jul'26 or are commissioned before 31st Dec'27. Additionally, the legislation introduced FEOC restrictions. These provisions limit tax credits for projects using equipment linked to countries such as China through ownership structures, supply chains, or technology licensing.

Given that many Indian solar manufacturers still rely on Chinese upstream inputs such as wafers and polysilicon, these rules could indirectly affect Indian exports.

Escalation of trade investigations

Trade tensions intensified further in mid-2025 when the Alliance for American Solar Manufacturing and Trade, supported by companies such as First Solar and Qcells, filed a petition alleging that solar imports from India, Indonesia and Laos were benefiting from unfair government subsidies and being sold in the US at artificially low prices.

Following the petition, the US Department of Commerce launched a formal investigation. In Feb'26, the department announced preliminary CVD, setting a general subsidy rate of 125.87% for India and 104.38% for Indonesia. These duties aim to offset alleged subsidies provided by foreign governments to their domestic solar manufacturers.

The investigation has now entered its second phase, focusing on anti-dumping allegations. US manufacturers claim that Indian exporters have sold modules in the US market at lower prices than in their domestic markets and, exported products below cost of production. The petition requests anti-dumping duties (ADD) of up to 214% for India.

The anti-dumping case includes the preliminary anti-dumping rates being set on 21st Apr'26, followed by the final determination from the Commerce Department on 6th Jul'26. The final tariff announcement is scheduled for Sep'26, and the US International Trade Commission will make its final injury determination on 19th Oct'26.

If approved, the combined tariffs (CVD + ADD) could exceed 300%, effectively eliminating the economic viability of Indian solar exports to the US.

Impact on exports

The preliminary CVD has already altered the cost structure for Indian exporters. Solar modules manufactured in India typically sell at USD 0.16–0.28/Wp. Once the current tariffs are applied, the effective landed cost in the US increases to roughly USD 0.46/Wp, well above the prevailing US market price of about USD 0.30/Wp.

Should additional ADD be imposed, the landed cost could increase further, potentially exceeding USD 0.50/Wp. At these levels, Indian modules would likely struggle to compete in the US market unless supply shortages emerge or policy conditions change.

Strategic response by Indian manufacturers

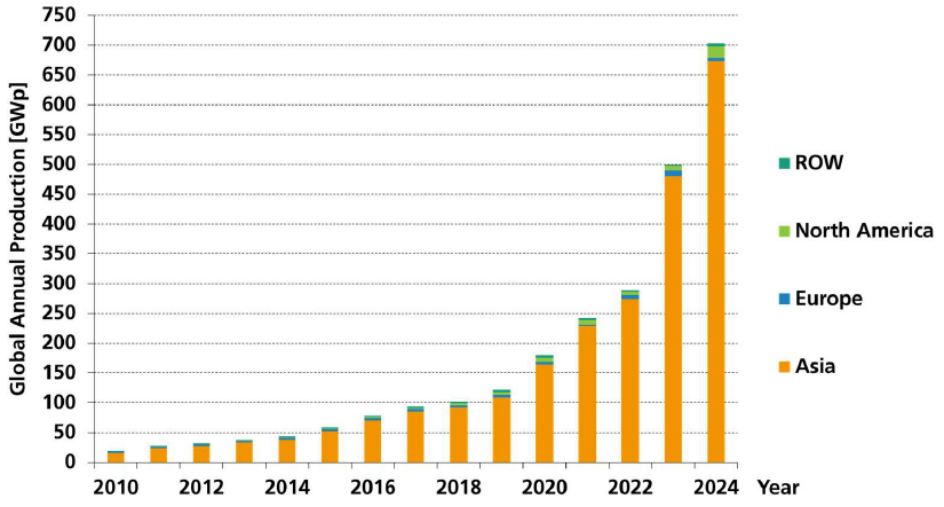
In response to these developments, Indian solar manufacturers have begun adjusting their strategies. Export diversification is accelerating, with companies targeting markets in Europe, the Middle East and Africa wherein solar demand continues to grow rapidly.

Growth Comes with Challenges

Dominance of China

Global solar PV manufacturing capacity has increasingly moved from Europe, Japan and the United States to China over the last decade. China has invested over USD 50bn in new PV supply capacity—about ten times more than Europe since 2011.

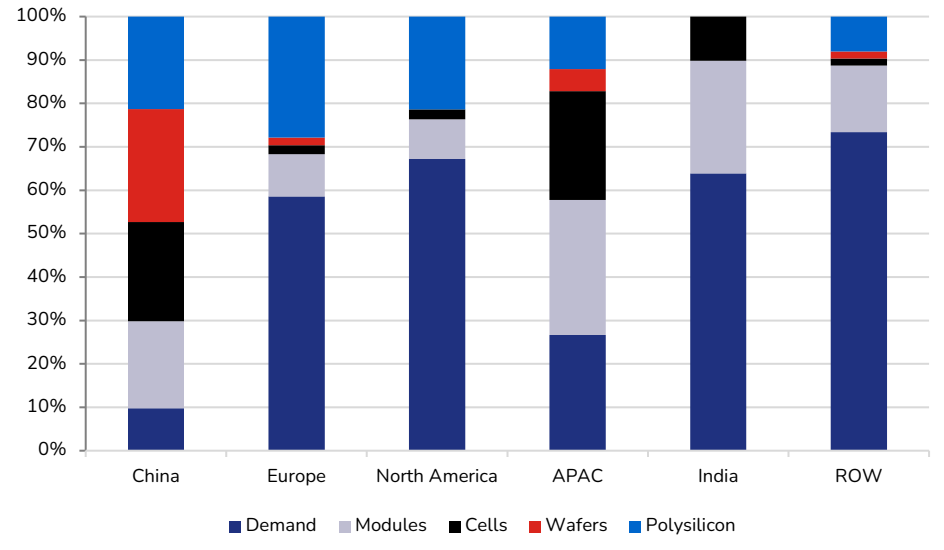
Exhibit 48: PV module production by region, global annual production (GW)



Source: ISA

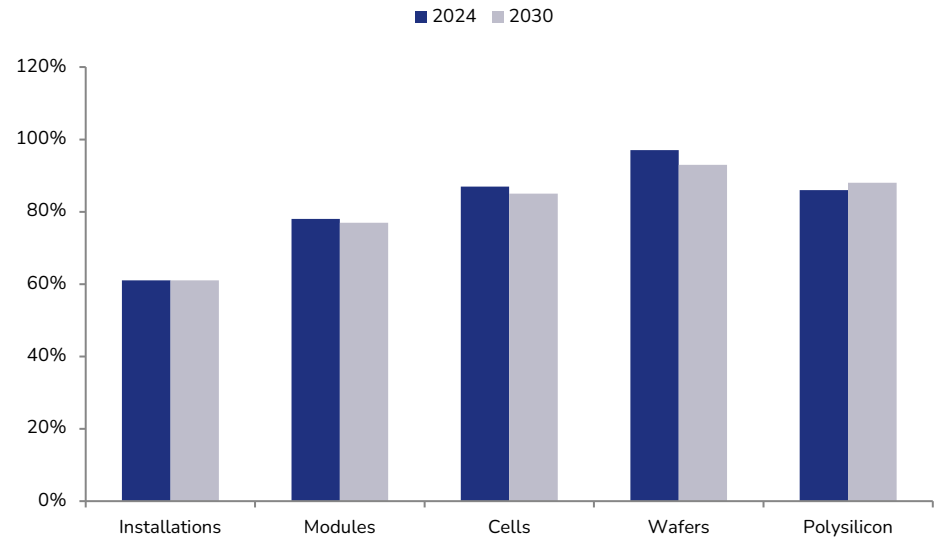
Today, China's share in all the manufacturing stages of solar panels (such as polysilicon, ingots, wafers, cells and modules) exceeds 80%. This is more than double China's share of global PV demand. In addition, the country is home to the world's 10 top suppliers of solar PV manufacturing equipment. However, China has been instrumental in bringing down costs worldwide for solar PV, with multiple benefits for clean energy transitions. At the same time, geographical concentration in global supply chains also creates potential challenges for India with a view on energy security.

Exhibit 49: Relative demand-supply of solar value chain across regions/countries



Source: IEA

Exhibit 50: China's share in global PV manufacturing capacity, 2024 and 2030E

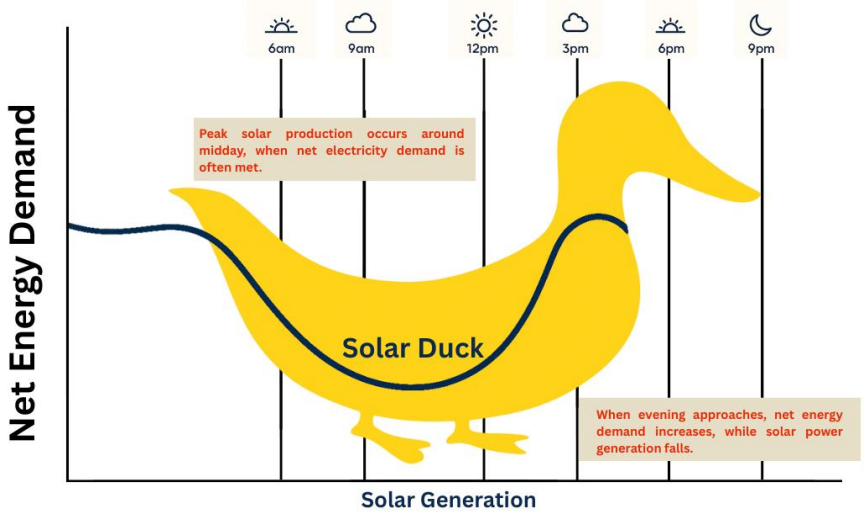


Source: IEA, JM Financial

Imbalance in supply mix

The rapid increase in solar energy adoption has led to a significant power supply imbalance known as the "midday solar peak paradox," wherein solar generation peaks between 10AM and 2PM., often surpassing demand and overwhelming the electrical grid. This results in the "duck curve" phenomenon, forcing conventional power plants to sharply reduce output during the day and quickly ramp up in the evening, which strains infrastructure and lowers system efficiency.

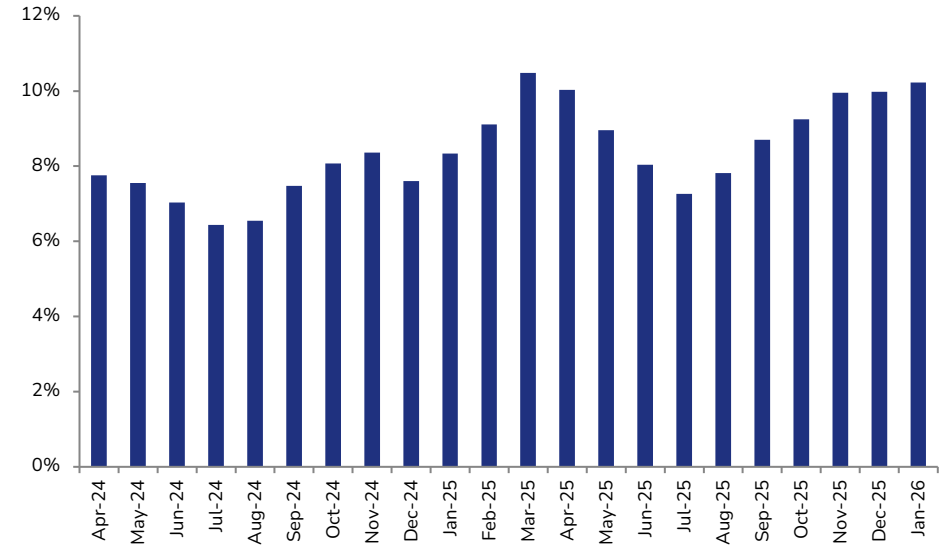
Exhibit 51: Duck curve



Source: Diaelectrics

The imbalance between demand and supply, along with traditional coal plants that lack flexibility and cannot rapidly adjust their output, results in overproduction. This causes the grid to become overloaded and saturated as excess energy generated during the day flows back into the system, leading to voltage surges, technical issues, and possible damage to equipment. To maintain grid stability, operators often curtail solar output. In some markets such as the Netherlands, surplus solar energy during low-demand sunny hours results in negative electricity prices. Additionally, the frequent ramping up of thermal plants to accommodate solar variability increases operating costs, maintenance needs and emissions, further complicating grid management.

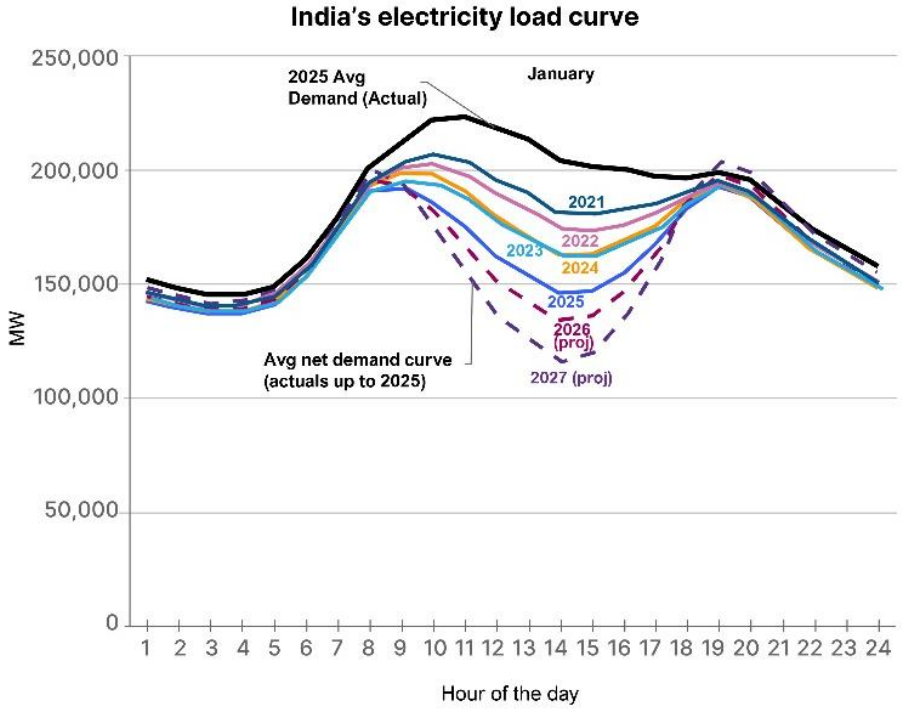
Exhibit 52: Share of solar in generation (%)



Source: CMIE, JM Financial

GRID-India has also reported that India's power system was increasingly experiencing a pronounced "duck curve," with surplus RE during mid-day hours and steep evening ramp requirements of about 60GW. National ramping-up needs a range of 250–300MW/minute, reaching up to 500 MW per minute on certain days while diurnal demand variation is about 75GW.

Exhibit 53: India's electricity load curve



Source: India's deepening duck curves, Prof. Nikit Abhyankar

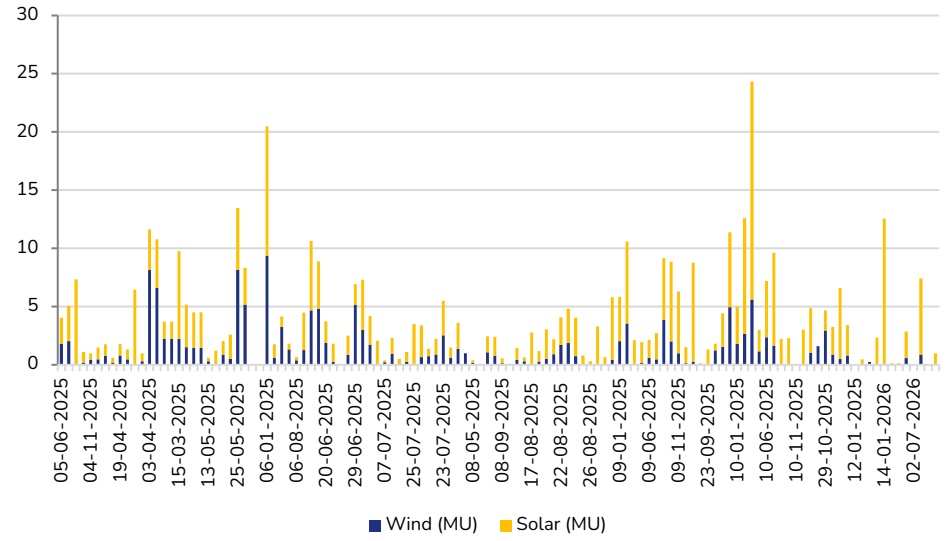
Curtailment

Skewed growth in renewables coupled with limited system flexibility leads to curtailment. Curtailment levels have been rising in many markets, including China, Germany, Brazil, Chile, the UK, Ireland and now India. The number of hours with negative prices has surged across multiple countries, coinciding with peak solar generation. Curtailment and negative prices signal a lack of flexibility in electricity systems and/or a mismatch between supply and demand at certain times.

Growing electrification and demand-side flexibility (e.g. smart EV chargers or heat pumps), storage (short and long term), and dispatchable power plants will be increasingly needed to integrate wind and solar PV securely and cost-effectively. More countries are introducing policies to boost dispatchability and storage, with over 10 of them launching firm-capacity auctions for solar PV and wind over the last five years.

India too had to curtail 2.3TWh of solar generation between late May'25 and Dec'25, including 0.9TWh in October alone due to a combination of forecast error, low daytime demand due to unusually mild temperatures, and rising solar generation led to periods of daytime oversupply in 2025.

Exhibit 54: Curtailment of solar and wind (MU)



Source: Grid India, JM Financial

Excess Module Manufacturing Capacity?

India has crossed 180GW mark of solar PV module manufacturing capacity (ALMM-driven) spread across 130–140 manufacturing units owned by about 100 companies. The depth of capacity and breadth of participation is remarkable. However, with India's annual module demand at 45–55GWp, this capacity surge has raised concerns among investors regarding the risk of underutilised assets, margin compression and potential to constrain backward integration—now critical for survival.

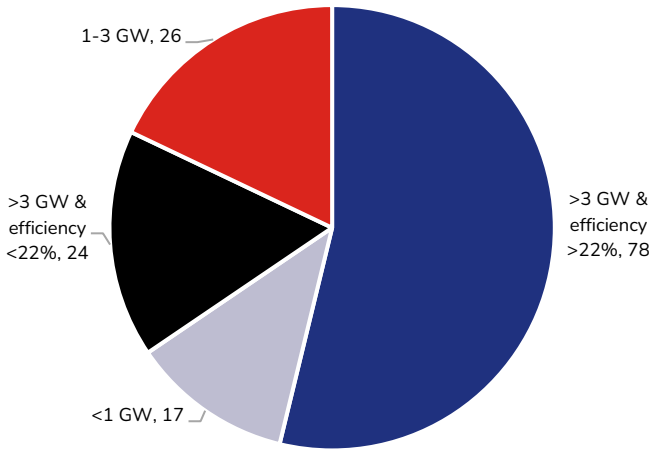
A closer look (100 GW+ of solar module capacity? Not Really) into ALMM-listed capacities yields startling insights.

India's solar manufacturing landscape has undergone a sharp structural shift, with total ALMM-listed capacity now at 185 GW, overwhelmingly dominated by N-type technologies—particularly TOPCon, which alone accounts for 140 GW. Within this, a large portion lies in the 22–23% efficiency band, while truly high-efficiency modules (>23%) still form a relatively smaller premium segment. In contrast, legacy PERC capacity (20–25 GW) is increasingly becoming less relevant due to lower efficiencies (20.5–21.5%) and declining developers' preference. Additionally, higher wattage modules (600W+) are gaining prominence, while sub-550W modules are gradually becoming obsolete. Importantly, when adjusting for efficiency and wattage relevance, the "marketable" or commercially competitive capacity reduces to 95–110 GW, implying that headline capacity overstates effective supply. The recent tenders by SECI also required module specification of ≥585W, bifacial, ALMM-compliant modules with 21.6%+ efficiency and TOPCon. Similarly, NTPC also specified ≥570W, further reinforcing the industry-wide shift toward high-wattage configurations.

The median listed capacity is only 203MW, highlighting the majority of ALMM-listed manufacturers are mid-to-small players, whereas a handful of large manufacturers dominate actual production output.

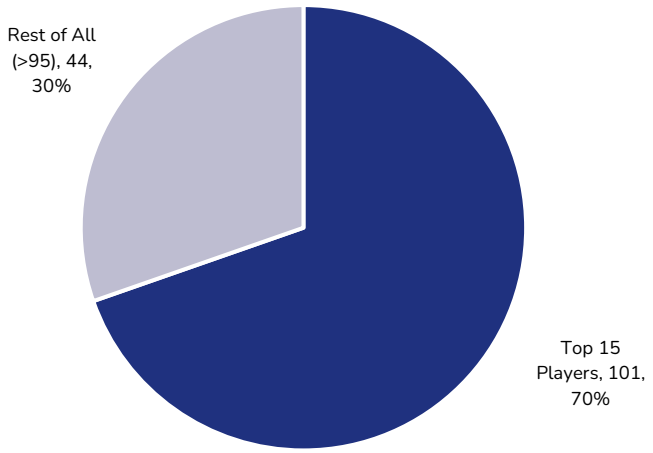
The current manufacturing capacity of 185 GW is just nameplate capacity, consisting of over 13,822 models from 137 manufacturers. The actual output is just 45–55% due to frequent technology changes, fluctuating demand, wide variants of modules and small size of orders. Leading manufacturers such as Emmvee/Premier/Vikram/Waaree reported effective capacity utilisation of 39%/60%/48%/43% during FY24.

Exhibit 55: GW capacity and efficiency across manufacturers



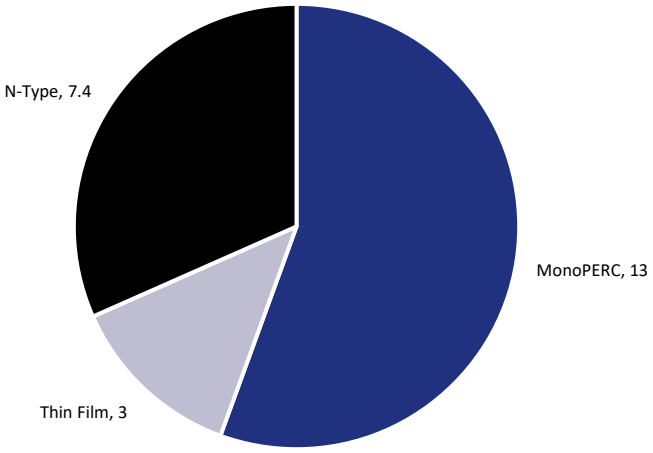
Source: MNRE, JM Financial

Exhibit 56: Manufacturers – nos and capacities



Source: MNRE, JM Financial

Exhibit 57: Cell manufacturing capacity with technology



Source: MNRE, JM Financial

Exhibit 58: Cell capacities and players listed in ALCM (MW)

Player	Capacity
Waaree Energies	5251
Websol Energy	602
TP Solar	4533
Tata Power	280
Emmvee Energy Pvt	1553
Premier Energies	1925
Mundra Solar	3832
ReNew Photovoltaics	1766
Jupiter International	779
FS India	3212

Source: MNRE, JM Financial

Solar PV cell manufacturing

Starting Jun'26, module manufacturers listed in List-I will be required to buy cells only from List-II manufacturers for modules installed in India. Both ALMM lists aim to anchor demand for domestic solar production, ensure quality control and reliability, and discourage cheaper imports. The ALMM List-II addresses several policy gaps in domestic solar cell manufacturing and is poised to significantly impact domestic module production and deployment. Driven by policies such as ALMM and the PLI scheme, India's cell capacity is expected to surge from 23GW currently to 100–120GW by 2027–30.

Exhibit 59: Solar PV cell manufacturing capacity (GW)

Company Name	Existing cell capacity	Additions planned	Cumulative cell capacity
Saatvik Green Energy	0	4.8	4.8
Waaree Energies (Domestic)	5.4	10	15.4
Premier Energies	3.6	7	10.6
Golfi Solar	0	17.2	17.2
Emmvee Solar	2.9	6	8.9
Vikram Solar	-	12	12
ReNew Photovoltaics	2.5	4	6.5
Reliance	-	20	20
Adani	4	6	10
Tata Power	4.9	0	4.9
Total	**23.3**	**87**	**110.3**

Source: Industry, JM Financial

Converting MonoPerc to TOPCon: How easy it is

Converting a MonoPERC (Passivated Emitter and Rear Contact) production line to TOPCon (Tunnel Oxide Passivated Contact) is considered a moderate upgrade rather than a total overhaul, but it does involve significant technical and financial trade-offs. While TOPCon is physically compatible with existing MonoPERC infrastructure, the process is far from "easy" due to the requirement for highly specialised equipment and a complete cessation of production during the transition. The upgrade typically requires 40% incremental investment.

Exhibit 60: Prerequisites for converting MonoPERC to TOPCon module line

MonoPERC		TOPCon		Changes to equipment	Remarks
1	Texturing	1	Texturing	No Change	
2	P- Diffusion	2	B- Diffusion	New Equipment	
3	Inline Alk. Edge Isolation		X	Process Change	Will be used for Process step 8 of Topcon
4	Selective Emitter Laser	3	Boron Annealing	Discard	
		4	InEtchside		
		5	BatchEtch		
		6	Thermal SiO2 - Tunnel Oxide	New Equipment	
5	PID Annealing Equipment	7	a-SiN(n) Annealing Equipment	No Change	
		8	Wet Inline a-SiN(n) Removal	Process Change	Will be used from Process step 3 of MonoPERC
		9	Batch Wet Clean before ALD	New Equipment	
		10	Alumina Depostion (ALD)	New Equipment	
6	Rear Side ALOX PECVD	11	Front SiN PECVD	Process Change	
7	Front SiN PECVD	12	Rear SiN PECVD	Process Change	
		13	Laser Enhanced Contact Optimisation	New Equipment	
8	Metallisation & Sorter	14	Metallisation & Sorter	No Change	

Source: Industry, JM Financial

Various utilities will also require significant changes

Exhibit 61: Changes to utilities

Sl. No	Description	MonoPERC	TOPCon	Remarks
1	Process Steps	8	14	The additional process steps are not at the end of the MonoPERC process where you can typically add on. But they are scattered across lines as demonstrated above.
2	Clean Room Area	1x	1.5 x	Even if the additional clean room is built subject to space availability, all equipment and utilities have to be relocated to cater to TOPCon process flow.
3	Class of Clean Room	100,000	10,000	This requires additional work in the complete HVAC system.
4	Water	1x	1.4x	Additional upgradation of UPW supply system to handle region 50% more requirements.
5	Gases	7 types	9 types	Necessitates modification in the PESO approvals and also the gas yard, which is constructed as per PESO approvals.
6	Power	1x	1.6x	Additional Power requirement necessitates redesigning the Power Supply System.
7	ETP	1x	1.5x	Necessitated additional infrastructure for ETP/ZLD system including changes in the drain pipes to accommodate additional quantity of water flow.

Source: Industry, JM Financial

The simpler phase of solar value chain module assembly is now behind us. The industry is entering a more capital- and capability-intensive phase driven by the need for backward integration into cells, wafers and ingots, supported by policy mandates. This shift comes at a time when even leading manufacturers are operating at only 45–55% capacity utilisation. While numerous integrated (cell+module) facilities have been announced, we believe many are likely to face delays or even abort plans.

Policy Shifts from Quantity to Quality

Advisory to lenders

In Dec'25, the Ministry of New and Renewable Energy (MNRE) advised banks to exercise caution and conduct due diligence when funding new solar module manufacturing projects due to potential overcapacity. It urged lenders to prioritise projects that plan fully integrated solar manufacturing facilities rather than only adding module assembly lines.

Increasing threshold efficiency

The MNRE in Dec'25 has proposed increasing the minimum solar module efficiency thresholds for ALMM enlistment.

Proposed Efficiency Thresholds (Crystalline Silicon)
▪ **Utility/grid-scale:** 21% by 2027, 21.5% by 2028
▪ **Rooftop and solar pumping:** 20.5% by 2027, 21% by 2028
▪ **Off-grid/distributed (<200Wp):** 19% by 2027, 19.5% by 2028
▪ **Thin-film (CdTe) requirements:** Slightly lower thresholds (20% by 2027, 20.5% by 2028)

As per the proposal, modules currently on the ALMM list that do not meet these new thresholds by the effective date will be removed.

Mandatory backward integration

The MNRE mandates all solar PV modules used in government-backed, net-metering and open-access projects must source solar cells from the ALMM List-II with effect from 1st Jun'26.

Subsequently, MNRE has also proposed ALMM List-III to mandate the use of domestically produced silicon ingots and wafers, effective 1st Jun'28 to drive backward integration. This ensures approved modules (List-I) use listed cells (List-II), which must use indigenous wafers/ingots (List-III).

In our view, the next leg of growth will favour experienced manufacturers with financial strength, execution capability and skilled manpower, enabling them to successfully navigate this transition. Hence, we believe the market will evolve from today's commoditised landscape into a more oligopolistic structure over time. For now, despite India's 150GW+ of nameplate capacity, effective module output is limited to 50–60GWp, and a sustained oversupply scenario is unlikely in the near term.

Exhibit 62: Capacity utilisation of leading module manufacturers

Company	FY21	FY22	FY23	FY24	FY25	9MFY26
Emmvee Solar						
Annual installed capacity (a), GW	-	-	1.6	1.6	6.0	10.3
Effective installed capacity (b), GW	-	-	1.0	1.2	2.7	-
Actual production (c), GW	-	-	0.2	0.5	1.5	2.1
Capacity utilisation w.r.t. Annual installed capacity (c/a)	-	-	14%	30%	25%	-
Capacity utilisation w.r.t. effective installed capacity (c/b)*	-	-	22%	39%	54%	43%
Premier Energies						
Annual installed capacity (a), GW	0.5	1.2	1.4	3.4	5.1	5.1
Effective installed capacity (b), GW	0.4	0.9	1.1	1.7	-	-
Actual production (c), GW	0.2	0.2	0.5	1.0	-	2.7
Capacity utilisation w.r.t. Annual installed capacity (c/a)	40%	19%	36%	30%	-	-
Capacity utilisation w.r.t. effective installed capacity (c/b)*	46%	26%	43%	60%	74%	78%
Vikram Solar						
Annual installed capacity (a), GW	-	2.0	3.5	3.5	4.5	9.5
Effective installed capacity (b), GW	-	1.4	1.1	1.8	1.6	-
Actual production (c), GW	-	0.5	0.4	0.9	1.3	2.3
Capacity utilisation w.r.t. Annual installed capacity (c/a)	-	26%	12%	24%	29%	
Capacity utilisation w.r.t. effective installed capacity (c/b)*	-	37%	40%	48%	78%	24%
Waaree Energies						
Annual installed capacity (a), GW	2.0	4.0	9.0	12.0	15.0	23
Effective installed capacity (b), GW	1.5	2.1	6.5	11.0	-	
Actual production (c), GW	0.8	1.0	2.6	4.8	-	8.4
Capacity utilisation w.r.t. Annual installed capacity (c/a)	41%	24%	29%	40%	-	
Capacity utilisation w.r.t. effective installed capacity (c/b)*	53%	46%	40%	43%	-	37%

Source: Company, DRHP, JM Financial
* Effective installed capacity is calculated on the basis of the duration during which manufacturing facility was under operations

R&D and innovation

India has primarily focused on scaling up solar deployment and developing domestic manufacturing capacity rather than developing core PV technology innovation and patent ownership. As a result, Indian manufacturers continue to rely on China-developed cell architectures such as TOPCon and, hence, struggle competing technologically with Chinese players.

Exhibit 63: R&D expenditure by industry leaders

Company	Technology focus	R&D (% of sales)	Annual R&D spending (approx. USD mn)
First Solar	Thin-film CdTe	4–6%	150–250
SunPower	High-efficiency silicon	5–7%	100–200
LONGi Green	Mono-silicon/ TOPCon	3–5%	500–800
Trina Solar	TOPCon/ N-type	2–4%	300–600
JinkoSolar	TOPCon/ N-type	2–3%	200–400
Canadian Solar	Silicon modules	1.5–3%	150–300
JA Solar	N-type/ PERC	2–3%	200–400

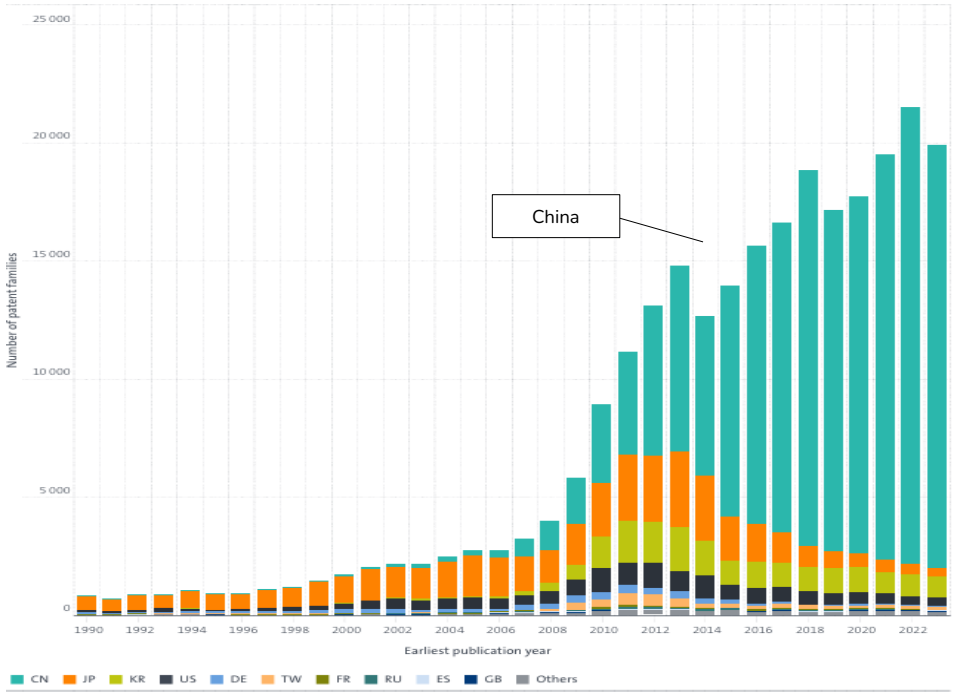
Source: Industry

Companies such as First Solar and SunPower historically spent 5–7% of revenue on R&D, significantly higher than most Chinese peers. But because Chinese companies have much larger revenues, their absolute R&D spending is often higher. Large Chinese solar manufacturers collectively expend billions of dollars annually on R&D, far exceeding Western peers on aggregate.

For example: LONGi Green Energy Technology alone spent about USD 175mn in one year while investing heavily in high-efficiency monocrystalline technology. On the contrary, even the largest Indian manufacturers spend negligible on R&D, file very limited patents and employ only a few R&D engineers. Chinese solar firms collectively employ more than 17,000 R&D personnel.

According to recent a recent European Patent Office report, the focus of innovation is gradually shifting towards advanced materials such as perovskites, quantum dots and next-gen thin-film semiconductors that promise much higher efficiencies and lower production costs. Countries such as Japan, the US, South Korea and Germany continue to account for a large share of high-value international patent families. At the same time, patent filings by China have shot up over the past decade and now represent a dominant share of global PV patent activity.

Exhibit 64: Number of national patent families in the field of photovoltaics



Source: EPO

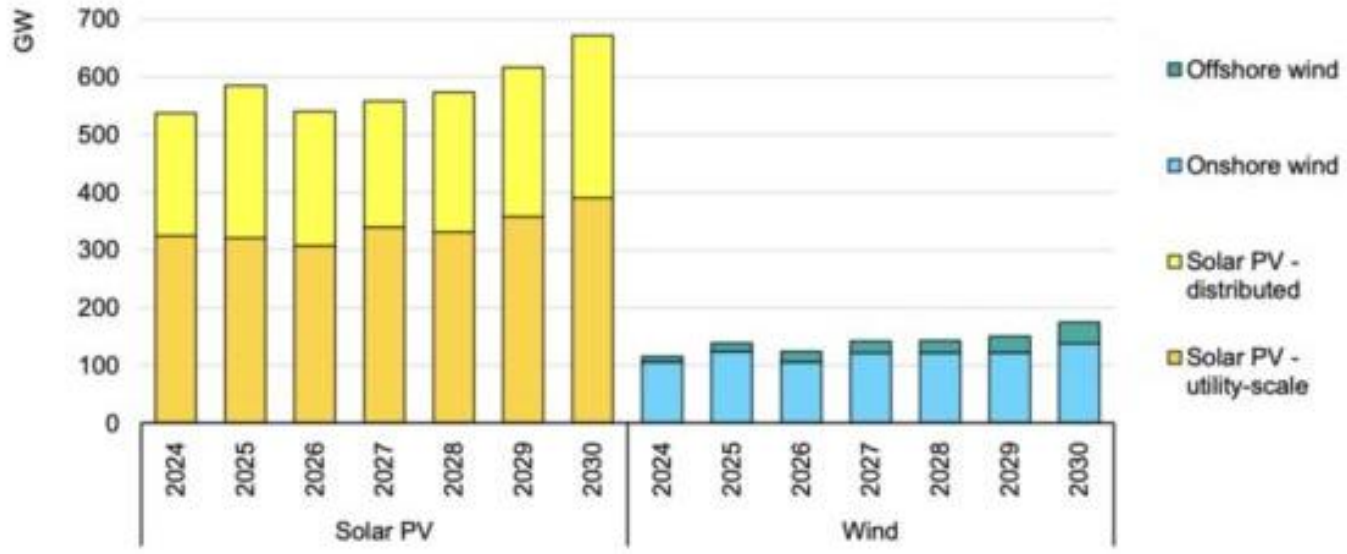
Global Solar Capacity Addition Outlook

S&P Global forecasts a near-term peak in annual global solar additions with a projected 100GW decline in 2026 (about 600GW of additions) compared with 2025, driven largely by a slowing market in China. The decline is primarily due to a policy shift in China from guaranteed pricing to competitive bidding, which is expected to reduce their annual additions from 300GW to 200GW.

The International Energy Agency (IEA) also cut its 2025–30 renewables forecast (in Oct'25) by 5%, citing lower solar additions, though PV still represents nearly 80% of 4.6TW of expected growth. Annual installations are then expected to slow slightly between 2026 and 2028, with IEA citing slowdowns in China and the United States linked to evolving policy timelines. The agency is then forecasting over 600GW of solar additions in 2029, before moving closer to the 700GW threshold in 2030.

Despite this, cumulative solar capacity is still expected to double by the end of the decade with continued growth in other regions, though the industry faces challenges with oversupply and shrinking margins.

Exhibit 65: Solar PV and wind capacity additions by segment (GW), 2024–30



Source: IEA

India Opportunities

We expect 130–140GW of solar capacity additions over FY27–30E. Currently peak demand during daytime is hovering around 240GW. Solar is contributing 80–82GW (30–35%) against the installed capacity of 140GW (60% peak utilisation).

At this level of variable RE (solar and wind), grid operators are facing challenges in managing intermittency, as also evident from daily grid frequency charts. Considering modest 6.5–7% power demand growth during FY27–30E and maintaining the 30–35% VRE contribution we expect 10–12GW of incremental utility solar addition. Furthermore, India aims to develop 230GWh of BESS by 2030, which will require 55–60GW of solar generation capacity (assuming four hours' storage). Additionally, 25–30GW of demand can come from off-grid solar from various schemes such as PM Kusum and PM Surya Ghar Yojana. Considering the AC/DC factor of 1.4x, we estimate annual modules' requirement of 45–50GW through 2030.

Exhibit 66: Solar PV modules demand in India

GW	Mar'26	FY27E	FY28E	FY29E	FY30E
Day peak demand as per CEA	240	270	289	305	325
-YoY %		12.5%	7.0%	5.5%	6.6%
Incremental demand		**30**	**19**	**16**	**20**
Likely thermal addition		5.0	4.5	5.5	8.5
Incremental contribution at 55% minimum technical load		2.8	2.5	3.0	4.7
Thermal generation	140	143	145	148	153
Others (Hydro, nuclear) additions		2	4	5	4
Solar generation required	82	97	104	110	117
% share in peak day demand (current 34%)		36%	36%	36%	36%
Solar capacity	138	162	173	183	195
% peak utilisation (current 60%)		60%	60%	60%	60%
Utility solar addition		**24**	**11**	**10**	**12**
India aims to develop 230GWh of BESS by 2030. Corresponding solar GW*		10	10	15	15
Total incremental supply		29	18	18	21
Solar PV additions (MW)					
Ground Mounted including grid connected solar rooftop	28	24	11	10	12
*Hybrid solar component		10	10	15	15
Off-Grid Solar	6	6	7	7	8
Total AC (x)	**38**	**40**	**28**	**32**	**35**
Annual modules' requirement in DC (= 1.5x)		**60**	**40**	**45**	**50**

Source: CEA, JM Financial

Waaree Energies | REDUCE

Jack of all, master of one

Sudhanshu Bansal
sudhanshu.bansal@jmfl.com | Tel: (91 22) 66303128

Waaree is India's largest solar PV module manufacturer with cell/ module manufacturing capacity of 5.4/22.8GW. It is also India's most active global player in solar value chain with exports to 20+ countries and 1.6GW module manufacturing in Texas (order book of INR 600bn with 65% exports). The company maintains a strong balance sheet with net-cash of INR 68bn at end-FY25E, supporting expansion and diversification—manufacturing of 1GW electrolyser, 20GWh BESS, 4GW inverters, 20k MVA transformers and RE developer. As it plans to further expand cell/module capacity to 15.4/28GW along with 10GW solar ingots and wafers, we estimate revenue/EBITDA/PAT would compound at 34%/42%/40% to INR 351bn/78bn/52bn over FY26–28. We are initiating coverage at REDUCE with a TP of INR 2,815 (-10% downside potential), valuing the stock at 9xFY28E EV/EBITDA, reflecting its leadership and strong capacity expansion visibility, somewhat offset by excessive diversification-related execution risks.

- **Robust credentials**: Waaree Energies (Waaree) is India's largest solar PV module manufacturer with cell/ module manufacturing capacity of 5.4/22.8GW. It is also the India's most active global player in solar value chain with exports to 20+ countries and 1.6GW module manufacturing in Texas, United States. Waaree has built a strong order pipeline of INR 600bn (65% exports, which management seeks to optimise to 50% in the future), including 25–26GW modules.

- **The plan**: The company is further expanding cell capacity to 15.4GW along with development of 10GW solar ingot and wafer manufacturing. Alongside, the company aims to expand module capacity to 28GW by FY28E, including 2.6GW in US. Beyond its core solar manufacturing operations, Waaree is expanding into clean-energy adjacencies, viz., manufacturing of 1GW electrolyser, 20GWh BESS, 4GW inverters, 20k MVA transformers and RE developer.

- **Performance so far**: Waaree's financial trajectory over FY21–25 was strongly powered by a sharp scale-up, with module production surging from 1GW in FY22 to 7GW in FY25 (CAGR 72%), backed by capacity expansion from 4GW to 15GW. Revenue/EBITDA/PAT expanded at a CAGR of 65%/131%/153% to INR 144bn/27bn/19bn over FY21–25. EBITDA margin expanded from 5% in FY21 to 19% in FY25 on the back of operating leverage and improved realisation (with blended EBITDA/Wp more than trebling from INR 1.16/W to INR 3.81/W).

- **Outlook and valuation**: We estimate revenue/EBITDA/PAT would compound at 34%/42%/40% to INR 351bn/78bn/52bn over FY26–28E as module capacity expands from 15GW in FY25 to 29GW in FY28E and cell capacity ramps up from 5.4GW to 15.4GW. Blended EBITDA/Wp is expected to peak at INR 5.64 in FY26E and then moderate to INR 5.11 by FY28E as competition intensifies. Strong balance sheet (net-cash of INR 68bn at end-FY25) supports expansion plans. All in all, we are initiating coverage with an REDUCE and TP of INR 2,815 (-10% downside potential), valuing the stock at 9x FY28E EV/EBITDA, reflecting its scale and capacity expansion visibility, partially offset by excessive diversification-related execution risks.

- **Key risks**: An industry player with 'volume' as growth strategy is highly susceptible to business cycles. If the current subdued bidding phase in the Indian solar market protracts any further, Waaree may be significantly impacted. Additionally, given its 65% order book from exports, country-specific policy uncertainties (e.g. US tariffs) can be potential disruptors to growth momentum.

Recommendation and Price Target	
Current Reco.	REDUCE
Previous Reco.	NA
Current Price Target (12M)	2,815
Upside/(Downside)	-10%
Previous Price Target	N/A
Change	NA

Key Data – WAAREEEN IN	
Current Market Price	INR3,125
Market cap (bn)	INR898.9/US$9.7
Free Float (%)	25.2
Shares in issue (mn)	287.6
Diluted share (mn)	287.6
3-mon avg daily val (mn)	INR6,398.4/US$69.1
52-week range	INR3,865/2,072
Sensex/Nifty	77,563/23,997
INR/US$	92.6

Price Performance

%	1M	6M	12M
Absolute	18.9	-6.0	47.8
Relative*	18.9	-0.4	40.7

*To the NSE Nifty 50

Financial Summary (INR mn)

Y/E Mar	FY24A	FY25A	FY26E	FY27E	FY28E
Net Sales	113,976	144,445	240,336	318,575	351,101
Sales Growth (%)	68.8	26.7	66.4	32.6	10.2
EBITDA	15,744	27,216	59,239	73,032	78,444
EBITDA Margin (%)	13.8	18.8	24.6	22.9	22.3
Adjusted Net Profit	12,372	18,674	42,715	47,214	51,783
Diluted EPS (INR)	43.0	64.9	148.5	164.1	180.0
Diluted EPS Growth (%)	156.3	50.9	128.7	10.5	9.7
ROIC (%)	172.8	100.4	96.7	52.4	33.2
ROE (%)	41.8	27.5	36.8	29.3	24.6
P/E (x)	72.7	48.1	21.0	19.0	17.4
P/B (x)	22.0	9.5	6.5	4.9	3.8
EV/EBITDA (x)	54.9	30.6	13.8	11.5	10.5
Dividend Yield (x)	-	-	-	-	-

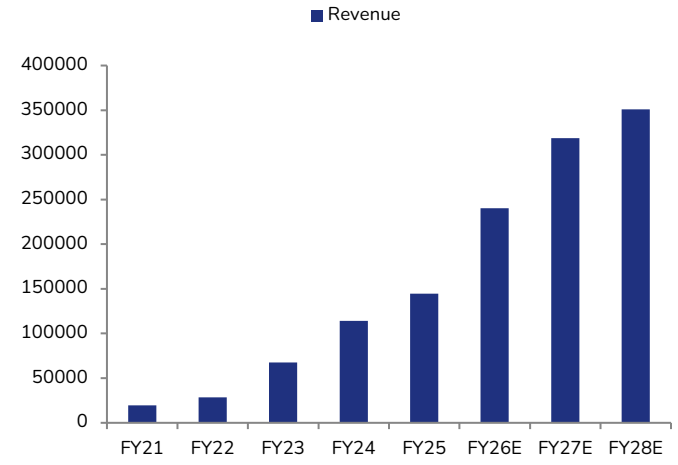
Source: Company data, JM Financial. Note: Valuations as of April 08, 2026

JM Financial Research is also available on: Bloomberg - JMFR <GO>, FactSet, LSEG and S&P Capital IQ

Please see Appendix I at the end of this report for Important Disclosures and Disclaimers and Research Analyst Certification.

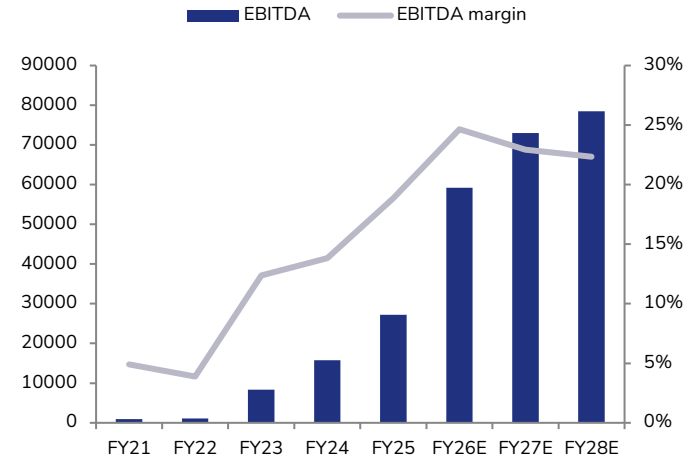
Focus Charts

Exhibit 1: Revenue (INR mn)



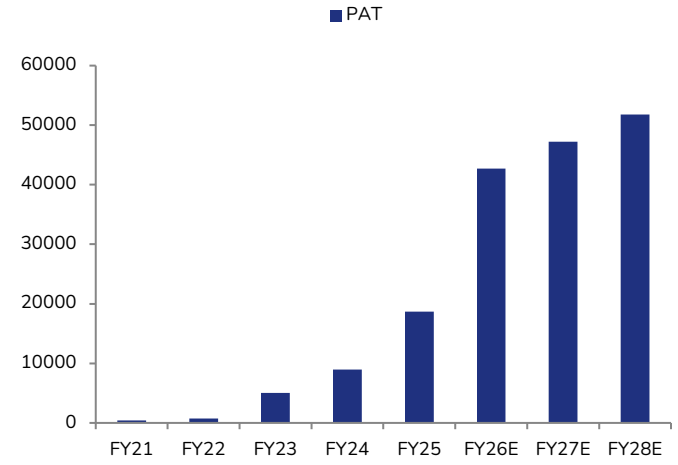
Source: Company, JM Financial

Exhibit 2: EBITDA (INR mn)



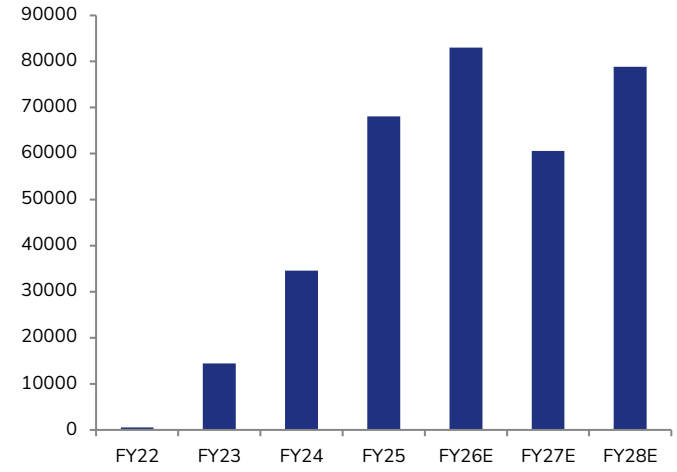
Source: Company, JM Financial

Exhibit 3: PAT (INR mn)



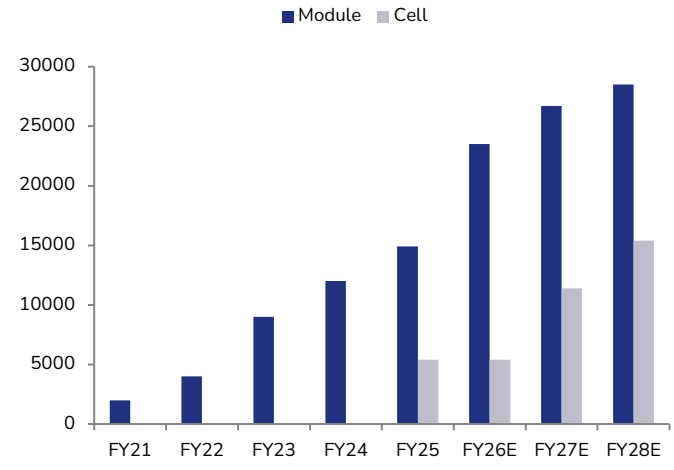
Source: Company, JM Financial

Exhibit 4: Net cash (INR mn)



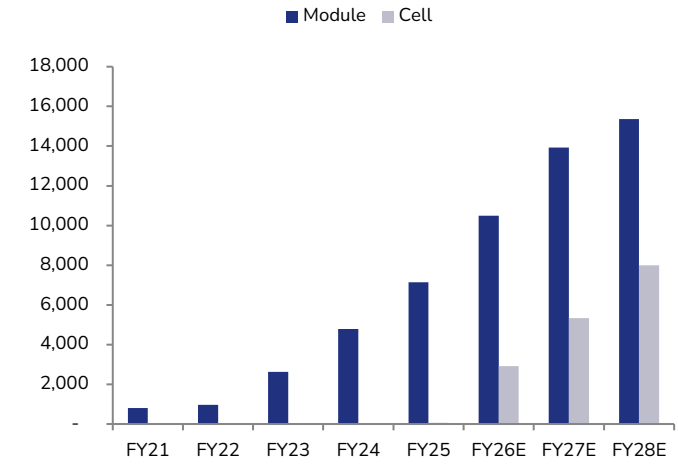
Source: Company, JM Financial

Exhibit 5: Capacity (MW)



Source: Company, JM Financial

Exhibit 6: Production (MW)



Source: Company, JM Financial

Investment thesis

India's largest PV manufacturing company

Waaree is India's largest solar PV module manufacturer with significant scale and global presence across manufacturing, EPC and rooftop solar solutions. Since entering the solar manufacturing segment in 2007, the company has expanded capacity rapidly to 22.8GW of module and 5.4GW of cell capacity (end-FY26), supported by facilities in India and the United States. Furthermore, its inclusion in the ALMM list strengthens participation in India's domestic solar market, while its presence in over 20 export markets enhances geographical diversification. The company's large-scale manufacturing footprint and backward integration into solar cells position it favourably to benefit from rising global solar demand, although increasing competitive intensity is a key variable to monitor.

Aggressive capacity expansion and integration strategy

Waaree is pursuing an aggressive expansion strategy with planned capex of INR 250bn aimed at strengthening backward integration and improving supply chain control. A key component of this strategy includes development of 10GW ingot and wafer manufacturing capacity, enabling in-house production of upstream components. The company plans to expand module/cell/ingot & wafer capacity to 28GW/15GW/10GW by FY28E, including incremental additions in both India and the United States. While these initiatives are expected to enhance long-term competitiveness and reduce external dependency, the scale and diversification of capex plans may increase execution risks and capital intensity over medium term.

Robust order book supports near-term revenue visibility

Waaree maintains a strong and expanding order book supported by sustained global demand for solar modules. At end-January 2026, the company reported a record order book of INR 600bn, providing healthy revenue visibility over the next two years. The order pipeline has grown significantly over time, with current orders estimated at 25–26GW, reflecting strong demand momentum. The order book remains export-led with 65% of orders from international markets and 35% from India. While this provides diversification benefits, it also exposes the company to external market dynamics and policy-related risks in overseas geographies.

Strong growth outlook largely priced

We expect Waaree to deliver steady growth supported by capacity expansion and strong order visibility, with revenue/EBITDA/PAT projected to expand at a CAGR of 34%/42%/40% over FY26–28E. However, blended EBITDA/Wp is expected to peak in FY26E and gradually moderate thereafter due to increasing competition and pricing pressures. The company's strong balance sheet, with net cash of INR 68bn at end-FY25, provides adequate funding support for its expansion plans. Despite healthy growth prospects, we believe current valuations adequately reflect its scale advantages and expansion visibility while incremental risks from aggressive diversification and capital deployment limit near-term upside. All in all, we are initiating coverage with a REDUCE and TP of INR 2,815, valuing the company at 9x FY28E EV/EBITDA.

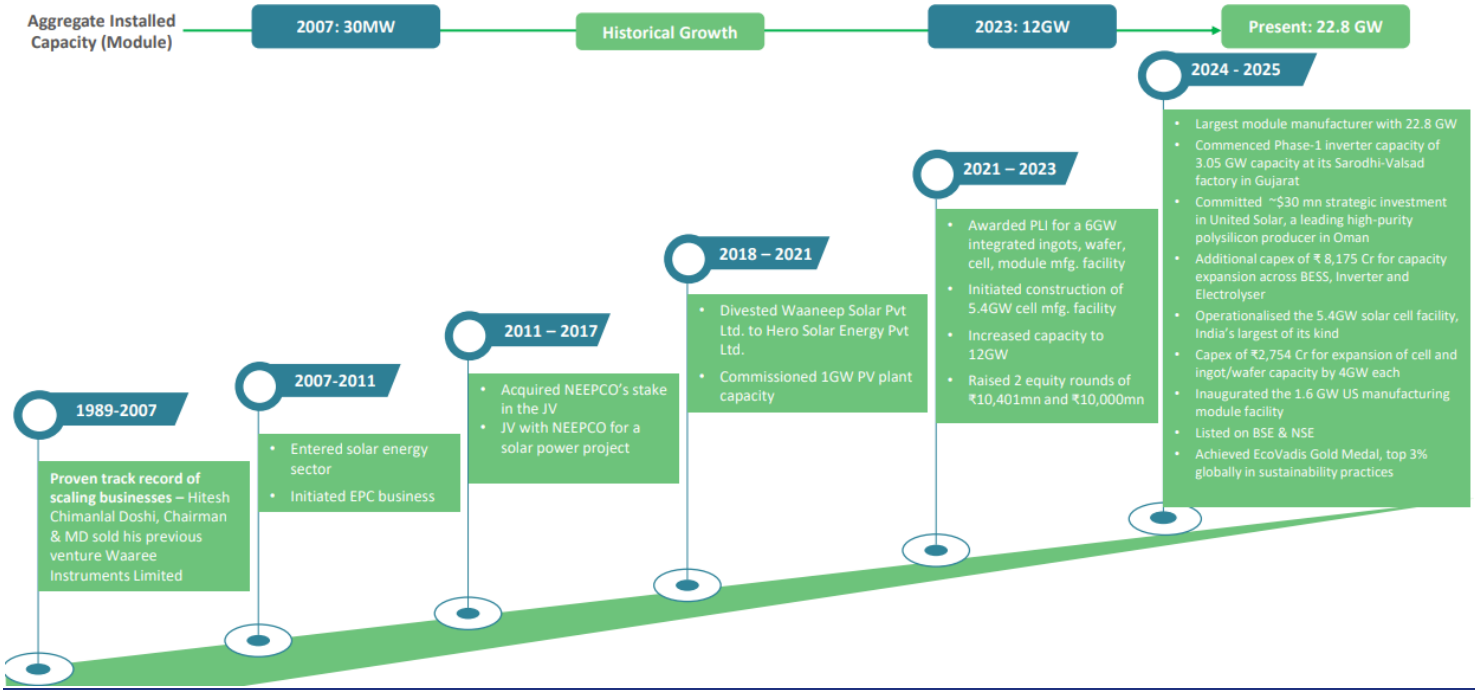
About the company

Incorporated in 1990 and headquartered in Mumbai, Waaree Energies Limited (Waaree) is India's largest solar PV module manufacturer and one of the leading integrated solar equipment companies globally. The company entered the solar manufacturing segment in 2007 and has since expanded to solar cell and module manufacturing, EPC services and rooftop solar solutions.

At end-FY26, WEL had operational manufacturing capacity of 22.8GW for solar modules and 5.4GW for solar cells, with facilities located in Gujarat and Uttar Pradesh in India and Texas in the USA; it exports to more than 20 countries.

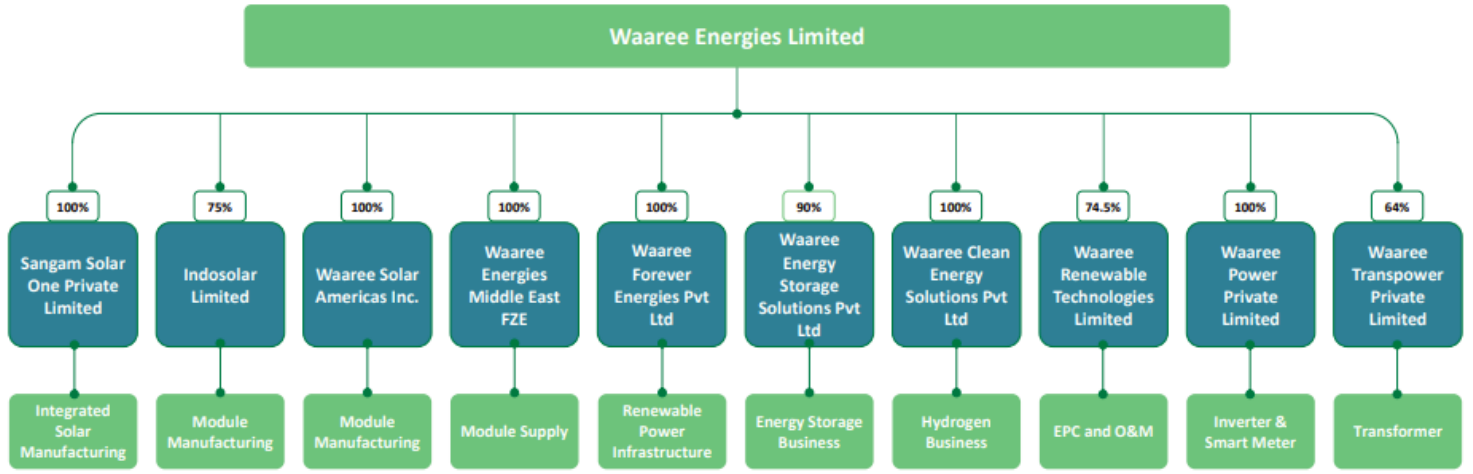
Waaree is also listed under the Approved List of Models and Manufacturers (ALMM) issued by the Ministry of New and Renewable Energy (MNRE), positioning it to cater to domestic solar demand. Going forward, the company is focused on scaling up manufacturing capacity and expanding into adjacent clean-energy segments such as BESS, transformers, inverters, green hydrogen equipment manufacturing and many more.

Exhibit 7: Encapsulating Waaree's growth journey



Source: Company

Exhibit 8: Group structure – A schematic representation



Source: Company

Manufacturing capacity

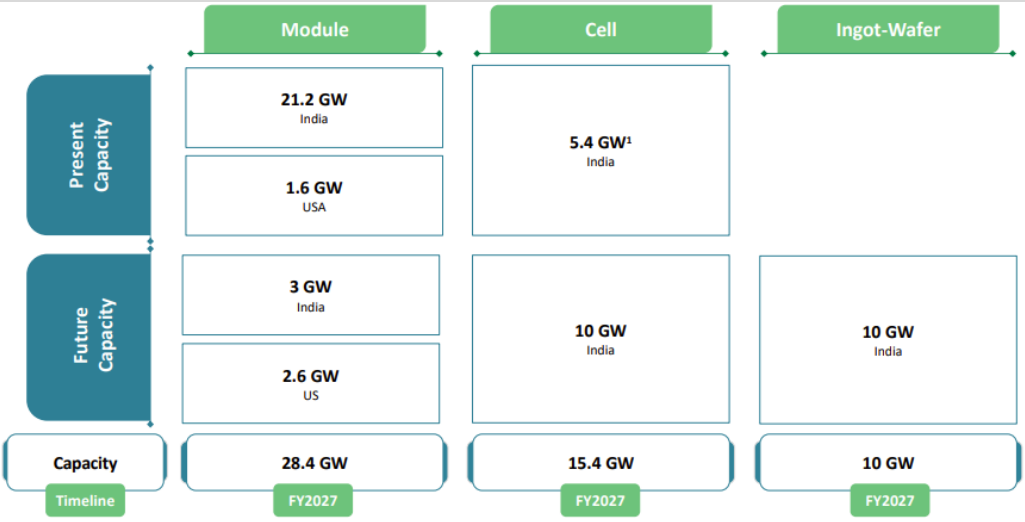
Waaree has significantly expanded its manufacturing footprint over the past few years, with operational solar module capacity increasing from 4GW in FY22 to 22.8GW at end-Dec'25. The company operates five manufacturing facilities in India located at Surat, Tumb, Nandigram and Chikhli in Gujarat along with the Indosolar facility in Noida, Uttar Pradesh. In addition, Waaree has an overseas module manufacturing facility in Texas, United States, strengthening its access to international markets, particularly the US. Currently, the company has 21.2GW of solar module manufacturing capacity in India and 1.6GW in the US. Recent commissioning of the 2.1GW module capacity at Chikhli and 3GW at Samakhiali have aided a fast ramp-up of domestic capacity and strengthened its position as India's largest module manufacturer.

Beyond module assembly, the company has taken steps towards backward integration across the solar value chain. It has commissioned a 5.4GW solar cell manufacturing gigafactory at Chikhli, Gujarat, which is among the largest cell manufacturing facilities in India. This facility enhances supply-chain security and reduces dependence on imported cells, supporting the company's strategy to move towards a fully integrated manufacturing platform. The company plans to further expand its solar cell capacity to 15.4GW over medium term.

Waaree is undertaking aggressive capacity expansion and backward integration strategy with planned capex of INR 250bn. A key component of this plan includes the development of 10GW solar ingot and wafer manufacturing capacity, which will allow the company to produce key upstream components in-house. This integration is expected to improve supply-chain resilience, reduce the reliance on imports and enhance margins over time.

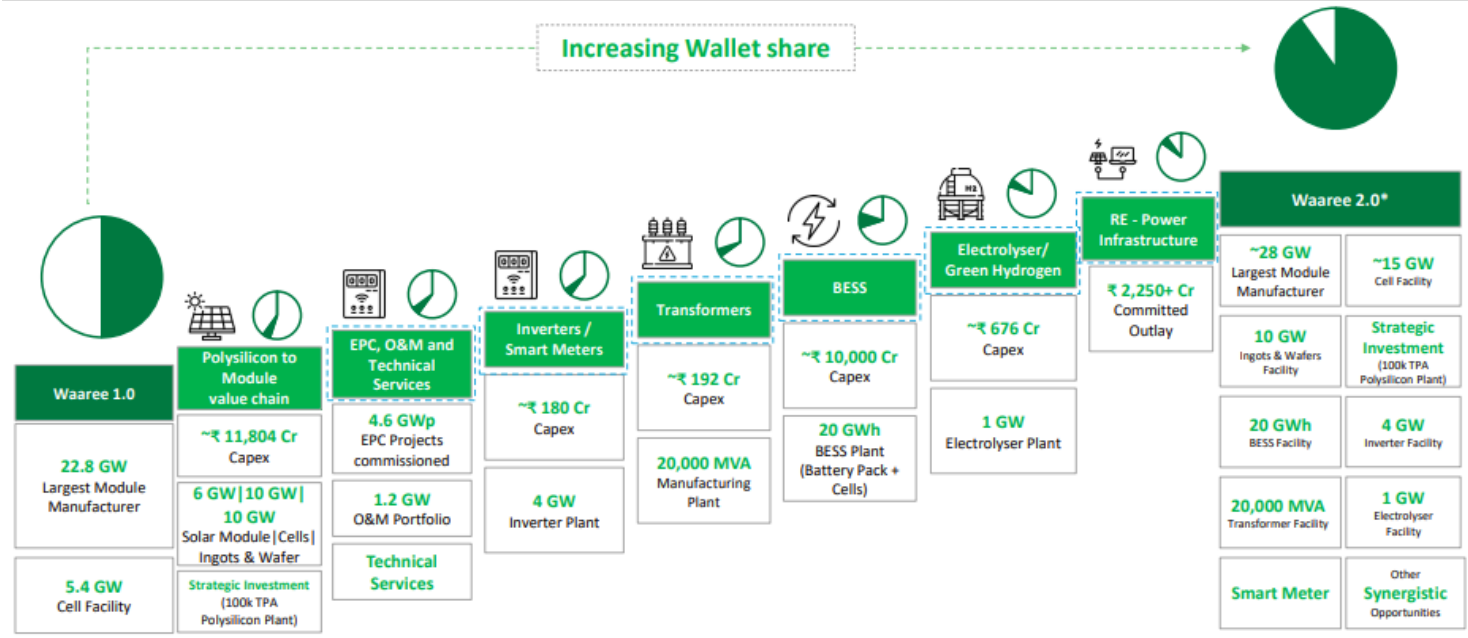
Alongside, the company aims to expand solar module manufacturing capacity to 28GW by FY28E through the addition of 3GW capacity in India and 2.6GW in the US, thereby taking its domestic module capacity to 24GW and US capacity to 2.6GW. Overall, these investments would foster Waaree's evolution from a module-focused manufacturer to a fully vertically integrated solar equipment player over the next few years.

Exhibit 9: Planned expansion to cater to growing demand (GW)



Source: Company

Exhibit 10: Waaree 2.0: Charting evolution to a fully integrated solar value chain player



Source: Company

Technology

Waaree focuses on advanced high-efficiency cell and module technologies to enhance module performance and energy yield. Its current manufacturing is primarily based on N-type TOPCon and Mono-PERC technologies, producing high-efficiency bifacial and half-cut cell modules. By utilising large-format M10 and M12 wafers, Waaree manufactures high-wattage solar modules with capacity of up to 700Wp+, which help improve project economics by increasing power output and reducing balance-of-system costs.

The company is now gradually transitioning its technology mix toward next-gen cell architectures. Waaree plans to expand its TOPCon cell manufacturing capacity to 15.4GW while also investing in R&D for advanced technologies such as Heterojunction (HJT) and perovskite tandem solar cells.

As part of its long-term strategy to strengthen technological capabilities, the company collaborates with the Indian Institute of Technology – Bombay to develop next-gen solar cell architectures, including perovskite tandem technologies. In addition, Waaree operates NABL-accredited laboratories and internal quality control frameworks, supporting continuous improvements in module efficiency, reliability and cost competitiveness.

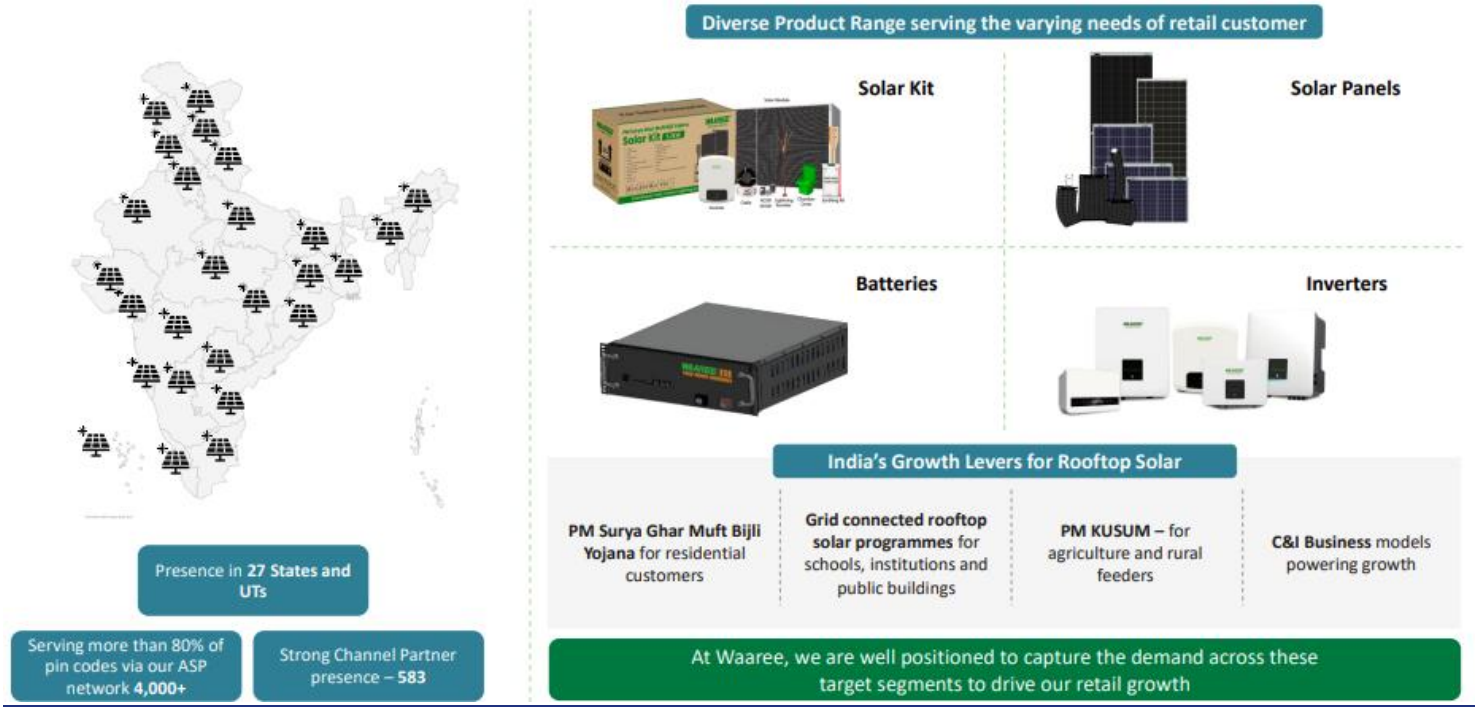
Other businesses

Beyond its core solar manufacturing operations, Waaree is expanding into emerging clean-energy adjacencies. The company is developing 1GW of electrolyser manufacturing capacity as part of its entry into the green hydrogen value chain.

In addition, Waaree has forayed into the IPP segment, with PPAs signed for 413MW and grid connectivity secured for 6.1GW of renewable capacity, providing a potential long-term annuity revenue stream.

The company is also setting up 20GWh of Battery Energy Storage System (BESS) manufacturing capacity by FY28E. While current BESS realisation stands at USD 70–80/kWh, the segment could benefit from future policy support such as ALMM inclusion and duty protection. Management expects sustainable margins of 18–20% in the BESS business over medium term.

Exhibit 11: Diversified product range



Source: Company

Order book

Waaree has built a strong order pipeline supported by rising global demand for solar modules. At end-January 2026, the company has a record order book of INR 600bn, providing strong revenue visibility for the next two years. The order book has expanded significantly over time, increasing from 407MW in earlier years to 25–26GW currently. During the most recent quarter alone, the company secured 5.3GW of new module orders, reflecting continued commercial traction in both domestic and international markets.

The order book is largely driven by exports with 65% of orders from overseas markets and 35% from India. Since the company internally consumes all the solar cells it produces, the order book primarily pertains to module supply contracts. Going forward, management aims to increase the share of domestic orders to 50%, supported by strong policy support and growing solar capacity additions in India.

EPC and OMS

Waaree undertakes engineering, procurement & construction (EPC) activities for solar power projects primarily through its subsidiary Waaree Renewable Technologies Limited. The EPC business enables the group to offer an integrated solution to utilities, developers and global investors, covering project development, equipment supply, installation and grid connectivity.

The company has successfully commissioned over 4.6GWp of solar projects to date and currently has a secured EPC pipeline of 6.1GW. This segment forms an important part of Waaree's integrated solar strategy and contributes 10–11% of the company's total revenue mix (10.7% as of Q3FY26).

In addition to project execution, the group provides operations & maintenance (O&M) services to ensure long-term asset performance. The O&M vertical manages a portfolio of 1.2GW of solar assets, offering services such as real-time monitoring, technical maintenance and performance optimisation. Through its EPC and O&M capabilities, Waaree is able to provide end-to-end lifecycle solutions for solar projects while strengthening relationships with developers and institutional investors.

Financial Performance

Waaree has had a strong financial trajectory over FY21–25 driven by rapid capacity expansion and robust domestic solar demand. Revenue/EBITDA/PAT grew at a CAGR of 65%/131%/153% to INR 144bn/27bn/19bn over FY21–25. Profitability improved meaningfully during the period, with EBITDA margin expanding from 5% in FY21 to 19% in FY25 on the back of operating leverage and improved realisation. The growth was underpinned by a sharp scale-up in operations, with module production increasing from 1GW in FY22 to 7GW in FY25 (CAGR 72%), backed by capacity expansion from 4GW to 15GW over the same period. Consequently, blended EBITDA/Wp improved from INR 1.16/W to INR 3.81/W, reflecting improved cost efficiencies and stronger margin profile.

Going forward, we expect Waaree to sustain its strong growth momentum driven by continued capacity additions and deepening backward integration. We estimate revenue/EBITDA/PAT would compound at 34%/42%/40% to INR 351bn/78bn/70bn over FY26–FY28. This growth will be supported by module capacity expansion from 15GW in FY25 to 29GW in FY28, along with cell capacity ramp-up from 5.4GW to 15.4GW, enabling production spike from 7GW to 15GW over the same period.

We estimate EBITDA margin would peak at 25% in FY26E supported by operating leverage and initial benefits of backward integration, before moderating to 22% by FY28 amid rising industry competition and normalisation in spreads. Similarly, blended EBITDA/Wp is expected to peak at INR 5.64/W in FY26E and then moderate to INR 5.11/W by FY28E as pricing competition intensifies.

Waaree maintains a strong balance sheet position with net-cash of INR 68bn at end-FY25, providing flexibility to fund its ongoing expansion plans. We expect the company to maintain a healthy liquidity profile, with net cash projected to increase modestly to INR 78bn by FY28E, supporting future growth initiatives while preserving balance sheet strength.

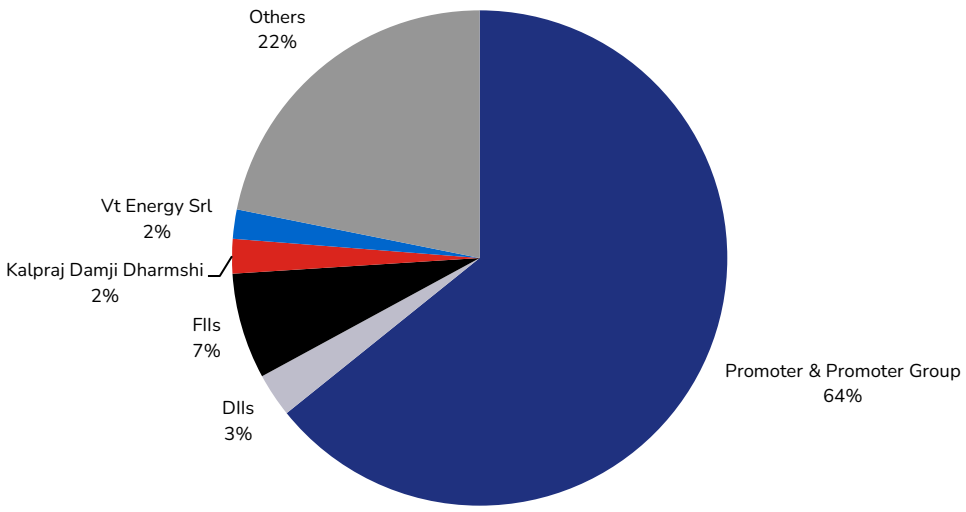
Management Overview

Exhibit 12: Board of directors and key management personnel

Name	Designation	Details
Mr Hitesh Chimanlal Doshi	Chairman and Managing Director	Mr Doshi has been with the company since 1999 and brings over 22 years of experience in the engineering and infrastructure industry. Mr Doshi is a Bachelor of Commerce and a Doctorate in Professional Entrepreneurship in Business Project Management from the European Continental University.
Mr Jignesh Rathod	CEO	Mr Rathod holds a degree from Gujarat University and was awarded a Doctorate in Management Studies. As Director of Operations since late 2024, Mr Rathod has been overseeing O&M, plant setup and operations across Waaree's manufacturing and utility facilities.
Mr Viren Chimanlal Doshi	Whole Time Director	Mr Doshi has been associated with the company since 2007, oversees engineering, procurement and construction for solar projects across Waaree and its subsidiaries.
Mr Hitesh Pranjivan Mehta	Whole-Time Director	Mr Mehta has been with Waaree since 2011. He leads strategic planning and goal-setting and has more than 23 years of experience in engineering, solar and oil industries. Mr Mehta is a Bachelor of Commerce from the University of Bombay and a member of the Institute of Chartered Accountants of India.
Mr Rajender Mohan Malla	Independent Director	Mr Malla has been with the company since 2019. During his prior stints, he was Director in various companies, including SIDBI Venture Capital Limited, IDBI Capital Markets and Securities Limited, and IDBI Asset Management Limited.
Ms Richa Manoj Goyal	Independent Director	Ms Goyal has been associated with Waaree since 2021. She is a certified trademarks agent and is currently the managing partner of the law firm 'Richa Goyal and Associates'. Ms Goyal is a B. Com. from H.A. Commerce College and Bachelor of Law from Gujarat University and a practicing company secretary.
Mr Rajinder Singh Loona	Independent Director	Mr Loona, a law graduate is a seasoned corporate lawyer with over four decades of experience in securities law, regulatory advisory, infrastructure, and banking. He has also held senior roles at SEBI and IDBI and represents clients before key tribunals and regulatory bodies.
Mr Mahesh Ramchand Chhabria	Independent Director	Mr Chhabria is a CA and commerce graduate from the University of Mumbai. He served as MD of Kirloskar Industries and held board positions across multiple Kirloskar Group companies. Earlier, he was a Partner at Actis and spent 13 years at Enam, where he last served as Co-Head of the Investment Banking division.
Ms Sonal Shrivastava	CFO	Ms Shrivastava is a seasoned professional with qualifications in accounting, treasury & strategic financial management. Ms Sonal Shrivastava, CFO of Waaree since Sept 2024, has nearly 27 years of domain expertise. As the former Group CFO at Vedanta and Regional CFO at Holcim (APAC, MENA, USA), she led finance, M&A and strategy across various global sectors.
Mr Rajesh Ghanshyam Gaur	Company Secretary & Compliance Officer	Mr Gaur is a Bachelor of Commerce and is a qualified Company Secretary (ICSI), with extensive expertise in corporate governance, secretarial affairs, and regulatory filings. Mr Rajesh Gaur, Company Secretary and Compliance Officer since May 2023, manages secretarial, compliance and investor relations. His prior stints in compliance includes a role at Ambuja Cements.

Source: Company, JM Financial

Exhibit 13: Shareholding pattern (%)



Source: BSE, JM Financial

Financial Tables (Consolidated)

Income Statement					(INR mn)
Y/E Mar	**FY24A**	**FY25A**	**FY26E**	**FY27E**	**FY28E**
Net Sales	113,976	144,445	240,336	318,575	351,101
Sales Growth (%)	68.8	26.7	66.4	32.6	10.2
Other Operating Income	-	-	-	-	-
Total Revenue	**113,976**	**144,445**	**240,336**	**318,575**	**351,101**
Cost of Goods Sold/Op. Exp	90,139	105,208	161,096	219,031	243,437
Personnel Cost	1,772	3,182	5,294	7,017	7,734
Other Expenses	6,322	8,839	14,707	19,495	21,485
EBITDA	**15,744**	**27,216**	**59,239**	**73,032**	**78,444**
EBITDA Margin (%)	13.8	18.8	24.6	22.9	22.3
EBITDA Growth (%)	88.6	72.9	117.7	23.3	7.4
Depn. & Amort.	2,768	4,025	5,378	9,773	15,484
EBIT	12,976	23,192	53,862	63,259	62,961
Other Income	2,352	4,016	5,812	3,186	10,533
Finance Cost	1,399	1,521	1,911	2,682	3,640
PBT before Excep. & Forex	13,929	25,687	57,763	63,762	69,854
Excep. & Forex Inc./Loss(-)	3,413	-40	-	-	-
PBT	17,342	25,646	57,763	63,762	69,854
Taxes	4,598	6,365	14,441	15,941	17,464
Extraordinary Inc./Loss(-)	-	-	-	-	-
Assoc. Profit/Min. Int.(-)	372	607	607	607	607
Reported Net Profit	12,372	18,674	42,715	47,214	51,783
Adjusted Net Profit	**12,372**	**18,674**	**42,715**	**47,214**	**51,783**
Net Margin (%)	10.9	12.9	17.8	14.8	14.7
Diluted Share Cap. (mn)	288	288	288	288	288
Diluted EPS (INR)	**43.0**	**64.9**	**148.5**	**164.1**	**180.0**
Diluted EPS Growth (%)	156.3	50.9	128.7	10.5	9.7
Total Dividend + Tax	-	-	-	-	-
Dividend Per Share (INR)	-	-	-	-	-

Source: Company, JM Financial

Balance Sheet					(INR mn)
Y/E Mar	**FY24A**	**FY25A**	**FY26E**	**FY27E**	**FY28E**
Shareholders Fund	41,485	95,953	138,668	185,882	237,665
Share Capital	2,630	2,873	2,873	2,873	2,873
Reserves & Surplus	38,249	91,919	134,634	181,848	233,632
Preference Share Capital	-	-	-	-	-
Minority Interest	607	1,161	1,161	1,161	1,161
Total Loans	3,173	9,395	12,166	24,822	31,309
Def. Tax Liab. / Assets (-)	-710	-1,138	-1,138	-1,138	-1,138
Other non-current liabilities / Lease Liabilities	15,229	11,806	11,806	11,806	11,806
Total - Equity & Liab.	**59,887**	**117,153**	**162,640**	**222,509**	**280,780**
Net Fixed Assets	24,906	54,691	67,868	127,455	156,821
Gross Fixed Assets	16,659	44,498	63,053	132,413	177,263
Intangible Assets	-	-	-	-	-
Less: Depn. & Amort.	5,166	8,647	14,024	23,797	39,281
Capital WIP	13,413	18,840	18,840	18,840	18,840
Investments	-	-	-	-	-
Current Assets	85,361	138,384	179,176	189,561	222,666
Inventories	25,855	26,921	43,906	58,199	64,141
Sundry Debtors	9,714	11,848	17,938	23,777	26,205
Cash & Bank Balances	1,214	5,098	95,153	85,406	110,141
Loans & Advances	247	114	114	114	114
Other Current Assets	48,331	94,403	22,065	22,065	22,065
Current Liab. & Prov.	52,879	79,907	88,390	98,492	102,692
Current Liabilities	5,234	6,992	7,034	7,034	7,034
Provisions & Others	47,645	72,915	81,356	91,459	95,658
Net Current Assets	27,247	51,485	83,752	84,035	112,940
Other Non Current Assets/ROU Assets	8,105	11,391	11,433	11,433	11,433
Total - Assets	**59,887**	**117,153**	**162,640**	**222,510**	**280,781**

Source: Company, JM Financial

Cash Flow Statement					(INR mn)
Y/E Mar	**FY24A**	**FY25A**	**FY26E**	**FY27E**	**FY28E**
Profit before Tax	17,342	25,646	57,763	63,762	69,854
Depn. & Amort.	2,768	4,025	5,378	9,773	15,484
Net Interest Exp. / Inc. (-)	-567	-2,880	-3,901	-503	-6,893
Inc (-) / Dec in WCap.	5,916	11,574	-23,745	-10,030	-4,170
Others	943	645	-	-	-
Taxes Paid	-3,351	-7,428	-14,441	-15,941	-17,464
Operating Cash Flow	**23,050**	**31,582**	**21,054**	**47,061**	**56,811**
Capex	-13,423	-32,741	-18,555	-69,360	-44,850
Free Cash Flow	9,627	-1,159	2,499	-22,299	11,961
Inc (-) / Dec in Investments	-77	231	-	-	-
Others	-19,902	-35,574	5,812	3,186	10,533
Investing Cash Flow	**-33,403**	**-68,084**	**-12,743**	**-66,174**	**-34,317**
Inc / Dec (-) in Capital	10,035	35,080	-	-	-
Dividend + Tax thereon	13	42	-	-	-
Inc / Dec (-) in Loans	416	6,221	11,924	12,655	6,488
Others	-1,359	-944	69,861	-3,290	-4,247
Financing Cash Flow	**9,105**	**40,399**	**81,786**	**9,366**	**2,241**
Inc / Dec (-) in Cash	**-1,247**	**3,898**	**90,097**	**-9,747**	**24,735**
Opening Cash Balance	2,461	1,201	5,057	95,153	85,406
Closing Cash Balance	1,214	5,098	95,153	85,406	110,141

Source: Company, JM Financial

Dupont Analysis					
Y/E Mar	**FY24A**	**FY25A**	**FY26E**	**FY27E**	**FY28E**
Net Margin (%)	10.9	12.9	17.8	14.8	14.7
Asset Turnover (x)	2.6	1.6	1.7	1.6	1.4
Leverage Factor (x)	1.5	1.3	1.2	1.2	1.2
RoE (%)	41.8	27.5	36.8	29.3	24.6

Source: Company, JM Financial

Key Ratios					
Y/E Mar	**FY24A**	**FY25A**	**FY26E**	**FY27E**	**FY28E**
BV/Share (INR)	142.1	329.5	478.1	642.2	822.2
ROIC (%)	172.8	100.4	96.7	52.4	33.2
ROE (%)	41.8	27.5	36.8	29.3	24.6
Net Debt/Equity (x)	-0.8	-0.7	-0.6	-0.3	-0.3
P/E (x)	72.7	48.1	21.0	19.0	17.4
P/B (x)	22.0	9.5	6.5	4.9	3.8
EV/EBITDA (x)	54.9	30.6	13.8	11.5	10.5
EV/Sales (x)	7.6	5.8	3.4	2.6	2.3
Debtor days	31	30	27	27	27
Inventory days	83	68	67	67	67
Creditor days	-	-	-	-	-

Source: Company, JM Financial

Premier Energies | REDUCE

Credible integrated proxy for India's solar momentum

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Premier Energies (PEL) is among India's leading integrated solar PV cell and module manufacturers with installed cells/module capacity of 3.6/11.1GW. As much as 7GW TOPCon cell and 10GW ingot–wafer facilities are under construction and will commission in phases by Dec'28E. We expect PEL to sustain growth momentum led by continued expansion, deeper integration (cell-to-module ratio of 95% by FY27E) and an order book of INR 137bn (9.4GW, 60% cells, 100% domestic). Production is expected to scale up to 8.2GW (modules) and 6.6GW (cells) by FY28E resulting in revenue/EBITDA/PAT of INR 164bn/39bn/23bn, a CAGR of 36%/29%/35% over FY26–28E. However, blended EBITDA/Wp is expected to moderate to INR 4.68 by FY28E versus INR 6.35 in FY26E. Initiating coverage with REDUCE and TP of INR 865 (-10% downside potential), valuing the stock at 10x FY28E EV/EBITDA recognising its potential to emerge as one of the largest integrated solar value chain players.

- **Credentials**: Incorporated in 1995, PEL is one of India's leading integrated solar PV cell and module manufacturers with installed capacity of 3.6GW for solar cells and 5.4GW for solar modules in Telangana and Andhra Pradesh. The company has an order book of INR 137.235bn (9.4GW, 60% cells, predominantly domestic focus).

- **The plans**: As part of its expansion, PEL commissioned a 5.6GW TOPCon module facility in Mar'26. The company is also developing a 7GW TOPCon solar cell manufacturing facility, which will be commissioned in phases: 4.8GW by Jun'26 and 2.2GW by Sep'26. Another 10GW ingot–wafer manufacturing facility is under construction and is slated for commissioning in phases by Dec'28. With this expansion, PEL is expected to achieve a cell-to-module capacity ratio of 95% by FY27E, significantly higher than most domestic peers.

- **Performance so far**: PEL turned around over FY22–25 supported by strong demand momentum, operating leverage and increased integration. Revenue/EBITDA compounded at a robust 106%/292% to INR 65bn/18bn over FY22–25. PAT too turned positive to INR 9.4bn in FY25 from a loss of INR 144mn in FY22. EBITDA margin expanded from 4% in FY22 to 27% in FY25 driven by higher utilisation, improved product mix and benefits from backward integration to cells.

- **Outlook and valuation**: We expect PEL to sustain strong growth momentum led by continued capacity additions and deeper integration across the value chain. Production is thus expected to scale up to 8.2GW (modules) and 6.6GW (cells) by FY28E, lifting revenue/EBITDA/PAT to INR 164bn/39bn/23bn, a CAGR of 36%/29%/35% over FY26–28E. We expect EBITDA margin to peak at 29% in FY26E supported by operating leverage and scale benefits from recently commissioned capacities, before gradually moderating to 24% by FY28E amid intensifying industry competition and spread normalisation. Similarly, blended EBITDA/Wp is expected to peak at INR 6.35/W in FY26E and moderate to INR 4.68/W by FY28E. We value PEL at 10x FY28E EV/EBITDA, recognising its potential to emerge as one of the largest integrated solar manufacturers, yielding a TP of INR 865 (-10% downside potential); initiate at REDUCE as current valuations limit near-term upside potential.

- **Key risks**: PEL's strategy for capacity expansion and gradual integration is achievable. That said, its risks are external, which may emerge from unexpected and sharp correction in cell/module prices, policy uncertainty (US tariffs/ALMM changes) and slowdown in RE capacity additions.

Recommendation and Price Target	
Current Reco.	REDUCE
Previous Reco.	NA
Current Price Target (12M)	865
Upside/(Downside)	-10%
Previous Price Target	N/A
Change	NA

Key Data – PREMIERE IN EQUITY	
Current Market Price	INR960
Market cap (bn)	INR434.7/US$4.7
Free Float (%)	27.2
Shares in issue (mn)	453.0
Diluted share (mn)	453.0
3-mon avg daily val (mn)	INR2,111.9/US$22.9
52-week range	INR1,164/660
Sensex/Nifty	77,563/23,997
INR/US$	92.6

Price Performance

%	1M	6M	12M
Absolute	32.6	-5.8	13.2
Relative*	32.6	-0.2	7.8

*To the NSE Nifty 50

Financial Summary (INR mn)

Y/E Mar	FY24A	FY25A	FY26E	FY27E	FY28E
Net Sales	31,438	65,187	81,668	146,949	164,274
Sales Growth (%)	120.1	107.4	25.3	79.9	11.8
EBITDA	4,778	17,809	23,457	32,720	38,628
EBITDA Margin (%)	15.2	27.3	28.7	22.3	23.5
Adjusted Net Profit	2,314	9,371	14,651	19,240	23,009
Diluted EPS (INR)	5.1	20.7	32.3	42.5	50.8
Diluted EPS Growth (%)	-	305.1	56.3	31.3	19.6
ROIC (%)	23.3	44.8	41.5	35.9	27.0
ROE (%)	43.7	54.0	41.2	36.7	31.3
P/E (x)	187.9	46.4	29.7	22.6	18.9
P/B (x)	67.2	15.4	10.1	7.0	5.1
EV/EBITDA (x)	93.1	24.3	18.4	13.4	11.7
Dividend Yield (x)	-	-	-	-	-

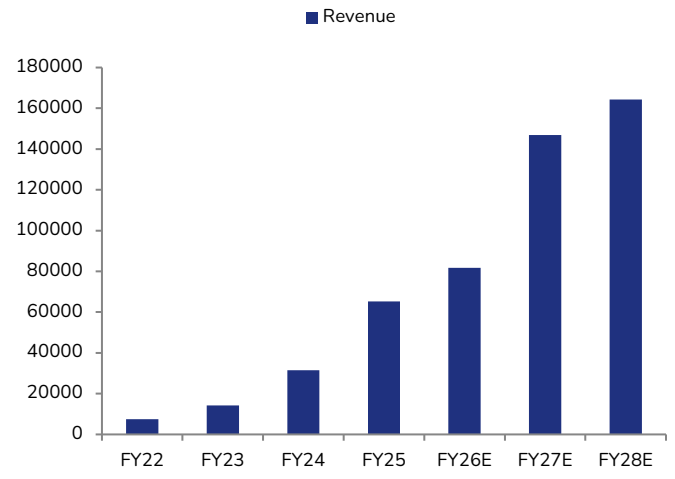
Source: Company data, JM Financial. Note: Valuations as of April 08, 2026

JM Financial Research is also available on: Bloomberg - JMFR <GO>, FactSet, LSEG and S&P Capital IQ

Please see Appendix I at the end of this report for Important Disclosures and Disclaimers and Research Analyst Certification.

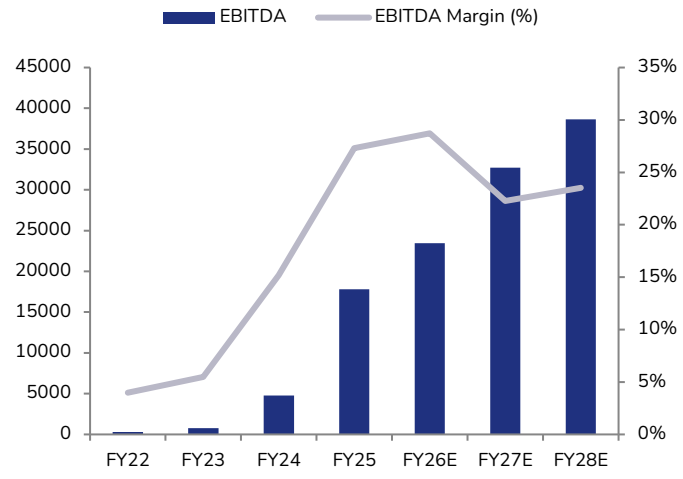
Focus Charts

Exhibit 1: Revenue (INR mn)



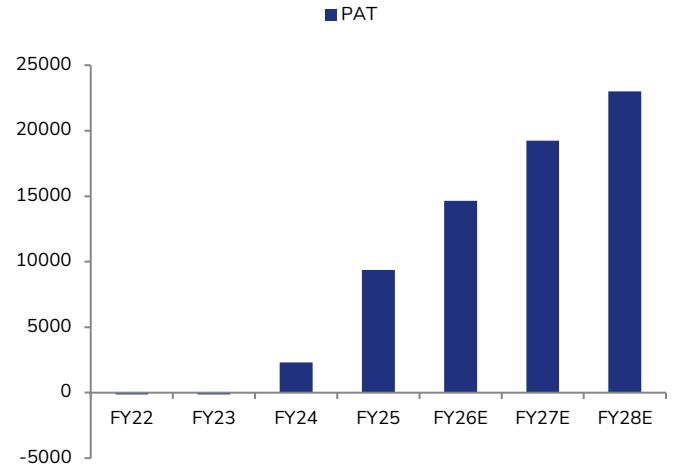
Source: Company, JM Financial

Exhibit 2: EBITDA (INR mn) and EBITDA margin (%)



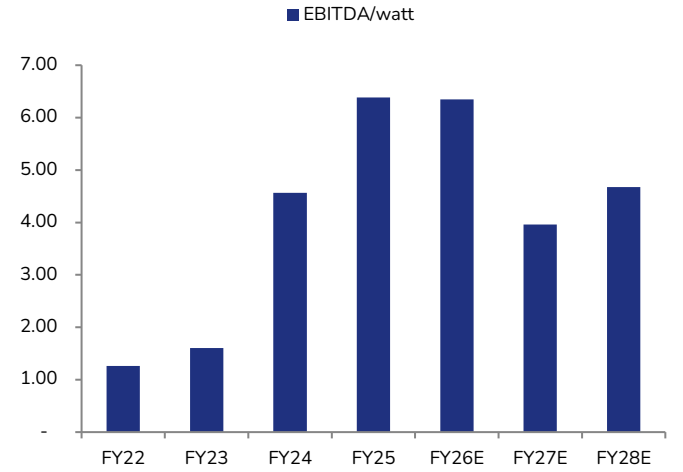
Source: Company, JM Financial

Exhibit 3: PAT (INR mn)



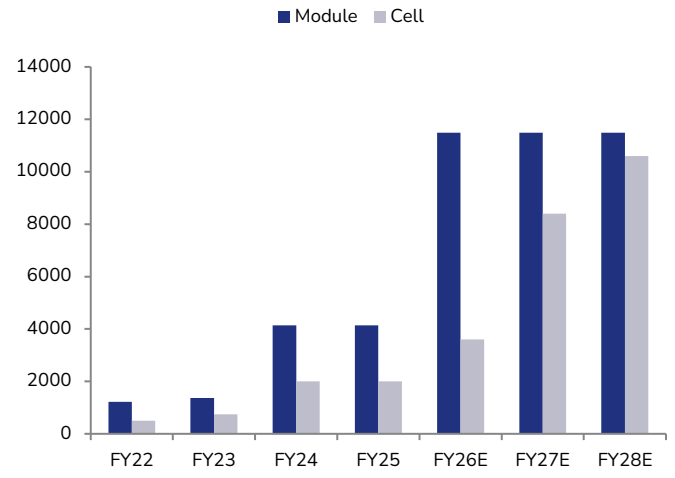
Source: Company, JM Financial

Exhibit 4: EBITDA/Wp



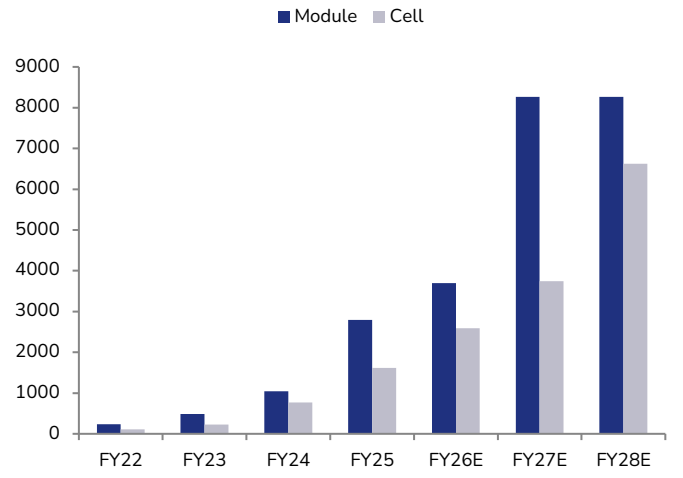
Source: Company, JM Financial

Exhibit 5: Module and cell capacity (MW)



Source: Company, JM Financial

Exhibit 6: Module and cell production (MW)



Source: Company, JM Financial

Investment Thesis

Integrated PV player with strong domestic position

Premier is among India's leading integrated solar PV manufacturers with over two decades of operating experience across solar cell and module manufacturing as well as EPC services. At end-FY26, the company had installed solar cell capacity of 3.6GW and solar module capacity of 5.4GW, positioning it as a meaningful player in India's domestic solar ecosystem.

Its integrated manufacturing capabilities support operational efficiencies and enable participation across key segments of the solar value chain. The company's strong domestic focus lends visibility on demand stability, although limited export exposure may moderate diversification benefits vis-a-vis some larger peers.

Robust order book provides steady revenue visibility

PEL maintains a healthy order pipeline supported by strong domestic demand from leading developers and independent power producers. At end-Dec'25, the company reported an order book of INR 137bn, equivalent to 9.4GW, providing revenue visibility over the medium term.

The order mix is largely skewed toward solar cell supplies, accounting for 60% of order value, with the remaining 40% from modules, reflecting increasing demand for domestically manufactured high-efficiency components. The company's predominantly domestic order book reduces exposure to export-related volatility while the increasing share of TOPCon-based products highlights its gradual transition towards advanced technology offerings.

Significant capacity expansion to enhance integration

PEL is undertaking a sizeable capacity expansion programme aimed at strengthening backward integration and improving its competitive positioning. The company commissioned a 5.6GW TOPCon module facility at Seetharampur in March 2026 and is developing a 7GW TOPCon solar cell facility at Naidupeta, Andhra Pradesh, which would be commissioned in phases through FY27E.

Post-expansion, module/cell capacity is expected to reach 11.5/10.6GW by FY28E, resulting in a favourable cell-to-module capacity ratio of 95%, among the highest in the domestic industry. While these expansions are expected to improve integration levels and operational efficiency, timely execution and ramp-up remain key the variables to monitor.

Financial performance and valuation

We expect PEL to deliver steady growth driven by ongoing capacity additions and improving scale efficiencies, with module/cell production projected to touch 8.2GW/6.6GW by FY28E, translating to revenue/EBITDA/PAT of INR 164bn/39bn/23bn, implying CAGR of 36%/29%/35% over FY26–28E. We reckon EBITDA margin would peak at 29% in FY26 before moderating to 24% by FY28E amid increasing industry competition and normalisation in spreads.

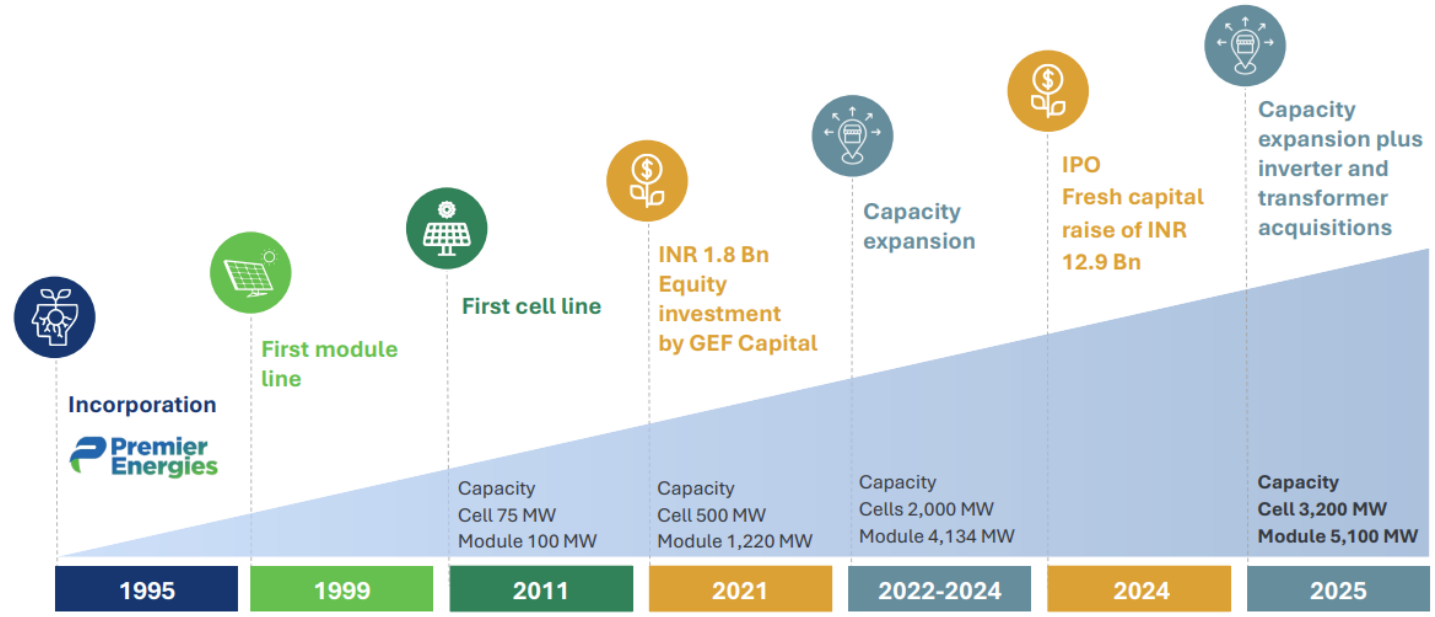
Despite favourable growth prospects and improving integration levels, current valuations appear to factor in a significant portion of anticipated growth. We value the company at 10x FY28E EV/EBITDA, yielding a TP of INR 865, implying 10% downside potential. Initiating coverage with a **REDUCE** rating, reflecting limited near-term upside potential at current valuations.

About the Company

Incorporated in 1995, Premier Energies Limited (PEL) is one of India's leading integrated solar photovoltaic (PV) cell and module manufacturers with over two decades of experience in the solar manufacturing industry. The company manufactures solar PV cells and modules and also undertakes EPC services for solar power plants. At end-FY26, PEL had installed manufacturing capacity of 3.6GW for solar cells and 5.4GW for solar modules, with manufacturing facilities located in Telangana and Andhra Pradesh. The company has been gradually transitioning its product portfolio toward higher-efficiency technologies such as TOPCon alongside its established Mono PERC platform.

PEL is also listed under the Approved List of Models and Manufacturers (ALMM) issued by the Ministry of New and Renewable Energy (MNRE), with 3.7GW of module capacity under ALMM-I and 1.9GW of cell capacity under ALMM-II. The company plans to undertake significant capacity expansion –7GW of solar cell capacity at Naidupeta and 5.6GW of module capacity at Seetharampu – thereby scaling up its manufacturing footprint and strengthening its presence across domestic and export solar markets.

Exhibit 7: Premier – Milestones since inception



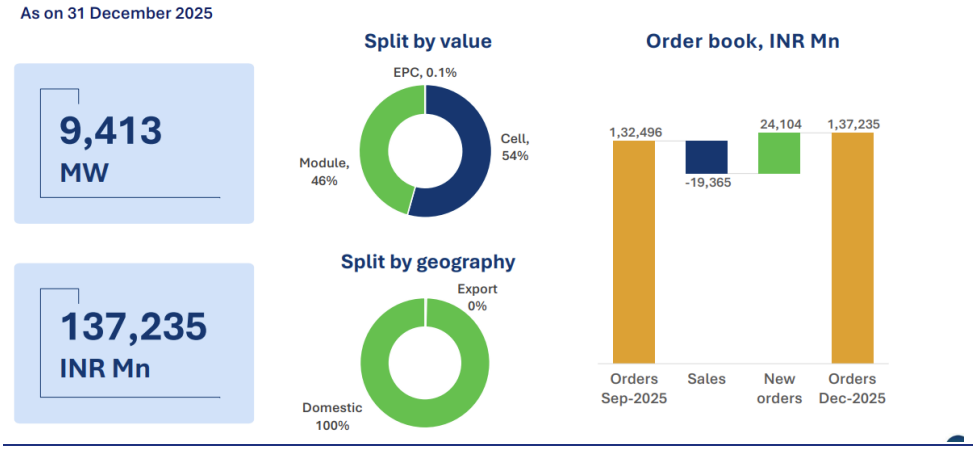
Source: Company, JM Financial

Order book

Premier Energies Limited has a robust and growing order pipeline driven by strong domestic demand for solar equipment. At end-Dec'25, the company's order book stood at INR 137.235bn, equivalent to 9.4GW, providing healthy revenue visibility for the next few years. The order book has been supported by steady inflows from leading domestic solar developers and IPPs, reflecting the company's strong positioning in the Indian solar manufacturing ecosystem.

The order mix is largely skewed toward solar cell supplies, which account for 60% of its order book value; solar modules contribute the remainder 40%. The company has consciously maintained a predominantly domestic focus, with nearly the entire order book originating from India and minimal exposure to export markets. In addition, the technology mix in the order pipeline is gradually shifting toward high-efficiency TOPCon products as the company ramps up its advanced cell manufacturing capabilities.

Exhibit 8: Order book details



Source: Company

Manufacturing capacity

PEL has significantly expanded its manufacturing footprint over the past few years, positioning itself as a leading integrated solar cell and module manufacturer in India. At end-Jan'26, the company had installed manufacturing capacity of 3.6GW for solar cells and 5.4GW for solar modules, with facilities located in Telangana and Andhra Pradesh. The manufacturing base includes a 1.2GW high-efficiency TOPCon solar cell line at Fab City, Hyderabad, which is currently operating at over 80% utilisation and delivering cell efficiencies exceeding 25%. Premier Energies has rapidly scaled up capacity from 0.8GW of cell capacity and 1.4GW of module capacity in FY23, reflecting strong execution and robust demand for domestically manufactured solar equipment.

The company operates multiple manufacturing lines in Rangareddy district, Telangana (around 15 km from Hyderabad), including facilities at Raviryala and Maheshwaram that house module and cell production lines, including a 1.4 GW TOPCon module facility. It is undertaking significant expansion with planned capex of INR 110bn to more than double its manufacturing scale. The company is targeting 10.6GW of solar cell capacity and 11.1GW of module capacity by Sep'26.

As part of this expansion, a 5.6GW TOPCon module manufacturing facility (150 acres) at Seetharampur (Telangana) is commissioned in March 2026. Alongside, the company is developing a 7GW TOPCon solar cell manufacturing facility at Naidupeta, Andhra Pradesh, which will be commissioned in phases with 4.8GW expected by Jun'26 and the remaining 2.2GW by Sep'26. The Naidupeta complex, spread across 269 acres, will also house a 10GW ingot–wafer manufacturing facility slated for commissioning in phases by Dec'28.

With these expansion, PEL is expected to achieve a cell-to-module capacity ratio of 95% by FY27E, significantly higher than most domestic peers and favorable in the context of the implementation of ALMM-II norms. In addition, the company is pursuing backward integration across the solar value chain through development of upstream ingot and wafer manufacturing capacity, which is expected to strengthen supply-chain security, reduce dependence on imports and improve long-term cost competitiveness.

Exhibit 9: Brownfield expansion plans

Brownfield expansion of cell and module capacity at existing sites through installation of additional equipment using existing utilities

Cells 400 MW (total 3.6 GW)

Modules 350 MW (total 5.4 GW)

COD – January 2026

Total capital expenditure – INR 1,010 Mn

Funding – Internal accruals

Source: Company

Exhibit 10: Cell and module expansions

Source: Company

Technology

PEL focuses on high-efficiency photovoltaic technologies to enhance module performance and energy yield. The company currently manufactures bifacial monocrystalline solar cells based on the Mono-PERC technology platform using M10 (182 mm) wafer formats, with average cell efficiencies of 23–23.5%. These high-efficiency cells are used in the production of both monofacial and bifacial solar modules across multiple power output ranges, enabling the company to cater to utility-scale as well as commercial and industrial solar applications.

In line with the industry's transition toward next-generation cell architectures, the company is gradually shifting its technology mix toward TOPCon (Tunnel Oxide Passivated Contact) technology. Premier Energies has commissioned a 1.2GW TOPCon solar cell manufacturing line in Hyderabad, targeting cell efficiencies of up to 25%. In addition, the company currently uses a combination of in-house Mono-PERC cells and externally sourced TOPCon cells for module manufacturing. The adoption and scale-up of TOPCon technology is expected to improve module efficiency, enhance product reliability and support higher energy yields for solar projects while keeping the company aligned with evolving global trends in solar cell manufacturing.

EPC

PEL undertakes EPC activities for solar power projects through its subsidiary Premier Solar Powertech Private Limited (PSPPL). The EPC business complements the company's core manufacturing operations by enabling it to offer integrated solar solutions to project developers. The segment contributed 4% to the company's revenue in FY25.

PEL provides EPC services across a range of solar project formats, including ground-mounted, rooftop, floating, canal-top, canal-bank and hybrid solar installations. This diversified execution capability allows the company to cater to multiple end-use segments across the solar ecosystem. In addition to EPC services, the company is gradually expanding into adjacent equipment segments such as battery packs, inverters and transformer manufacturing as part of its strategy to broaden its presence across the solar value chain.

Other businesses

PEL is gradually expanding beyond its core solar manufacturing business into adjacent power equipment and energy storage segments as part of its strategy to build a broader clean energy platform. The company is diversifying into allied verticals such as BESS, solar inverters and transformer manufacturing—segments that benefit from strong structural tailwinds, including rising renewable energy deployment, grid infrastructure upgrades and increasing policy support for domestic manufacturing.

In the energy storage segment, PEL plans to establish a lithium-ion battery assembly facility in Pune with planned capacity of 12GWh under a cell-to-pack configuration. The first phase of 6GWh is expected to be operational by Jun'26 while the remaining 6GWh is targeted to come online by FY28. The project will involve estimated capex of INR 6bn, with INR 3bn expected to be deployed by Jun'26 and the balance over following months. As this will be the company's first manufacturing line in the battery segment, management expects a gradual ramp-up with initial production of 2–3GWh targeted in FY27. The company has also built a dedicated team and is engaging with IPPs to secure initial orders.

PEL has also expanded into the solar inverter segment through the acquisition of a majority stake in KSolare Energy Private Limited, a Pune-based inverter manufacturer. The existing facility has annual production capacity of 0.5mn inverters, which is expected to increase to 1mn units by Dec'26 through brownfield expansion. Alongside, the company has acquired a controlling stake in Transcon Industries, a transformer manufacturer with more than two decades of industry experience. Transcon has manufacturing capacity of 2.5GVA, which is expected to expand significantly to 16.75GVA by Jul'26, with a strategic focus on higher-value medium and extra-high voltage transformer segments.

Overall, these initiatives are aimed at strengthening PEL's presence across the broader power equipment ecosystem and capturing opportunities emerging from the rapid growth in renewable energy deployment and grid infrastructure investments in India.

Exhibit 11: Recent acquisitions – A snapshot

TRANSCON

Acquisition completed

50% of the consideration value paid on 23 December 2025, balance payment expected by Feb-2026

Operational update

- Capacity expansion on track – additional 4.25 GVA capacity estimated by Feb-2026 and 10 GVA by Jul-2026
- Current orderbook – INR 1,900 Mn

Financial results

INR Mn	9M FY2026	FY 2025
Revenue	3,318	3,428
EBITDA	633	316
PAT	352	231

KSolare

Acquisition update

Final documentation and transaction completion expected by Feb-2026

Operational update

- Brownfield site ready for a 1 million inverter capacity (3 GW per annum)
- Design and engineering work in progress
- Estimated COD – Dec-2026

Source: Company

Financial Performance

PEL demonstrated a sharp turnaround in financial performance over FY22–25 supported by strong demand momentum, operating leverage and increased backward integration into cell manufacturing. Revenue/EBITDA compounded at a robust 106%/292% to INR 65bn/18bn over FY22–25. The company also reported a significant turnaround in profitability, with PAT turning positive to INR 9.4bn in FY25 from a loss of INR 144mn in FY22. EBITDA margin expanded materially from 4% in FY22 to 27% in FY25 driven by higher utilisation, improved product mix and benefits from cell backward integration. The growth was supported by capacity expansion, with module and cell capacities increasing from 1.2GW/0.5GW in FY22 to 4GW/2GW in FY25, enabling the company to capitalise on rising domestic solar demand.

We expect PEL to sustain strong growth momentum led by continued capacity additions and deeper integration across the value chain. We estimate its revenue/EBITDA/PAT would compound at 36%/29%/35% to INR 164bn/39bn/23bn over FY26–28E. This growth will be driven by a significant capacity ramp-up with module capacity expected to increase from 4.1GW in FY25 to 11.5GW in FY28E, and cell capacity from 2GW to 10.6GW over the same period. With these additions, production is expected to scale up to 8.2GW (modules) and 6.6GW (cells) by FY28E, supporting revenue growth and improved capacity utilisation. We expect EBITDA margin to peak at 29% in FY26 supported by operating leverage and scale benefits from recently commissioned capacities, before gradually moderating to 24% by FY28E amid intensifying industry competition and normalisation of spread. Similarly, blended EBITDA/Wp is expected to peak at INR 6.35/W in FY26 and moderate to INR 4.68/W by FY28E, reflecting increased competitive intensity and industry-wide capacity additions.

On the balance sheet front, the company reported a net debt position of INR 1.1bn at end-FY25, reflecting ongoing expansion investments. Going forward, we expect leverage to increase as the company undertakes significant capacity additions with net debt projected to rise to INR 17bn by FY28E. Nevertheless, strong operating cash flows and improving profitability are expected to support funding requirements and maintain balance sheet stability over medium term.

Management Overview

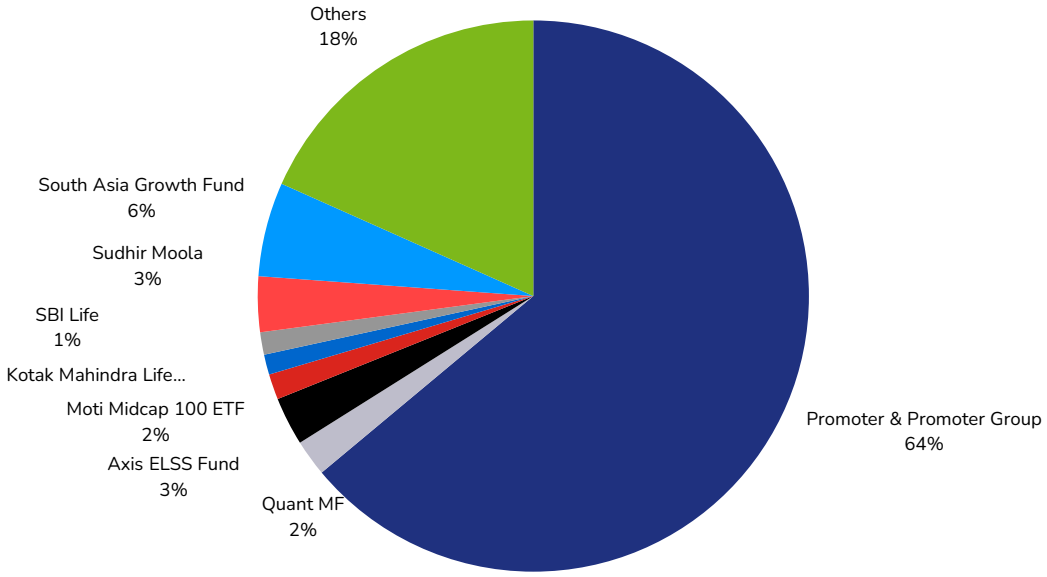
Exhibit 12: Board of directors and KMP

Name	Designation	Details
Mr Surender Pal Singh Saluja	Chairman	Mr Saluja provides strategic advice to the Board and develops and executes business strategies. He was awarded the National Award for Outstanding Entrepreneurship in Micro and Small Enterprises by the Ministry of Micro, Small and Medium Enterprises, Government of India, in 2007. Mr Saluja is a Bachelor of Engineering (Mechanical) from Karnataka University (Dharwad, Karnataka).
Mr Chiranjeev Singh Saluja	Managing Director	Mr Saluja has been associated with the company since 1997 and is responsible for the overall operations of the company. He was also honoured with a professional doctorate in global leadership and management by the European International University, Paris.
Ms Revathi Rohini Buragadda	Executive Director	Ms Buragadda oversees indirect taxation, government relations and general insurance and its subsidiaries. She previously served as a Deputy Commissioner of Commercial Taxes with the Andhra Pradesh government. Ms Buragadda is a Bachelor of Science (Agriculture) from Andhra Pradesh Agricultural University.
Mr Sudhir Moola	Whole-time Director	Mr Moola is responsible for strategic and capital expansion plans across the company and its subsidiaries. Mr Moola is a B. Tech. (Electronics and Communication Rngineering) from JNTU (Hyderabad), MS (Electrical) from Colorado State University, USA and PGDBM, Indian School of Business, Hyderabad.
Mr Nand Kishore Khandelwal	Group Chief Financial Officer	Mr Khandelwal is responsible for the finance function, strategic planning and information technology. He has been associated with the company since September 1, 2023. Mr Khandelwal is an associate member of the Institute of Chartered Accountants of India. He was previously associated with Param Industries Limited, Dukes Products (India) Limited, Alumeco India Extrusion Limited, and Pitti Engineering Limited.
Mr Ravella Sreenivasa Rao	Company Secretary	Mr Rao has been associated with PEL since March 24, 2022. Mr Rao was previously associated with Keerthi Industries Limited, Pridhvi Asset Reconstruction and Securitisation Company Limited, Tecumseh Products India Private Limited and SMS Pharmaceuticals Limited.
Mr Ragunathan Kannan	Independent Director	Mr Kannan has been associated with PEL since March 12, 2024. He is a CA with K Vijayaraghavan & Associates LLP, Chartered Accountants, where he has been handling acquisition/divestiture transaction consulting, risk evaluation, M&A, audits and supply chain evaluations.
Ms Priyanka Gulati	Independent Director	Ms Gulati has been associated with PEL since March 12, 2024, and is an associate of the Institute of the Chartered Accountants of India. Ms Gulati is currently a partner at Grant Thornton Bharat LLP, and is also one of the co-founders of Manthan Management Solutions. She served as a manager in Accenture Services Private Limited.
Mr Nishith Mehta	Independent Director	Mr Mehta leads the Risk and Compliance Practice at Trilegal, with a focus on regulatory strategy, governance and control frameworks for financial institutions. Over a career spanning 25 years, Nishith has held senior compliance roles at HSBC, Kotak Mahindra group (a JV with Goldman Sachs) and Edelweiss group.
Mr Uday Sudhir Pilani	Independent Director	Mr Pilani has been associated with PEL since March 18, 2020. He is a Bachelor of Commerce from Osmania University, Hyderabad. Mr Pilani previously served as a director on the board of PEL's subsidiary PSPPL.

Source: Company

Shareholding pattern

Exhibit 13: Shareholding pattern (%)



Source: BSE, JM financial

Financial Tables (Consolidated)

Income Statement					(INR mn)
Y/E Mar	**FY24A**	**FY25A**	**FY26E**	**FY27E**	**FY28E**
Net Sales	31,438	65,187	81,668	146,949	164,274
Sales Growth (%)	120.1	107.4	25.3	79.9	11.8
Other Operating Income	-	-	-	-	-
Total Revenue	**31,438**	**65,187**	**81,668**	**146,949**	**164,274**
Cost of Goods Sold/Op. Exp	23,910	40,891	50,861	101,004	110,862
Personnel Cost	615	1,057	1,633	2,939	3,285
Other Expenses	2,135	5,431	5,717	10,286	11,499
EBITDA	**4,778**	**17,809**	**23,457**	**32,720**	**38,628**
EBITDA Margin (%)	15.2	27.3	28.7	22.3	23.5
EBITDA Growth (%)	510.2	272.7	31.7	39.5	18.1
Depn. & Amort.	961	4,975	5,153	7,356	8,234
EBIT	3,817	12,834	18,304	25,364	30,394
Other Income	275	1,333	3,267	2,939	3,285
Finance Cost	1,212	1,774	2,036	2,649	3,000
PBT before Excep. & Forex	2,880	12,393	19,535	25,654	30,679
Excep. & Forex Inc./Loss(-)	-	-	-	-	-
PBT	2,880	12,393	19,535	25,654	30,679
Taxes	580	3,028	4,884	6,413	7,670
Extraordinary Inc./Loss(-)	-	-	-	-	-
Assoc. Profit/Min. Int.(-)	13	7	-	-	-
Reported Net Profit	2,314	9,371	14,651	19,240	23,009
Adjusted Net Profit	**2,314**	**9,371**	**14,651**	**19,240**	**23,009**
Net Margin (%)	7.4	14.4	17.9	13.1	14.0
Diluted Share Cap. (mn)	453	453	453	453	453
Diluted EPS (INR)	**5.1**	**20.7**	**32.3**	**42.5**	**50.8**
Diluted EPS Growth (%)	-	305.1	56.3	31.3	19.6
Total Dividend + Tax	-	-	-	-	-
Dividend Per Share (INR)	-	-	-	-	-

Source: Company, JM Financial

Balance Sheet					(INR mn)
Y/E Mar	**FY24A**	**FY25A**	**FY26E**	**FY27E**	**FY28E**
Shareholders Fund	6,599	28,221	42,871	62,111	85,121
Share Capital	263	451	451	451	451
Reserves & Surplus	6,205	27,770	42,420	61,661	84,670
Preference Share Capital	-	-	-	-	-
Minority Interest	130	-	-	-	-
Total Loans	13,922	18,935	21,166	24,234	29,949
Def. Tax Liab. / Assets (-)	-353	-2,376	-1,899	-1,899	-1,899
Other non-current liabilities / Lease Liabilities	521	1,336	1,336	1,336	1,336
Total - Equity & Liab.	**21,042**	**48,492**	**65,373**	**87,681**	**116,405**
Net Fixed Assets	12,084	11,547	24,598	43,163	75,620
Gross Fixed Assets	13,820	15,453	36,078	61,998	102,690
Intangible Assets	-	-	-	-	-
Less: Depn. & Amort.	1,934	6,326	11,480	18,835	27,070
Capital WIP	198	2,420	-	-	-
Investments	148	154	154	154	154
Current Assets	23,050	55,625	62,433	75,887	74,731
Inventories	10,093	13,256	14,626	26,318	29,421
Sundry Debtors	6,090	8,009	8,832	15,892	17,765
Cash & Bank Balances	2,570	8,026	24,639	19,341	13,209
Loans & Advances	9	18	18	18	18
Other Current Assets	4,288	26,315	14,318	14,318	14,318
Current Liab. & Prov.	14,193	19,915	22,416	32,126	34,703
Current Liabilities	10,977	12,942	15,443	25,153	27,730
Provisions & Others	3,216	6,973	6,973	6,973	6,973
Net Current Assets	7,626	32,415	36,722	40,466	36,732
Other Non Current Assets/ROU Assets	1,318	3,895	3,895	3,895	3,895
Total - Assets	**21,042**	**48,492**	**65,375**	**87,682**	**116,406**

Source: Company, JM Financial

Cash Flow Statement					(INR mn)
Y/E Mar	**FY24A**	**FY25A**	**FY26E**	**FY27E**	**FY28E**
Profit before Tax	2,894	12,400	19,535	25,654	30,679
Depn. & Amort.	961	4,975	5,153	7,356	8,234
Net Interest Exp. / Inc. (-)	703	328	-1,231	-290	-285
Inc (-) / Dec in WCap.	-3,688	-1,529	-9,389	-9,041	-2,399
Others	283	1,301	-	-	-
Taxes Paid	-252	-3,994	-4,884	-6,413	-7,670
Operating Cash Flow	**901**	**13,480**	**9,184**	**17,265**	**28,559**
Capex	-4,514	-6,202	-18,205	-25,920	-40,692
Free Cash Flow	-3,613	7,279	-9,021	-8,655	-12,133
Inc (-) / Dec in Investments	-1,562	-19,874	-	-	-
Others	1,610	1,973	3,267	2,939	3,285
Investing Cash Flow	**-4,466**	**-24,103**	**-14,938**	**-22,981**	**-37,407**
Inc / Dec (-) in Capital	-	12,389	-	-	-
Dividend + Tax thereon	-	-	-	-	-
Inc / Dec (-) in Loans	6,287	5,012	11,929	3,067	5,715
Others	-798	-1,323	10,438	-2,649	-3,000
Financing Cash Flow	**5,489**	**16,078**	**22,367**	**418**	**2,715**
Inc / Dec (-) in Cash	**1,923**	**5,456**	**16,613**	**-5,298**	**-6,133**
Opening Cash Balance	647	2,570	8,026	24,639	19,341
Closing Cash Balance	2,570	8,026	24,639	19,341	13,209

Source: Company, JM Financial

Dupont Analysis					
Y/E Mar	**FY24A**	**FY25A**	**FY26E**	**FY27E**	**FY28E**
Net Margin (%)	7.4	14.4	17.9	13.1	14.0
Asset Turnover (x)	1.8	1.8	1.4	1.9	1.6
Leverage Factor (x)	3.3	2.1	1.7	1.5	1.4
RoE (%)	43.7	54.0	41.2	36.7	31.3

Source: Company, JM Financial

Key Ratios					
Y/E Mar	**FY24A**	**FY25A**	**FY26E**	**FY27E**	**FY28E**
BV/Share (INR)	14.3	62.3	94.6	137.1	187.9
ROIC (%)	23.3	44.8	41.5	35.9	27.0
ROE (%)	43.7	54.0	41.2	36.7	31.3
Net Debt/Equity (x)	1.5	0.0	-0.1	0.1	0.2
P/E (x)	187.9	46.4	29.7	22.6	18.9
P/B (x)	67.2	15.4	10.1	7.0	5.1
EV/EBITDA (x)	93.1	24.3	18.4	13.4	11.7
EV/Sales (x)	14.1	6.7	5.3	3.0	2.7
Debtor days	71	45	39	39	39
Inventory days	117	74	65	65	65
Creditor days	113	54	54	54	54

Source: Company, JM Financial

Emmvee Photovoltaic Power | BUY

An underappreciated technology leader in the crowd

Emmvee is one of India's leading integrated solar equipment players with many firsts to its credit. It was the first to be enlisted in ALMM for both TOPCon modules and cells, enabling it to consistently command an industry-best EBITDA margin of 31%. Modules/cells capacity of 10.3GW/2.9GW and order book of 9.3GW (50% C&I, 20% DCR) gives healthy revenue visibility through FY28E. In the medium term, it plans to backward integrate further by increasing its cell/module capacity to 8.9GW/16.3GW by FY28E and plans to foray into ingot and wafers; it does not intend to diversify into adjacent segments. We expect cell/module production to increase to 5GW/8GW by FY28E, resulting in revenue/EBITDA/PAT growing at an estimated CAGR of 72%/60%/65% over FY25–28E. We initiate coverage on Emmvee with a BUY rating and a TP of INR 291 (31% upside), valuing it at 7.5x FY28E EV/EBITDA, reflecting its strong technology credentials and re-rating potential waiting for scale expansion and visibility on ingots and wafers.

- **The credentials**: Emmvee Photovoltaic (Emmvee) is one of India's leading integrated solar equipment manufacturers with many firsts to its credit; it was the first to be enlisted in ALMM for both TOPCon modules and TOPCon cells. The company started with solar water heating systems and entered the solar PV module manufacturing segment in 2007. Over the years, it has emerged as one of the leading pure-play integrated solar manufacturers in India. At end-Dec'25, the company had installed manufacturing capacity of 10.3GW/2.9GW for solar modules/cells. An order book of 9.3GW (4.5GW TOPCon cells, INR 93.4bn, 50% C&I, 20% DCR) provides healthy revenue visibility through FY28E.

- **The plans**: Emmvee is increasing its cell/module capacity to 8.9GW/16.3GW by FY28E and has plans for ingot and wafer manufacturing, while selectively localising aluminium frames, encapsulants and junction boxes. Notably, it remains focused on the core solar PV supply chain and does not intend to diversify into adjacent segments such as inverters, transformers or BESS.

- **Performance so far**: Emmvee has demonstrated a sharp scale-up in performance over FY23–25 supported by capacity expansion and increasing backward integration. Revenue/EBITDA/PAT increased from INR 6bn/563mn/90mn in FY23 to INR 23bn/7bn/3.7bn in FY25. EBITDA margin expanded from 9% in FY23 to 31% in FY25 (industry best), driven by commissioning of cell capacity of 2.9GW in FY25.

- **Investment thesis and valuation**: We expect cell/module production to increase to 4.7GW/7.9GW by FY28E, resulting in revenue/EBITDA/PAT CAGR of 72%/60%/65% over FY25–28E. However, EBITDA margin may peak at 33% in FY26 before moderating to 27%/28% in FY27E/28E, reflecting increasing competition and moderation in realisations. Similarly, blended EBITDA/Wp is expected to peak at INR 6.13/Wp in FY26E, before moderating to INR 5/Wp by FY28E. We assign Emmvee a 7.5x FY28E EV/EBITDA, reflecting its strong technology credentials and attractive re-rating potential waiting for scale expansion and visibility for ingots and wafers. We initiate coverage with a BUY rating and TP of INR 291, a 31% upside, supported by its deep integration experience, and meaningful potential for valuation re-rating as scale improves.

- **Risks**: Emmvee's modest capacity insulates it from earnings volatility in case new solar bids remain subdued for a longer time. However, it is susceptible to unexpected and sharp correction in cell/module prices and policy uncertainty (US tariffs/ALMM changes).

Sudhanshu Bansal
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Recommendation and Price Target	
Current Reco.	BUY
Previous Reco.	NA
Current Price Target (12M)	291
Upside/(Downside)	30.5%
Previous Price Target	N/A
Change	NA

Key Data – EMMVEE IN	
Current Market Price	INR223
Market cap (bn)	INR154.7/US$1.7
Free Float (%)	20.0
Shares in issue (mn)	692.3
Diluted share (mn)	692.3
3-mon avg daily val (mn)	INR559.7/US$6.1
52-week range	INR248/172
Sensex/Nifty	77,563/23,997
INR/US$	92.6

Price Performance			
%	1M	6M	12M
Absolute	15.7	0.0	0.0
Relative*	15.7	0.0	0.0

*To the NSE Nifty 50

Financial Summary					(INR mn)
Y/E Mar	FY24A	FY25A	FY26E	FY27E	FY28E
Net Sales	9,519	23,356	47,590	80,750	117,899
Sales Growth (%)	54.0	145.4	103.8	69.7	46.0
EBITDA	1,204	7,219	15,934	19,120	29,443
EBITDA Margin (%)	12.7	30.9	33.5	23.7	25.0
Adjusted Net Profit	289	3,690	9,531	11,403	16,463
Diluted EPS (INR)	0.4	5.3	13.8	16.5	23.8
Diluted EPS Growth (%)	222.1	1,176.9	158.3	19.6	44.4
ROIC (%)	5.7	26.6	28.5	18.7	21.2
ROE (%)	18.7	104.6	45.7	27.1	29.4
P/E (x)	535.4	41.9	16.2	13.6	9.4
P/B (x)	91.7	28.8	4.3	3.2	2.4
EV/EBITDA (x)	136.1	23.7	10.6	9.5	5.9
Dividend Yield (x)	-	-	-	-	-

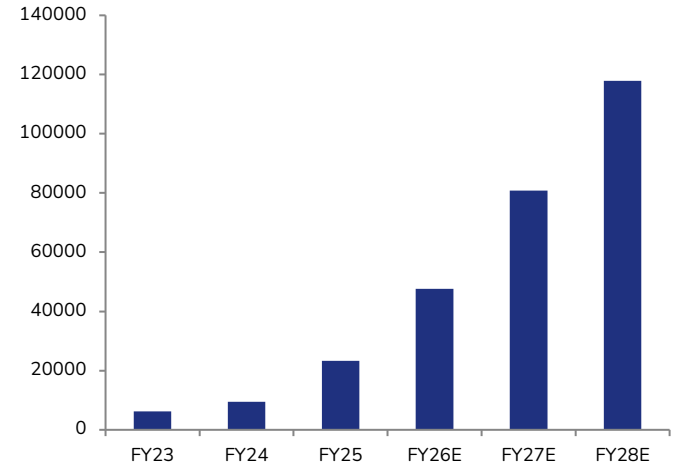
Source: Company data, JM Financial. Note: Valuations as of April 08, 2026

JM Financial Research is also available on: Bloomberg - JMFR <GO>, FactSet, LSEG and S&P Capital IQ

Please see Appendix I at the end of this report for Important Disclosures and Disclaimers and Research Analyst Certification.

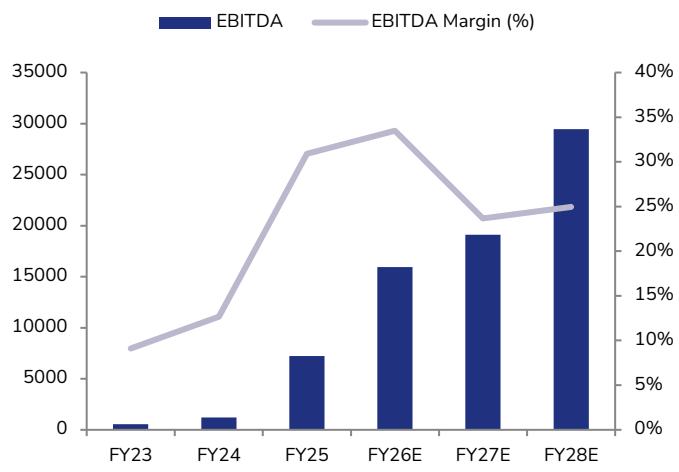
Focus Charts

Exhibit 1: Revenue (INR mn)



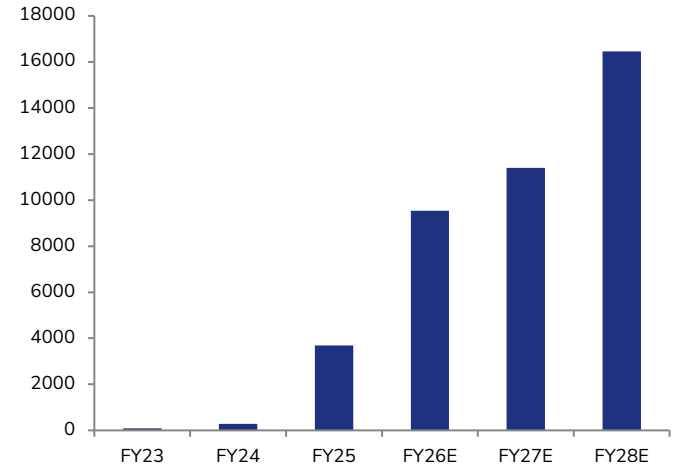
Source: Company, JM Financial

Exhibit 2: EBITDA (INR mn) and EBITDA margin (%)



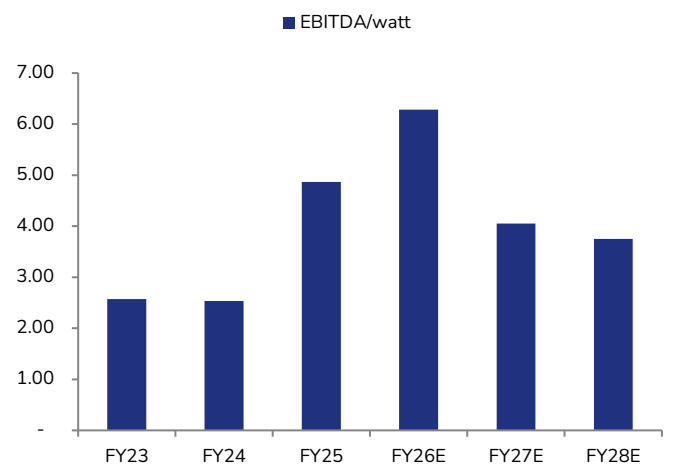
Source: Company, JM Financial

Exhibit 3: PAT (INR mn)



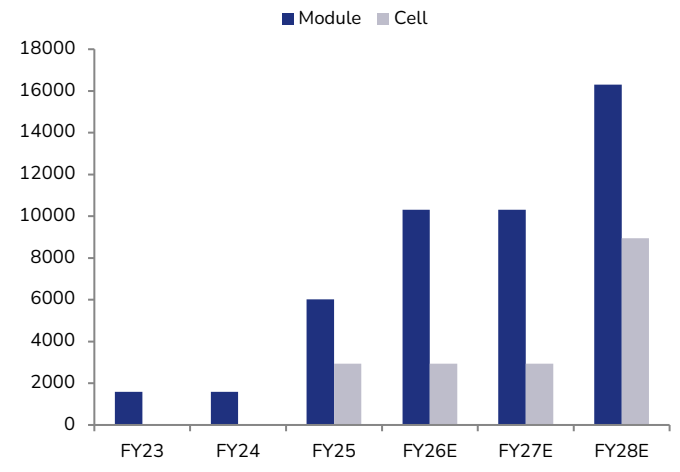
Source: Company, JM Financial

Exhibit 4: EBITDA/Wp, INR



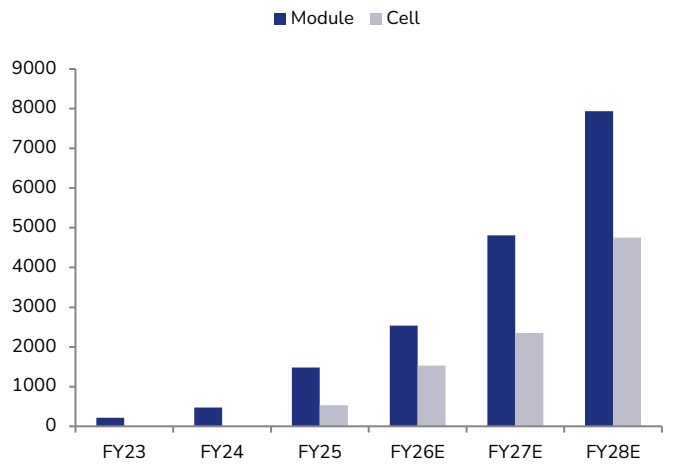
Source: Company, JM Financial

Exhibit 5: Module and cell capacity (MW)



Source: Company, JM Financial

Exhibit 6: Module and cell production (MW)



Source: Company, JM Financial

Investment Thesis

Strong operational history

Emmvee has built a strong foundation over more than three decades in the renewable energy sector, evolving from solar water heating systems in 1992 to a fully integrated solar cell and module manufacturer. With over 18 years of experience in PV module manufacturing, the company has established meaningful scale, with installed capacities of 10.3GW for modules and 2.9GW for solar cells by Dec'25. Its inclusion in the Approved List of Models and Manufacturers (ALMM) for both modules and cells strengthens its access to domestic projects and underpins its 5.1% market share among ALMM-listed manufacturers. Post its INR 29bn IPO in Nov'25, Emmvee has further strengthened its balance sheet and is well positioned to capitalise on India's rapidly expanding solar manufacturing ecosystem.

Expansion to drive scale benefits

Emmvee has demonstrated strong execution capability through rapid capacity ramp-up, with module capacity increasing from 1.6GW in FY23 to 10.3GW by early 2026, supported by expansion across its Karnataka-based facilities. The company has also strengthened backward integration through 2.9GW of solar cell capacity at its Dobbaspet facility, which houses large-scale TOPCon technology lines enabling production of high-efficiency modules. Emmvee plans to expand module capacity to 16.3GW and solar cell capacity to 8.9GW by FY28E, which is expected to enhance scale efficiencies, improve supply chain control and support margin resilience over the medium term.

Diversified order book provides revenue visibility

Emmvee benefits from a robust and diversified order pipeline, supported by strong demand across utility-scale and commercial & industrial (C&I) segments. As of Dec'25, the company reported an order book of 9.3GW, translating into revenue visibility through FY28E. By value, the order book expanded significantly from INR 5.4bn in FY23 to INR 93.4bn by Dec'25, reflecting strong order inflows amid rising domestic solar installations. The order mix remains well diversified, with 50% from the C&I segment, 32% from independent power producers (IPPs), and 18% from other segments, while being entirely domestic in nature, reducing exposure to export-related volatility.

Strong earnings growth outlook; scope for re-rating

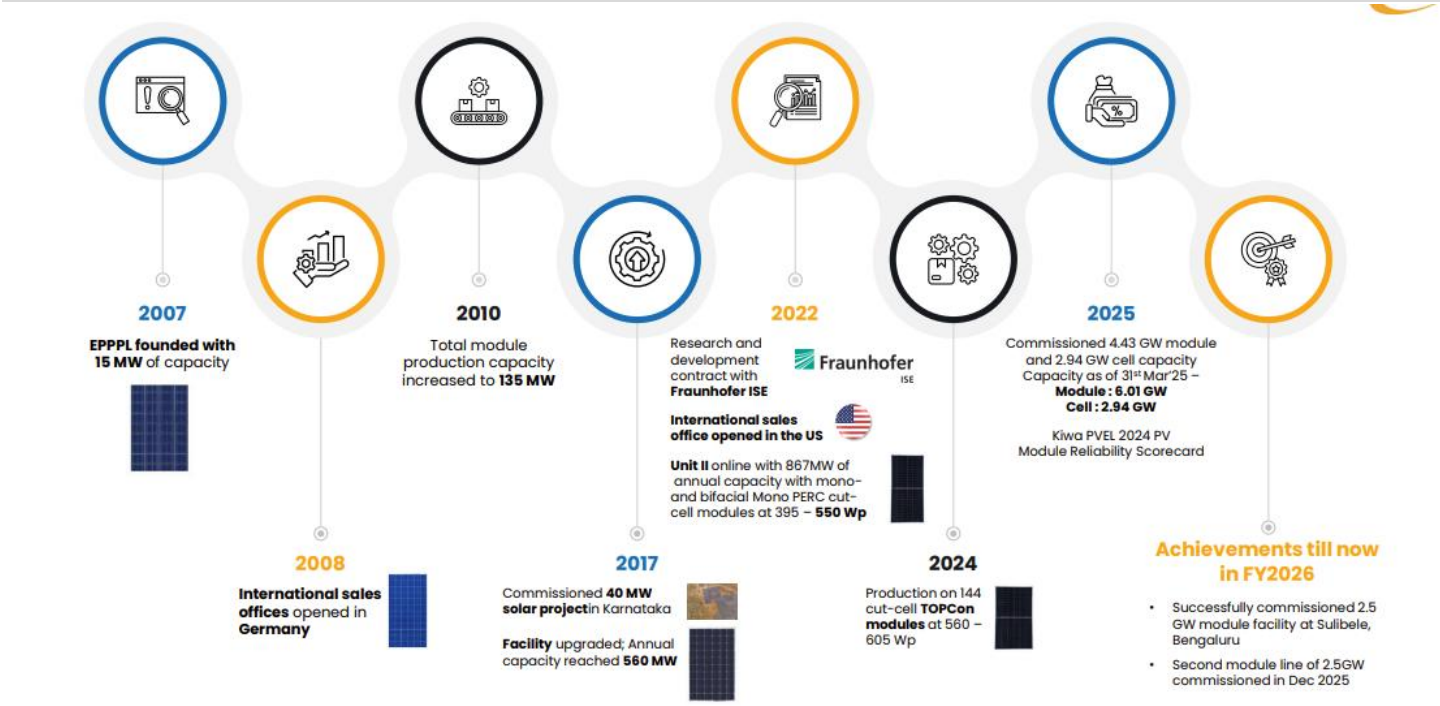
We expect Emmvee to deliver strong earnings growth driven by capacity ramp-up, with cell/module production projected to rise to 4.7GW/7.9GW by FY28E, translating into revenue/EBITDA/PAT CAGR of 72%/60%/65% over FY25–28E. While EBITDA margin is expected to peak at 33% in FY26 before moderating to 27–28% by FY28E due to rising competition and normalisation in realisations, overall profitability is likely to remain healthy supported by scale and integration benefits. We value the company at 7.5x FY28E EV/EBITDA, reflecting its technology positioning and scale potential, and initiate coverage with a BUY rating and target price of INR 291, implying 31% upside, supported by strong execution visibility and scope for valuation re-rating as capacity utilisation and integration deepen.

Emmvee Photovoltaic Power Limited

Established in 1992, Emmvee Photovoltaic Power Limited (Emmvee) is one of India's leading integrated solar equipment manufacturers with a long operating history in the renewable energy sector. The company initially started with solar water heating systems under the *Solarizer* brand and entered the solar PV module manufacturing segment in 2007. Over the years, Emmvee has developed strong capabilities across solar cell and module manufacturing, emerging as one of the leading pure-play integrated solar manufacturers in India. At end-Dec'25, the company had installed manufacturing capacity of 10.3GW for solar modules and 2.9GW for solar cells, supported by more than 18 years of experience in module manufacturing.

Emmvee is also listed under the Approved List of Models and Manufacturers (ALMM) issued by the Ministry of New and Renewable Energy for both solar modules and cells, enhancing its access to domestic solar projects. The company has a market share of 5.1% among ALMM-listed module manufacturers in India. Following the successful completion of its INR 29bn IPO in November 2025, the company has strengthened its balance sheet and is focused on expanding its manufacturing footprint. Emmvee plans to scale up module manufacturing capacity to 16.3GW and solar cell capacity to 8.9GW by FY28E, positioning itself to benefit from strong growth in India's solar manufacturing ecosystem.

Exhibit 7: Emmvee's history – A look at milestones



Source: Company

Manufacturing capacity

Emmvee has significantly expanded its manufacturing footprint over the past few years, emerging as one of India's key integrated solar equipment manufacturers. The company's installed solar module manufacturing capacity shot up from 1.6GW in FY23 to 10.3GW as of early 2026, supported by multiple capacity additions across its facilities in Karnataka, primarily around Bengaluru. The most recent expansion includes the commissioning of a 2.5GW module manufacturing line in December 2025, further strengthening its production scale. The company's manufacturing operations are focused on high-efficiency TOPCon and Mono PERC technologies, enabling it to cater to both utility-scale and commercial & industrial solar installations.

In addition to module manufacturing, the company has developed meaningful backward integration into solar cell production, with 2.9GW of operational cell capacity located at its Dobbaspet facility in Karnataka. This facility houses one of India's large-scale TOPCon cell manufacturing lines, supporting the production of high-efficiency modules.

Going forward, Emmvee is undertaking a significant expansion program aimed at increasing its module capacity to 16.3GW and solar cell capacity to 8.9GW by FY28E. As part of this strategy, the company is developing a 6GW integrated cell and module manufacturing facility at the Information Technology Investment Region (ITIR) Phase-II near Devanahalli, Bengaluru. The project, spread across 100 acres and supported by a INR 33bn term loan from Indian Renewable Energy Development Agency, is expected to be operational by Mar–Apr'27.

Over medium term, the company also plans to gradually deepen backward integration into the solar value chain, including ingot and wafer manufacturing as the government expands the ALMM framework upstream, while selectively localising components such as aluminium frames, encapsulants and junction boxes. Notably, Emmvee remains focused on the core solar PV supply chain and does not intend to diversify into adjacent segments such as inverters, transformers or battery energy storage systems (BESS).

Exhibit 8: Emmvee's operational capacity details

Units	Year of commissioning	Area (Sq. ft.)	Annual Installed production (GW)	Products Manufactured	Technology
Unit 2	2023	118700	0.87	Modules	TOPCon
Unit 3	2024	435604	2.21 / 2.94	Modules / Cell	TOPCon
Unit 4	2025		2.21	Modules	TOPCon
Unit 5	2025	423313	2.5	Modules	TOPCon
Unit 6	2025		2.5	Modules	TOPCon

Source: Company, JM Financial

Exhibit 9: Business update

2.5 GW Solar Module line

- Commissioned a 2.5 GW solar module manufacturing line on 20 Dec 2025
- Facility located at Sulibele, Hoskote Taluk, Bengaluru, Karnataka (Unit VI)
- Capacity expansion completed as planned
- Company's aggregate solar module manufacturing capacity now stands increased to 10.3 GW

6 GW Integrated (Cell + Module) Facility

- Completed payment for land allotment for the proposed 6 GW integrated solar module and solar cell manufacturing facility at Devanahalli, Bengaluru in Dec 2025
- Entire consideration for the 100 acre land allotment has now been fully paid. Design and Execution Planning in progress
- IREDA has sanctioned a term loan of INR 33,060 mn for this manufacturing unit
- Progress is in-line to achieve target CoD

4.5 GW Order

- Received a 4.5 GW order for supply of TOP Con crystalline silicon photovoltaic cells from a domestic customer
- Order execution period spans from December 2025 to 2030

Source: Company

Exhibit 10: Capacity ramp-up plans

	Cells	Modules
Current Capacity	2.94 GW	10.3 GW
Ongoing Projects	6 GW by FY28	6 GW by FY28
Future expansion	8.94 GW by FY28	16.3 GW by FY28

Source: Company

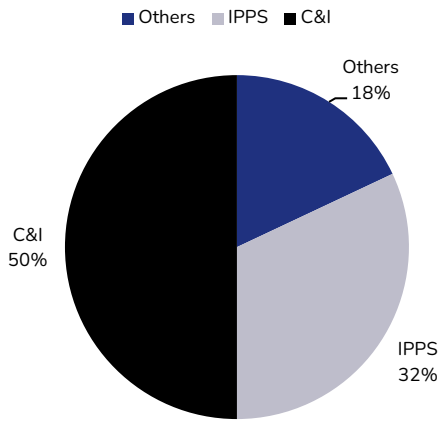
Order book

Emmvee has built a strong and diversified order pipeline supported by robust demand for solar modules across both utility-scale and commercial & industrial (C&I) segments. As on December 31, 2025, the company's order book stood at 9.3GW, providing healthy revenue visibility through FY28E. Of the total backlog, 6.3GW is scheduled for delivery over the next 12–18 months, translating to estimated revenue potential of INR 100bn, while 3GW forms part of a multi-year supply agreement (within a 4.5GW contract) with deliveries extending until 2030. By value, the order book expanded sharply from INR 5.4bn in FY23 to INR 93.4bn by Dec'25, reflecting strong order inflows amid rising domestic solar installations.

The order book is well diversified across customer segments, with 50% attributable to the C&I segment, 32% to independent power producers (IPPs) and 18% to other segments, and is entirely domestic in nature. The company caters to several leading renewable energy developers including NTPC Renewable Energy Limited, Ayana Renewable Power, CleanMax Enviro Energy Solutions, KPI Green Energy Limited, Hero Future Energies and Aditya Birla Renewables.

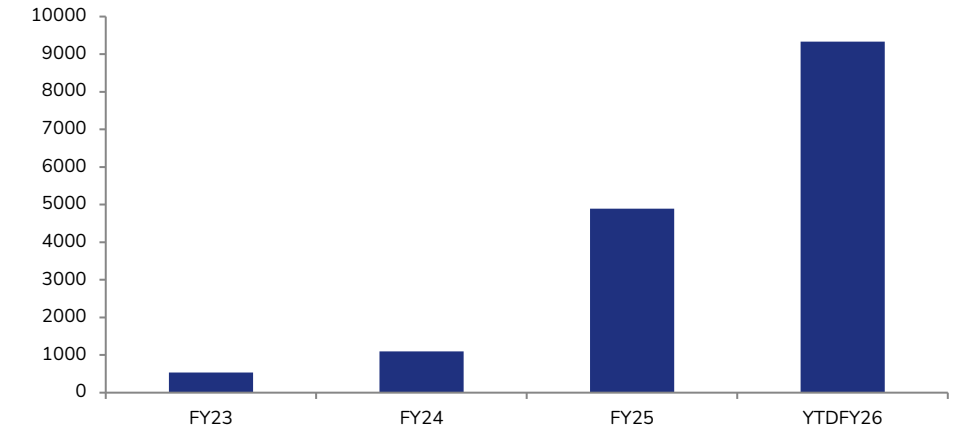
Emmvee also benefits from a strong repeat customer base, with repeat orders contributing 61.7% at end-Jun'25. Reflecting its increasing focus on large-scale projects and high-quality customers, the average order size has increased from 1.64MW in FY23 to 7.63MW in FY25, while the average order size for its top 10 customers has grown significantly from 18MW to 121MW over the same period. From a contractual perspective, 20% of the order book pertains to domestic content requirement (DCR) projects while 75% of the backlog includes cost pass-through clauses for wafer and cell prices, helping mitigate input cost volatility. The remaining orders are typically short-term contracts where customers provide 25–30% advance payments, enabling the company to procure key inputs and protect margins.

Exhibit 11: Order book split



Source: Company, JM Financial

Exhibit 12: Order book trend (MW)



Source: Company, JM Financial

Technology

Emmvee's focuses on advanced photovoltaic technologies aimed at improving module efficiency, performance and long-term reliability. The company's product portfolio primarily includes high-efficiency bifacial solar modules based on Mono-PERC and next-generation TOPCon technologies. These modules are designed to deliver higher energy yield and improved performance across both utility-scale and commercial & industrial (C&I) solar installations. Emmvee has also been among the early adopters of TOPCon cell technology in India, with 3GW of TOPCon cell capacity operational since September 2024, enabling the company to transition towards higher-efficiency module offerings as the industry gradually shifts away from conventional PERC technologies.

To strengthen its technology capabilities, Emmvee has entered into a strategic collaboration with the Fraunhofer Institute for Solar Energy Systems (Fraunhofer ISE), Germany—one of the world's leading solar research institutes. Initiated in February 2023, this multi-year partnership focuses on optimising high-efficiency solar cell manufacturing processes, equipment selection and technology development for TOPCon cells.

Fraunhofer also provides technical training to Emmvee's workforce to support efficient production ramp-up and process improvements. Notably, the company stabilised production at its TOPCon line within a few months of commissioning and has already executed orders under domestic government programs. A large portion of the cell manufacturing equipment is sourced from Germany; although the initial capex is higher than Chinese lines, it offers operational advantages such as lower power and water consumption, supporting more efficient and sustainable manufacturing over long term.

Financial performance

Emmvee has demonstrated a sharp scale-up in financial performance over FY23–25 supported by significant capacity expansion and increasing backward integration. Revenue/ EBITDA/ PAT increased from INR 6bn/563mn/90mn in FY23 to INR 23bn/7bn/3.7bn in FY25, reflecting strong growth in operations. Profitability improved materially during the period, with EBITDA margin expanding from 9% in FY23 to 31% in FY25, driven by operating leverage and the commissioning of 2.9GW of cell capacity in FY25, enabling higher value capture across the solar value chain. Operational scale also improved meaningfully, with module production increasing from 219MW in FY23 to 1,482MW in FY25, alongside 534MW of cell production in FY25, supported by module capacity expansion from 1.6GW to 6GW over the same period.

Going forward, we expect Emmvee to benefit from rising demand for integrated solar manufacturers in India, supported by continued capacity additions and improved utilisation levels. Module capacity is expected to increase from 6GW in FY25 to 16.3GW by FY28 while cell capacity is projected to scale up from 2.9GW to 8.9GW over the same period. Consequently, module and cell production is estimated to increase to 7.9GW and 4.1GW, respectively, by FY28E. Supported by this ramp-up, we expect revenue/EBITDA/PAT to grow at a robust CAGR of 72%/60%/65% over FY25–28E driven by higher capacity utilisation and expanding integrated manufacturing capabilities.

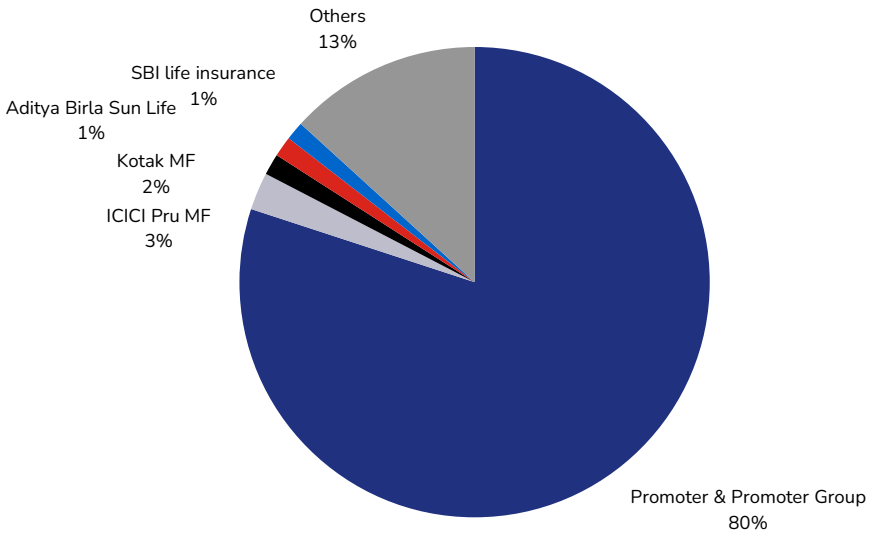
We expect EBITDA margin to peak at 33% in FY26 supported by operating leverage and benefits from recently commissioned capacities, before gradually moderating to 27%/28% in FY27E/28E, reflecting increasing competition and moderation in realisations across the solar module industry. Similarly, blended EBITDA/Wp is expected to peak at INR 6.13/W in FY26E, before moderating to INR 5.1/W by FY28E, in line with normalisation of industry spreads.

Exhibit 13: Board of directors and management

Name	Designation	Details
Mr Manjunatha Donthi Venkatarathnaiah	Chairman and MD	Mr Venkatarathnaiah is a Bachelor of Commerce from Bangalore University, Karnataka, and has been in the solar industry since 1992. He co-founded Emmvee Solar Systems Private Limited in 1996 and then co-founded Company in 2007.
Mr Suhas Donthi Manjunatha	WTD and CEO	Mr Manjunatha is a Bachelor of Science (Business and Engineering) from Drexel University, Pennsylvania (US). He has over six years of experience in the renewable energy industry. In 2025, Mr Manjunatha was conferred the Hall of Fame Leadership Award for Legacy & Empire Building at the Karnataka Annual Solar Awards 2025 presented during Suryacon Bengaluru-2025. Additionally, he received the Most Promising Business Leaders of Asia Award at Times Now Asian Business Leaders Conclave 2025
Mr Pawan Kumar Jain	CFO	Mr Jain is a Master of Business Administration (Executive) from Mohanlal Sukhadia University, Udaipur. He is an associate member of the ICAI. and was previously associated with the Aditya Birla Group for over 31 years.
Mr Shailesha Barve	Company Secretary	Mr Barve is a Bachelor of Business Management from Mangalore University. He is also an associate member of the ICSI. Mr Barve ws previously associated with Karnataka Bank Limited and North East Small Finance Bank Limited, and has a total work experience in banking of 21 years.
Ms Shubha Manjunatha Donthi	Non Executive Director	Ms Donthi is a Bachelor of Arts from V.V.N. Degree College, Bengaluru. She has been in the solar industry since 1996 and has 29 years of experience in the renewable energy sector.
Mr Ram Kumar Tiwari	Independent Director	Mr Tiwari is a Master of Science in Engineering from the Indian Institute of Science, Bengaluru, and a BE (Electronics) from Maulana Azad NIT, Bhopal. He has over 45 years of experience in the electrical and energy sector. Mr Tiwari held senior positions at BHEL and has served as a consultant to SECI and PGCIL.
Ms Sambasivarao Chandramouleswara Sharada	Independent Director	Ms Sharada is also a qualified company secretary. Ms Sharada has a total work experience of over 30 years. She is serving on the boards of several companies such as Malabar Gems and Jewellery Manufacturing, Malabar Gold and Diamonds, Mimecast India Private Limited and Raichur Power Corporation.
Mr Santosh Kumar Mohanty	Independent Director	Mr Mohanty is a Bachelor of Arts from Ravenshaw College, Cuttack (Utkal University), and a Master of politics (international studies) from Jawaharlal Nehru University. He retired as a Commissioner of Income Tax, Indian Revenue Service. He was also a whole-time member of SEBI.

Source: Company, JM Financial

Exhibit 14: Shareholding pattern (%)



Source: BSE, JM Financial

Financial Tables (Consolidated)

Income Statement					(INR mn)
Y/E Mar	**FY24A**	**FY25A**	**FY26E**	**FY27E**	**FY28E**
Net Sales	9,519	23,356	47,590	80,750	117,899
Sales Growth (%)	54.0	145.4	103.8	69.7	46.0
Other Operating Income	-	-	-	-	-
Total Revenue	**9,519**	**23,356**	**47,590**	**80,750**	**117,899**
Cost of Goods Sold/Op. Exp	7,546	14,023	26,264	54,096	80,792
Personnel Cost	240	778	1,585	2,689	2,947
Other Expenses	529	1,336	3,807	4,845	4,716
EBITDA	**1,204**	**7,219**	**15,934**	**19,120**	**29,443**
EBITDA Margin (%)	12.7	30.9	33.5	23.7	25.0
EBITDA Growth (%)	114.0	499.4	120.7	20.0	54.0
Depn. & Amort.	418	1,560	3,100	3,548	7,116
EBIT	786	5,660	12,834	15,573	22,327
Other Income	25	247	952	1,615	2,358
Finance Cost	335	1,079	1,872	1,984	2,735
PBT before Excep. & Forex	476	4,828	11,914	15,204	21,950
Excep. & Forex Inc./Loss(-)	-	-	-	-	-
PBT	476	4,828	11,914	15,204	21,950
Taxes	187	1,138	2,383	3,801	5,488
Extraordinary Inc./Loss(-)	-	-	-	-	-
Assoc. Profit/Min. Int.(-)	-	-	-	-	-
Reported Net Profit	289	3,690	9,531	11,403	16,463
Adjusted Net Profit	**289**	**3,690**	**9,531**	**11,403**	**16,463**
Net Margin (%)	3.0	15.8	20.0	14.1	14.0
Diluted Share Cap. (mn)	692	692	692	692	692
Diluted EPS (INR)	**0.4**	**5.3**	**13.8**	**16.5**	**23.8**
Diluted EPS Growth (%)	222.1	1,176.9	158.3	19.6	44.4
Total Dividend + Tax	-	-	-	-	-
Dividend Per Share (INR)	-	-	-	-	-

Source: Company, JM Financial

Balance Sheet					(INR mn)
Y/E Mar	**FY24A**	**FY25A**	**FY26E**	**FY27E**	**FY28E**
Shareholders Fund	1,688	5,368	36,338	47,740	64,203
Share Capital	108	108	306	306	306
Reserves & Surplus	1,580	5,260	36,032	47,435	63,898
Preference Share Capital	-	-	-	-	-
Minority Interest	-	-	-	-	-
Total Loans	14,413	19,497	20,755	21,121	36,732
Def. Tax Liab. / Assets (-)	21	418	418	418	418
Other non-current liabilities / Lease Liabilities	1,228	3,086	3,086	3,086	3,086
Total - Equity & Liab.	**17,329**	**27,951**	**60,179**	**71,947**	**104,021**
Net Fixed Assets	9,261	19,389	45,586	63,569	65,858
Gross Fixed Assets	3,191	21,344	40,964	55,318	81,711
Intangible Assets	17	14	14	14	14
Less: Depn. & Amort.	405	2,103	5,203	8,750	15,867
Capital WIP	6,458	134	9,810	16,987	-
Investments	-	-	-	-	-
Current Assets	12,368	18,544	26,253	23,648	57,477
Inventories	3,062	7,584	10,846	18,403	26,869
Sundry Debtors	961	1,903	2,918	4,951	7,229
Cash & Bank Balances	1,823	2,186	6,673	-5,522	17,563
Loans & Advances	3,382	1,055	-	-	-
Other Current Assets	5,843	2,749	1,694	1,694	1,694
Current Liab. & Prov.	4,369	10,730	12,408	16,018	20,062
Current Liabilities	4,043	5,197	6,875	10,485	14,529
Provisions & Others	325	5,533	5,533	5,533	5,533
Net Current Assets	5,538	6,120	12,151	5,936	35,721
Other Non Current Assets/ROU Assets	2,565	2,901	2,901	2,901	2,901
Total - Assets	**17,329**	**27,951**	**60,179**	**71,947**	**104,021**

Source: Company, JM Financial

Cash Flow Statement					(INR mn)
Y/E Mar	**FY24A**	**FY25A**	**FY26E**	**FY27E**	**FY28E**
Profit before Tax	476	4,828	11,914	15,204	21,950
Depn. & Amort.	418	1,560	3,100	3,548	7,116
Net Interest Exp. / Inc. (-)	266	754	920	369	377
Inc (-) / Dec in WCap.	1,191	-544	-2,599	-5,980	-6,700
Others	145	196	-	-	-
Taxes Paid	-151	-655	-2,383	-3,801	-5,488
Operating Cash Flow	**2,345**	**6,138**	**10,951**	**9,339**	**17,256**
Capex	-6,733	-9,883	-29,297	-21,531	-9,405
Free Cash Flow	-4,388	-3,746	-18,345	-12,192	7,851
Inc (-) / Dec in Investments	-	-2,552	-	-	-
Others	-3,268	2,578	952	1,615	2,358
Investing Cash Flow	**-10,000**	**-9,857**	**-28,345**	**-19,916**	**-7,047**
Inc / Dec (-) in Capital	-	-	21,439	-	-
Dividend + Tax thereon	-	-	-	-	-
Inc / Dec (-) in Loans	9,217	5,084	1,258	366	15,611
Others	-272	-1,003	-817	-1,984	-2,735
Financing Cash Flow	**8,944**	**4,081**	**21,880**	**-1,618**	**12,877**
Inc / Dec (-) in Cash	**1,289**	**362**	**4,486**	**-12,195**	**23,085**
Opening Cash Balance	535	1,823	2,186	6,673	-5,522
Closing Cash Balance	1,823	2,186	6,673	-5,522	17,563

Source: Company, JM Financial

Dupont Analysis					
Y/E Mar	**FY24A**	**FY25A**	**FY26E**	**FY27E**	**FY28E**
Net Margin (%)	3.0	15.8	20.0	14.1	14.0
Asset Turnover (x)	0.8	1.0	1.1	1.2	1.3
Leverage Factor (x)	7.9	6.5	2.1	1.6	1.6
RoE (%)	18.7	104.6	45.7	27.1	29.4

Source: Company, JM Financial

Key Ratios					
Y/E Mar	**FY24A**	**FY25A**	**FY26E**	**FY27E**	**FY28E**
BV/Share (INR)	2.4	7.8	52.5	69.0	92.7
ROIC (%)	5.7	26.6	28.5	18.7	21.2
ROE (%)	18.7	104.6	45.7	27.1	29.4
Net Debt/Equity (x)	5.5	3.0	0.4	0.6	0.3
P/E (x)	535.4	41.9	16.2	13.6	9.4
P/B (x)	91.7	28.8	4.3	3.2	2.4
EV/EBITDA (x)	136.1	23.7	10.6	9.5	5.9
EV/Sales (x)	17.2	7.3	3.5	2.2	1.5
Debtor days	37	30	22	22	22
Inventory days	117	119	83	83	83
Creditor days	69	79	60	52	53

Source: Company, JM Financial

Vikram Solar | ADD

Two years behind peers; priced for value

Vikram Solar is on an expansion and integration drive. Its current 9.5GW module manufacturing capacity is being augmented to 15.5GW along with new 12GW cell and 5GWh BESS manufacturing by 4QFY27. With an order book of 10.6GW (mostly TOPCon, 84% domestic, 21% C&I), we estimate module production to go up from 1,900MW in FY25 to 7,716MW by FY28. Revenue/ EBITDA/PAT is estimated to grow at a CAGR of 54%/65%/85% over FY25–FY28E, driven by higher utilisation and gradual integration. Blended EBITDA/Wp could moderate from INR 3.0/W in FY26E to INR 2.6/W by FY28E. Recent sector concerns have led to sharp correction in the stock (48% since listing, versus <20% for peers), making it a value pick even when we assume delays in commissioning and utilisation. We value Vikram Solar at 5x EV/EBITDA FY28E, reflecting its lag in technology readiness. We initiate at ADD and TP of INR 202 (5% upside).

- **A recap**: Vikram Solar is one of India's leading solar PV module manufacturers with two manufacturing facilities (Kolkata, Chennai). The company has a module capacity of 9.5GW and has supplied cum 7GW of solar modules globally. At end-Dec'25, it had an order book of 10.6GW (mostly TOPCon, 84% domestic, 21% C&I), up from 8.2GW in Dec'24, providing 6-8 quarters of revenue visibility.

- **The plans**: The company plans to increase its module capacity to 15.5GW (capex of INR 13.3bn). It is also setting up 12GW cell (capex of INR 50.5bn) and 5GWh BESS manufacturing facility by FY27. These investments are expected to strengthen Vikram Solar's backward-integration capabilities and position it as a fully integrated player over the next few years.

- **Performance so far**: Vikram Solar has demonstrated steady growth over FY23–25. Revenue/EBITDA/PAT surged from INR 20bn/1.9bn/145mn in FY23 to INR 34bn/4.9bn/1.4bn in FY25, driven primarily by an increase in module capacity from 3.5GW in FY23 to 4.5GW in FY25. EBITDA margin too expanded from 9% in FY23 to 14% in FY25.

- **Investment thesis and valuation**: We estimate module production to go up from 1,900MW in FY25 to 7,716MW by FY28. Consequently, we expect Revenue/EBITDA/PAT to grow at a robust CAGR of 54%/65%/85% over FY25–FY28E, driven by higher utilisation and gradual integration across the solar value chain. However, as Vikram Solar is a relatively late entrant into cell manufacturing, profitability is expected to remain comparatively lower than that of integrated peers during the initial ramp-up phase. We expect EBITDA margin to peak at 20% in FY26, supported by operating leverage from recent capacity additions, before moderating to 17% by FY28, reflecting increased competition and normalisation in industry spreads. Similarly, blended EBITDA/Wp is expected to moderate from INR 3.0/W in FY26E to INR 2.6/W by FY28E. We value Vikram Solar at 5x EV/EBITDA FY28E, reflecting its relatively smaller scale and lag in technology readiness compared to industry leaders, balanced by strong growth visibility. We initiate coverage with a ADD rating and TP of INR 202, representing 5% upside, as the company offers strong earnings growth potential despite currently trailing industry leaders by around two years in scale expansion.

- **Risks**: The company is at least two years behind its credible industry peers. Its ability to swifty set up cell manufacturing facilities and then catch up for wafers and ingots remains opportunities as well as the largest risk in addition to frequent changes in leadership.

Sudhanshu Bansal
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Recommendation and Price Target	
Current Reco.	ADD
Previous Reco.	NA
Current Price Target (12M)	202
Upside/(Downside)	5.2%
Previous Price Target	N/A
Change	NA

Key Data – VIKRAMSO IN	
Current Market Price	INR192
Market cap (bn)	INR69.4/US$0.7
Free Float (%)	34.2
Shares in issue (mn)	362.3
Diluted share (mn)	362.3
3-mon avg daily val (mn)	INR549.7/US$6.0
52-week range	INR408/162
Sensex/Nifty	77,563/23,997
INR/US$	92.6

Price Performance

%	1M	6M	12M
Absolute	10.0	-40.2	0.0
Relative*	10.0	-36.6	0.0

*To the NSE Nifty 50

Financial Summary (INR mn)

Y/E Mar	FY24A	FY25A	FY26E	FY27E	FY28E
Net Sales	25,110	34,235	45,773	76,727	124,174
Sales Growth (%)	21.1	36.3	33.7	67.6	61.8
EBITDA	3,986	4,920	9,076	14,684	22,004
EBITDA Margin (%)	15.9	14.4	19.8	19.1	17.7
Adjusted Net Profit	797	1,398	4,376	5,444	8,810
Diluted EPS (INR)	2.2	3.9	12.1	15.0	24.3
Diluted EPS Growth (%)	450.1	75.4	213.0	24.4	61.8
ROIC (%)	18.1	17.9	21.8	12.7	13.9
ROE (%)	19.7	16.6	19.6	15.6	20.9
P/E (x)	87.1	49.6	15.6	12.6	7.8
P/B (x)	15.6	5.6	2.1	1.8	1.5
EV/EBITDA (x)	19.2	14.2	7.9	7.4	4.8
Dividend Yield (x)	-	-	-	-	-

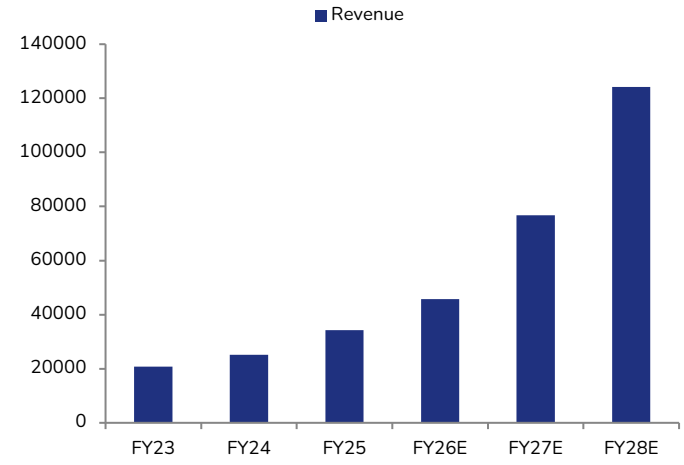
Source: Company data, JM Financial. Note: Valuations as of April 08, 2026

JM Financial Research is also available on: Bloomberg - JMFR <GO>, FactSet, LSEG and S&P Capital IQ

Please see Appendix I at the end of this report for Important Disclosures and Disclaimers and Research Analyst Certification.

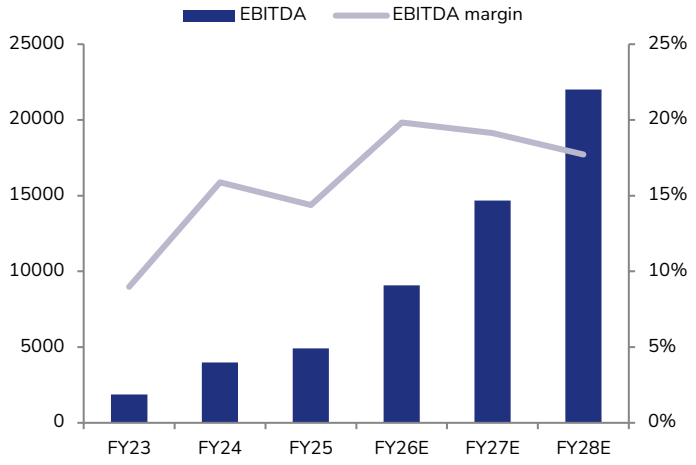
Focus Charts

Exhibit 1: Revenue (INR mn)



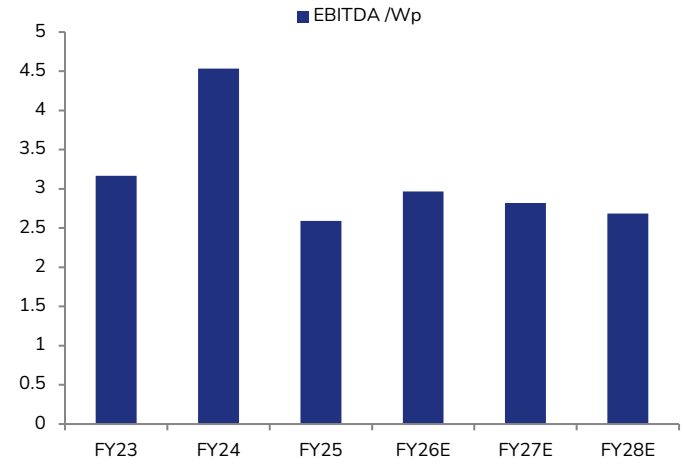
Source: Company, JM Financial

Exhibit 2: EBITDA (INR mn) and EBITDA margin (%)



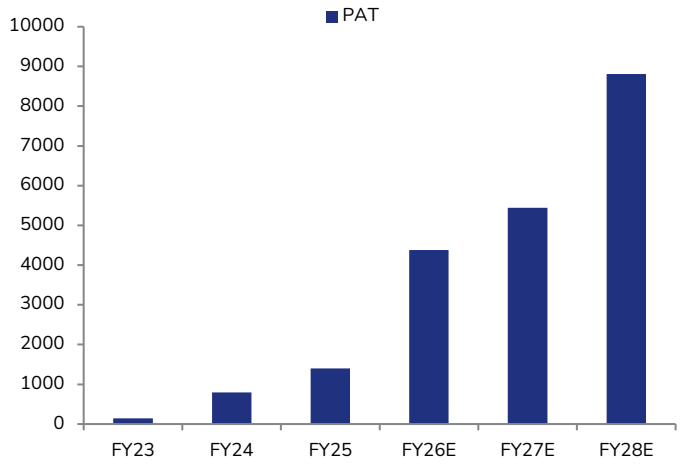
Source: Company, JM Financial

Exhibit 3: Blended EBITDA/Wp



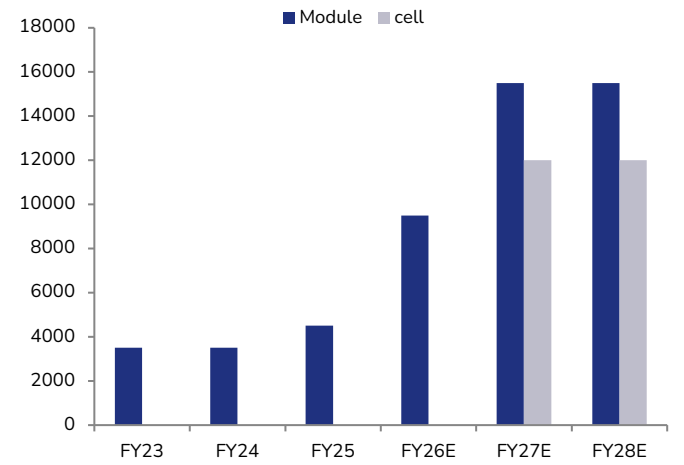
Source: Company, JM Financial

Exhibit 4: PAT (INR mn)



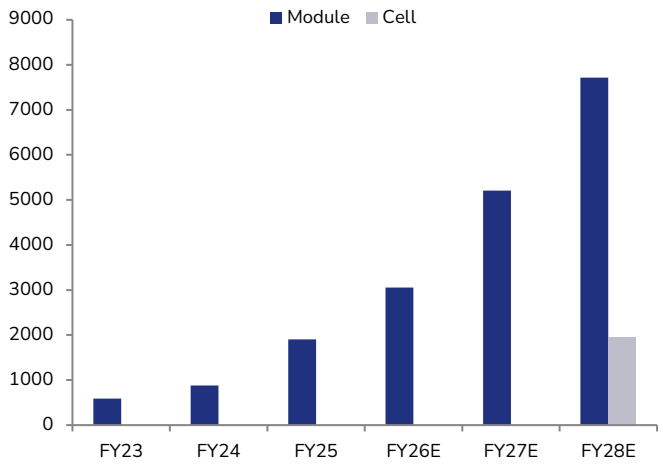
Source: Company, JM Financial

Exhibit 5: Module and cell capacity (MW)



Source: Company, JM Financial

Exhibit 6: Module and cell production (MW)



Source: Company, JM Financial

Investment Thesis

Scaling up with catch-up in backward integration

Vikram Solar has significantly expanded its manufacturing footprint in recent years as it positions itself to capitalise on rising solar demand. As of Mar'26, the company has installed solar module capacity of 9.5GW, supported by the commissioning of its 5GW Vallam facility in Tamil Nadu. It is undertaking meaningful capacity expansion and backward-integration initiatives, including plans to scale module capacity to 15.5GW through the addition of 6GW capacity at Gangaikondan by 1QFY27. In parallel, Vikram is entering solar cell manufacturing with plans to establish 12GW of cell capacity at the same location, to be commissioned in phases through FY27. While the company is relatively late in backward integration compared to some peers, the ongoing scale-up is expected to significantly improve its integration profile and strengthen long-term competitiveness.

Strong order book gives healthy revenue visibility

Vikram Solar has built a robust order pipeline supported by rising demand for high-efficiency modules across domestic and export markets. As of Dec'25, the company reported an order book of 10.6GW, up from 8.2GW in Dec'24, providing revenue visibility over the next six to eight quarters and equivalent to 2.3x FY25 rated capacity. The order mix remains largely domestic, accounting for 84% of total orders, with growing traction from the commercial & industrial (C&I) segment, whose share has increased meaningfully over the past year. Additionally, the high share of variable pricing contracts (90%) provides protection against raw material volatility, while the focus on high-efficiency TOPCon modules supports sustained demand visibility.

Strategic diversification to expand growth avenues

Vikram Solar is actively diversifying into adjacent clean energy segments, particularly battery energy storage systems (BESS), through its wholly owned subsidiary, VSL Powerhive Private Limited. The company plans to establish an initial 5GWh BESS manufacturing facility at Oragadam, Tamil Nadu, expected to be commissioned by FY27, aligning with growing demand for integrated renewable and storage solutions. Over the medium term, Vikram also plans to enter battery cell manufacturing with 7.5GWh capacity targeted by FY29, with potential to scale up further depending on market demand. This diversification is expected to complement its solar manufacturing business and provide incremental growth opportunities as storage adoption accelerates.

Attractive valuation with strong earnings growth potential

We expect Vikram Solar to deliver strong earnings growth driven by capacity ramp-up and improving utilisation, with module production projected to increase from 1.9GW in FY25 to 7.7GW by FY28E. Accordingly, we estimate revenue/EBITDA/PAT CAGR of 54%/65%/85% over FY25–FY28E. While profitability may initially lag integrated peers due to its relatively late entry into cell manufacturing, margins are expected to remain supported by operating leverage from recent expansions. We value the company at 6x FY28E EV/EBITDA, reflecting its current scale and integration lag relative to larger peers, while recognising strong growth visibility. We initiate coverage with a ADD rating and target price of INR 202, implying 5% upside, as we believe current valuations remain too attractive to ignore given the company's improving scale and earnings trajectory.

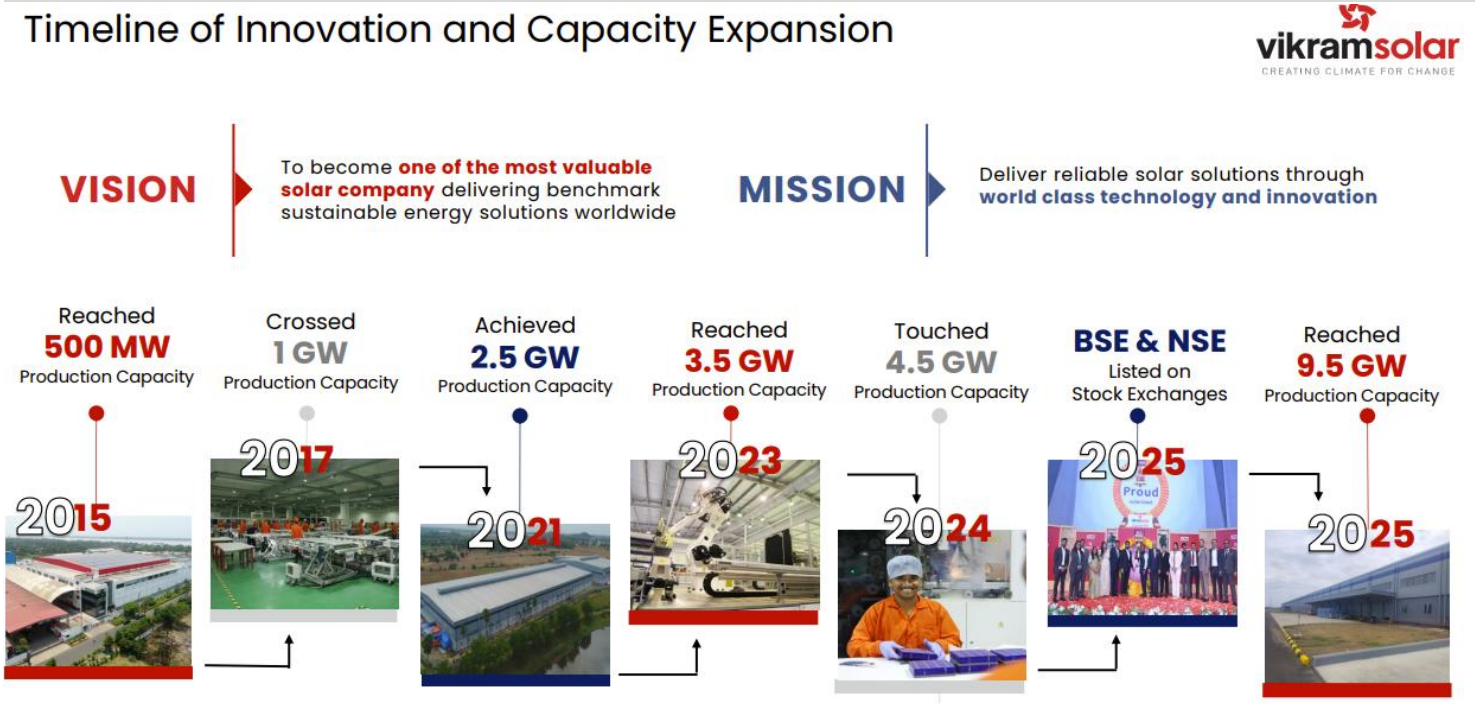
A veteran but two years behind now

Vikram Solar

Vikram Solar Limited (VSL), established in 2006 and headquartered in Kolkata, is one of India's leading solar photovoltaic (PV) module manufacturers and integrated solar solutions providers. The company specialises in manufacturing high-efficiency solar PV modules and delivering engineering, procurement and construction (EPC) services for solar power projects. Vikram Solar operates manufacturing facilities in Falta (Special Economic Zone) in West Bengal and Oragadam in Chennai, producing a wide range of high-efficiency solar modules for domestic and international markets.

As of now, the company has a module manufacturing capacity of 9.5GW and has supplied over 7GW of solar modules globally. In addition, it has executed 1.4GW of EPC projects in India, supporting its integrated presence across the solar value chain. The company is also recognised as a Tier-1 solar module manufacturer by BloombergNEF. Vikram Solar is focused on expanding its manufacturing scale and strengthening backward integration into solar cell manufacturing, positioning itself to benefit from the strong growth outlook for solar power installations in India and globally.

Exhibit 7: Vikram Solar: A timeline



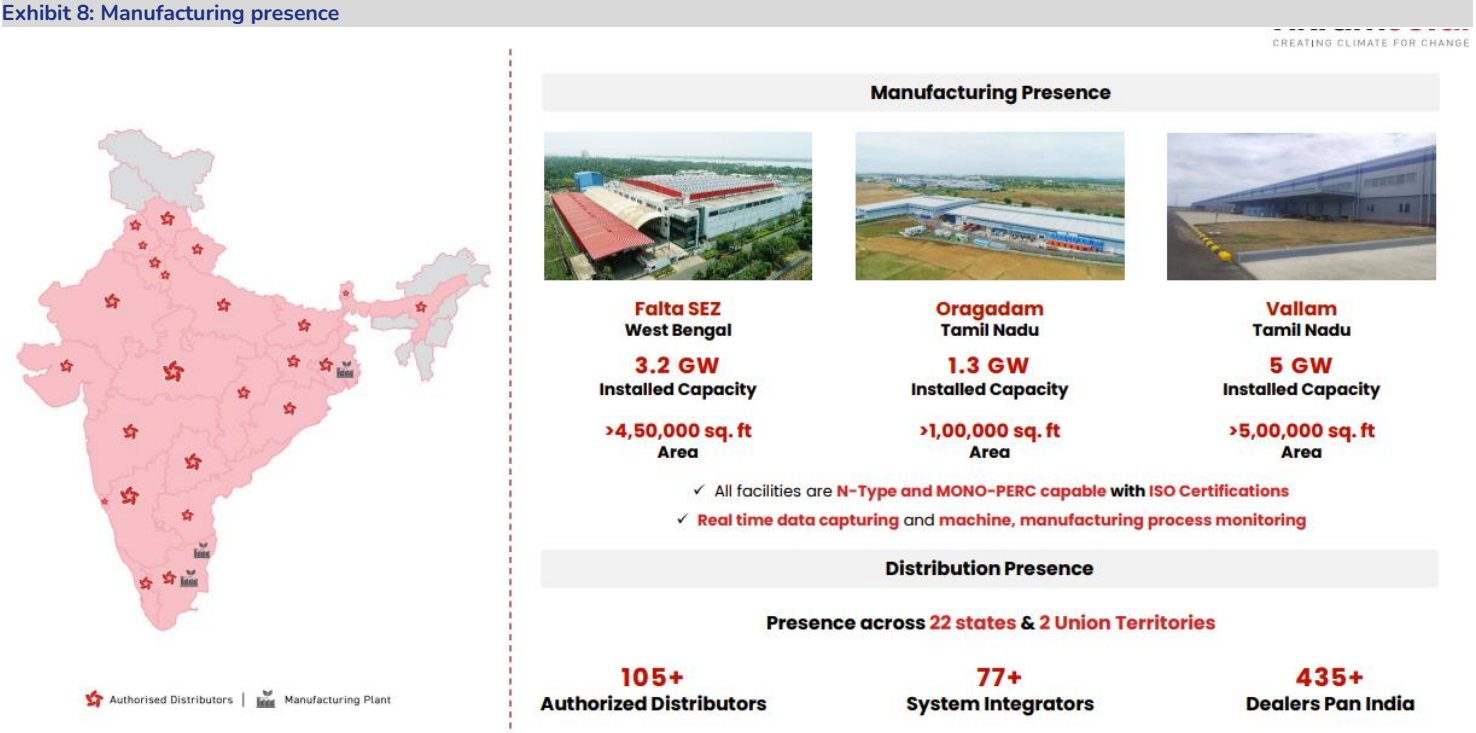
Source: Company

Manufacturing capacity

Vikram Solar Limited has significantly expanded its manufacturing footprint in recent years as it scales up to cater to rising global demand for solar modules. As of Mar'26, the company has an installed solar PV module manufacturing capacity of 9.5GW following the commissioning of its 5GW state-of-the-art facility at Vallam, Tamil Nadu, in Nov'25. Vikram Solar currently operates three major manufacturing facilities across India. The Falta SEZ facility in West Bengal, the company's original manufacturing hub, has an installed capacity of 3.2GW and spans 450,000sqft. The Oragadam facility in Tamil Nadu has 1.3GW capacity across 100,000sqft. In addition, the newly commissioned Vallam plant in Tamil Nadu, spread across 500,000sqft, is the company's largest and most advanced facility, equipped with next-generation automation and capable of producing high-efficiency modules based on TOPCon and Mono-PERC technologies. These facilities are compatible with large wafer formats such as M10, G12 and G12R and are strategically located near major ports to facilitate domestic and international shipments.

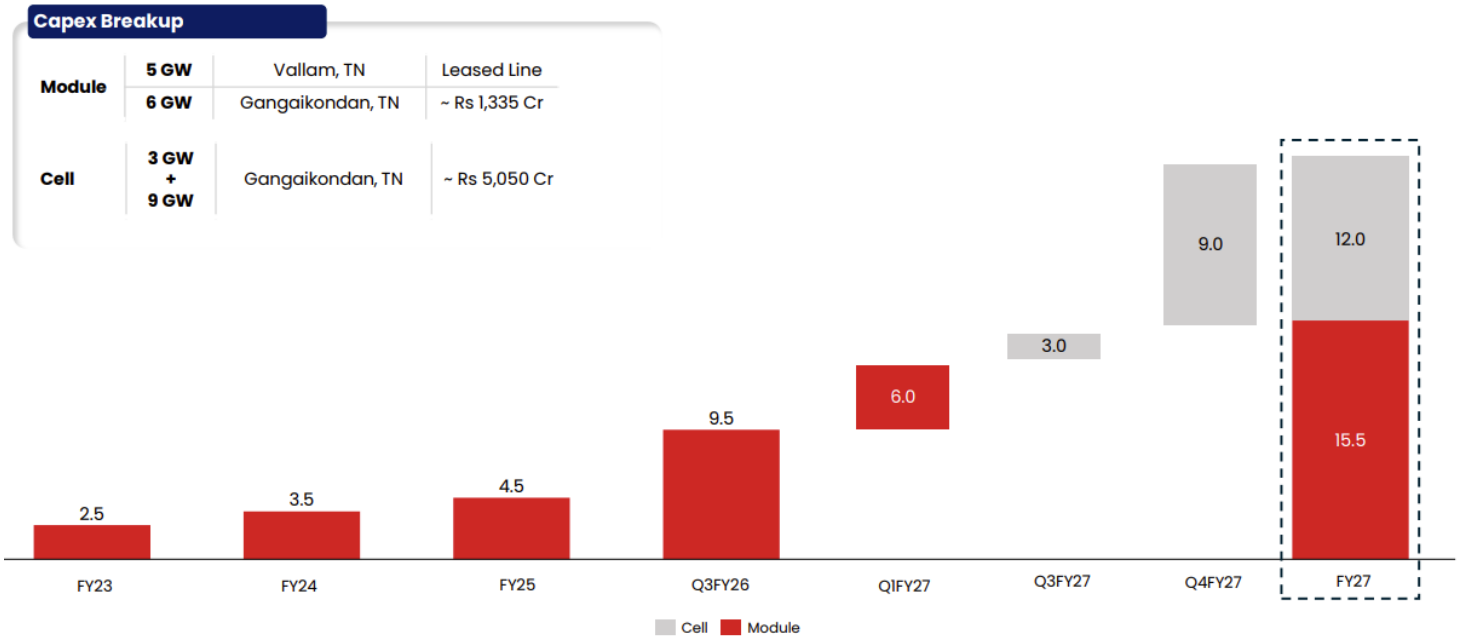
The company is undertaking significant capacity expansion and backward-integration initiatives. It plans to increase its module manufacturing capacity to 15.5GW over the medium term through the addition of 6GW module capacity at Gangaikondan, Tamil Nadu, at an estimated capex of INR 13.3bn with commissioning expected in 1QFY27. In parallel, the company is entering solar cell manufacturing with plans to establish 12GW of cell capacity at the same location, to be commissioned in phases with 3GW expected by 3QFY27 and the remaining capacity by 4QFY27, involving a cumulative capex of INR 50.5bn. These investments are expected to strengthen Vikram Solar's backward integration capabilities and position the company as a fully integrated solar manufacturing player over the next few years.

Exhibit 8: Manufacturing presence



Source: Company

Exhibit 9: Expansion plans to reach 15.5 GW module and 12 GW cell capacity



Source: Company

Technology

Vikram Solar Limited focuses on high-efficiency photovoltaic technologies to enhance module performance and energy yield. The company has transitioned its product portfolio toward large-format wafer platforms and currently standardises on the G12R rectangular wafer format, enabling higher energy density and optimised logistics for utility-scale solar installations. It manufactures high-efficiency bifacial modules based on advanced cell technologies that help improve power output and project economics for solar developers.

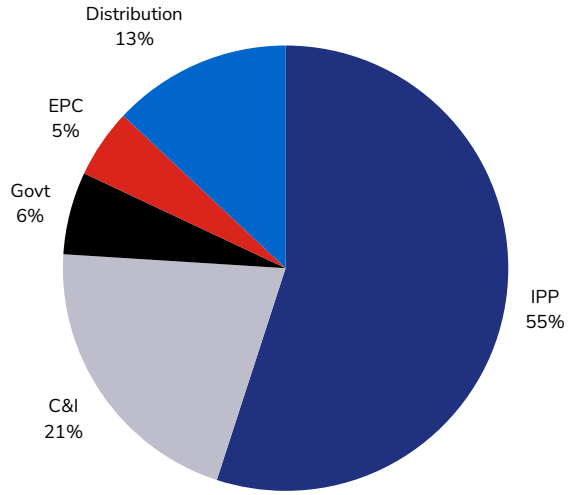
In line with the industry's transition toward next-generation cell architectures, the company's technology platform is centred around N-type TOPCon and Heterojunction (HJT) technologies. These modules can deliver peak module efficiencies of up to 23.7% and power output exceeding 735Wp. The modules also incorporate advanced bifacial designs for dual-side energy capture along with integrated blocking diodes that reduce reverse power losses and mitigate hotspot risks. Through continued investments in advanced module architectures and large-format wafer technologies, Vikram Solar aims to remain aligned with evolving global trends in high-efficiency solar module manufacturing.

Order book

Vikram Solar Limited has built a strong order pipeline supported by rising demand for high-efficiency solar modules in both domestic and international markets. As of Dec'25, the company had an order book of 10.6GW, up from 8.2GW in Dec'24, providing healthy revenue visibility over the next six to eight quarters. The current order book is equivalent to 2.3x the company's rated manufacturing capacity for FY25, highlighting strong demand for its products across multiple customer segments.

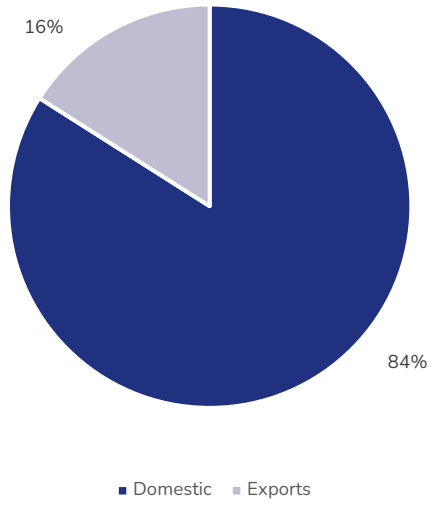
The order mix is largely domestic, with 84% of the order book from India and 16% from export markets. In terms of customer segments, the company has witnessed a gradual increase in orders from the commercial & industrial (C&I) segment, whose share has increased to 21% from 5% a year ago, while the share from independent power producers (IPPs) has moderated to 55% from 73%. Approximately 90% of the order book comprises variable pricing-based contracts, which help mitigate input cost volatility and are typically executed within a tenure of around two years, while fixed-price contracts are generally completed within four to five months. Most of these orders relate to the supply of high-efficiency TOPCon PV modules, primarily catering to the domestic solar market.

Exhibit 10: Order book split by customer



Source: Company, JM Financial

Exhibit 11: Order book split by Geography



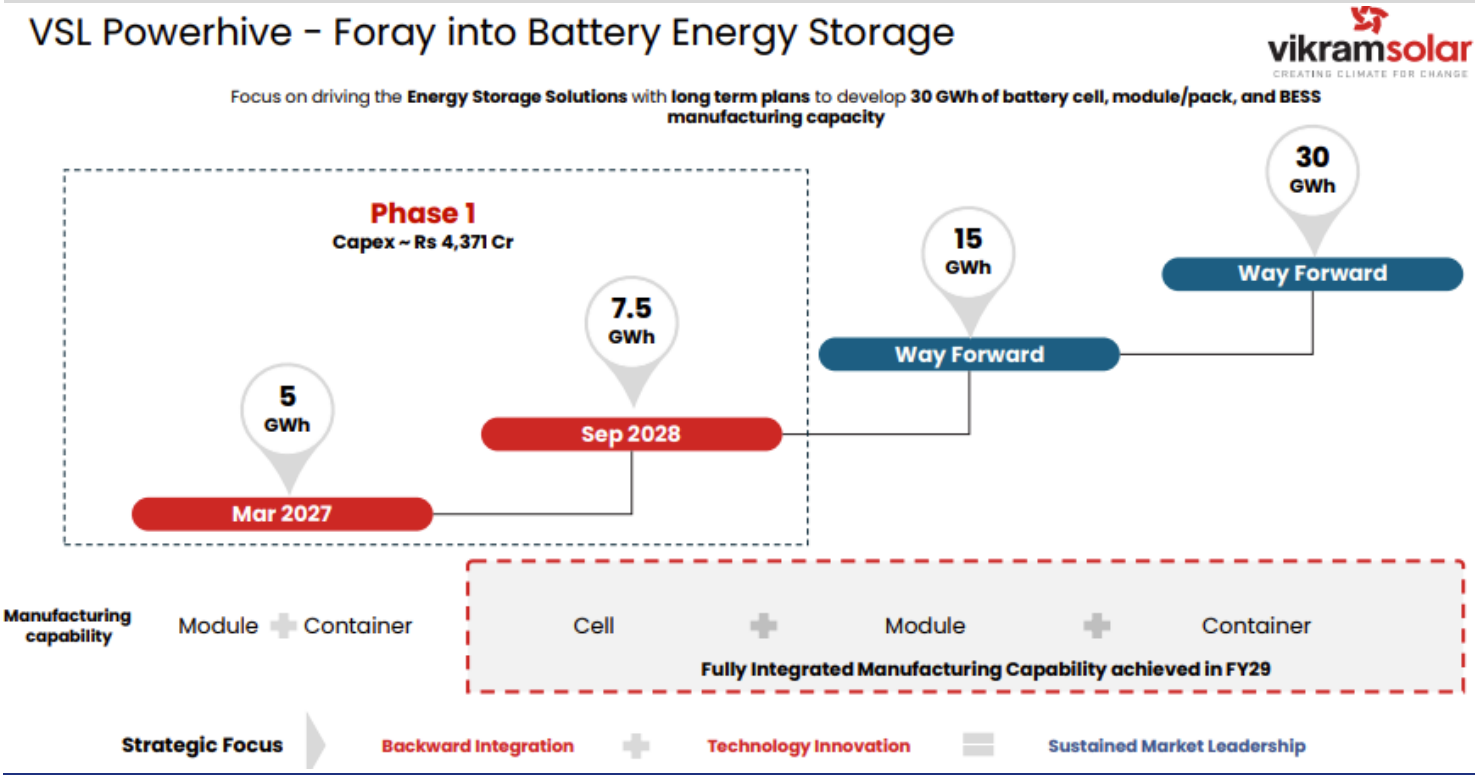
Source: Company, JM Financial

Other business

Vikram Solar Limited is also exploring adjacent opportunities within the broader clean energy ecosystem, particularly in battery energy storage systems (BESS). The company has announced its entry into the BESS segment through its wholly owned subsidiary, VSL Powerhive Private Limited, as part of its strategy to participate in the rapidly expanding energy storage market. Initially, Vikram Solar plans to establish a 5GWh BESS manufacturing facility at Oragadam, Tamil Nadu, which is expected to be commissioned by FY27. The initiative is aimed at leveraging the growing need for energy storage solutions alongside renewable energy deployment.

Over the medium term, the company also plans to move toward backward integration into battery cell manufacturing. Vikram Solar has outlined plans to develop 7.5GWh of battery manufacturing capacity, expected to be operational by FY29, at an estimated capex of INR 44bn. The company has also indicated that this facility could be scaled up to 30GWh over the longer term, depending on market demand. The proposed entry into the BESS value chain is expected to complement the company's solar manufacturing business while positioning it to benefit from increasing adoption of integrated renewable energy and storage solutions.

Exhibit 12: Foray into BESS



Source: Company

Financial performance

Vikram Solar has demonstrated steady growth in financial performance over FY23–FY25, supported by gradual capacity expansion and improving operational scale. Revenue/EBITDA/PAT surged from INR 20bn/1.9bn/145mn in FY23 to INR 34bn/4.9bn/1.4bn in FY25, driven primarily by an increase in module manufacturing capacity from 3.5GW in FY23 to 4.5GW in FY25. Profitability improved during the period, with EBITDA margin expanding from 9% in FY23 to 14% in FY25, supported by operating leverage and higher production volumes. Operational throughput improved meaningfully, with module production increasing from 588MW in FY23 to 1,900MW in FY25.

Vikram Solar is expected to significantly scale up manufacturing capabilities, supported by planned capacity additions across modules and cells. Module capacity is projected to increase from 4.5GW in FY25 to 15.5GW by FY28, alongside the commissioning of 12GW of cell manufacturing capacity by FY28. Supported by these additions, module production is expected to go up from 1,900MW in FY25 to 7,716MW by FY28. Consequently, we expect Revenue/EBITDA/PAT to grow at a robust CAGR of 54%/65%/85% over FY25–FY28E, driven by higher utilisation and gradual integration across the solar manufacturing value chain.

However, as Vikram Solar is a relatively late entrant into cell manufacturing, profitability is expected to remain comparatively lower than that of integrated peers during the initial ramp-up phase. We expect EBITDA margin to peak at 20% in FY26, supported by operating leverage from recent capacity additions, before moderating to 17% by FY28, reflecting increased competition and normalisation in industry spreads. Similarly, Blended EBITDA/Wp is expected to moderate from INR 3.0/W in FY26 to INR 2.6/W by FY28.

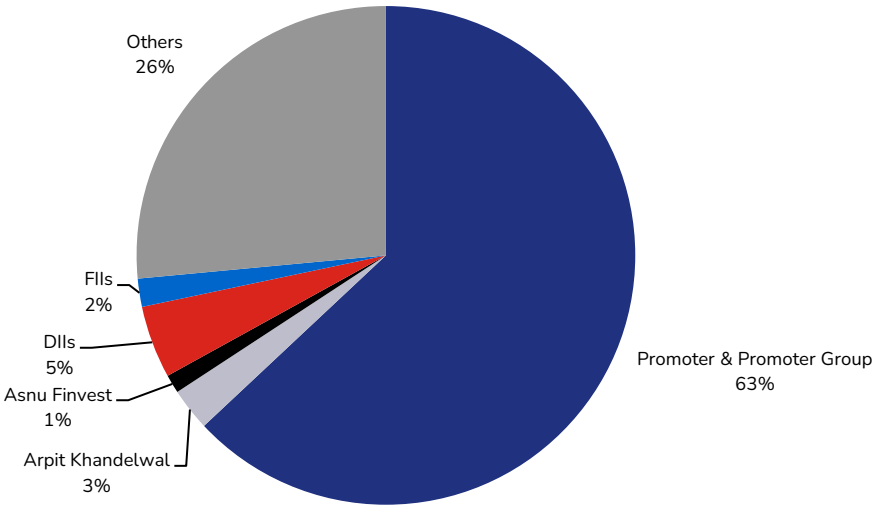
To support the planned capex for incremental module and cell capacity, expected to be commissioned largely by FY27, leverage levels are likely to increase over the medium term. Net debt is projected to rise from INR 417mn in FY25 to INR 33bn by FY28, reflecting the funding requirements associated with large-scale capacity expansion.

Exhibit 13: Board of directors and management

Name	Designation	Details
Mr Gyanesh Chaudhary	Chairman and Managing Director	In 2005, he incorporated Vikram Solar, which has become a major force in India's green energy sector. He is a business graduate from Cardiff Business School, University of Wales, Cardiff, UK, and studied Marketing and International Trade from Boston University. He further completed the OPM (Owner/President Management Program) from Harvard Business School, USA. He is the Co-Chair of the Indian Chamber of Commerce (ICC) National Expert Committee on Energy and also a member of the Confederation of Indian Industry (CII).
Mr K Subramanya	Independent Director	He holds a bachelor's degree of engineering in electronics and communications and bachelor's degree of science from the University of Mysore. He was previously associated with Bharat Heavy Electricals Limited as a senior commercial engineer, and Tata BP Solar Limited as chief executive officer. He has over 42 years of experience in the solar and renewable energy industry.
Mr. J.P. Dua	Independent Director	He holds a degree in law from Meerut University and master's degree in economics from Punjab University. He has served Oriental Bank of Commerce for more than 30 years. He has also served as Executive Director as well as Chairman & Managing Director of Allahabad Bank for five years. He was appointed to Board for Industrial & Financial Reconstruction (BIFR) and retired as Chairman in January 2016.
Ms Ratnabali Kakkar	Independent Director	She holds a post graduate diploma in management from the Indian Institute of Management, Calcutta. She has over 11 years of experience in wealth management industry. She is the founder and director of Magellan Wealth Management Limited.
Mr Sumit Binani	Independent Director	He holds a B.Com., PGDBM, ICWAI, and CS. He is also a registered Insolvency Professional with the Insolvency and Bankruptcy Board of India. He has experience in the securities market, operations management and insolvency law.
Mr Suresh Gopinathan Menon	Non Executive Director	He holds a Master of Science degree in Physics from the University of Poona, India, and a Master of Technology degree in Computer Science from the Indian Institute of Technology, Madras, India. He superannuated in May'22 as a Senior Vice President Tata Consultancy Services Ltd. (TCS).
Mr. Krishna Kumar Maskara	Whole Time Director	He holds a diploma and a post graduate diploma in management from Indira Gandhi National Open University, New Delhi. He is an associate of the Institute of Chartered Accountants of India. Previously, he was associated with Vikram India Limited as a general manager – finance. He has over 20 years of experience in the field of finance and solar industry.
Ms Neha Agrawal	Whole Time Director	She is certified as a company secretary by the Institute of Company Secretaries of India and is also an associate of the Institute of Chartered Accountants of India. She has over 14 years of experience in the field of consultancy and solar industry.
Mr Sameer Nagpal	CEO	He holds a PGDBM, from IIM Calcutta and BE from Delhi College of Engineering (now DTU). Mr Nagpal brings over three decades of leadership experience across diverse industries namely Livguard Energy Technologies, Dalmia Bharat Group, Shalimar Paints, Ingersoll Rand, Zicom and Carrier Air Conditioning.
Mr Ranjan Jindal	CFO	Ranjan Jindal serves as the CFO since 28th Mar'25, bringing over two decades of financial leadership and expertise to the organisation. He has graduated in Commerce from St Xavier's College under Calcutta University and is an Associate Member of the Institute of Chartered Accountants of India. He has held key financial roles at leading Companies including Essar Oil and Gas Exploration & Production Limited, VISA Steel Limited and Ferro Alloys Corporation Limited.
Mr Sudipta Bhowal	CS	He has completed B.Com., LLB, CS and PGDBM. He has been associated with the company since 24th Apr'23, and was appointed as the Company Secretary & Compliance Officer with effect from 27th Jun'23. He was previously associated with Jindal (India), Tega Industries, Haldia Petrochemicals, Kesoram Industries and Globsyn Technologies.

Source: Company, JM Financial

Exhibit 14: Shareholding pattern (%)



Source: BSE, JM Financial

Financial Tables (Consolidated)

Income Statement					(INR mn)
Y/E Mar	**FY24A**	**FY25A**	**FY26E**	**FY27E**	**FY28E**
Net Sales	25,110	34,235	45,773	76,727	124,174
Sales Growth (%)	21.1	36.3	33.7	67.6	61.8
Other Operating Income	-	-	-	-	-
Total Revenue	**25,110**	**34,235**	**45,773**	**76,727**	**124,174**
Cost of Goods Sold/Op. Exp	16,789	25,546	31,658	53,597	89,216
Personnel Cost	963	1,244	1,663	2,787	4,511
Other Expenses	3,372	2,525	3,376	5,659	8,444
EBITDA	**3,986**	**4,920**	**9,076**	**14,684**	**22,004**
EBITDA Margin (%)	15.9	14.4	19.8	19.1	17.7
EBITDA Growth (%)	114.1	23.4	84.5	61.8	49.8
Depn. & Amort.	1,380	1,560	2,025	5,059	7,038
EBIT	2,606	3,360	7,051	9,625	14,966
Other Income	130	361	482	809	1,308
Finance Cost	1,546	1,547	1,699	3,175	4,527
PBT before Excep. & Forex	1,189	2,174	5,835	7,259	11,747
Excep. & Forex Inc./Loss(-)	-116	-	-	-	-
PBT	1,073	2,174	5,835	7,259	11,747
Taxes	276	775	1,459	1,815	2,937
Extraordinary Inc./Loss(-)	-	-	-	-	-
Assoc. Profit/Min. Int.(-)	-	-	-	-	-
Reported Net Profit	797	1,398	4,376	5,444	8,810
Adjusted Net Profit	**797**	**1,398**	**4,376**	**5,444**	**8,810**
Net Margin (%)	3.2	4.1	9.6	7.1	7.1
Diluted Share Cap. (mn)	362	362	362	362	362
Diluted EPS (INR)	**2.2**	**3.9**	**12.1**	**15.0**	**24.3**
Diluted EPS Growth (%)	450.1	75.4	213.0	24.4	61.8
Total Dividend + Tax	-	-	-	-	-
Dividend Per Share (INR)	-	-	-	-	-

Source: Company, JM Financial

Balance Sheet					(INR mn)
Y/E Mar	**FY24A**	**FY25A**	**FY26E**	**FY27E**	**FY28E**
Shareholders Fund	4,454	12,420	32,248	37,692	46,502
Share Capital	2,588	3,165	3,617	3,617	3,617
Reserves & Surplus	1,866	9,255	28,631	34,075	42,885
Preference Share Capital	-	-	-	-	-
Minority Interest	-	-	-	-	-
Total Loans	8,083	2,307	12,985	42,515	40,030
Def. Tax Liab. / Assets (-)	-	-	-	-	-
Other non-current liabilities / Lease Liabilities	5,282	1,245	1,245	1,245	1,245
Total - Equity & Liab.	**17,820**	**15,971**	**46,478**	**81,452**	**87,778**
Net Fixed Assets	4,839	5,607	24,872	59,208	52,355
Gross Fixed Assets	7,761	9,601	30,890	70,285	70,469
Intangible Assets	67	98	98	98	98
Less: Depn. & Amort.	3,267	4,718	6,742	11,801	18,839
Capital WIP	278	626	626	626	626
Investments	-	-	-	-	-
Current Assets	20,522	22,151	34,974	42,283	65,687
Inventories	3,933	4,286	5,495	9,211	14,907
Sundry Debtors	11,853	12,286	16,137	27,051	43,778
Cash & Bank Balances	89	392	9,653	2,332	3,313
Loans & Advances	-	-	-	-	-
Other Current Assets	4,646	5,187	3,689	3,689	3,689
Current Liab. & Prov.	8,035	12,350	13,932	20,602	30,827
Current Liabilities	7,212	8,826	10,407	17,078	27,302
Provisions & Others	823	3,525	3,525	3,525	3,525
Net Current Assets	11,747	9,258	20,500	21,138	34,317
Other Non Current Assets/ROU Assets	1,234	1,106	1,106	1,106	1,106
Total - Assets	**17,820**	**15,971**	**46,478**	**81,452**	**87,778**

Source: Company, JM Financial

Cash Flow Statement					(INR mn)
Y/E Mar	**FY24A**	**FY25A**	**FY26E**	**FY27E**	**FY28E**
Profit before Tax	1,073	2,174	5,835	7,259	11,747
Depn. & Amort.	1,380	1,560	2,025	5,059	7,038
Net Interest Exp. / Inc. (-)	2,274	1,806	1,216	2,367	3,219
Inc (-) / Dec in WCap.	-3,097	-2,269	-3,479	-7,959	-12,199
Others	-	-	-	-	-
Taxes Paid	-110	-284	-1,459	-1,815	-2,937
Operating Cash Flow	**1,520**	**2,987**	**4,138**	**4,911**	**6,868**
Capex	-712	-1,464	-21,289	-39,395	-184
Free Cash Flow	808	1,523	-17,151	-34,485	6,684
Inc (-) / Dec in Investments	-	-	-	-	-
Others	75	-225	482	809	1,308
Investing Cash Flow	**-637**	**-1,688**	**-20,807**	**-38,587**	**1,125**
Inc / Dec (-) in Capital	-	6,526	15,452	-	-
Dividend + Tax thereon	-	-	-	-	-
Inc / Dec (-) in Loans	-233	-1,277	10,678	29,530	-2,485
Others	-577	-6,247	-200	-3,175	-4,527
Financing Cash Flow	**-810**	**-997**	**25,930**	**26,355**	**-7,012**
Inc / Dec (-) in Cash	**73**	**301**	**9,261**	**-7,321**	**981**
Opening Cash Balance	16	89	392	9,653	2,332
Closing Cash Balance	89	392	9,653	2,332	3,313

Source: Company, JM Financial

Dupont Analysis					
Y/E Mar	**FY24A**	**FY25A**	**FY26E**	**FY27E**	**FY28E**
Net Margin (%)	3.2	4.1	9.6	7.1	7.1
Asset Turnover (x)	1.4	2.0	1.5	1.2	1.5
Leverage Factor (x)	4.3	2.0	1.4	1.8	2.0
RoE (%)	19.7	16.6	19.6	15.6	20.9

Source: Company, JM Financial

Key Ratios					
Y/E Mar	**FY24A**	**FY25A**	**FY26E**	**FY27E**	**FY28E**
BV/Share (INR)	12.3	34.3	89.0	104.0	128.3
ROIC (%)	18.1	17.9	21.8	12.7	13.9
ROE (%)	19.7	16.6	19.6	15.6	20.9
Net Debt/Equity (x)	1.6	0.0	0.1	1.1	0.8
P/E (x)	87.1	49.6	15.6	12.6	7.8
P/B (x)	15.6	5.6	2.1	1.8	1.5
EV/EBITDA (x)	19.2	14.2	7.9	7.4	4.8
EV/Sales (x)	3.0	2.0	1.6	1.4	0.8
Debtor days	172	131	129	129	129
Inventory days	57	46	44	44	44
Creditor days	112	103	98	97	96

Source: Company, JM Financial

APPENDIX I

Investment in securities market are subject to market risks. Read all the related documents carefully before investing.

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Rating	**Meaning**
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ADD	Expected return >= 5% and < 15% over the next twelve months.
REDUCE	Expected return >= -10% and < 5% over the next twelve months.
SELL	Expected return < -10% over the next twelve months.

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