Waaree Energies Ltd. (WAAREEEN)

Renewable Energy | Plant visit

Not Rated

CMP: Rs2,172 | Target Price (TP): NA | Upside: NA

March 18, 2025

Waaree: Powering India's Solar Future

Key Points

- We recently visited the Waaree Energies plant in Chikhli (Gujarat) and had discussions with the management to understand their current business landscape.
- Solar energy is the lowest cost energy globally at this point in time. It is expected to remain the leading low cost energy source globally, with Solar PV installed capacity anticipated to rise from 1,064 GW in CY22 to 2,733 GW by CY28, reflecting a CAGR of 14% and is set to surpass natural gas by 2026 and coal by 2027.
- The company follows a cost-plus margin model. By FY27, with backward integration from ingots to wafers, there is an opportunity to increase EBITDA margins by 5% from the current ~19% in 9MFY25.
- According to management, company has a customer retention rate of over 90%, driven by its quality standards, global certifications, and 49-50 reliability tests per module**.** It is also expanding testing capacity by introducing new tests and doubling existing capabilities.

Company Overview: Waaree Energies Limited was founded in 1989 with its headquarters in Mumbai. With a current capacity of 12 GW, it is India's largest solar PV module manufacturing company.It has exponentially increased its capacity because of rising demand and healthy order book. It is expected to further increase the capacity to 21 GW by 2027.

The company's product portfolio includes a range of solar energy products, such as multicrystalline and monocrystalline modules, along with TopCon modules. These TopCon modules feature flexible bifacial designs (Mono PERC) available in both framed and unframed options, as well as building-integrated photovoltaic (BIPV) modules. Waaree Energies operates four manufacturing facilities located in Surat, Tumb, Nandigram, and Chikhli in Gujarat, India.and It also offers a wide range of solar products and solutions which includes manufacturing of solar modules, water pumps, inverters, and rooftop systems for commercial, residential, and industrial applications. Besides manufacturing solar products, it also provides EPC (engineering, procurement, and construction) services for solar projects through Waaree Renewable Technologies.

Margin Expansion with Backward Integration: Waaree, already forward-integrated through its EPC contracts, is further strengthening its position with a 6 GW backward integration expansion under the PLI Scheme, covering ingots, wafers, cells, and modules, with incentives offsetting 5% of manufacturing costs. The company is setting up a 5.4 GW cell manufacturing facility, where 1.4 GW of Mono PERC lines is already operational, while the remaining 4 GW of TOPCon capacity is expected to be operational by 1QFY26. The estimated investment for this expansion is ₹27 billion, with the average cost of setting up 1 GW of a cell plant ranging from ₹5-6 billion. Additionally, a fully integrated 6 GW facility in Odisha, covering ingot-to-module production, will require ₹90.5 billion. The company is targetting 11.4 GW solar cell capacity by FY27E—including a 5.4 GW facility in Chikhli by FY25E and a 6 GW plant in Odisha. The company aims to reduce third-party dependence and secure its supply chain. This comprehensive backward integration strategy is expected to significantly enhance profitability, improving EBITDA margins by 500 bps from the current ~19% in 9MFY25.

Est Change	-
TP Change	-
Rating Change	-

Company Data and Valuation Summary

Reuters:	WAAN.BO
Bloomberg:	WAAREEEN IN
Mkt Cap (Rsbn/US$bn):	610.5 / 7.0
52 Wk H / L (Rs):	3,743 / 2,026
ADTV-3M (mn) (Rs/US$):	4,027.4 / 46.6
Stock performance (%) 1M/6M/1yr:	(3.1) / 0.0 / 0.0
Nifty 50 performance(%)1M/6M/1yr:	(4.9) / (8.0) / (8.5)

Shareholding	1QFY25	2QFY25	3QFY25
Promoters	-	64.3	64.3
DIIs	-	2.8	2.7
FIIs	-	2.2	1.4
Others	-	30.7	31.6
Pro pledge	-	0.0	0.0

Financial and Valuation Summary

Particulars (Rsmn)	FY22	FY23	FY24
Net Sales	28,543	67,508	1,13,976
Growth YoY%	-	1	1
Gross margin %	*16%*	*21%*	*21%*
EBITDA	1,109.46	8,345.70	15,745.47
EBITDA margin %	*4%*	*12%*	*14%*
Adj PAT	797	5,002	12,744
Growth YoY%	-	*528%*	*155%*
Adj EPS	3.84	21.82	48.05
RoCE	*6.1%*	*23.5%*	*21.6%*
RoE	*18.6%*	*27.2%*	*31.2%*
RoIC	*7.7%*	*22.9%*	*47.0%*
P/E	550.5	96.9	44.0
EV/EBITDA	546.9	71.0	36.4
P/BV	142.0	33.0	14.9

Source: Bloomberg, Company, Nirmal Bang Institutional Equities Research

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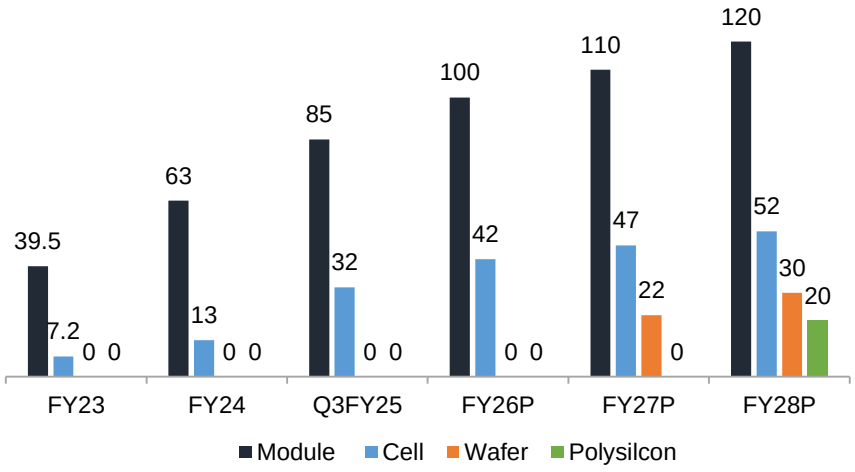
Indian solar industry

India's solar industry is growing rapidly, driven by government targets and increasing private investment. In 2024, the country's installed solar power capacity stood at 87.21 GW, with a goal of reaching 280 GW by 2030. The demand for solar modules is expected to rise from 28.3 GW in FY24 to 35 GW in FY25 and 58 GW by FY28. Similarly, solar cell consumption is set to grow from 22.1 GW in FY24 to 40.4 GW in FY25 and 78.3 GW by FY28.

India currently does not have any existing production capacity for the initial stages of the solar PV value chain ifrom polysilicon to wafer and it is mainly imported from China. High capex requirements and high complexity have been the main deterrents

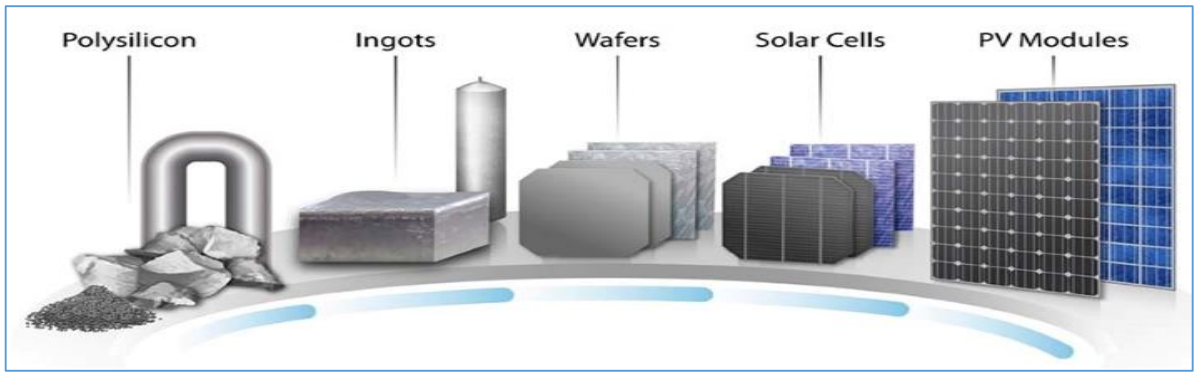
However, by 2028, the country is expected to establish a strong manufacturing presence in the solar module value chain. With substantial government support, India aims to integrate the entire production process, achieving a significant footprint in polysilicon, ingots/wafers, and solar cells.

Exhibit 1: Domestic Manufacturing Capacity across Solar Value Chain (GW)



Source: Company, Nirmal Bang Institutional Equities Research

Solar Value Chain



Source: Google

1. **Polysilicon:** The process starts with purification of silica which is mined from quartz deposits. The silica is then heated with carbon in an electric arc furnace, which produces metallurgical grade silicon. The metallurgical-grade silicon is then further purified through the chemical reduction process to produce polysilicon, which is 99.99% pure.
2. **Ingots:** The polysilicon is melted down and solidified into a cylindrical shape called a silicon ingot.
3. **Wafer production:** Silicon ingots are sliced into thin wafers using a diamond wire saw. The wire saw cuts the ingot into thin, uniform slices that are typically 200-300 microns thick. Wafers are cleaned using chemical solutions to remove any impurities and surface defects.
4. **Cell Production:** A layer of phosphorus is applied to one side, while boron is applied to the other. These layers create a p-n junction, which is essential for the solar cell to function. Antireflection coating (silicon nitride or titanium dioxide) is applied to reduce reflection and improve the cell's efficiency. Metal contacts are applied to the front and back of the cell to allow the flow of electricity. The cells are then tested to ensure they meet the required electrical performance standards.
5. **Module Assembly:** The solar cells are then connected in series to create a solar module. The cells are sandwiched between a layer of EVA (ethylene-vinyl acetate) and a sheet of glass or plastic. The EVA is used to bond the cells and protect them from moisture and other environmental factors.

The Government Push

BCD on Cells and Modules - Since April 1, 2022, a Basic Customs Duty (BCD) of 25% on solar PV cells and 40% on solar PV modules has been implemented. This has helped the domestic module manufacturers to stay competitive against the dumping of solar modules by the Chinese player.

Domestic Content Requirement (DCR) - Various government schemes like PM-KUSUM, Suryoday Yojna, and e Central Public Sector Undertaking (CPSU) have been introduced to promote domestically manufactured solar modules by providing subsidies and financial support to bridge the cost gap between imported and domestic solar cells and modules. To avail of these benefits, it is mandatory to use Domestic Content Requirement (DCR) cells and modules that meet the specifications and testing standards set by MNRE. These initiatives are expected to drive a demand of 35-40 GW for domestically manufactured DCR cells and modules.

Approved list of models and manufacturers - The Approved list of models and manufacturers (ALMM) was introduced in 2019 to ensure the quality and performance of solar modules used in India. It is a list of solar cell and module types and manufacturers in India that have been certified by the Bureau of Indian Standards. Only modules that are listed on the ALMM are eligible for use in government sponsored solar projects. ALMM policy became effective from April 1, 2024 and as per the latest list published by MNRE, the ALMM list still does not have any foreign manufacturer.

US a Major Market

The company has a 1.5 GW module manufacturing facility in Texas, designed for expansion to 3 GW and further up to 5 GW. Establishing a local presence in the U.S. helps bypass import restrictions on Chinese solar products while benefiting from policies like the Inflation Reduction Act (IRA) and other federal incentives for clean energy. However, the future of IRA benefits remains uncertain as the new administration has paused fund disbursement under the Inflation Reduction Act of 2022.

According to management, the removal of IRA would have minimal impact, as solar energy would still remain the lowest-cost electricity source. With IRA incentives, solar costs $50/MW, while without IRA, it rises to $80/MW, which is still significantly lower than coal at $250/MW.

World-class manufacturing facilities - Waaree's world-class manufacturing facilities, with ISO certifications and NABL-accredited laboratories, ensure superior product quality, attracting marquee clients. The facility follows global standards, conducting 49-50 rigorous tests for module reliability. Utilities, comprising ~50% of cell plant costs with a 14-18 month lead time, are crucial for operations. Waaree has invested in its TOPCon cell line, with 1.4 GW production starting soon and full 4 GW commissioning in the coming months. The Chikhli facility houses three module plants with 13 production lines, including flexible modules, and two cell plants with three PERC and eight TOPCon lines. Waaree sources most machinery from China, the rejection rate remains below 0.01%. Maintaining precise Parts Per Million (PPM) levels requires extensive utilities, handling hazardous gases, making safety a top priority in plant setup and operations.

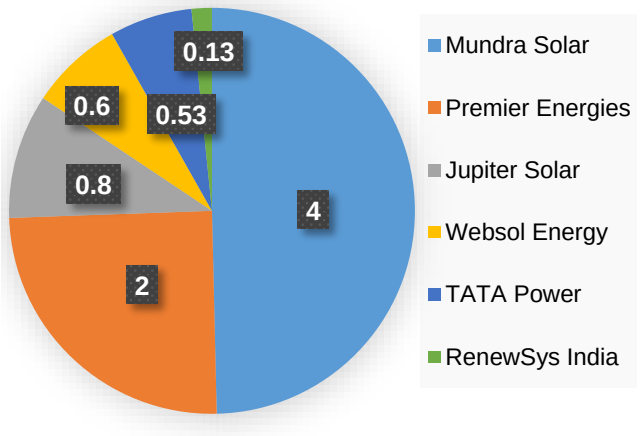
Source: Google

Exhibit 2: Waaree Capacity Details

Metric (GW)	FY22	FY23	FY24	FY25E	FY26E	FY27E
Module Capacity	4	9	12	14.9	14.9	20.9
Cell Capacity	-	-	-	5.4	5.4	11.4
Ignot + Wafer Capacity	-	-	-	-	-	6

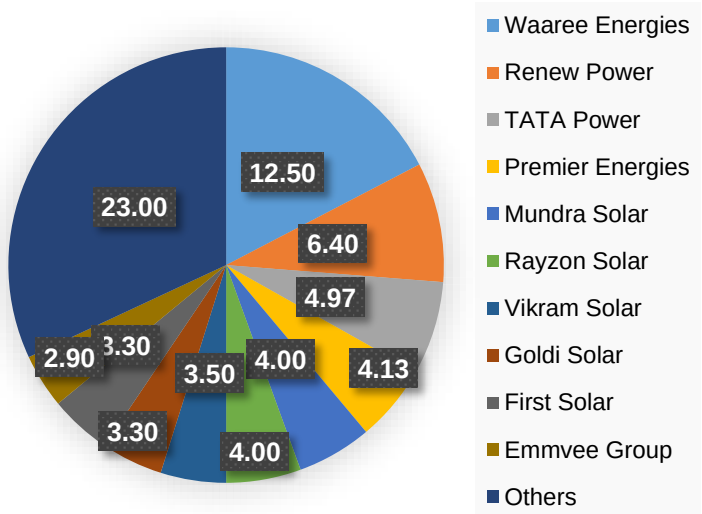
Source: Company, Nirmal Bang Institutional Equities Research

Exhibit 3: Domestic Cell Manufacturing Capacity (FY24)



Source: Company, Nirmal Bang Institutional Equities Research

Exhibit 4: Domestic Module Manufacturing Capacity (FY24)



Source: Company, Nirmal Bang Institutional Equities Research

Future Initiative

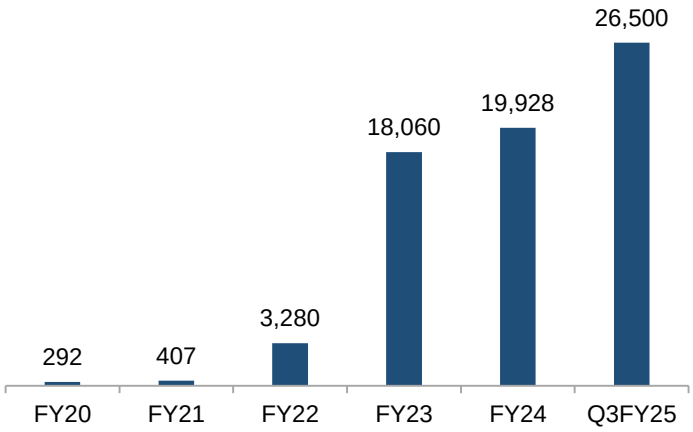
Waaree is advancing technology upgrades, reducing costs, and expanding its renewable energy footprint. It plans a 20 **(**National Centre for Hydrogen and Materials)NCMH Green Hydrogen plant and water electrolyzer manufacturing capacity in Chikhli, starting with Alkaline electrolysis and later adopting (Proton Exchange Membrane)PEM and (Anion Exchange Membrane)AEM technologies. The company was awarded a 300 MW PLI tender for Electrolyser manufacturing facility.It will invest ₹5.5billion in electrolyzer production, with operations set to start from FY26. Additionally, it received SECI approval for a 90,000 MTPA Green Hydrogen facility.

Waaree is investing ₹20.73billion in a 3.5 GWh lithium-ion cell plant, ₹6.5 billion in renewable power infrastructure, and ₹1.300 billion in its inverter business. It also operates an online solar solutions store. The acquisition of Enel Green Power India (under process) will strengthen its manufacturing and EPC businesses, reinforcing its position in solar and renewable energy.

Well-positioned for future growth

Strong Order Book - Waaree has seen a significant rise in its order book, which now stands at 26.5 GW, valued at approximately ₹500 billion. The order book is well-diversified, with 54% from international markets and 46% from India. However, revenue from the last quarter was 79% from India and 21% from global markets, reflecting varying project timelines. In India, order cycles range from 1-2 months for retail customers and 9-12 months for large utility projects, while international orders, particularly in the U.S., span 1-2 years. Despite raw material price volatility, margins have improved due to increased order flow, pass-through clauses, and order-backed procurement strategies. Additionally, customer advances have strengthened liquidity.

Exhibit 5: Order Book in MW



Source: Company, Nirmal Bang Institutional Equities Research

Export Tailwind - In 3QFY25, exports accounted for 21% of revenue, making it a leading player in India's PV module exports. The shift in global supply chains under the China+1 strategy, along with import tariffs imposed by the U.S. and U.K. on Chinese products, has boosted the competitiveness of Indian modules. The Uyghur Forced Labor Prevention Act (UFLPA), enforced in June 2022, banned imports into the U.S. of goods linked to forced labor in China, particularly from Xinjiang. This created opportunities for Indian manufacturers, which meet stringent quality standards and have strong production capabilities. As a result, over 98% of India's module exports have been directed to the U.S

Financial statement

Exhibit 6: Income statement

Y/E March (Rs mn)	FY22	FY23	FY24
Net Sales	**28,543**	**67,508**	**1,13,976**
Growth YoY%	-	*137%*	*69%*
Gross profit	**4,658**	**14,345**	**23,838**
Gross margin %	***16.3***	***21.2***	***20.9***
Staff costs	***569.1***	1,238	1,772
% of sales	*2.0*	*1.8*	*1.6*
Other expenses	2,980	4,761	6,321
% of sales	*10.4*	*7.1*	*5.5*
EBITDA	**1,109**	**8,346**	**15,745**
Growth YoY%	-	-	-
EBITDA margin %	***3.9***	***12.4***	***13.8***
Depreciation	433	1,641	2,768
EBIT	677	6,704	12,977
Interest	409	823	1,399
Other income	916	1,095	2,351
PBT (bei)	1,184	6,977	13,929
PBT	1,184	6,771	17,342
ETR	33%	26%	27%
PAT	797	5,002	12,744
Adj PAT	**797**	**5,002**	**12,744**
Growth YoY%	**-**	***528%***	***155%***

Source: Company, Nirmal Bang Institutional Equities Research

Exhibit 7: Cash flow

Y/E March (Rs mn)	FY22	FY23	FY24
PBT	**1,184**	**6,772**	**17,342**
Depreciation	433	1,641	2,768
Interest	361	694	1,240
Other adjustments	-54	302	-865
Change in Working capital	5,344	7,196	5,916
Tax paid	-259	-1,004	-3,351
Operating cash flow	**7,009**	**15,602**	**23,050**
Capex	-4,965	-8,654	-13,423
Free cash flow	**2,044**	**6,948**	**9,627**
Other investing activities	-1,784	-12,284	-19,979
Investing cash flow	**-6,749**	**-20,938**	**-33,403**
Issuance of share capital	-	10,401	10,044
Movement of Debt	1,407	-1,508	416
Dividend paid (incl DDT)	-5	-3	-5
Other financing activities	-417	-2,466	-1,363
Financing cash flow	**985**	**6,425**	**9,092**
Net change in cash flow	**1,245**	**1,089**	**-1,260**
Opening C&CE	128	1,392	2,537
Closing C&CE	**1,392**	**2,537**	**1,214**

Source: Company, Nirmal Bang Institutional Equities Research

Exhibit 8: Balance sheet

Y/E March (Rs mn)	FY22	FY23	FY24
Share capital	1,971	2,434	2,630
Reserves	2,305	15,950	38,249
Net worth	**4,276**	**18,384**	**40,878**
Long term debt	1,890	1,458	1,025
Short term debt	1,241	1,277	2,147
Total debt	**3,131**	**2,735**	**3,172**
Net debt	**-533**	**-14,629**	**-34,619**
Other non-current liabilities	1,231	5,064	17,003
Total Equity & Liabilities	**22,374**	**74,199**	**1,13,137**
Gross block	**6,841**	**7,197**	**16,659**
Accumulated depreciation	1,193	2,715	5,166
Net Block	**5,648**	**9,912**	**11,494**
CWIP	1,227	5,370	13,413
Intangible and others	605	1,138	3,003
Other non-current assets	1,452	2,949	5,097
Investments	1,492	447	711
Trade receivables	925	3,126	9,714
Inventories	5,382	27,089	25,855
Cash & Cash Equivalents	3,664	17,364	37,792
Other current assets	1,979	6,803	6,058
Total current assets	**13,442**	**54,829**	**80,131**
Trade payables	5,348	14,316	14,752
Other current liabilities	8,388	33,700	37,332
Total current liabilities	**13,735**	**48,016**	**52,084**
Total Assets	**22,374**	**74,199**	**1,13,137**

Source: Company, Nirmal Bang Institutional Equities Research

Exhibit 9: Key ratios

Y/E March	FY22	FY23	FY24
Per share (Rs)			
Adj EPS	4	22	48
Book value	15	64	142
DPS	0.0	0.1	0.4
Valuation (x)			
P/Sales	2.2	0.9	0.5
EV/EBITDA	547	71	36
P/E	550.5	96.9	44.0
P/BV	142.0	33.0	14.9
Return ratios (%)			
RoCE	6%	23%	22%
RoCE (pre-tax)	9%	32%	29%
RoE	18.6%	27.2%	31.2%
RoIC	8%	23%	47%
Profitability ratios (%)			
Gross margin	16%	21%	21%
EBITDA margin	4%	12%	14%
PAT margin	3%	7%	11%
Liquidity ratios (%)			
Current ratio	1.0	1.1	1.5
Quick ratio	0.6	0.6	1.0
Solvency ratio (%)			
Net Debt to Equity ratio	0.73	0.15	0.08
Turnover ratios			
Fixed asset turnover ratio (x)	4.2	7.8	8.4
Debtor days	12	11	21
Inventory days	69	88	85
Creditor days	68	53	47
Net Working capital days	149	152	152

Source: Company, Nirmal Bang Institutional Equities Research

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BUY > 15%

HOLD -5% to14%

SELL < -5%

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