A FORTUNE 500 COMPANY INDIA

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India’s Solar Policies: Key Takeaways from an Indian Manufacturing Pioneer

Mahesh Murthy

Chief Technology Officer, Waaree Group

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About Us: Waaree Energies Limited - Introduction

35+ Years
Experience

US $ 1.8 Bn
Revenue (FY25)
+ 65 % CAGR

US $ 11+ Bn
Market Cap
(WEL+WRTL+ISL)

~24 GW
Solar Module
Capacity (global)

5.4 GW
Solar Cell
Capacity

3.4+ Bn
New Investments

15,000+
People

20+ Countries
Supply of Products

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Our Manufacturing Strength

21.15 GW
India Aggregate Module Capacity

2.6 GW
USA Module Capacity (Additional 1.6GW under expansion)

5.4 GW
India Aggregate Cell Capacity

4 GW
Inverter Capacity

10 GW
Ingot Wafer Cell Manufacturing Facility (Expansion Plan)

20 GWh
Battery Cell Manufacturing Capacity (Expansion Plan)

1 GW
Electrolyzer Capacity (Expansion Plan)

Industry Leading Scale

Manufacturing setup in Gujarat, Noida & USA – India's largest solar module & Cell manufacturer.

Fully Automated Production

End-to-end automation throughout manufacturing process

Rigorous Quality Control

Comprehensive 100% testing regime with multi-stage visual inspections that exceed global quality standards

Advanced Process Technologies

Precision manufacturing utilizing laser cell cutting, IR-based soldering to reduce mechanical stress, two-stage lamination for enhanced reliability, and automated sorting systems for optimal binning

World-Class Testing Laboratory

NABL-accredited PV Module Test Laboratory (PMTL) performing comprehensive reliability testing

Waaree Modules Factory

Waaree Solar Americas

Electrolyzer Plant - India

Waaree Inverters Plant

Our History | 30 MW to ~24 GW in ~18 Years

India's favorable solar policies have fueled this recent growth

Aggregate Installed Capacity (Module)

2007: 30MW — **Historical Growth** — **2023: 12 GW** → **Present: ~23.75 GW** [2]

1989-2007

1989:
Waaree Instruments- Started Manufacturing of Measuring Instruments

2007-2011

2007:
Entered solar energy sector

2011:
Initiated EPC business

2011 – 2017

2017:
Acquired NEEPCO's stake in the JV[1]

2014:
JV with NEEPCO for a solar power project

2018 – 2021

- **2018:** Divested Waaneep Solar Pvt Ltd. to Hero Solar Energy Pvt Ltd.
- **2018:** Commissioned 1GW PV plant capacity

2021 – 2023

- **Awarded PLI for a 6 GW integrated ingots, wafer, cell, module mfg. facility**
- Initiated construction of 5.4 GW cell mfg. facility
- Increased capacity to 12GW

2024 - 2027

- **6GW integrated expansion expected to commence commercial operations in FY27**
- Listed on BSE & NSE
- Commenced operations at Indosolar facility
- **Awarded PLI for a 300 MW Electrolyser mfg. facility**
- Entered a Share Purchase Agreement for acquisition of ENEL Green Power India
- Trial production commenced at 5.4GW cell mfg. facility
- Commercial production of 1.6GW module mfg. initiated in USA facility
- **Awarded 90kT green hydrogen production PLI (LoA awaited)**
- Added 1.8GW solar module manufacturing capacity
- Acquisition of KOTSONS transformers, Racemosa Energy Meters & Burger Meyer (USA)

Note: "~" represents rounded off numbers. Largest manufacturer of solar modules as per Crisil Report dated June 2024. All years above are calendar years; 1. The JV, i.e. Waaneep Solar Private Limited, became a wholly owned subsidiary company of WEL pursuant to such acquisition from NEEPCO. 2. Includes 1.3 GW from Indosolar and 1.6GW from USA

BASED ON PUBLIC INFORMATION | Non-Exhaustive (Key Players Only) | Update as of December'25

POLICY IMPACT #1

Aggressive capacity additions by key players driving module capacity from current **142+ GW** to **250+ GW** by FY30

Module Capacity in GW	FY25 (A)	FY26 (A) As on Dec 2025	Month of Last Capacity Updation	FY26 (P)	FY27 (P)	FY28 (P)	FY30 (P)
Waaree	16.7	20.2	Dec-25	23.2	23.2	23.2	23.2
Reliance*	1.0	2.4	Aug-25	5.0	10.0	20.0	20.0
Adani Solar	4.0	4.0	Oct-24	10.0	10.0	10.0	15.0
Premier Energies	5.1	5.1	Jun-25	11.1	11.1	11.1	11.1
Vikram Solar	4.5	9.5	Nov-25	15.5	17.5	17.5	17.5
Goldi Solar	14.7	14.7	Mar-25	14.7	14.7	14.7	14.7
Rayzon Solar	6.0	8.9	May-25	8.9	8.9	8.9	8.9
Insolation Solar	3.5	5.5	Dec-25	7.0	7.0	7.0	7.0
Emmvee Power	7.8	7.8	Dec-25	10.3	10.3	16.3	16.3
TP Solar	5.0	5.0	Jun-25	5.0	5.0	5.0	5.0
Saatvik Solar	3.8	4.8	Nov-25	4.8	8.8	8.8	8.8
Renew	6.4	6.4	May-24	7.0	9.0	10.0	10.0
Avaada	5.4	8.5	Sep-25	10.0	13.6	13.6	13.6
Alpex Solar		1.2	Aug-25	2.4	3.6	3.6	3.6
Solex Energy	1.5	4.0	Feb-25	4.0	6.5	6.5	10.0
Renewsys	3.4	5.5	Nov-25	6.2	6.2	6.2	6.2
Websol Energy	0.6	0.6	Sep-25	0.6	2.6	4.6	4.6
Inox Solar		1.3	Sep-25	3.0	7.8	7.8	7.8
First Solar	2.6	3.3	Jan-24	4.5	5.0	5.0	5.0
Sael Solar	3.6	3.6	Jul-25	3.6	8.5	8.5	8.5
Gautam Solar	3.2	3.9	Nov-23	5.0	5.0	5.0	5.0
Navitas	2.5	2.5	Jul-25	3.0	3.0	3.0	3.0
Cosmic PV	1.4	3.0	Mar-25	3.0	3.0	3.0	3.0
Grew	3.0	6.5	Sep-25	11.0	14.0	14.0	14.0
Pahal Solar	2.4	2.4	Oct-25	2.4	2.4	2.4	2.4
Veda Solar		0.5	Jul-25	1.5	1.5	1.5	1.5
Jakson Engineers	1.2	1.2	Jul-25	5.2	5.2	5.2	5.2
Total	**109.3**	**142.3**		**187.9**	**223.4**	**242.4**	**250.9**

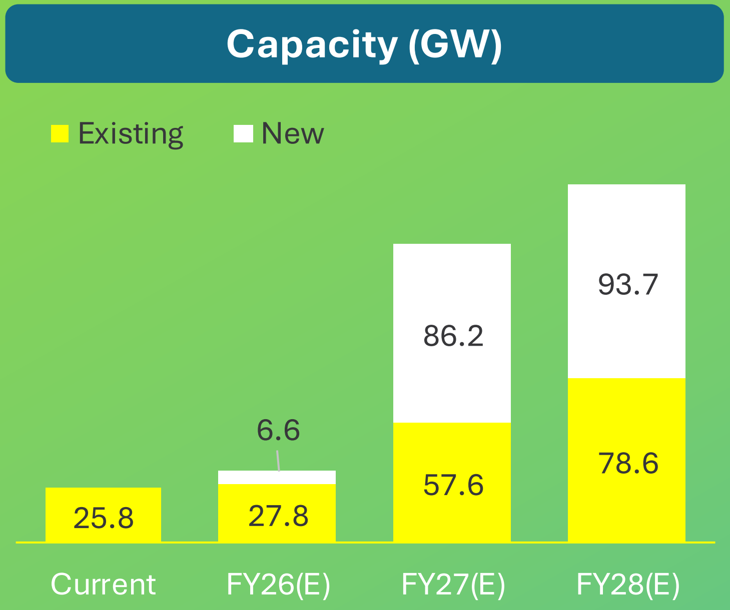
Listed / Parent Company Listed | *IPO Planned in 2026*

*Assuming 0.6 GW each line of the 4 lines as announced by Reliance

(A) – Actual ; (P) – Planned

POLICY IMPACT #2

Domestic Cell Capacity to grow 5x in next 2-3 years to 170+ GW by FY28 based on announcements



Existing players and new entrants driving unprecedented growth

	Player	Capacity (GW)			
		Current	FY26(E)	FY27(E)	FY28(E)
Existing Players	Waaree	5.4	5.4	15.4	15.4
	Adani Solar	4.0	4.0	10.0	10.0
	Premier	3.2	3.2	7.0	10.0
	Jupiter	0.8	2.8	6.8	10.8
	Tata Power	4.8	4.8	4.8	4.8
	EMMVEE	2.9	2.9	2.9	8.9
	Renew	2.5	2.5	6.5	6.5
	Websol	1.2	1.2	1.2	5.2
	Evervolt	1.0	1.0	3.0	7.0
	Sub-Total	**25.8**	**27.8**	**57.6**	**78.6**
New Entrants	Avaada		6.0	12.0	12.0
	Saatvik Solar			4.8	4.8
	SAEL Solar			5.0	5.0
	Rayzon Solar			3.5	3.5
	Insolation Ene			4.5	9.0
	Renewsys		0.6	3.1	3.1
	Grew Solar			8.0	8.0
	Reliance			10.0	10.0
	Jackson			6.0	6.0
	Inox			5.0	5.0
	Vikram Solar			12.0	12.0
	Alpex Solar			2.2	2.2
	Gautam Solar			5.0	5.0
	Goldi Solar			1.2	2.8
	Involt Energy			1.7	1.7
	Solex			2.2	5.2
	Sub-Total	**-**	**6.6**	**86.2**	**93.7**
	Total	**25.8**	**34.4**	**143.8**	**172.3**

POLICY IMPACT #3

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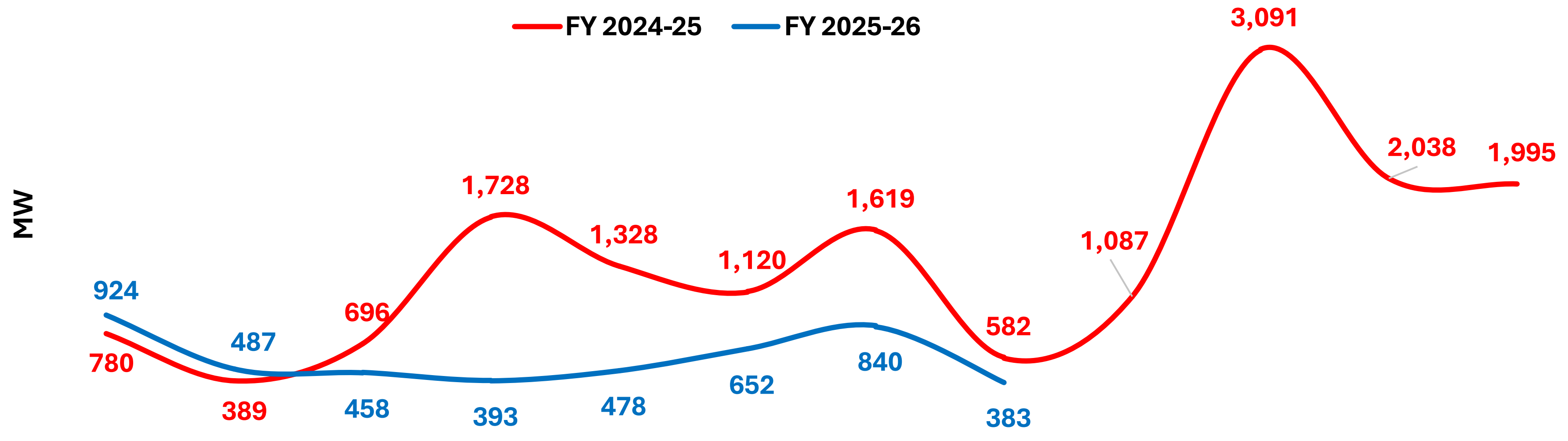
Module Import Trend: From 15.3 GW (FY25) to 3.6 GW in FY26 (till Nov’25)

Developers and EPC Players leading the imports



Category	FY	UoM	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Pure Developer	**2024-25**	**MW**	481	115	368	1,297	1,129	903	1,346	408	791	2,630	1,556	1,395	**12,418**
	2025-26	**MW**	514	307	336	198	217	214	476	124					**2,386**
Developer-cum-Manufacturer	**2024-25**	**MW**	89	121	182	183	60	-	2	-	-	178	187	58	**1,061**
	2025-26	**MW**	154	40	10	30	23	80	42	14					**394**
Manufacturer	**2024-25**	**MW**	33	47	62	1	5	24	117	88	157	39	104	109	**786**
	2025-26	**MW**	34	26	15	9	27	4	23	52					**191**
EPC/Installer	**2024-25**	**MW**	54	37	44	140	53	143	107	63	36	132	73	169	**1,052**
	2025-26	**MW**	79	58	22	65	65	105	200	69					**662**
Total	**2024-25**	**MW**	**654**	**320**	**656**	**1,621**	**1,247**	**1,070**	**1,572**	**559**	**984**	**2,979**	**1,920**	**1,713**	**15,317**
	2025-26	**MW**	**781**	**431**	**383**	**302**	**332**	**403**	**741**	**259**					**3,633**

BASED ON PUBLIC INFORMATION

Last updated : 15th Dec’2025

POLICY IMPACT #4

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Total of **23.7 GW enlisted module capacity** as per ALMM

As on 15th Dec 2025

Capacity (MW)	1,893	1,553	1,174	751	440	339	1,766	1,939	53	4,480	280	602	3,923	1,328	3,212
Busbar	16	16	10	10	10	10	10	10	10	10	10	10	10	10	-
Average Cell Efficiency (%)	25.27	24.62	23.24	23.24	23.10	23.10	23.35	23.43	23.30	23.25	22.89	23.16	25.54	23.55	-
Type of Cell	Bifacial N-Type TOPCon Cell	Bifacial N-Type TOPCon Cell	Bifacial Mono c-Si PERC Cell	Bifacial Mono c-Si PERC Cell	Bifacial Mono PERC, P type	Bifacial Mono PERC, P type	Bifacial Mono c-Si PERC Cell	Bifacial N-Type TOPCon Cells	Mono Crystalline TOPCon Bifacial Solar cell	Mono Crystalline PERC Bifacial Solar cell	Bifacial Mono c-Si PERC Cells	Mono Crystalline PERC (Bifacial), P-Type Bifacial	Mono Crystalline TOPCon (N-Type) Bifacial	Mono Crystalline PERC (P type)	-
State	Gujarat	Karnataka	Telangana	Telangana	Himachal Pradesh	Himachal Pradesh	Gujarat	Gujarat	Tamil Nadu	Tamil Nadu	Karnataka	West Bengal	Gujarat	Gujarat	Tamil Nadu

Looking ahead: Favourable policies key enabler to achieving solar autonomy

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Deep Dive: Our perspectives on some of the gaps...

1. Production Linked Incentive (PLI)
2. DCR vs non-DCR demand
3. ALMM (List I and II)
4. Innovation & Global Competitiveness

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1 Production Linked Incentive (PLI)

Current Situation

- 2 yr extension (Oct'25)
- PLI benefit - only last three years!
- Since scheme is front loaded, the revenue foregone (>50% of the PLI eligibility)

Challenges

- Loss of >50% of PLI would affect the financial viability
- Most projects were delayed - geo-political situation, restriction in access to Chinese machinery – PLI partners cannot be solely responsible!
- Now most projects are under implementation, but this loss of PLI funds a concern!

Support Required

1. Government may give the full five year entitlement for PLI

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2a DCR Demand Scenario

Current Situation

- Domestic cell manufacturing has ramped up - ALMM-listed cell capacity to expand sharply
- However, DCR module demand remains limited !
    - Some PM-KUSUM C demand fulfilled by non-DCR modules
- ALMM for cells becomes mandatory from 1 June 2026, but demand impact will materialize after 6–9 months due to tendering timelines (DCR cell adoption probably ~30% today)

Support Required

1. More demand for **Make in India** with greater deployment
2. Launch new DCR-specific projects for next 12 months
3. Expand and extend PM-KUSUM C and Phase II with DCR mandate
4. Expedite pending CPSU tenders with DCR eligibility
5. Any extension should be given with DCR module only

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2b Non-DCR Demand Scenario

Current Situation

- Non-DCR projects continue to absorb imported modules, despite adequate domestic capacity

Risks

- Price-based tendering favours imports
- Weak enforcement perception around ALMM discipline
- Domestic manufacturers face under-utilization despite scale-up

Support Required

1. Strengthen ALMM enforcement and compliance monitoring
2. Discourage import-heavy EPC-led procurement practices
3. Introduce domestic preference/scoring advantage for Indian modules in non-DCR tenders
4. Support for Make in India for pass through requirements for Green Hydrogen projects
5. Support to stop import of modules from FTA countries

Assuming Cell-to-Module losses of ~3%, avg. module efficiencies range from **19% - 22%** : lower than the global benchmark by **1 – 1.5%** (TOPCON)

As on 15th Dec 2025

Capacity (MW)	1,893	1,553	1,174	751	440	339	1,766	1,939	53	4,480	280	602	3,923	1,328	3,212
Busbar	16	16	10	10	10	10	10	10	10	10	10	10	10	10	-
Average Cell Efficiency (%)	25.27	24.62	23.24	23.24	23.10	23.10	23.35	23.43	23.30	23.25	22.89	23.16	25.54	23.55	-
Type of Cell	Bifacial N-Type TOPCon Cell	Bifacial N-Type TOPCon Cell	Bifacial Mono c-Si PERC Cell	Bifacial Mono c-Si PERC Cell	Bifacial Mono PERC, P type	Bifacial Mono PERC, P type	Bifacial Mono c-Si PERC Cell	Bifacial N-Type TOPCon Cells	Mono Crystalline TOPCon Bifacial Solar cell	Mono Crystalline PERC Bifacial Solar cell	Bifacial Mono c-Si PERC Cells	Mono Crystalline PERC (Bifacial), P-Type Bifacial	Mono Crystalline TOPCon (N-Type) Bifacial	Mono Crystalline PERC (P type)	-
State	Gujarat	Karnataka	Telangana	Telangana	Himachal Pradesh	Himachal Pradesh	Gujarat	Gujarat	Tamil Nadu	Tamil Nadu	Karnataka	West Bengal	Gujarat	Gujarat	Tamil Nadu

3 ALMM –I and II

Current Situation

- Scale (~140+ GW modules), but Eta below global benchmarks

Risks

- No strong push to shift to higher-efficiency technologies; tenders do not reward efficiency improvements
- India becoming a destination for lower-efficiency products for government subsidy projects
- All govt supported projects like Pumps / KUSUM are biggest buyers for low efficiency modules

Support Required

1. Standardise minimum 22% modules efficency for all Govt supported projects and periodic upward revision, technology agnostic
2. Recognition of higher-efficiency modules in government procurement
3. Advance ALMM- List III (wafer) compliance deadline to June 2027

4 Innovation & Global Competitiveness

Current Situation

- R&D in India lags global benchmarks, industry playing catch-up
- Industry-academia engagements have to deliver larger impact
- Manufacturing equipment and process SOPs are not based on indigenous designs and know-how

Risks

- Continue to be a fast follower rather than a leader!

Support Required

1. Higher investment to support module efficiency improvements, next gen solar technologies (e.g. tandem cells)
2. Launch an Indian "Top Runner"– type programme
3. Schemes to support local equipment manufacturing for giga scale factories
4. Strengthen domestic supply chain


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