Waaree Energies

Executing Eclectic Energy Integration

BRAVEHEART '**BUY**'

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- Radiating cash flows and profitability: Strong operating cash flows shall conserve balance sheet strength and generate robust return ratios
- Imponderable risks loom: Government support, module oversupply
- Valuation – similar to Indian IT in 2000s?; DCF TP implies 25% upside potential; new industry life cycle
  - Valuation sensitivity and peer group valuation
- Differentiated long-term strategy:
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  - FDRE key to counter renewable energy intermittency
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Investment thesis

Executing eclectic energy integration (‘BUY’; TP INR2,805)

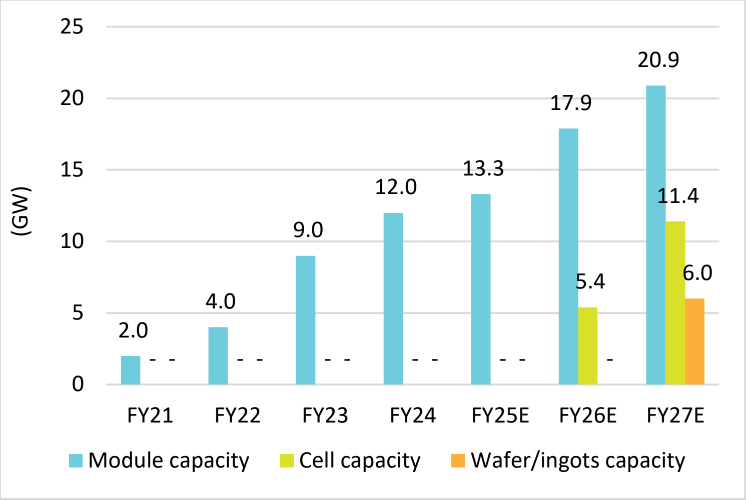
Waaree is not just solar; it is strategically pivoting for exponential growth across the nascent, but multi-decadal renewable energy/green hydrogen opportunity. The company’s ballooning capacity and burnishing DCR-linked realisation underpin our FY24–27E revenue/EBITDA CAGR of 30%/54%. The cell plant start-up would fast-charge EBITDA by INR20bn in FY26E (we model in only INR8bn).

- **Backward integration to fuel 54% CAGR in EBITDA over FY24–27E**
  - *Revenue/EBITDA to grow at a 30%/54% CAGR driven by a 25%/8x/6GW surge in module/cells/new wafer capacity.*
  - *We reckon Waaree’s EBITDA margin shall surge to 23% by FY27E (closest peer Premier Energies clocked 30% in Q3FY25) driven by government support through ALMM, DCR mandates. We expect margins to peak at 24% by FY28E as competition rises.*
- **All-round strategy to de-risk and sustain growth at modest margins**
  - *Waaree is prudently executing a long-term strategy of becoming a horizontally and vertically integrated New Energy play by foraying into production of green hydrogen (G H2), electrolyser, li-ion advanced cell, inverter manufacturing and BESS.*
  - *The strategy of scaling up operations by entering new-age areas shall tie up multi-decadal growth and enable it to achieve targeted 20% sustainable EBITDA margin.*
- **Valuation: High potential returns; strong balance sheet, high RoE**
  - *Much like the IT sector’s valuation trend during Y2K, Waaree’s high 24x FY25E EV/EBITDA factors in explosive growth with a subsequent earnings catch-up. Based on our projections of a 54% EBITDA CAGR, strong cash flow, robust balance sheet and an RoE of 30%-plus, we reckon EV/EBITDA will correct to a reasonable 11x FY27E.*
- **Imponderables: We gauge sensitivities and attempt to build them in**
  - *Inevitably, new industries raise imponderable risks—eventual import tariffs cut, technological upgrades and potential modules overcapacity.*
  - *We attempt to factor in those and also provide a valuation sensitivity at different growth rates with a base case of a modest nominal free cash flow CAGR of 17% over FY24–45E.*
- **Initiating with a BRAVEHEART ‘BUY’ (TP: INR2,805); caveat emptor: imponderable risks.**

Exponential volume and margin-driven growth…

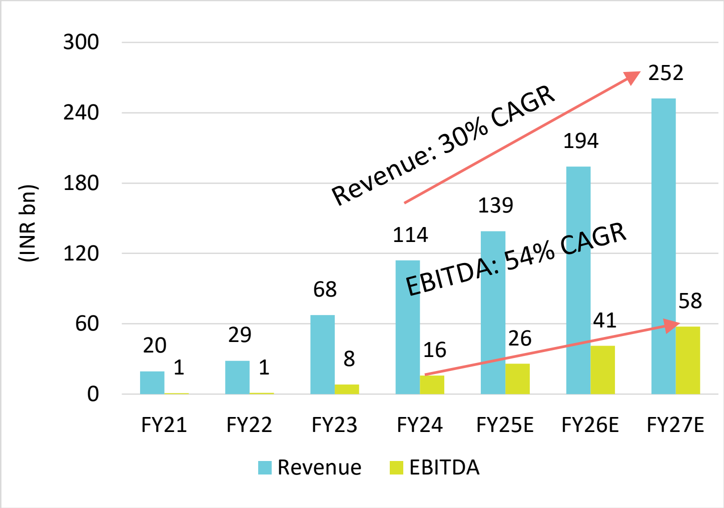
- Waaree's FY24–27E revenue/EBITDA to surge at 30%/54% CAGR driven by a sizable order book of 26.5GW valued at INR500bn
- EBITDA margin to jump from 14% in FY24 to 23% by FY27E driven by backward integration and operating leverage; shift from moderate-margin ALMM modules to high-margin DCR modules shall lift both realisation and margins
- Competitiveness vis-a-vis peers likely to improve due to capacity expansion and backward integration to solar cells and wafers/ingots; solar module/cell/wafer capacity to burgeon post-expansion to 21GW/11GW/6GW

Solar module capacity expansion and backward-integration to solar cells, wafers/ingots to support growth



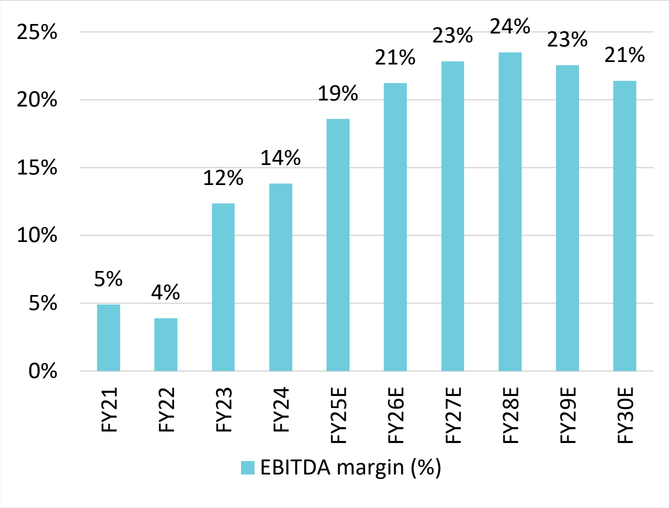
Source: Company, Nuvama Research

Revenue/EBITDA CAGR of 30%/54% over FY24–27E…



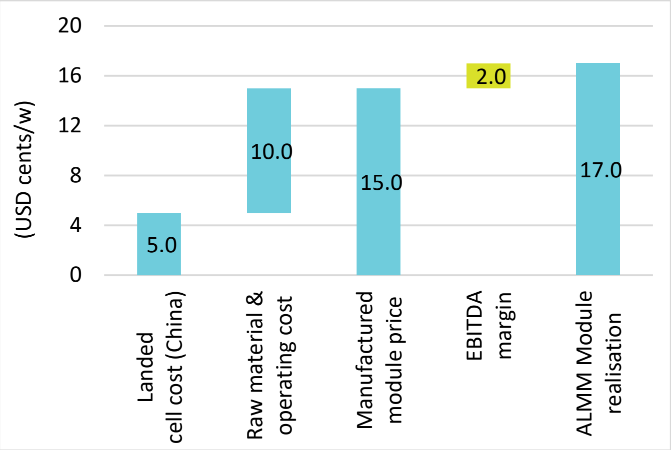
Source: Company,, Nuvama Research

…with EBITDA margin surging to 23% by FY27 and peaking at 24% in FY28E



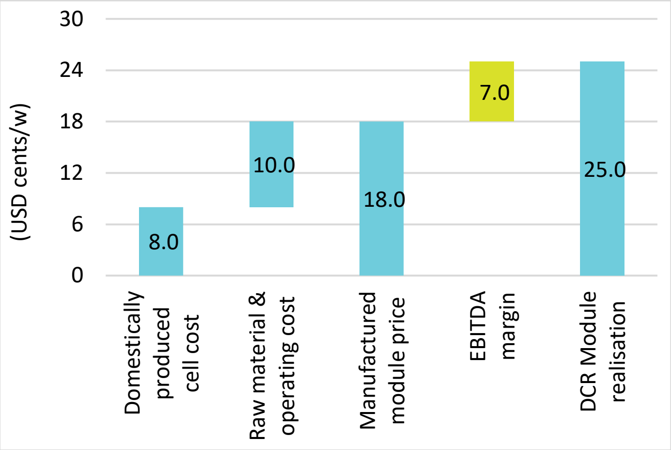
Source: Company,, Nuvama Research

Pivoting away from modest-margin ALMM modules…



Source: Company,, Nuvama Research

…to high-margin DCR modules



Source: Company,, Nuvama Research

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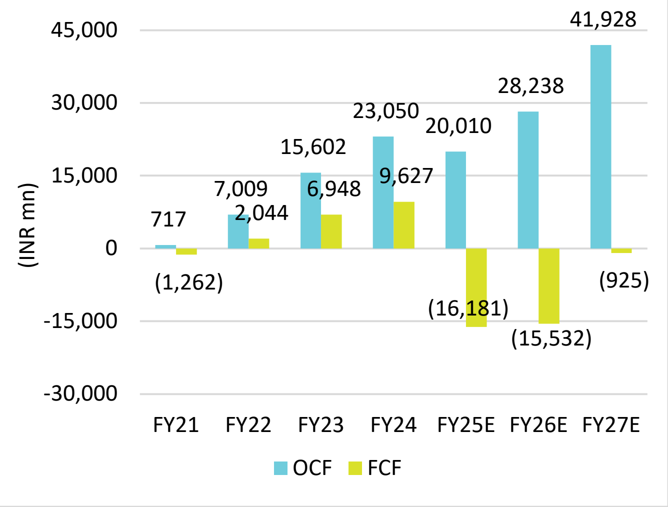
…radiating cash flows and profitability

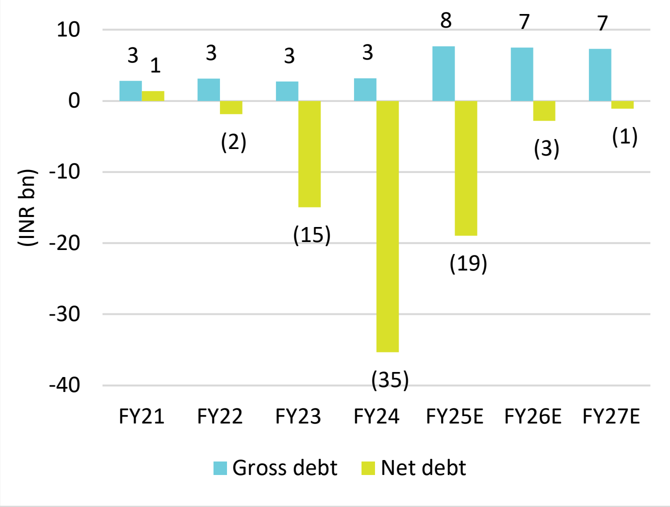
- We estimate EBITDA shall compound annually at 54% over FY24–27E driven by: i) Waaree's module/cell/wafer capacity expansion to 21GW/11GW/6GW by FY27E; ii) backward integration for superior realisations; and iii) solar module capacity utilisation ramp-up from 44% in FY24 to 52% utilisation on expanded module capacity by FY27E.
- Despite higher capex of ~INR123bn over FY25–27E, Waaree's operating cash flows remain strong, which shall largely take care of its higher capex spends for capacity expansion and backward integration into cells and wafers over FY25–27E. Free cash flow turns positive from FY28E given stronger operating cash flow generation.
- Based on our expectation of a rise in Waaree's profitability, we estimate its return ratios shall remain robust with an FY27E RoE/RoCE at 30%/28%. Higher returns also ensure a shorter payback of 1.5–2 years, which can also cater to any further capex needs.

Strong operating cash flows…



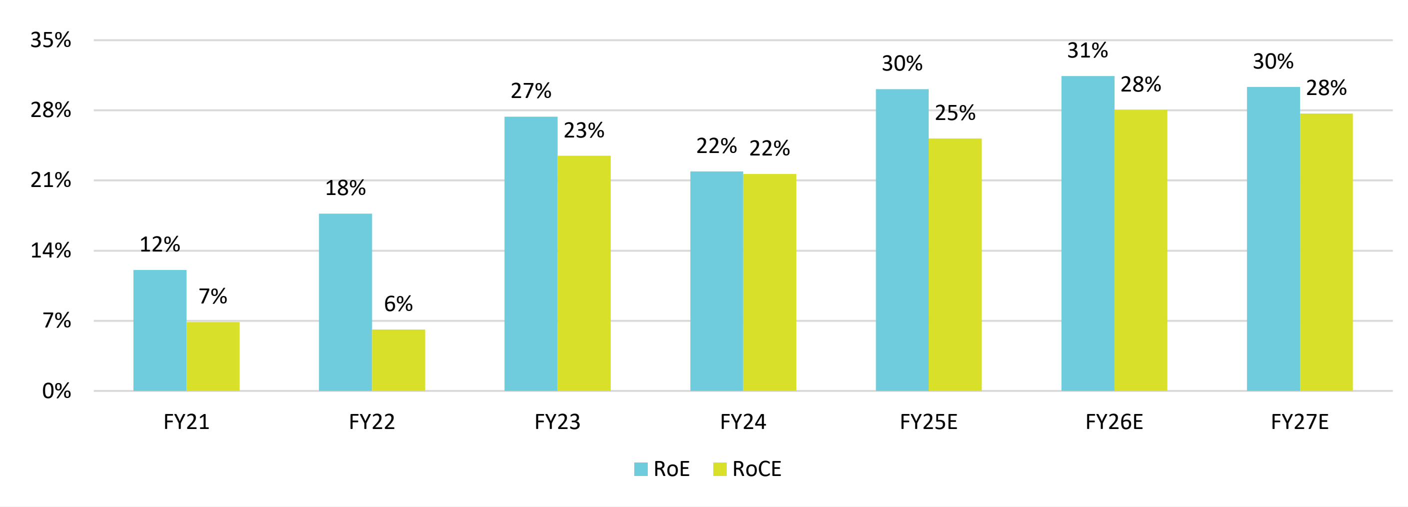
Source: Company,, Nuvama Research

…shall conserve balance sheet strength…



Source: Company,, Nuvama Research

…and generate robust return ratios



Source: Company, Nuvama Research

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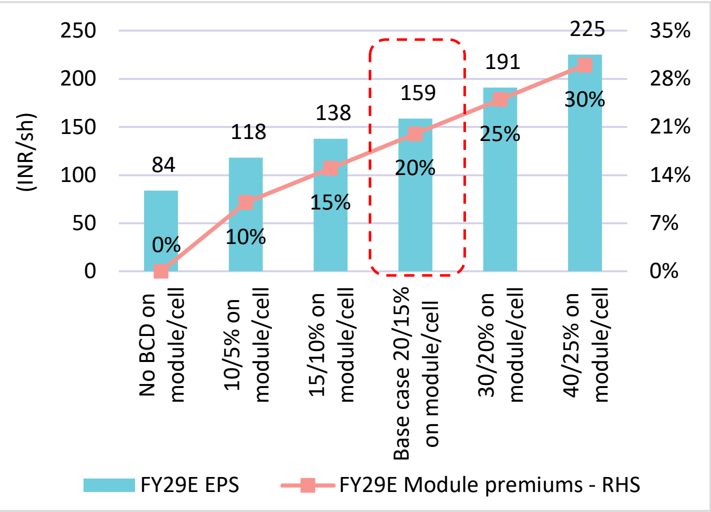
Imponderable risks loom: Government support, module oversupply

- The Government of India (GoI) has imposed a basic customs duty of 40%/25% on imports of solar modules/cells; phasing out the BCD shall intensify competition, affecting realisations and margins
- Solar cell plant stabilisation remains critical; Waaree commissioned its 1.4GW mono PERC facility within a short period of time; 4GW TOPCon facility to commence operations in early Q1FY26
- Given evolving technologies, the risk of solar module/cell manufacturing advancing towards more efficient and cheaper modules remains, not to mention a shift in demand towards newer products
- Solar module overcapacity—a risk in the near term; over medium term, exports and backward integration shall mitigate and cushion the impact on margins
- Valuation challenge: high near-term margins vis-a-vis long-term potential

Earnings sensitivity to tweaks in basic customs duty



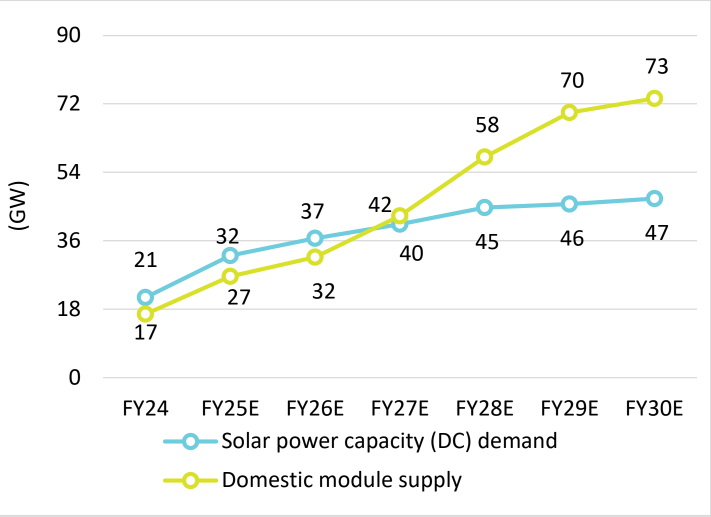
Source: Nuvama Research

Every 5% change in CU impacts EBITDA by 12%

Capacity utilisation (CU)	Mapping EBITDA to changes in capacity utilisation FY27E (INR mn)	% change
42%	43,767	-24%
47%	50,697	-12%
52%	57,627	0%
57%	64,556	12%
62%	71,486	24%

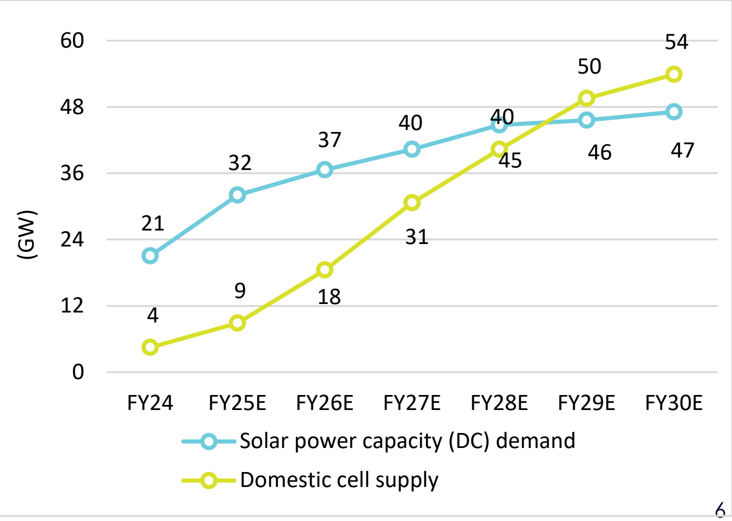
Source: Nuvama Research

Solar module overcapacity likely by FY27E…



Source: Company websites, Industry, Nuvama Research

…while cell supply to be in deficit until FY29E



Source: Company websites, Industry, Nuvama Research

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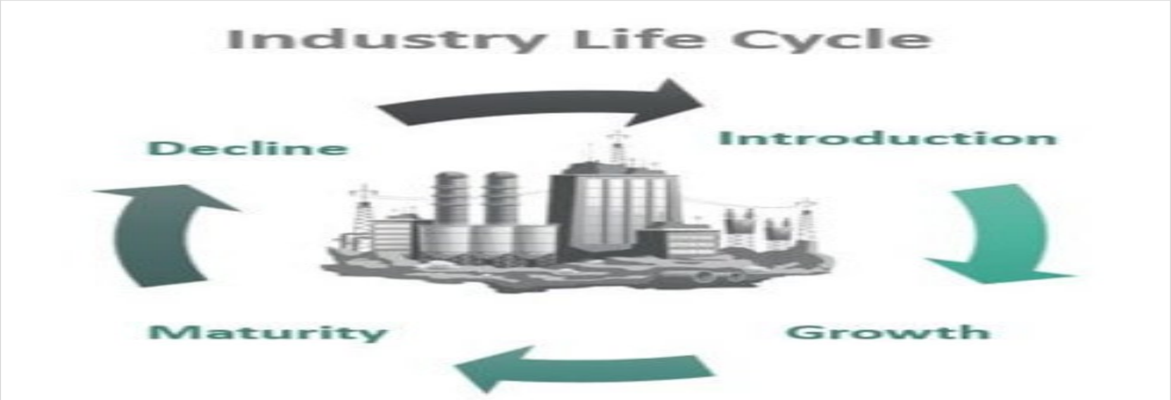
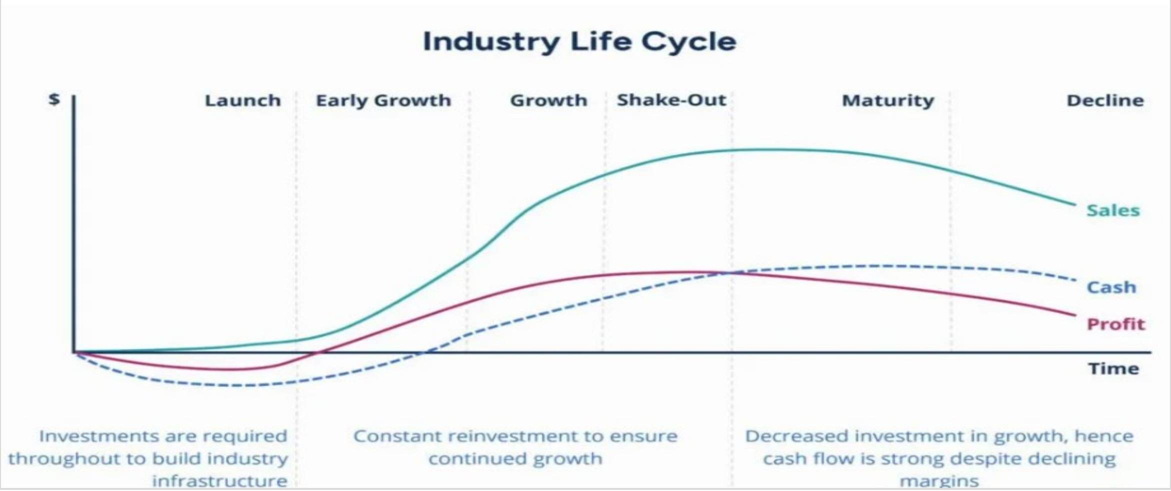
Valuation – similar to Indian IT in 2000s?

Industry stages

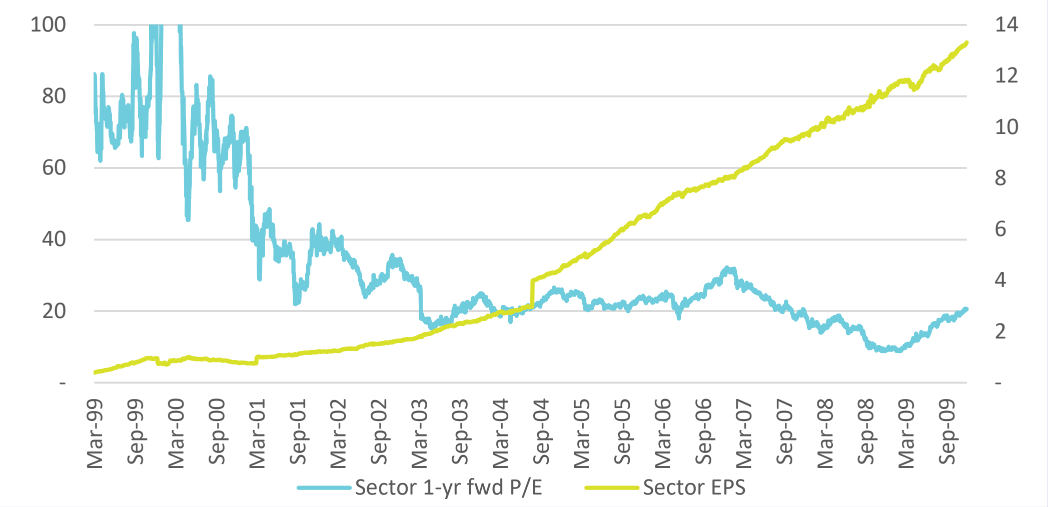


Growth-stage companies post significant rise in revenues and profits



Source: Bloomberg, Nuvama Research

Lofty valuations of high-growth industry correct as earnings catch up



SotP valuation yields TP of INR2,805

Particulars	Value
Risk free rate	6.70%
Market risk premium	6.00%
Beta	1.3
WACC	12.40%
Terminal growth	3.50%
Equity value (INR/sh)	2,646
Other investments	160
Waaree Energies equity value (INR/sh)	2,805
CMP (INR/sh)	2,238
% upside	25%

Source: Nuvama Research

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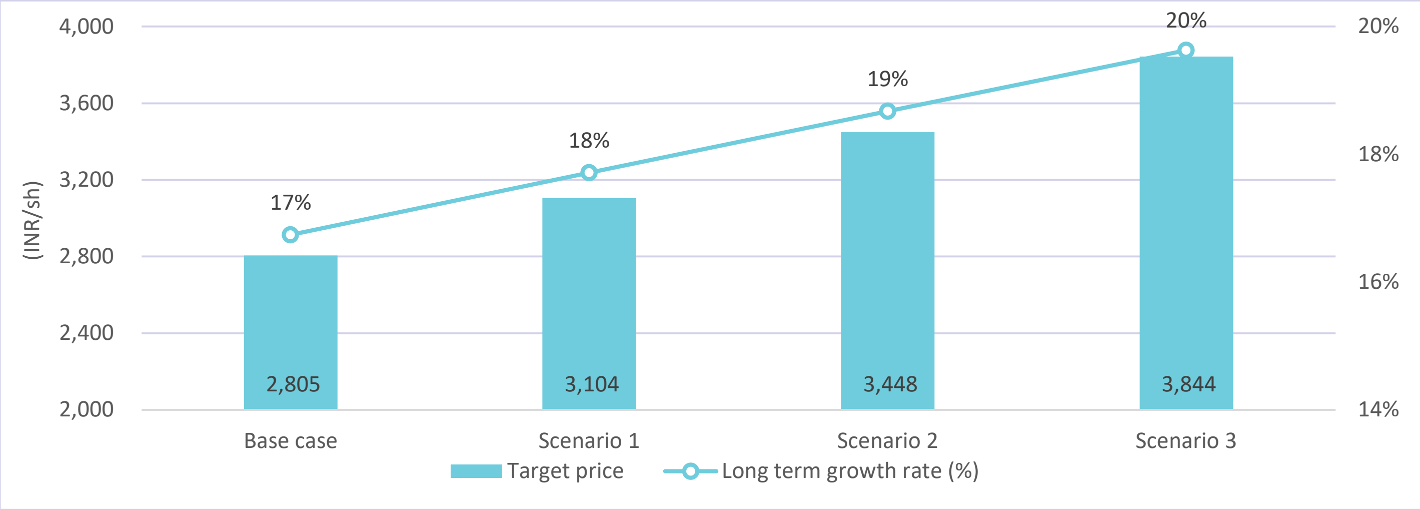
Valuation sensitivity and peer group valuation

- We believe the Indian solar industry is in the early growth stage of the industry life cycle, characterised by a sustained increase in market size and rising competition.
- Companies in the early growth stage are likely to experience significant growth in revenue and profits, which is likely to normalise as competition rises and utilisation levels of the current facilities rise.
- While we estimate free cash flows shall remain strong for Waaree, galloping at a 17% CAGR over FY24–45E, we provide different scenarios for long-term growth rate and its sensitivity to valuations.
- Waaree's 24x FY25E EV/EBITDA factors in high-growth with earnings catching up; we reckon valuation shall correct to a more reasonable FY27E PE of 17x and EV/EBITDA of 11x—a corollary of our FY24–27E EBITDA/EPS CAGR of 54%/60%
- Our base case long-term CAGR of 17% over FY24–45E yields a TP of INR2,805/share. However, if we factor in a much higher 20% CAGR, the TP inflates to INR3,844/share.

Valuation sensitivity to long-term growth rate



Source: Nuvama Research

Global peer valuations for solar module/cell producers

	Mkt Cap	P/E (x)				P/B (x)				EV/EBITDA (x)				EV/Sales (x)				ROE (%)			
Companies	(USD bn)	FY24	FY25E	FY26E	FY27E	FY24	FY25E	FY26E	FY27E	FY24	FY25E	FY26E	FY27E	FY24	FY25E	FY26E	FY27E	FY24	FY25E	FY26E	FY27E
Premier Energies	4.9	200.9	44.6	34.8	28.1	71.9	14.6	10.3	7.5	102.3	23.7	19.0	14.4	15.5	6.1	4.8	3.3	43.7	54.0	34.5	31.0
Waaree Energies	7.5	71.8	36.3	23.9	17.2	15.7	10.9	7.5	5.2	37.8	23.7	15.2	10.9	5.2	4.4	3.2	2.5	21.9	30.1	31.4	30.3
India average		**127.3**	**38.8**	**27.3**	**20.9**	**44.0**	**10.6**	**7.8**	**5.6**	**73.3**	**23.6**	**16.5**	**12.1**	**10.8**	**5.2**	**3.9**	**2.8**	**42.7**	**39.6**	**30.6**	**32.2**
LONGi Green	18.5	8.9	NM	40.0	21.0	1.8	2.2	2.1	1.9	5.2	NM	15.5	8.3	1.0	1.5	1.3	1.1	20.7	-11.1	3.6	9.3
Jinko Solar	9.7	8.8	41.4	21.9	15.4	2.1	2.1	2.0	1.8	5.1	9.0	7.0	5.1	0.8	0.9	0.8	0.7	24.2	3.5	8.6	13.3
Trina Solar	5.3	6.0	NM	14.2	9.8	1.2	1.4	1.3	1.2	5.0	NM	NM	NM	0.7	0.9	0.8	0.6	20.0	-8.0	6.9	11.3
JA Solar	5.9	4.9	NM	23.2	8.5	1.2	1.3	1.3	1.1	3.5	10.2	4.2	3.4	0.8	0.9	0.7	0.7	25.2	-6.9	5.1	12.6
China average		**7.1**	**41.4**	**24.8**	**13.7**	**1.6**	**1.7**	**1.6**	**1.5**	**4.7**	**9.6**	**8.9**	**5.6**	**0.8**	**1.1**	**0.9**	**0.8**	**22.5**	**-5.6**	**6.1**	**11.6**
First Solar (US)	13.6	16.6	9.7	6.8	4.8	2.1	1.7	1.4	1.1	12.5	7.5	5.5	4.1	3.6	3.0	2.3	1.9	12.5	17.5	21.0	22.6
Global average		**50.3**	**29.9**	**19.7**	**13.1**	**15.9**	**4.7**	**3.6**	**2.7**	**30.1**	**13.6**	**10.3**	**7.3**	**5.1**	**3.1**	**2.3**	**1.8**	**25.9**	**17.2**	**19.2**	**22.1**

Source: Company, Bloomberg, Nuvama Research
Note: FY24/25E/26E/27E is CY23/24E/25E/26E for global peers

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Differentiated long-term strategy

Strategic investments to diversify its green portfolio

	Renewable power infrastructure		Battery energy storage system	Green Hydrogen electrolyser mfg.	Inverters
	Renewable power generation	Renewable power infrastructure	Lithium-ion storage cell, and energy storage system	Awarded PLI for a 300MW Electrolyser mfg. facility	Investment in renewable power projects and bidding pipeline
Investment	Acquired EGPIPL for ₹ 792 Cr	₹ 650 Cr +	Up to ₹ 2,073 Cr	Up to ₹ 551 Cr	Up to ₹ 130 Cr
Key updates	Won RUMSL's 170 MW project		• Plant capacity[4]: 3.5 GWh • Operational by: Q2 FY27	• Plant capacity[4]: 300 MW • Operational by: Q2 FY27	• Plant capacity[4]: 3L invertors/3 GW per annum • Operational by: Q4 FY26
Market opportunity	500 GW RE capacity 2030 target[1]		236 GWh energy storage requirement in 2031-32[2]	5 MMTPA 2030 target[3] with NGHM	500 GW RE capacity 2030 target[1]

Source: Company, Nuvama Research

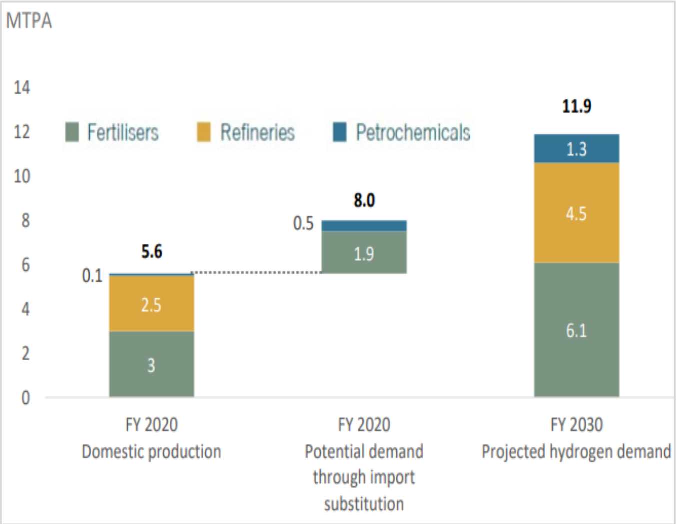
- Waaree is prudently executing a long-term strategy of becoming a horizontally and vertically integrated New Energy play. It is foraying into production of green hydrogen (G H2), electrolyser, li-ion advanced cell, inverter manufacturing and BESS. The strategy of scaling up operations by entering new-age areas shall tie up multi-decadal growth and enable it to achieve targeted 20% sustainable EBITDA margin.

- We liken Indian New Energy's currently early life-cycle stage of potentially exponential and multi-decadal growth opportunity to the Y2K-like technology (IT) opportunity of the 1990s. We feel India's solar sector is on the cusp of a mammoth J-curve breakout, which shall usher in an even larger G H2 prospect, and eventually pave the way for India to emerge a global behemoth in green ammonia (G NH3).

Green Hydrogen: Y2K-like multi-decadal opportunity for India

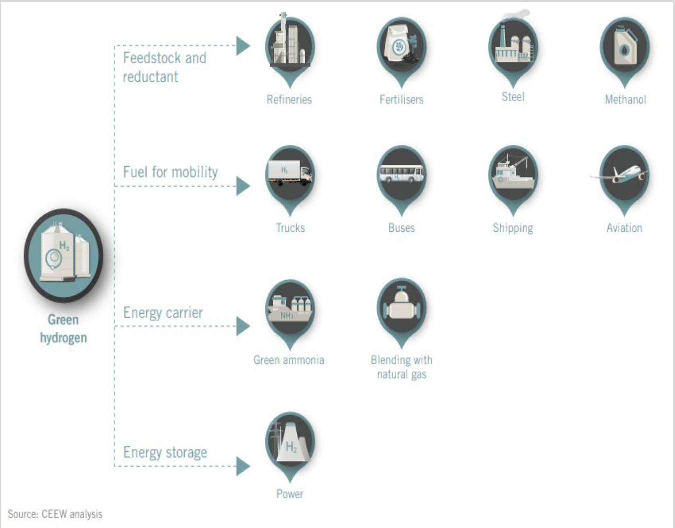
- H2 demand in the refining and fertiliser industries is likely to double by 2030, provided sectoral production targets are met.
- Demand drivers - Refining sector 4.5MTPA by 2030, fertiliser industry 6.1MTPA and petrochemical industry 1.3MTPA of H2 by 2030 on new refinery additions in India (current demand ~0.6MTPA).
- G H2 has wide applications ranging from feedstock in chemicals to reductants in the refining and steel segment. It may also be a fuel for heavy mobility in the long term.

India's H2 demand to double by 2030



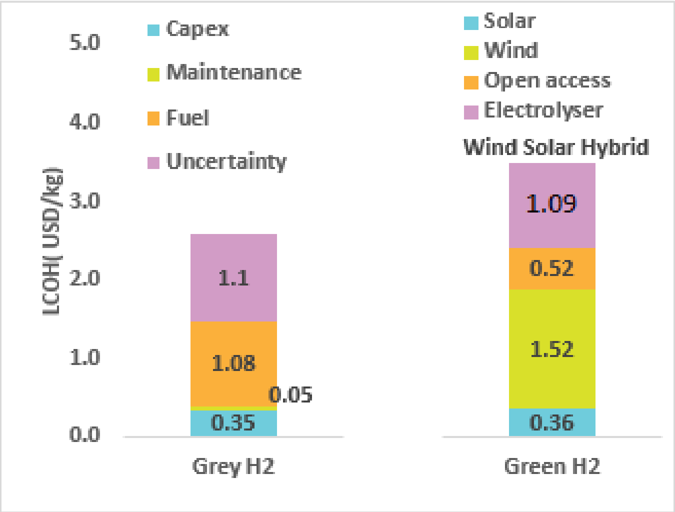
Source: Nuvama Research

Uses of G H2 as a decarbonisation tool



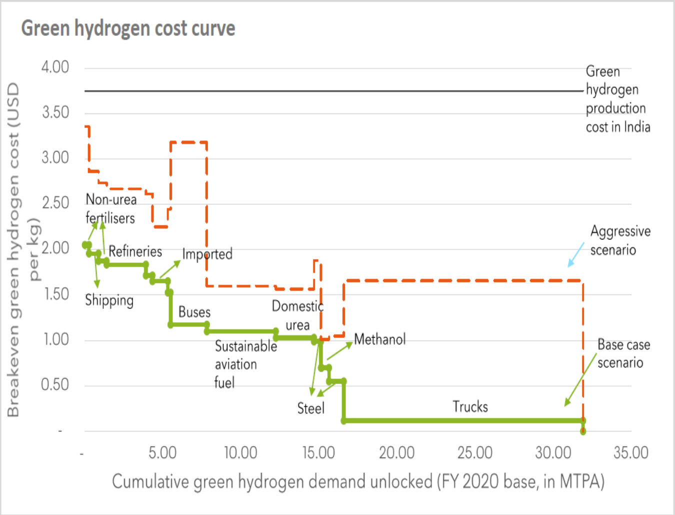
Source: Nuvama Research

G H2 currently 35% costlier than grey H2



Source: Nuvama Research

G H2 sectoral breakeven cost curve



Source: Nuvama Research

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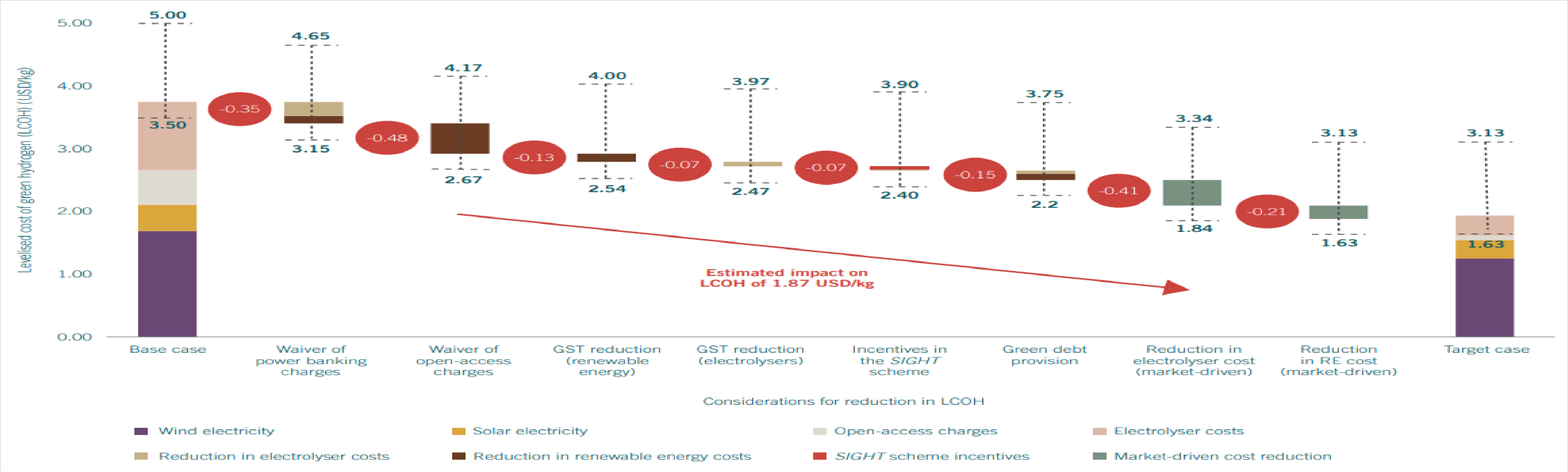
Green Hydrogen: Y2K-like multi-decadal opportunity for India

LCOH could reduce to ~USD1.63—3.13/kg driven by additional incentives and market forces



Source: CEEW, Nuvama Research

- As per industry estimates, the levelised cost of G H2 (LCOH) in India in 2024 is estimated to be USD3.5–5/kg. Some interventions by the Government of India, in addition to the outlay granted under NGHM to provide viability gap funding, may bring down the LCOH to USD1.63–3.13/kg by 2030E.

- Incentives reducing the cost of RE, including waiving power banking, open-access charges and GST reduction would lead to an aggregate reduction of USD0.96/kg. Incentives reducing the cost of electrolyser production, including GST waiver, SIGHT incentives and green-debt provision would lead to a total reduction of USD0.29/kg. A market-driven reduction in RE and electrolyser costs is estimated to be USD0.62/kg.

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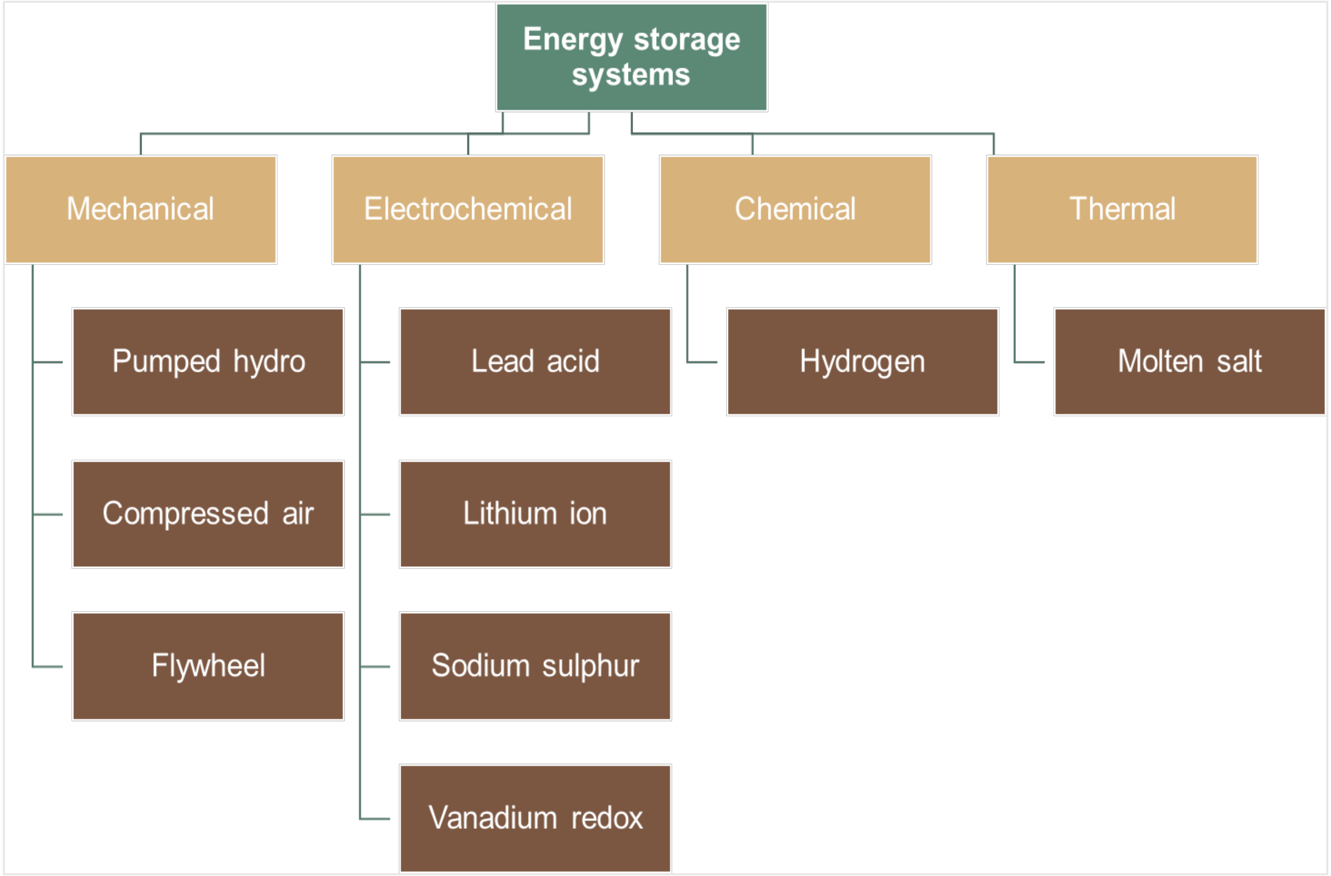
BESS – RTC power demand creates huge potential

- Waaree plans to set up a 3.5GWh BESS manufacturing facility, which will enable it to leverage its integration in the solar value chain.
- As per National Electricity Plan (NEP) 2023 of Central Electricity Authority (CEA), the energy storage capacity requirement is projected to be 82.4GWh (47.7GWh from PSP and 34.7GWh from BESS) by FY27. This requirement is further expected to increase to 411.4GWh (175.2GWh from PSP and 236.2GWh from BESS) by FY32.
- Furthermore, the CEA has projected that, by 2047, energy storage requirement is likely to increase to 2380GWh (540GWh from PSP and 1840GWh from BESS), due to the addition of a larger amount of renewable energy in light of the net zero emissions targets set for 2070.
- The INR37.6bn (USD452mn) viability gap funding (VGF) programme aims to install 4GWh of BESS by FY26.

Major types of storage technologies



Source: Industry, Nuvama Research

BESS – RTC power demand creates huge potential

Comparison of pumped hydro storage (PHS) and Battery Energy Services (BESS)

Parameters	PHS	BESS
Capital cost	Total capital cost for a closed-loop PHS ranges from INR50–60mn/MW*	Lithium-ion battery storage can range from USD550-700/kW (for a four-hour storage solution)
Efficiency	75–80%	80–85%
Land requirement	~2,000 m^2/MW	~100 m^2/MW
Ideal storage duration	6–12 hours	Up to 4 hours
Response time	30–90 seconds	In milliseconds
Project life	40–50 years (life of dam/reservoir is over 80 years)	Up to eight years
Construction period	4–5 years, it also depends upon other external and socio-political factors	1 year
Operating cost	Lower	Higher since batteries need to be replaced after certain period
Estimated levelised tariff	INR4–6 per kWh	INR5–7 per kWh
Environmental impact	Need substantial reservoirs, which may cause environmental consequences, such as habitat destruction and changes in water flow downstream	Disposal of batteries is a major concern. If not taken care properly, may end up in landfills, posing risks of corrosion, flammability, and environmental contamination
Execution and operational risk	Long approval process for land, environmental and forest clearances Rehabilitation and resettlement issues Limited naturally suitable sites Long gestation period with high construction risk Managing water requirement, especially in case of any adverse events	Shortage of rare minerals and metals Limited manufacturing capacity Cost volatility Performance deterioration and fire risk in extreme ambient conditions Constant degradation and self-discharge

Source: Industry, Nuvama Research

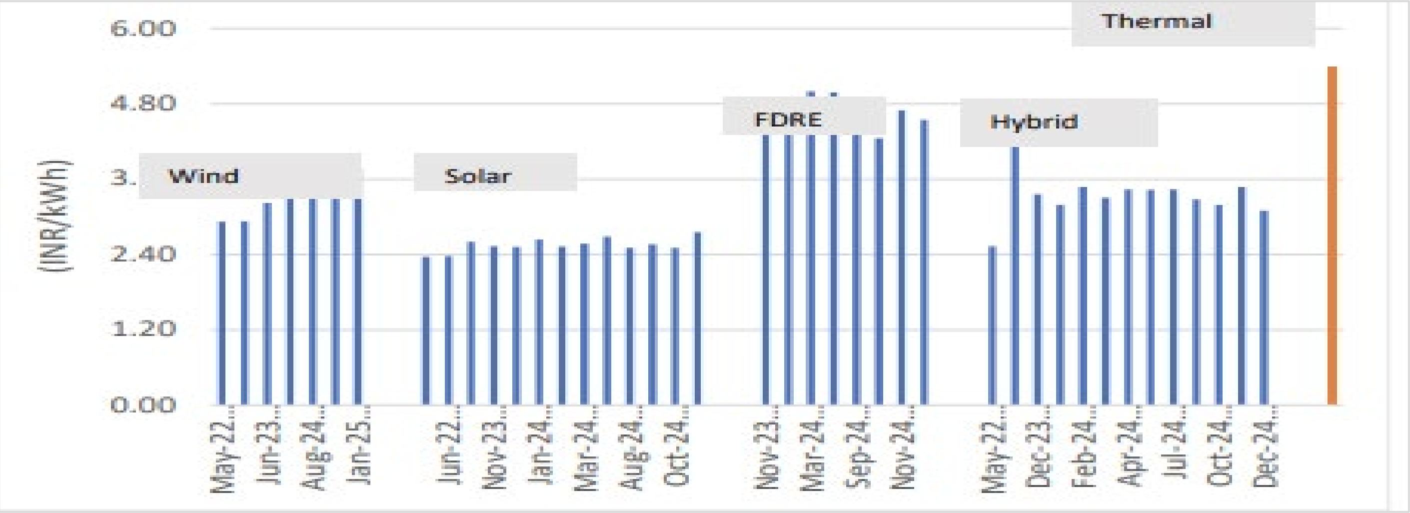
FDRE key to counter renewable energy intermittency

- Renewable energy sources such as wind and solar are "intermittent" as they cannot be sourced when needed at some time during of the day. Furthermore, significant use of variable and intermittent renewable energy presents issues such as grid balancing and underutilisation of the transmission system.

- Firm and Dispatchable Renewable Energy (FDRE) is an ingenious solution, which integrates solar generation (for daytime) with wind (for nights) and fills in the gaps in energy storage systems (ESSs). Hence, the business models of RE projects have also evolved from: i) vanilla wind and solar projects to; ii) hybrid co-located solar and wind to; iii) round-the-clock (RTC) RE supply with CUF commitment on monthly and annual basis to; iv) peak power RE constructs and FDRE with load-following characteristics that is anticipated to provide assured RTC power from renewables.

- Our Power team's analysis indicates plain-vanilla solar/wind projects generate mid-teen IRRs while complex solutions (such as FDRE) command an IRR of 20%-plus.

Solar power cheaper than alternatives, but intermittent; FDRE solutions offer huge potential for Waaree's BESS foray



Source: Company,, Nuvama Research

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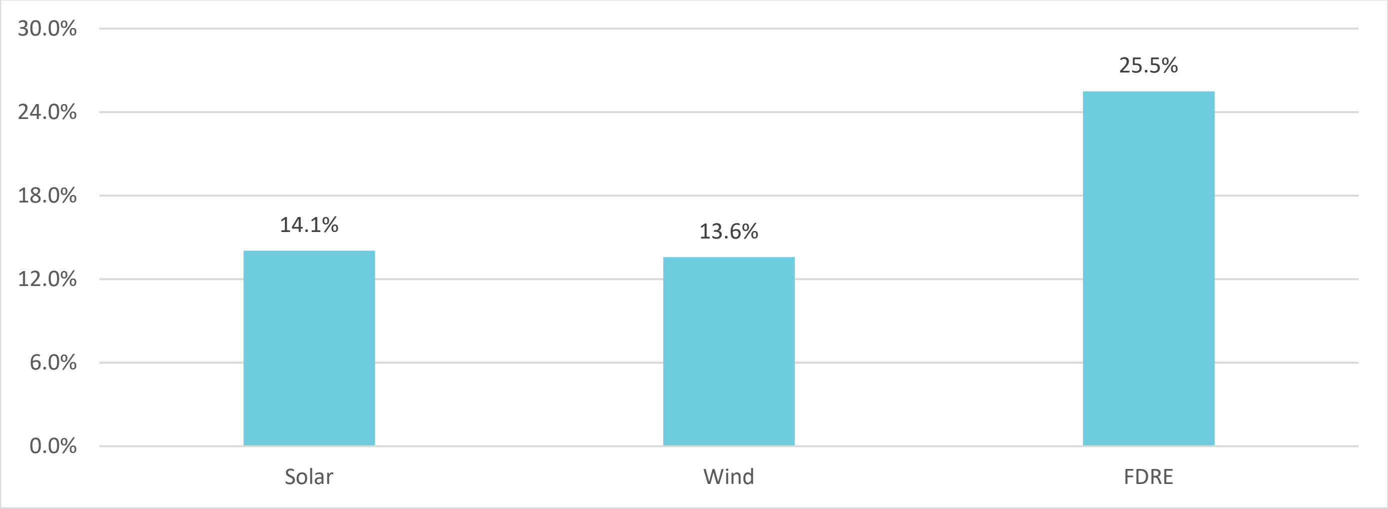
Average IRR highest for FDRE



Source: Company, Nuvama Research

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Waaree Energies – Financial snapshot

Income Statement (INR mn)

Year to March	FY24A	FY25E	FY26E	FY27E
Total operating income	1,13,976	1,39,002	1,94,190	2,52,299
Gross profit	26,378	43,427	63,528	84,479
Employee costs	1,772	2,951	3,953	4,863
Other expenses	8,862	14,638	18,343	21,989
EBITDA	15,744	25,837	41,231	57,627
Depreciation	2,768	3,459	6,315	9,410
Less: Interest expense	1,399	1,627	1,893	1,478
Add: Other income	2,352	3,527	3,880	4,268
Profit before tax	13,929	24,279	36,903	51,007
Prov for tax	4,598	6,111	9,289	12,839
Less: Other adj	3,413	0	0	0
Reported profit	12,372	17,706	26,948	37,321
Less: Excp.item (net)	(3,413)	0	0	0
Adjusted profit	8,958	17,706	26,948	37,321
Diluted shares o/s	287	287	287	287
Adjusted diluted EPS	31.2	61.6	93.8	129.9
DPS (INR)	0	0	0	0
Tax rate (%)	33.0	25.2	25.2	25.2

Balance Sheet (INR mn)

Year to March	FY24A	FY25E	FY26E	FY27E
Share capital	2,630	2,873	2,873	2,873
Reserves	38,249	55,955	82,903	1,20,224
Shareholders funds	40,878	58,828	85,776	1,23,096
Minority interest	607	607	607	607
Borrowings	3,173	7,673	7,474	7,303
Trade payables	20,138	21,972	30,038	38,581
Other liabs & prov	31,946	32,320	32,698	33,082
Total liabilities	1,13,137	1,37,993	1,73,389	2,19,670
Net block	14,364	30,823	48,594	62,767
Intangible assets	68	68	68	68
Capital WIP	13,413	29,686	49,369	68,640
Total fixed assets	27,844	60,577	98,031	1,31,474
Non current inv	3	3	3	3
Cash/cash equivalent	37,792	25,868	9,441	7,461
Sundry debtors	9,714	11,847	16,550	21,503
Loans & advances	1,015	1,035	1,056	1,077
Other assets	31,610	33,371	42,878	52,581
Total assets	1,13,137	1,37,993	1,73,389	2,19,670

Key Ratios

Year to March	FY24A	FY25E	FY26E	FY27E
RoE (%)	21.9	30.1	31.4	30.3
RoCE (%)	21.6	25.2	28.0	27.7
Inventory days	108	105	103	101
Receivable days	31	31	31	31
Payable days	84	84	84	84
Working cap (% sales)	13.5	12.5	12.0	11.6
Gross debt/equity (x)	0.1	0.1	0.1	0.1
Net debt/equity (x)	(0.8)	(0.3)	0	0
Interest coverage (x)	9.3	13.8	18.4	32.6

Important Ratios (%)

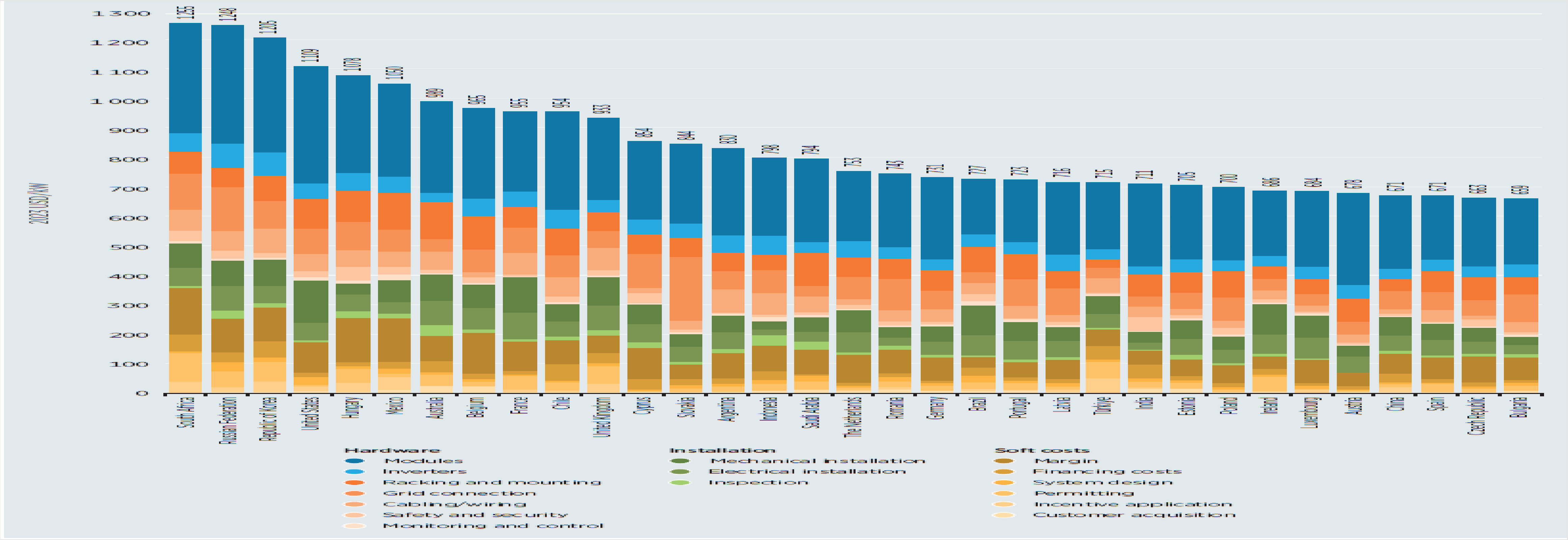
Year to March	FY24A	FY25E	FY26E	FY27E
EBITDA margin (%)	13.8	18.6	21.2	22.8
Net profit margin (%)	7.9	12.7	13.9	14.8
Revenue growth (% YoY)	68.8	22.0	39.7	29.9
EBITDA growth (% YoY)	88.6	64.1	59.6	39.8
Adj. profit growth (%)	78.0	97.7	52.2	38.5

Source: Nuvama Research

Multi-decadal industry growth

India highly competitive in New Energy

Utility-scale solar PV installed costs by country (2023)



Source: IRENA, Nuvama Research

- India's PV installation cost in 2022 was USD664/kW (down 89% since 2010) despite being heavily reliant on imports of solar modules from China and Taiwan. In 2023, while major markets saw a decline in its PV installation cost, the PV installation cost in India rose to USD711/kW (+7% YoY) on the back of a 15% YoY growth in installed capacity. Despite an increase in installation cost, India remains one of the most competitive in the new energy space.

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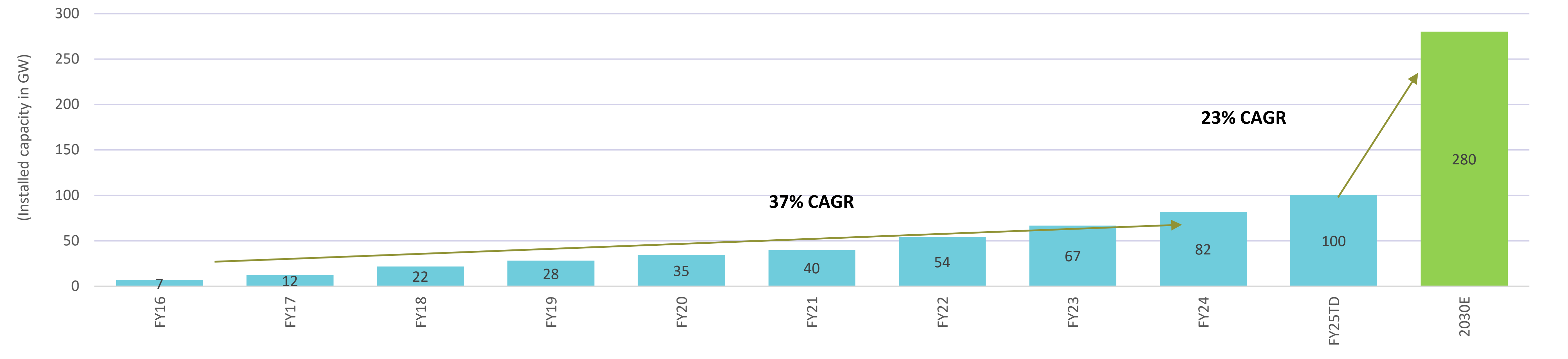
Multi-decadal industry growth

India's 3–4x solar growth

Solar power capacity shall rise to ~280GW from 100GW FY25TD (CAGR 23% over FY25–30E)

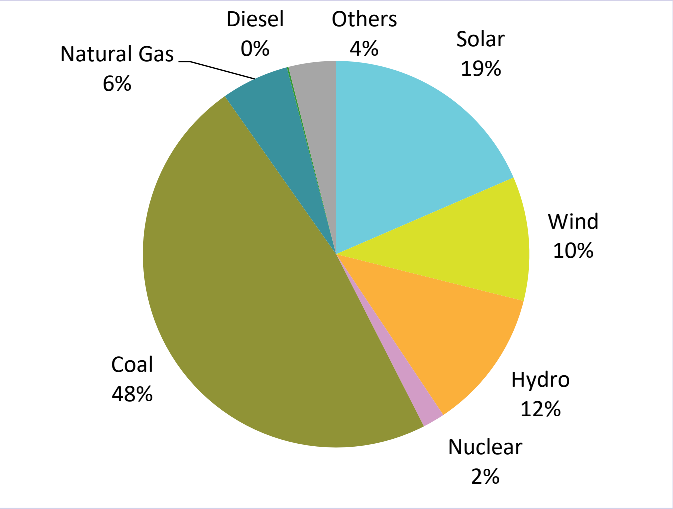


Source: MNRE, Nuvama Research

Robust solar capacity-adds in FY24; momentum sustains—100GW capacity in Jan-25

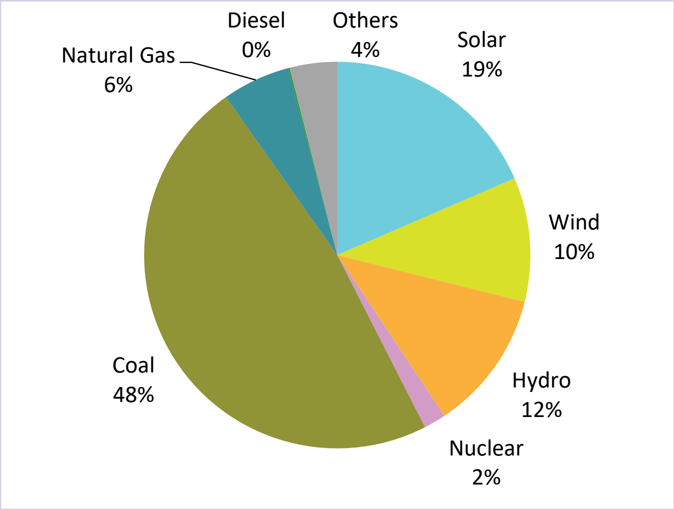
- Given current solar capacity at 100.3GW, 84.1GW capacity under implementation and an additional 47.5GW capacity under tendering, clear visibility is there of solar capacity rising to 232GW over the next few years.
- We expect solar power capacity to grow from 82GW in FY24 to 258GW by FY30, implying a 21% CAGR.
- The share of solar shall rise from 19% in FY24 to 35% by FY30.

Installed solar capacity at 82GW in FY24...



Source: CEA, Nuvama Research

...estimated to rise to 258GW by FY30E



Source: CEA, Nuvama Research

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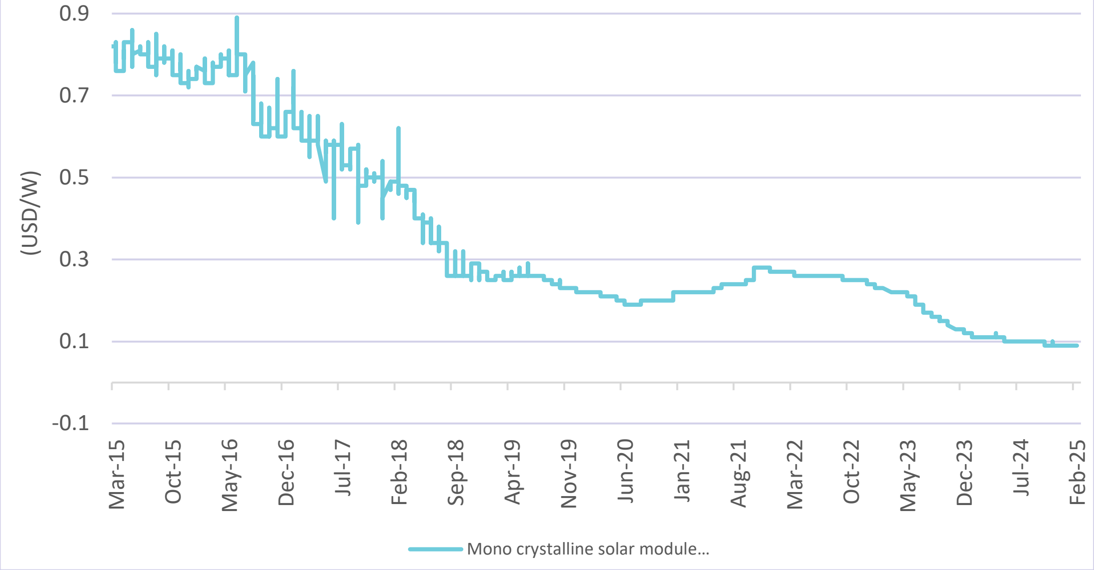
Multi-decadal industry growth

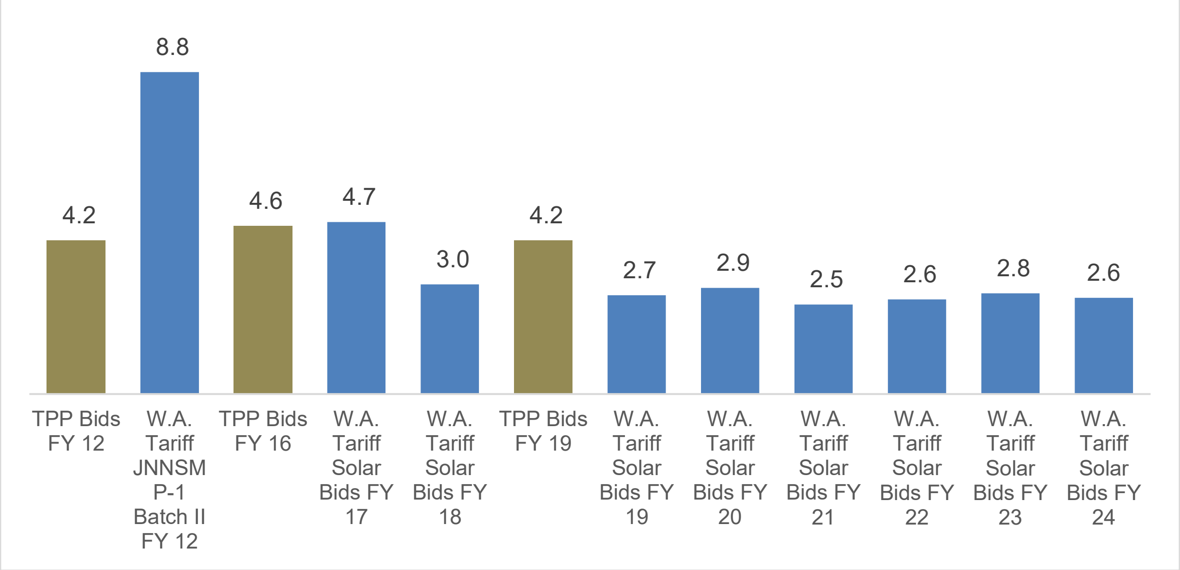
India’s 3–4x solar growth

Module prices decline >85% from FY15 to FY24; current module prices trending at USD0.09/w



Source: Bloomberg, Nuvama Research

Competitively bid solar power tariffs much lower than coal-based power tariffs



Source: CRISIL MI&A Consulting

- Module prices started to fall in 2023 owing to the ramp-up in production of upstream components. Prices of modules fell to USD0.15–0.20/w in Apr–Nov’23 from USD0.23/w in Jan-23. This has eased some pressure on capital costs in FY24. Prices of mono facial module had touched USD0.20/w by Q4FY24. Solar module prices further declined to USD0.09/w as global markets remain oversupplied.

- Solar power tariffs have been lower than coal-based power tariffs. In recent years, no major development has taken place in the case of thermal power bidding. However, considering the previously bid prices of thermal power, solar power tariffs have been on the lower side.

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Multi-decadal industry growth

Incentives to ignite economies of scale

- **Approved list of models and manufacturers:** Only modules that are listed on the ALMM are eligible for use in government-sponsored solar projects.

- **Domestic content requirement (DCR):** The DCR mandates the use of solar cells and modules manufactured domestically as per specifications and testing requirements fixed by MNRE. It is mandatory to use DCR cells and modules to avail the financial aid provided by the central/state government.

- **Basic customs duty:** The government imposed a basic customs duty of 40% on solar modules and 25% on solar cells on April 1, 2022. This was done in an effort to boost domestic manufacturing of solar components and reduce India's reliance on imports. The BCD applies to all imports of solar modules and cells, regardless of the country of origin.

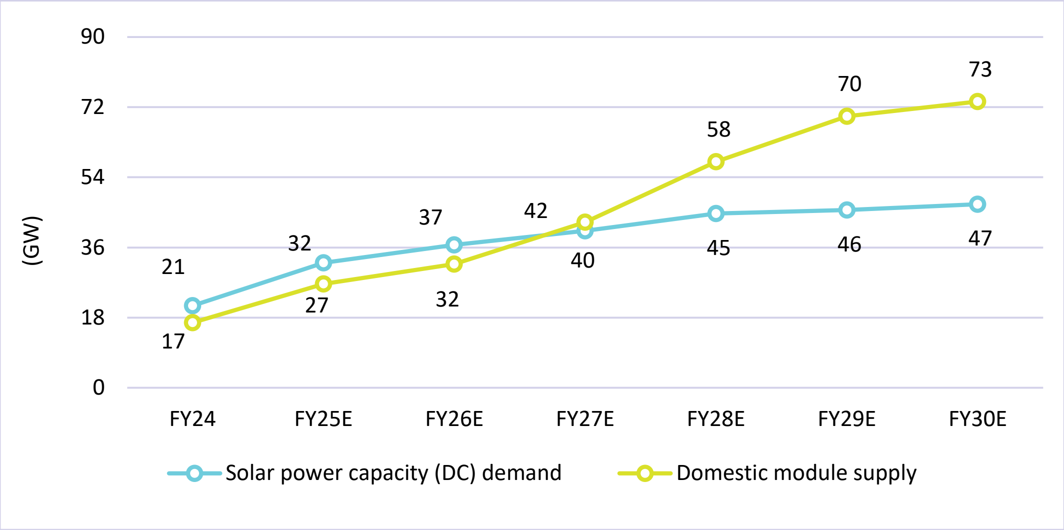
- **Pradhan Mantri Kisan Urja Suraksha evam Utthan Mahabhiyan (PM-KUSUM) Scheme:** Launched in Mar-19, the PM-KUSUM Scheme supports farmers by offering financial assistance for installing solar-powered irrigation systems, including solar pumps and grid-connected solar power plants. It aims to reduce diesel use in agriculture and boost farmers' income.

- **PLI scheme for domestic module manufacturing:** The government introduced the PLI scheme for ten key sectors to enhance India’s manufacturing capabilities and exports under its Aatmanirbhar Bharat initiative. One of the ten sectors for which PLI was approved is high-efficiency solar PV modules, for which, the MNRE was designated as the implementing ministry.

Multi-decadal industry growth

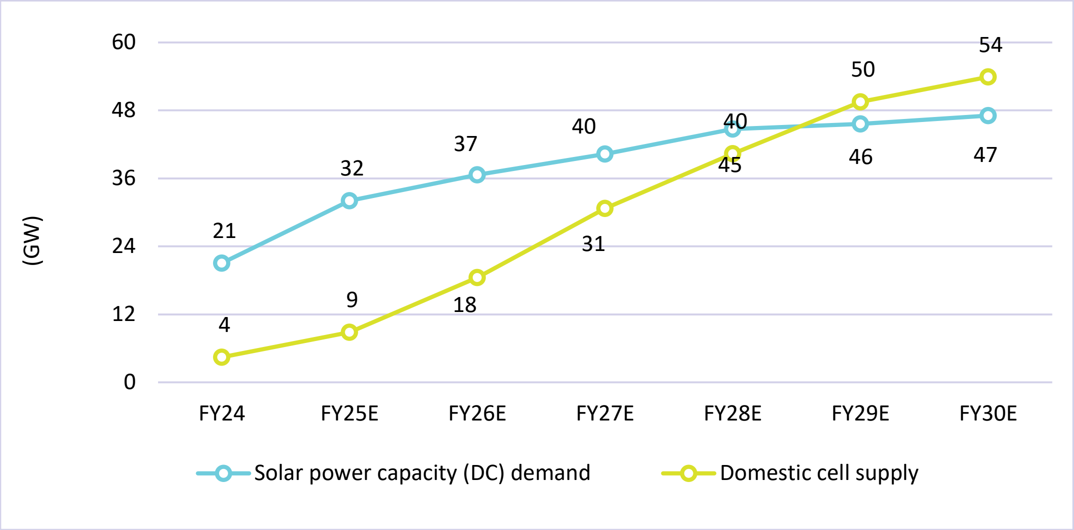
Module and cell industry demand–supply

Solar module supply to top demand by FY27E…



Source: Company websites, Industry, Nuvama Research

…with cell supply to be in deficit till at least FY29E



Source: Company websites, Industry, Nuvama Research

- Solar module capacity is likely to increase from 63GW in FY24 to 123GW by FY27E and 165GW by FY30E. We believe the announced capacities will likely cause a supply glut (from FY27E) and make module manufacturing alone unviable for smaller entities.

- Cell-manufacturing capacity is also likely to rise from 8GW seen in FY24 to 55GW by FY27E. While current cell manufacturing capacity remains under-supplied, with the announced capacities, we believe the cell manufacturing capacity shall also likely enter an oversupplied phase from FY29E.

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