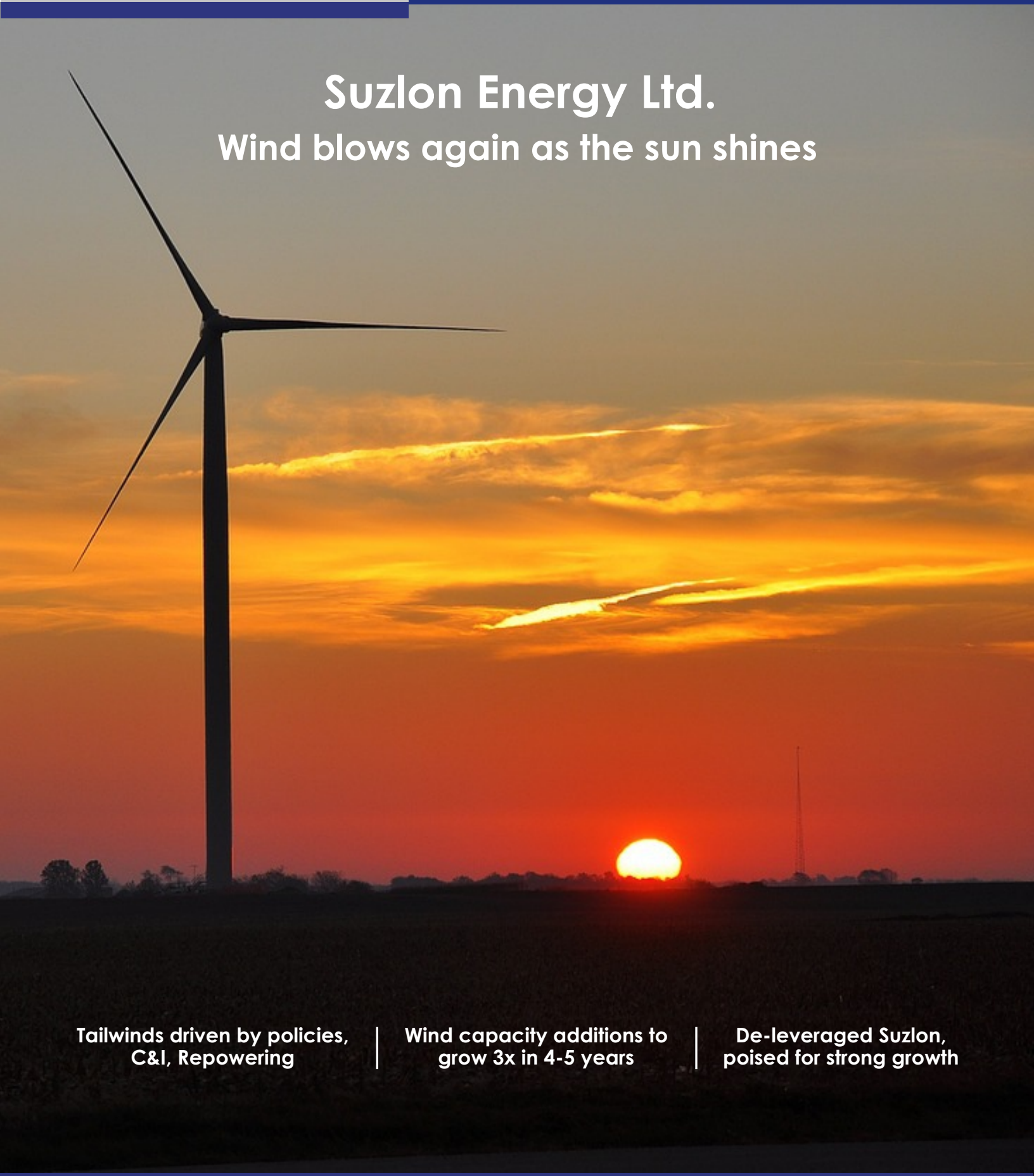
24 August 2023

**INDIA | UTILITIES | COVERAGE INITIATION**

JM FINANCIAL

# Suzlon Energy Ltd.

## Wind blows again as the sun shines



**Tailwinds driven by policies, C&I, Repowering** | **Wind capacity additions to grow 3x in 4-5 years** | **De-leveraged Suzlon, poised for strong growth**

JM Financial Institutional Securities Limited

# Suzlon Energy Ltd. | BUY

## Wind blows again as the sun shines

**Suzlon Energy Ltd. (Suzlon) with leading market share (33%), higher depth of manufacturing (4.5GW), most credible O&M services (35%+ EBITDA) and technology superiority (3MW sets under testing) is best placed to grow its order book (1.5GW/2GW as of Jun'23/Mar'26) and enhance project execution (800MW/1500MW in FY24/FY26) gaining from the industry tailwinds. With a visible bidding trajectory from MNRE, emergence of RTC - C&I segment, upcoming Repowering policy and multiple policy initiatives, the wind energy sector is poised for a decadal growth. As the company is on its way to become net-debt free, we expect the Suzlon to deliver revenue and EBITDA CAGR of 31% and 38% respectively over FY23-26E. We expect Suzlon's EPS to reach INR 1.4 in FY26. We initiate coverage on the stock with a BUY rating and a Sep'24 TP of INR 30/sh (based on a 25x Sept'25E EPS).**

- **Strong industry tailwinds:** As the generation mix is shifting towards renewables particularly in favour of solar, bringing diversity into the supply mix by enhancing share of wind is imperative. This will help in partly addressing grid challenges along with cost advantages and support to domestic manufacturing. Discontinuation of reverse auction, better demand visibility with bidding trajectory, upcoming repowering policy, open access policy, waiver of ISTS charges, introduction of wind specific RPOs and finally improvement in technology resulting in higher productivity has revived the momentum in wind sector. We see the current market size of 5-6GW p.a. of wind opportunity (utility scale+C&I+Repowering) growing to 11-12GW p.a. by FY27E.
- **Building its order book:** Moving past the painful period, Suzlon continues to have a 30-35% market share in the domestic market driven by technology superiority and reliable O&M services. The growing order book (652MW/1,582MW as of Mar'23/Jun'23) with a better-margin product-mix (c.50% orders constitute 3 MW sets) gives revenue visibility over the next 2 years. We expect Suzlon to exceed 2.5-3GW of annual installations in the near to mid-term as the company is best placed to benefit from industry tailwinds.
- **Out of the woods:** Suzlon had to undergo restructuring exercise on account of un-fulfilment of its debt obligations in the past (INR 217/150/26bn in FY15/20/23). However, during last year it has refinanced its existing debt and converted its entire outstanding Optionally Convertible Debentures (OCDs) and Compulsorily Convertible Preference Shares (CCPS) to bring down the total debt. Further, Suzlon has completed rights issue of INR 12bn and utilized INR 9bn to prepay its o/s debt obligations. It recently completed a INR 20bn QIP in Aug'23, the proceeds of which will be utilised towards repayment of debt (INR 15bn) and fulfilling capex requirement. With reduction in debt, lower interest cost (INR 4/1bn in FY23/25E) and better financial risk profile, the performance of the company is poised for significant improvement.
- **Initiate with BUY:** With industry tailwinds in place, a deleveraged balance sheet and a robust order book, we expect a strong pick-up in the company's performance going forward. We initiate coverage on the stock with a BUY rating and a Sep'24 TP of INR 30/sh (based on a 25x Sept'25E EPS).

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

**Darshan Gangar**
darshan.gangar@jmfl.com | Tel: (91 22) 62241879

| Recommendation and Price Target | |
|---|---|
| Current Reco. | BUY |
| Previous Reco. | NR |
| Current Price Target (12M) | 30 |
| Upside/(Downside) | 38.6% |
| Previous Price Target | NA |
| Change | NA |

| Key Data – SUEL IN | |
|---|---|
| Current Market Price | INR22 |
| Market cap (bn) | INR307.1/US$3.7 |
| Free Float | 71% |
| Shares in issue (mn) | 9,217.4 |
| Diluted share (mn) | 13,588.6 |
| 3-mon avg daily val (mn) | INR4,602.8/US$55.7 |
| 52-week range | 22/7 |
| Sensex/Nifty | 65,433/19,444 |
| INR/US$ | 82.7 |

| Price Performance | | | |
|---|---|---|---|
| % | 1M | 6M | 12M |
| Absolute | 11.5 | 168.1 | 165.9 |
| Relative* | 13.1 | 143.6 | 140.1 |

* To the BSE Sensex

| Financial Summary | | | | | (INR mn) |
|---|---|---|---|---|---|
| Y/E March | FY22A | FY23A | FY24E | FY25E | FY26E |
| Net Sales | 65,200 | 59,468 | 74,309 | 1,06,322 | 1,35,258 |
| Sales Growth (%) | 97.9 | -8.8 | 25.0 | 43.1 | 27.2 |
| EBITDA | 8,895 | 8,319 | 11,069 | 15,994 | 21,856 |
| EBITDA Margin (%) | 13.5 | 13.9 | 14.8 | 15.0 | 16.1 |
| Adjusted Net Profit | -2,597 | 1,667 | 7,708 | 13,435 | 19,479 |
| Diluted EPS (INR) | -0.3 | 0.1 | 0.6 | 1.0 | 1.4 |
| Diluted EPS Growth (%) | 0.0 | 0.0 | 317.7 | 74.3 | 45.0 |
| ROIC (%) | 0.0 | 21.5 | 29.5 | 36.3 | 43.0 |
| ROE (%) | 0.0 | 0.0 | 30.8 | 29.4 | 31.3 |
| P/E (x) | -78.1 | 162.0 | 38.8 | 22.3 | 15.3 |
| P/B (x) | -5.8 | 24.6 | 7.7 | 5.7 | 4.2 |
| EV/EBITDA (x) | 29.8 | 27.1 | 18.3 | 12.4 | 8.4 |
| Dividend Yield (%) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

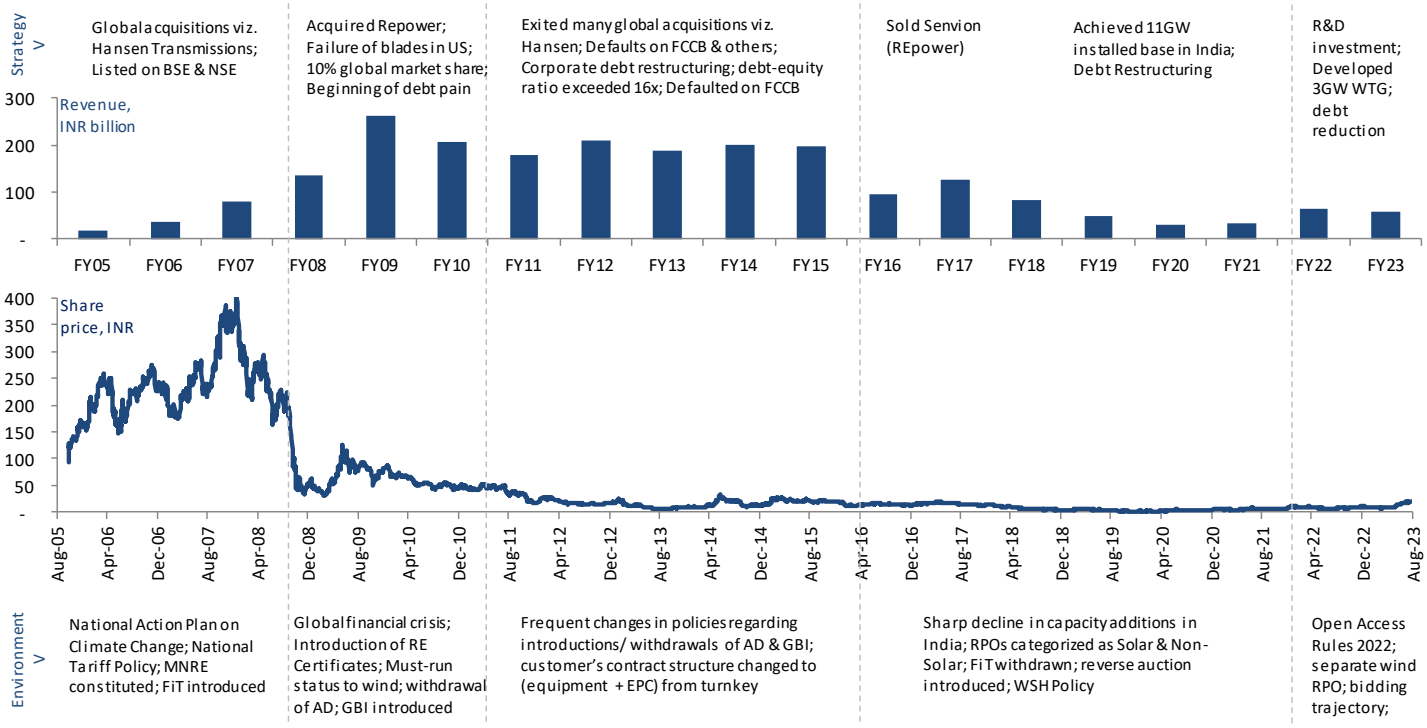
Source: Company data, JM Financial. Note: Valuations as of 23/Aug/2023

JM Financial Research is also available on:
Bloomberg - JMFR <GO>,
Thomson Publisher & Reuters,
S&P Capital IQ, FactSet and Visible Alpha

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

# What has changed this time?

## Exhibit 1. Historical revenue, stock price and key events




Suzlon is one of the leading global renewable energy solutions providers. Over the past 26 years, the group has installed over 20.1GW of wind energy in 17 countries across six continents. It commands a ~33% market share in the Indian market. However the company has suffered its fair share of setbacks in its journey over the past 28 years.

On the back of strong momentum in the wind sector in early 2000, company had acquired multiple global companies to build engineering & technology capabilities and expand its geographical presence to capitalise on the growing opportunities. These acquisitions were primarily funded via debt. Unfortunately, the aggressive growth strategy of the company coincided with the 2008 global financial crisis, subsequent downturn in global market and frequent changes in polices in India leading to shrinking of opportunities and beginning of the debt pain for the company.

Suzlon had to exit many of its global acquisitions in order to service its huge debt. It also had to undergo 2 rounds of debt restructuring along with exit from global markets to bring its debt down. In 2015, Dilip Shanghvi acted as a 'white knight' for the firm, picking up approximately 23% stake in Suzlon for ~INR 18bn. During these times, the company continued to invest in R&D and focus on developing new products.

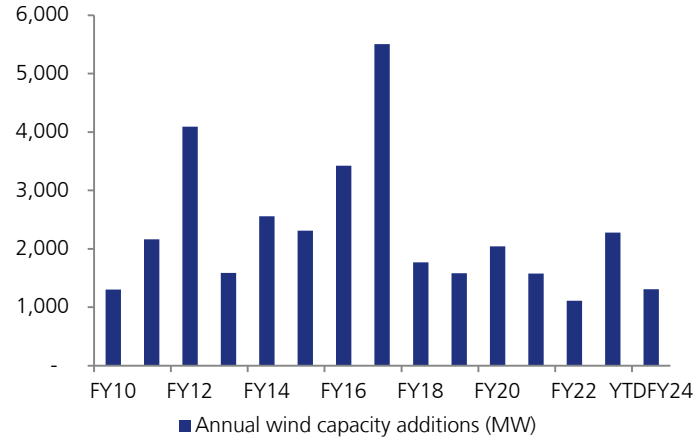
Today, the global and domestic market is witnessing a significant growth due to rising energy demand coupled with increasing share of renewables in the power generation mix, commitment of corporates for carbon emission reduction, policy incentives and better execution ecosystem.

Suzlon is emerging out of its past pains and harness these opportunities. It is on its way to turn debt-free. During last year, it has converted its debt (OCD+CCPS) into equity, completed its rights issue and a successful QIP. With the debt overhang gone from the books, strong industry tailwinds and improving product portfolio we see Suzlon delivering 31%/40%/148% revenue, EBITDA and PAT CAGR over the next 3 years.

Source: Bloomberg, JM Financial

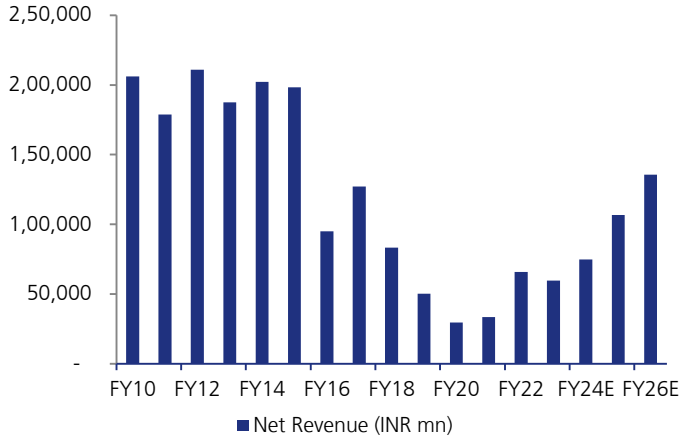
# Story in charts

## Exhibit 2. Wind sector facing challenges in recent years



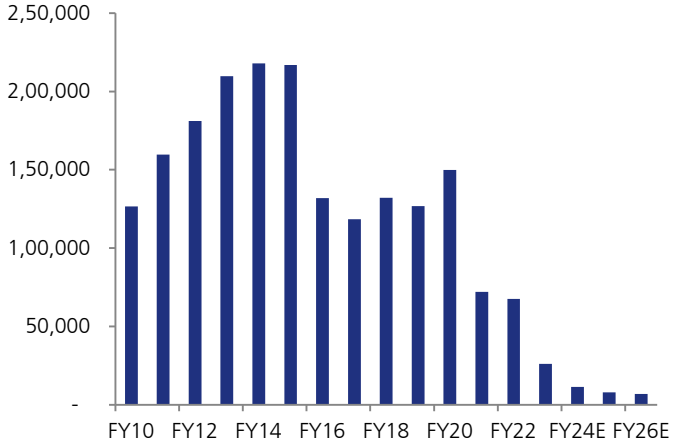

Source: Industry, JM Financial

## Exhibit 3. Affecting Suzlon's performance



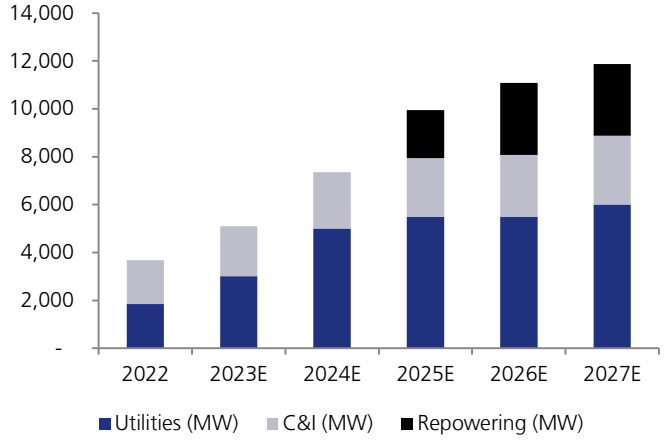

Source: Company, JM Financial

## Exhibit 4. which lead to higher debt (INR mn)



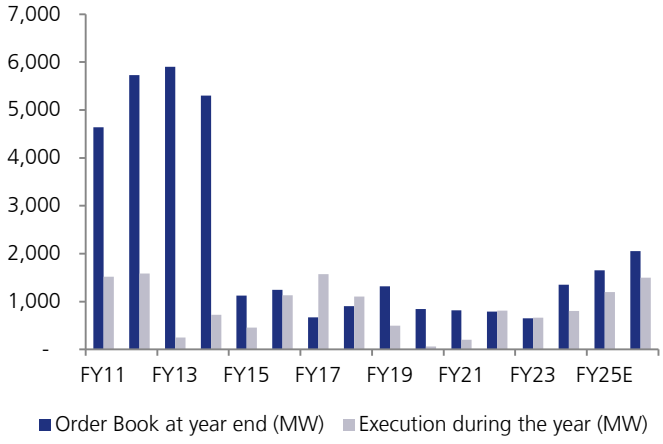

Source: Company, JM Financial

## Exhibit 5. With industry tailwinds we expect growth in market



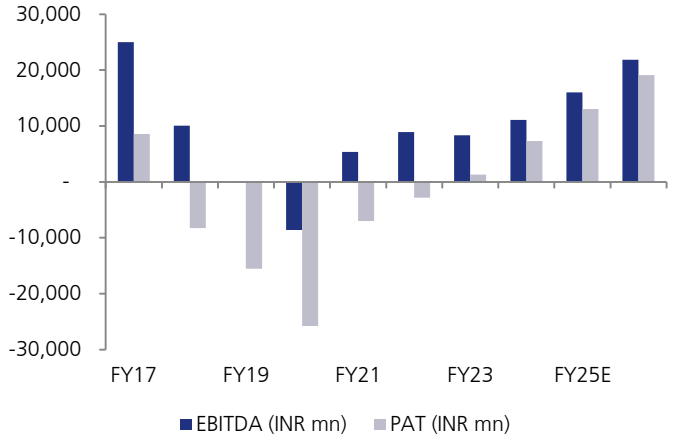

Source: Company, JM Financial

## Exhibit 6. which is likely to improve project commissioning (MW)




Source: Company, JM Financial

## Exhibit 7. and improvement in EBITDA and PAT (INR mn)



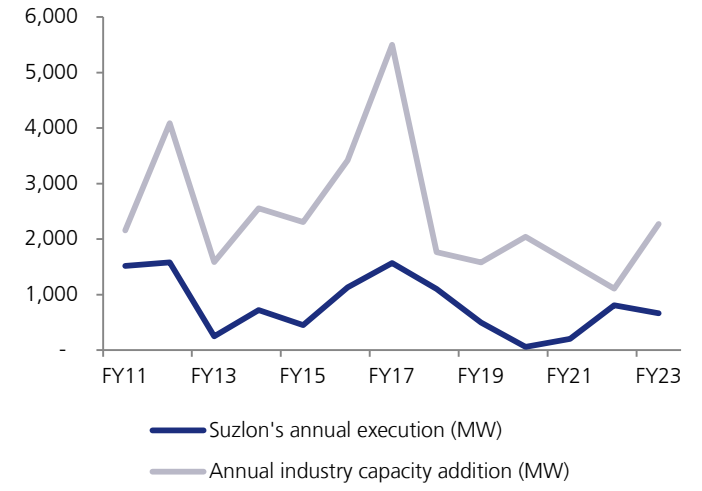

Source: Company, JM Financial

# Investment Rationale

## Building its Wind Turbine Generator (WTG) order book

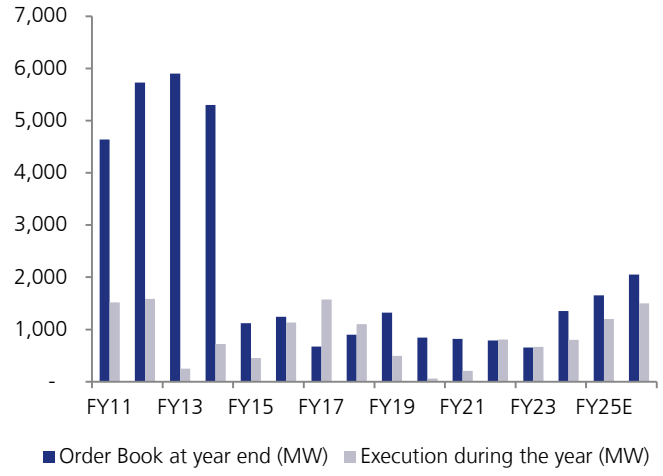
The order book of Suzlon is on an upward trajectory. It grew from 652MW as of 31st Mar'23 to 1,582MW as of 30th Jun'23, providing good visibility of revenue over the next 2 years. With the government targeting 10GW p.a. wind auctions in utilities, Suzlon remains well-placed to benefit from this cycle. We expect 3-4GW of annual installations in the near term. Moving past the painful period, Suzlon still has 30-35% market share in the domestic market.

**Exhibit 8. Capacity addition (MW)**




Source: Industry, Company, JM Financial

**Exhibit 9. Suzlon's order book (MW)**




Source: Industry, Company, JM Financial

## Strong tendering momentum

As on date, 3.5GW of wind and 8.5GW of solar-wind hybrid capacity have been tendered, the results of which are yet to be announced. These projects are expected to commission over the next 3-4 years.

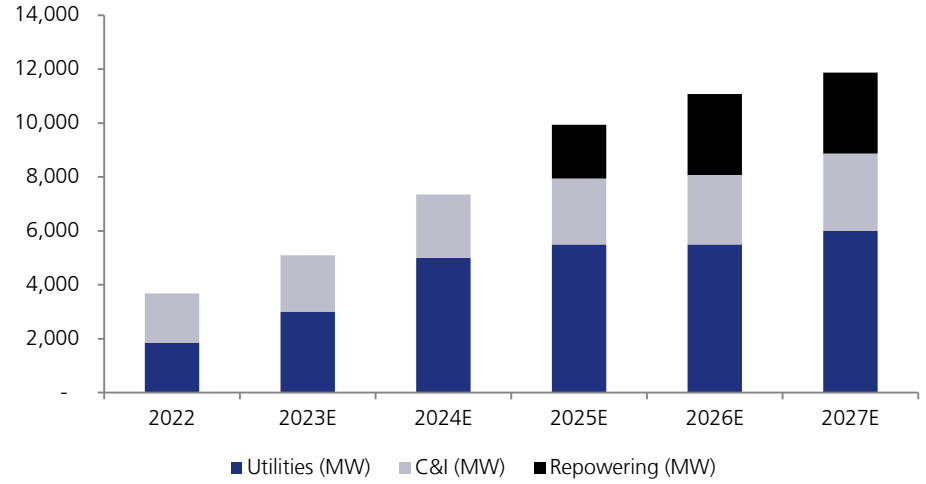
**Exhibit 10. List of tenders in CY23**

| Tender name | Status | Technology | Tender capacity | Allocated capacity | Tariff INR/ kWh |
|---|---|---|---|---|---|
| SECI Pan India Wind Tranche-XIV, 1,200 MW | Results announced | Wind | 1,200 MW | 690 MW | 3.18 |
| GUVNL Pan India Wind Tranche-V, 500 MW | Results announced | Wind | 500 MW | 240 MW | 3.11 |
| CESC Pan India Solar-Wind Hybrid, 150 MW | Results announced | PV-wind hybrid | 150 MW | 150 MW | 3.07 |
| SECI Pan India Solar-Wind-Storage Hybrid, 1,500 MW | RFS issued | PV-wind-storage hybrid | 1,500 MW | | |
| SJVN Pan India Solar-Wind-Storage Hybrid, 1,500 MW | RFS issued | PV-wind-storage hybrid | 1,500 MW | | |
| SECI Pan India Wind Tranche-XV, 1,300 MW | RFS issued | Wind | 1,300 MW | | |
| NTPC Gujarat Wind, 1,000 MW | RFS issued | Wind | 1,000 MW | | |
| SECI Pan India Solar-Wind-Storage Hybrid, 800 MW | RFS issued | PV-wind-storage hybrid | 800 MW | | |
| SECI Pan India Solar-Wind-Storage Hybrid, 500 MW | RFS issued | PV-wind-storage hybrid | 500 MW | | |
| GUVNL Pan India Wind Tranche-VI, 500 MW | RFS issued | Wind | 500 MW | | |
| Tata Power (TPC-D) Pan India Solar-Wind Hybrid, 225 MW | RFS issued | PV-wind hybrid | 225 MW | | |
| MSEDCL Maharashtra Wind, 200 MW | RFS issued | Wind | 200 MW | | |
| NTPC Gujarat Wind, 110 MW | RFS issued | Wind | 110 MW | | |
| RECPDCL Pan India Wind, 100 MW | RFS issued | Wind | 100 MW | | |
| NLC Pan India Wind, 50 MW | RFS issued | Wind | 50 MW | | |
| BEL Karnataka Wind, 4 MW | Bids submitted | Wind | 4 MW | | |

Source: Bridge to India, JM Financial; RFS: Request for Selection

A total of 16 tenders have been announced in YTDCY23; 3.9GW of pure wind tenders were floated, of which 930MW has been allocated, and 4.7GW of solar-wind hybrid projects have been tendered of which 150MW has been allocated. Out of the above, considering Suzlon's market share to be stable at 33%, we can expect order wins of 3-3.5GW p.a. over the next 4-5 years.

Exhibit 11. Expected domestic wind capacity additions (MW)

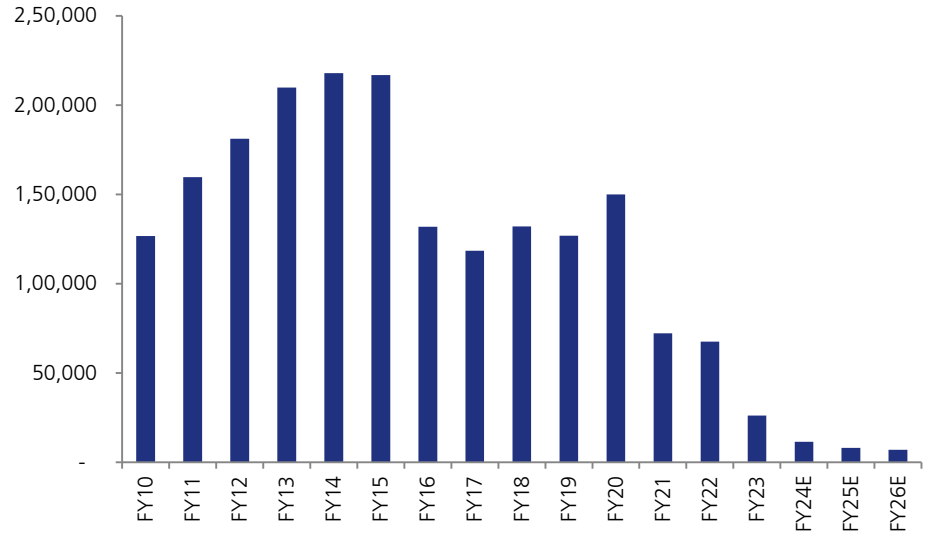



Source: Expert interactions, Industry, JM Financial

## Turnaround in financial performance

Suzlon had to undergo a restructuring exercise in the past as it had failed to fulfil its debt obligations. However, in the last year, the company has refinanced its existing debt, replacing 16 lenders with two new lenders (REC Limited and Indian Renewable Energy Development Agency Limited). Suzlon also converted its entire OCDs and CCPS, which helped in bringing down its debt. Further, the company has completed a rights issue of INR 12bn and utilised INR 9bn to prepay its entire outstanding debt obligations. The company had negative net worth due to past losses, but net worth recently turned positive majorly on account of the rights issue and gain on the de-recognition of OCDs and CCPS. With debt reduction, lower interest cost and a better financial risk profile, the company is in a good position to capitalise on the tailwinds in the wind sector. In 2QFY24, the company raised funds worth INR 20bn via a qualified institutional placement (QIP). Approximately INR 15bn will be utilised towards debt repayment and the balance will be used towards working capital and capex requirements. Post QIP, the company is on the path of becoming net-debt-free.

Exhibit 12. Trend in company's debt (INR mn)

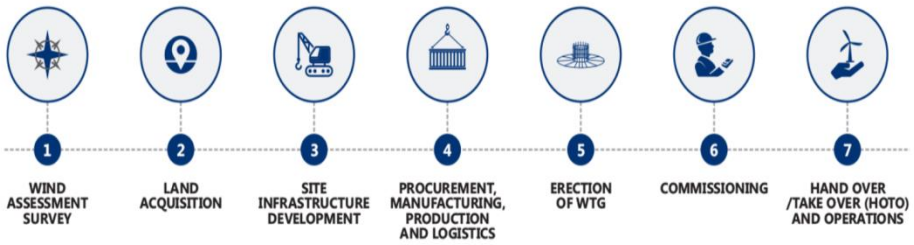



Source: Company, JM Financial

## Better visibility on execution

Timely execution remains the key to Suzlon's turnaround. The company's project services range from conceptualisation to commissioning including overall project management and complex front-end engineering and design. With successful installations of over 20GW across 17 countries, Suzlon's expertise covers an entire gamut of wind project planning and execution services, including wind resource assessment, infrastructure and power evacuation, technical planning and execution of wind power projects.

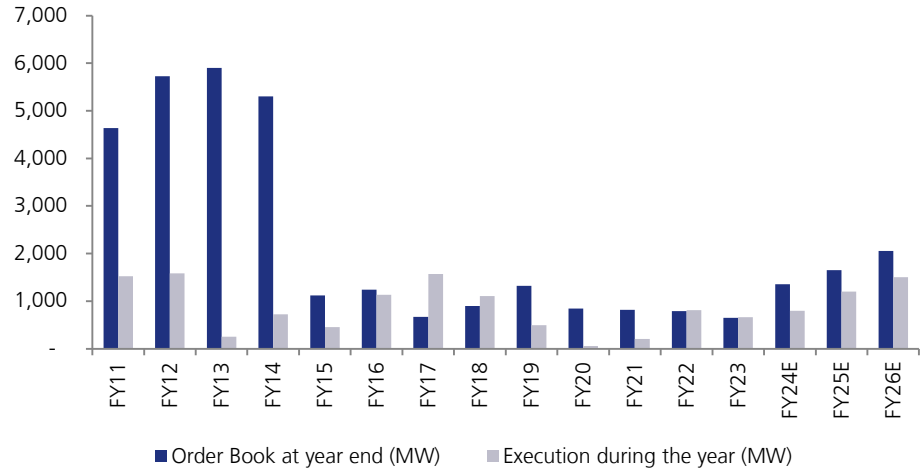
Exhibit 13. Execution process




Source: Company, JM Financial

In the past, the sector has faced challenges related to land availability & RoW, power evacuation, grid capacity, logistics constraints and infrastructure capability at the state level along with constraints in the supply chain. Today with active participation of SECI and other mature players, we don't expect these issues to re-emerge going forward. In addition to this, the nature of the contracts has also changed with land being in the scope of developers in most of the cases.

Exhibit 14. Project commissioning trend (MW)



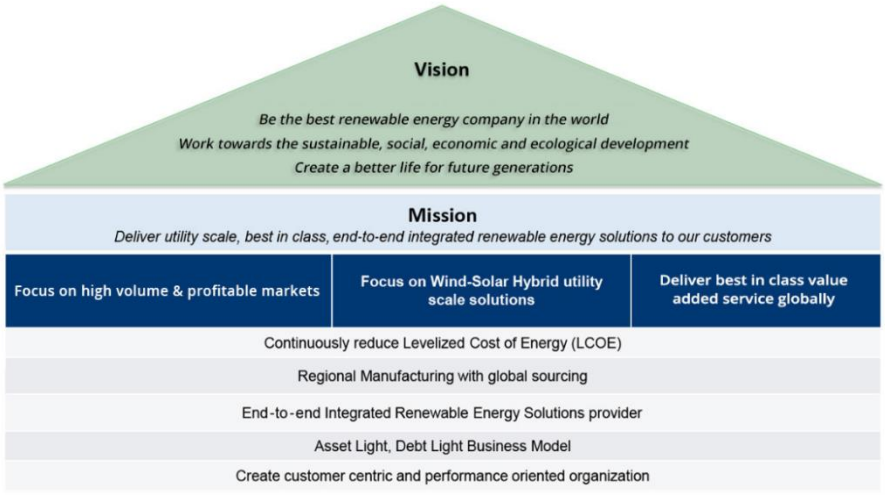

Source: Company, JM Financial

To address the supply chain risks, Suzlon has worked to create alternative sources by expanding the vendor base, localising and standardising certain components to ensure timely availability of critical components, and keeping procurement cost under control.

## Focused strategy

The core strategy of Suzlon since the beginning consisted of three elements: vertical integration, establishing manufacturing centres closer to the demand sites, and finally, leveraging its international footprint and knowledge of diverse environments. Today, the company is striving to: improve cost efficiency and optimising fixed cost to improve its competitive positioning; maintain market share; reorganise various business divisions; develop new WTG models that are customised for the Indian market; expand O&M service business in India, particularly from non-Suzlon WTGs; continuously innovate in products like larger turbines to drive down the Levelized cost of electricity which remain focus areas for the company.

Exhibit 15. Strategy of Suzlon




Source: Company, JM Financial

## Improving product portfolio

Suzlon has the capability to develop and manufacture different kinds of multi-MW WTGs ranging from 2.10MW to 3.3MW. Its current principal products include WTG models such as S120, S133 and S144. It has been consistently developing a market-leading product portfolio, with an emphasis on bigger WTGs that provide a higher energy yield at lower cost, resulting in higher returns. In FY23, it launched the S144 WTG model in 140-metre and 160-metre hybrid tubular-lattice tower variants. Presently, the company is focussing on the production of the S144 WTG model which caters to site-specific wind turbines from 3.0MW to 3.3MW with varying hub-heights. Out of the current order book of 1,582MW, c.50% is for the new 3MW series.

Exhibit 16. Recent order wins

| Date | Customer | Product | Order wins (MW) |
|---|---|---|---|
| Jul-23 | Everrenew Energy Private Limited | 2.1MW | 101 |
| Jul-23 | The KP Group, Gujarat | 2.1MW | 48 |
| May-23 | Torrent Power | 3MW | 300 |
| May-23 | Serentica Renewables | 3MW | 204 |
| May-23 | Sri Kumaraswamy Mineral Exports Pvt. Ltd | 2.1MW | 25 |
| May-23 | A Nordic Energy company | 3MW | 69 |
| May-23 | Vibrant Energy | 3MW | 99 |
| May-23 | Juniper Green | 3MW | 69 |
| Apr-23 | Thermax | 3MW | 39 |
| Apr-23 | Sembcorp | 2.1MW | 50 |
| Oct-22 | Adani Green | 2.1MW | 48 |
| Oct-22 | Aditya Birla group | 2.1MW | 145 |
| Sep-22 | Sembcorp | 2.1MW | 180 |

Source: Company, JM Financial

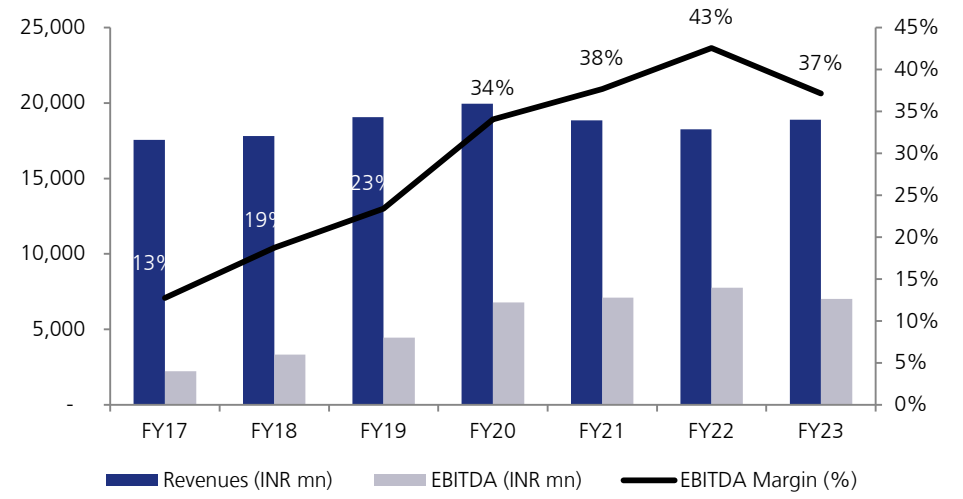
## Steady margins in operations and maintenance services (OMS)

Suzlon is the largest and most reliable wind O&M (operations and maintenance) service provider in India, in terms of capacity serviced. It provides comprehensive O&M services to its customers, which include reputed private companies, wind IPPs, power utilities and government organisations in India, for WTGs installed on a wind farm as well as the common infrastructure facilities such as electrical substations and transmission lines which support a wind farm, by entering into long-term O&M contracts with such WTG customers, for terms ranging from two to 10 years, with an option to renew thereafter.

As on 30th Jun'23, the total fleet serviced by Suzlon in India was approximately 14GW. In international markets, currently Suzlon provides O&M services for approximately 0.96GW of WTGs and technical services for approximately 1.6GW of WTGs.

Revenue and profitability of the O&M services business have been broadly stable even in stressed times in the past. Stable cash flow with EBIDTA above INR 7bn per fiscal (over the past 3 years) from the O&M services business is expected to support future growth capex.

**Exhibit 17. O&M Services revenue and EBITDA**




Source: Company, JM Financial

## Manufacturing

Suzlon is among the most vertically integrated wind turbine makers in the world, with manufacturing capabilities for all key components of a wind turbine generator like blades, nacelles, control panels, hubs, and tubular towers. This ensures the consistency and reliability of the turbine along with better assurance of lifetime technical support.

Currently the capacity of the company is 3,150MW for 2.1MW WTG sets. When Suzlon manufactures 3+ MW WTGs Dec'23 onwards, the capacity can be ramped up to 4,500MW in a phased manner.

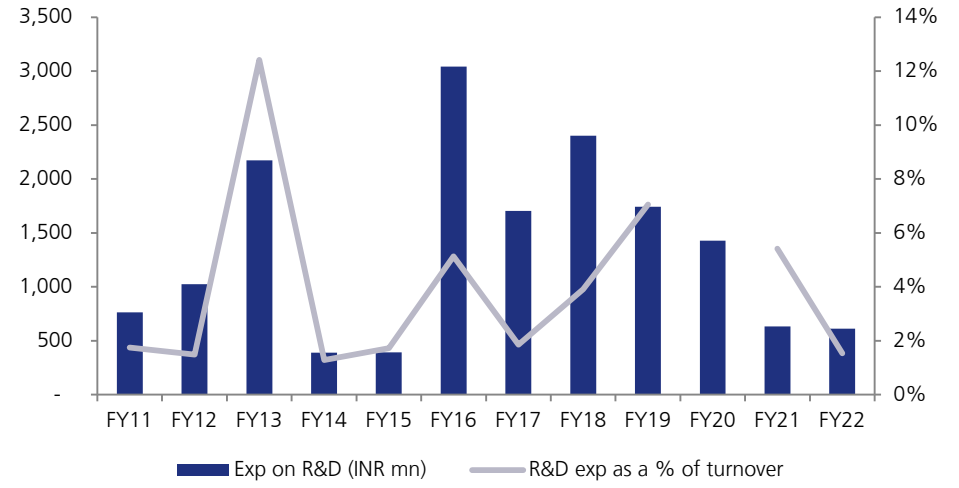
## R&D and technology

Research and development has always been a focus area for the company which has enabled it to stay globally competitive. Unlike its Indian industry peers, Suzlon spends a 2-3% of its revenue on R&D to incubate innovation and implement the outcomes in its product development, processes, operations, and maintenance services. The net result has been a significant reduction in the Levelised Cost of Energy (LCoE).

The company has four main research centres in Denmark, Germany, the Netherlands, and India. Suzlon is pushing the aerodynamic limits with each new turbine model. It is also introducing advanced materials such as carbon-fibre in its next-generation turbines which will make the blades stronger and lighter.

Globally, Suzlon's 2.1MW fleet continues to operate at and above 97% availability in some of the hottest and coldest environments on the globe. The development work on the new product, the 3MW platform, was completed in FY23 and is now under pilot testing.

**Exhibit 18. Expenditure on R&D (INR mn)**




Source: Company, JM Financial
* the reduction in revenue is mainly due to continued impact of transition from Feed-in Tariff to bidding regime, debt restructuring and working capital constraints resulting in lower volumes for the industry and the Company; hence R&D as a % seems so high in FY20.

Most recently, it has developed its 3 MW series of wind turbines with a 144-meter rotor diameter and 85-90% of the local content. The S144 wind turbine generator is one of the largest in India, extendable up to 3.15 MW, depending on site wind conditions, available at a hub height of 140 meters going up to 160 meters by its serial launch. At 160 meters hub height the S144 will also be India's tallest wind turbine. Suzlon's S144 fleet will deliver a remarkable 40-43% higher generation over Suzlon's current model, the S120 - 2.1 MW wind turbine.

# Evolution of wind power in India

Wind energy development in India began in Dec'52, when power engineer Maneklal Sankalchand Thacker undertook a project in collaboration with the Council of Scientific and Industrial Research (CSIR) to look into the possibility of capturing wind power in India. After that, India's wind energy journey is essentially India's RE journey. Over the years, solar energy has been prioritised over wind energy, despite import dependence on the solar sector. Today, the commercially exploitable potential of wind energy in India is estimated to be more than 200GW. But India has not been able to harness this potential primarily due to frequent changes in policies like shifts in tariff system from feed-in-tariff to competitive bidding and execution issues like availability of land. As a result, the total current installed capacity is just 44GW, i.e., about 22% of the commercially exploitable potential. With recent policy changes such as changes in bidding methodology, open access, issue of bidding trajectory visibility, traction in solar-wind hybrid projects, renewable power obligations (RPO), and the upcoming attractive repowering policy, the wind energy sector is poised for a decadal growth.

## Phase-I (upto 2000)

In 1992, the Department of Non-conventional Energy Sources was upgraded into a full-fledged ministry called the Ministry of Non-conventional Energy Sources (MNES). As part of the economy-wide reform process, in Sep'93 MNES put in place fiscal incentives and policies to increase private sector participation in the renewable energy sector. This included new and revised provisions of the incentives like accelerated depreciation, and concessions related to banking, wheeling and third-party sales, among others. Companies engaged in renewable energy such as solar and wind were provided with accelerated depreciation (AD) on a written down value (WDV) basis at 100% in the 1990s; this was later revised to 80% in 2002 and 40% in 2017. The policy framework announced by the ministry also had the provision of a power purchase price of INR 2.25/kWh (USD 0.18/kWh), with an escalation of 5% every year. This scheme created price certainty for renewable energy project developers.

The AD programme can be termed as a major incentive for new project developments. It promoted the involvement of both large businesses and small investors, and captive consumers in the industry, contributing to the efficient deployment of wind power. But in the late 1990s, the wind sector experienced a slowdown due to delays in securing land approval, poor installation practices and lowering of tax benefits by the government.

## Phase-II (2000+)

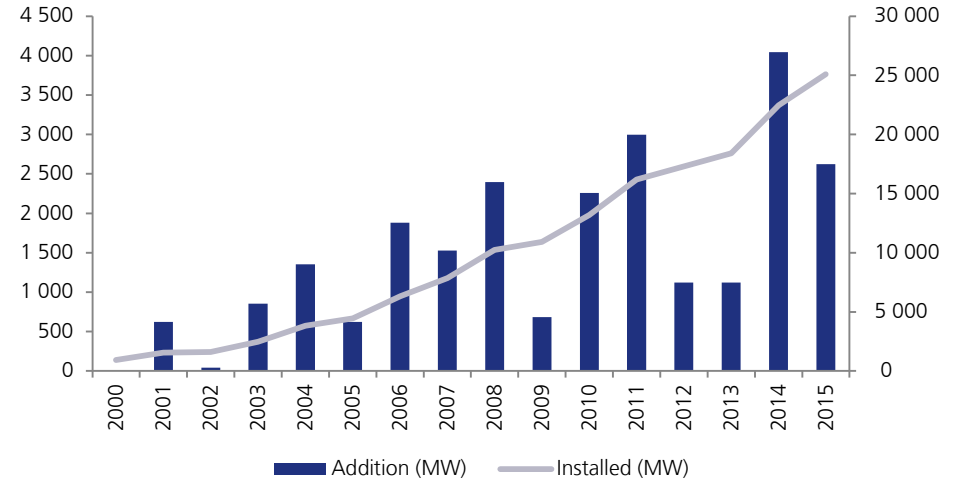
The de-licensing of electricity generation under the Electricity Act 2003 (EA), and the mandating of power procurement through competitive bidding under the National Tariff Policy, 2006, (NTP 2006) were game-changing reforms towards increasing private-sector investments in power generation.

These policies also emphasised the importance of setting renewable energy quotas and preferential tariffs for renewable energy, and stipulated several conditions to promote and harness renewable energy sources and their procurement by the states. MNES was renamed the Ministry of New and Renewable Energy (MNRE) in 2006.

The NTP 2006 permitted discoms to procure RE at tariffs fixed by their respective SERCs, also called feed-in tariffs (FiTs). The SERCs determined the FiTs based on their tariff determination regulations as guided by CERC. The CERC notified the first guidelines for tariff determination in 2009. The first generic tariff order determined utility-scale solar PV tariff of INR 18.44 and wind power tariffs of INR 5.63, INR 4.90, INR 4.17, and INR 3.75 (for Wind Zones 1, 2, 3, and 4 respectively) in 2009.

The cumulative effect of policies was that by 2010, RE accounted for 9.7% of the available installed power generation capacity in the country.

Exhibit 19. Wind power generation capacity trend in India (MW)




Source: MNRE, CEA, JM Financial

## Phase-II (2009+)

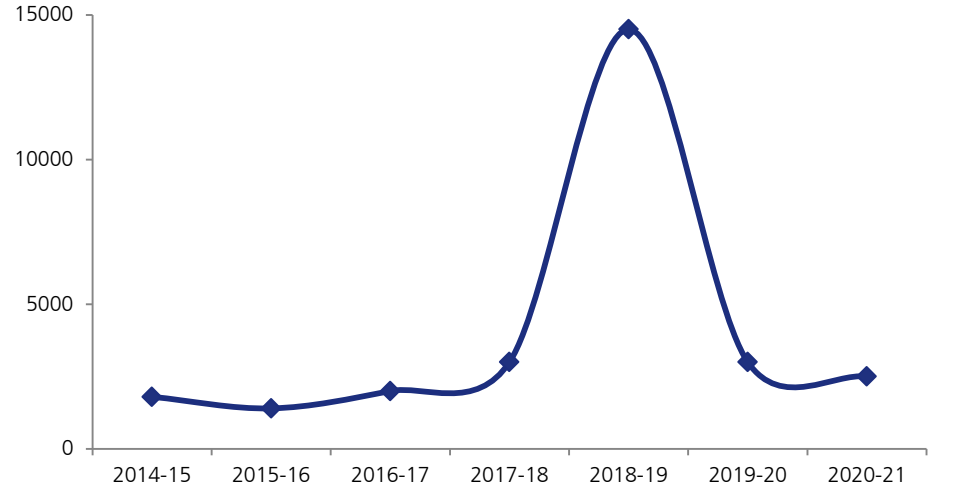
The Indian government was unhappy that the prevailing policy regime encouraged investment in renewable energy sources but not the actual generation of power. So, in 2009, the Government of India (GoI) implemented a generation based incentive (GBI) scheme for grid-connected wind power projects. Wind generators were to earn INR 0.50/ kWh of power supplied to the grid for not less than 4 years and not more than 10 years, with a capital of INR 10mn per MW, under the programme. GoI allotted more than INR 180bn under GBI from FY15 to FY21, the highest being in FY19.

The GBI was over and above the tariff approved by the electricity regulatory commissions and disbursed on a half-yearly basis through IREDA. The GBI scheme attempted to build a business case for idependent power producers. The GBI and accelerated depreciation benefits were mutually exclusive.

Simultaneously, the Grid Code, 2010, (Grid Code) which must be followed by all states, granted a must-run status to power generated from wind and solar plants. However, commercial considerations, grid unavailability, and technical grid security concerns led to curtailment, which translated into revenue loss for developers.

The progress and growth of wind power in India can be attributed to the above schemes, particularly GBI.

Exhibit 20. Funds released under GBI scheme for wind power in India




Source: IREDA

100% AD was introduced in 1994, which was reduced to 80% in 2002. GBI was introduced in 2009. Both AD and GBI lapsed in 2012 but were reintroduced in 2013. Subsequently, the production of wind power fell by 18% in 2012 and 42% in 2013, compared to 2011. Considering the significant reduction in wind power generation, GoI announced plans for the revival of the AD programme in Jul'14 subject to the condition that an entity can get the benefit of either AD or GBI, but not both.

The flip-flops by the government in withdrawing and re-introducing benefits such as AD and GBI had adverse effects on wind capacity addition.

### Phase-III (2015+)

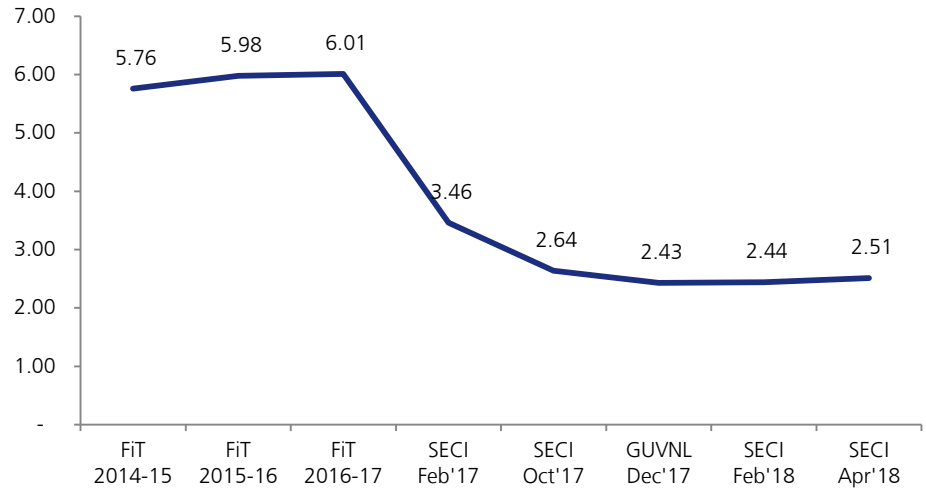
The tariff policy was amended in 2016 asking state electricity regulatory commissions (SERCs) to reserve a minimum percentage of electricity purchase (known as RPO) from renewable energy sources, as a percentage of the total consumption of electricity. RPOs were categorised as Solar and Non-Solar RPO.

So far, wind projects in the country were set up under a fixed feed-in tariff (FiT) regime. Under this, wind power developers signed power purchase agreements (PPAs) with discoms at a fixed tariff. Some developers signed PPAs with third parties at a mutually agreed rate. Installing captive or group captive power projects became another popular route for project development, especially in the wind segment.

In 2016, the government notified the reverse auction scheme for wind projects totalling 1,000MW, to encourage competition and ensure efficient and transparent e-bidding and e-auctioning processes. Reverse auction involved bidding for projects tendered by the government, with the lowest bidder winning the contract.

The country's first-ever auction of wind capacity took place in Feb'17. Tariffs plummeted to a record INR 3.46 per kWh, a sharp contrast to wind FiTs, which vary from INR 3.80 to INR 6.04 per kWh across states. Mytrah Energy (India) Limited, Singapore-based Sembcorp Industries, IDFC Alternatives-backed Green Infra Limited, global private equity fund Actis Capital's clean energy platform Ostro Kutch Wind Private Limited, and Inox Wind Infrastructure Services Limited INR 3.46 per kWh to win contracts for 250MW capacity each.

Exhibit 21. Wind power tariff trend (INR/kWh)




Source: Industry, JM Financial

The confidence of the developers was enhanced after the bidding. Under the FiT regime, there were delays in payments and PPA signing as the financially stressed distribution companies shied away from buying power from wind power plants. The competitive bidding process not only assured timely payments for fixed terms but also provided project visibility.

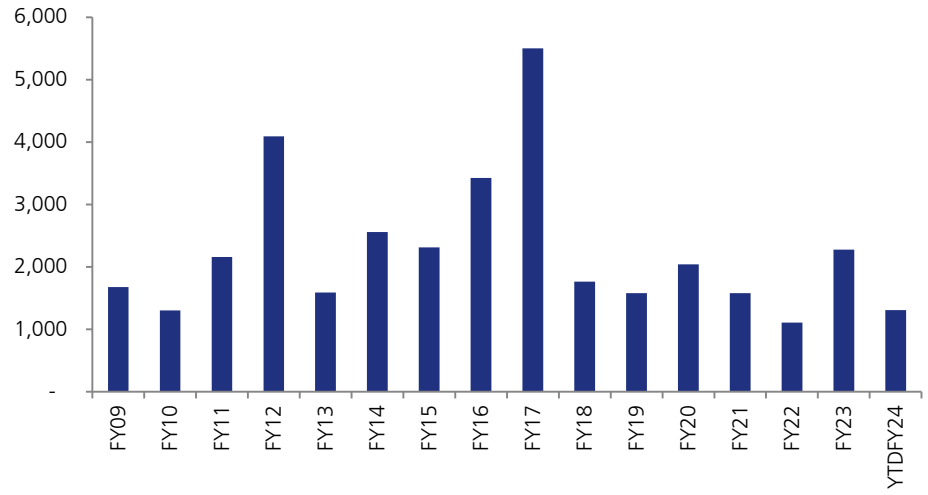
Following the successful allocation of 1,000MW of wind capacity, MNRE launched another round of wind auctions for 1,000MW of wind power projects, thus creating opportunities in the segment. Several states also announced moves towards the competitive bidding regime and came up with their respective tenders in 2017.

Subsequently, the government issued 'Guidelines for Tariff Based Competitive Bidding Process for Procurement of Power from Grid Connected Wind Power Projects' in Dec'17 (later amended in Jul'19) to provide a framework for procurement of wind power through a transparent process of bidding including standardisation of the process and defining of roles and responsibilities of various stakeholders.

After the discovery of these lower tariffs under competitive bidding, even under-construction projects were brought within the bidding regime, or else their tariffs were re-negotiated resulting in reduced tariffs and reduced margins. After 2017, there was a sharp decline in capacity additions, leading to unsold inventory with the OEMs. Discoms were no longer willing to sign PPAs on FiTs, and the pace of bidding failed to keep up with expectations.

The annual average installation before the introduction of competitive bidding was in the range of 2.5GW (3 years before the competitive regime). However post competitive bidding, the annual installations came down to around 1.5GW.

**Exhibit 22. Wind power generation capacity additions (MW)**




Source: MNRE, CEA, JM Financial

Further, because of the low tariffs it became essential that the developers set up projects in high wind-density sites making land the most crucial element of investment decisions. However, state policies were not very conducive in this aspect. The consequent delays in setting up projects further affected wind OEMs.

**Exhibit 23. Early policy actions and their impact**

| Policy/scheme | Impact |
|---|---|
| Promotion of RE, competitive bidding, and RPO in National Tariff Policy, 2006 | Creating demand for expensive RE power through RPOs. |
| National Action Plan on Climate Change, 2008 | Policy certainty and continued government support for promotion of RE. |
| National Solar Mission, 2010 | Managing offtake risk by signing long-term PPA and providing payment security. |
| Introduction of renewable energy certificates (REC), 2010 | Creating mechanism to broaden the demand base. |
| Must-run status in Grid Code, 2010 | Mitigating transmission and curtailment risk. |
| GBI for grid-interactive wind power projects, 2009 and 2013 | Financial incentives for generating wind power |
| Green Energy Corridor project, 2013 | Addressing transmission risk and offtake risk by reducing congestion on grid. |
| Scheme for solar park development, 2014 | Improving execution and lowering cost of supporting infrastructure and services. |
| National Tariff Policy, 2016 | Creating demand for RE by setting common national trajectory for RE's share in consumption. |
| Competitive bidding in wind, 2016 | Managing offtake risk by signing long-term PPAs and providing payment security.<br>Low tariffs for discoms through competitive bidding. |
| Waiver of inter-state transmission charges and losses, 2016 | Financial incentive for export of power outside State |
| Policy for re-powering of wind projects, 2016 | Support to utilize wind resources efficiently. |
| Competitive bidding guidelines for wind, 2017 | Low tariffs for discoms through competitive bidding. |

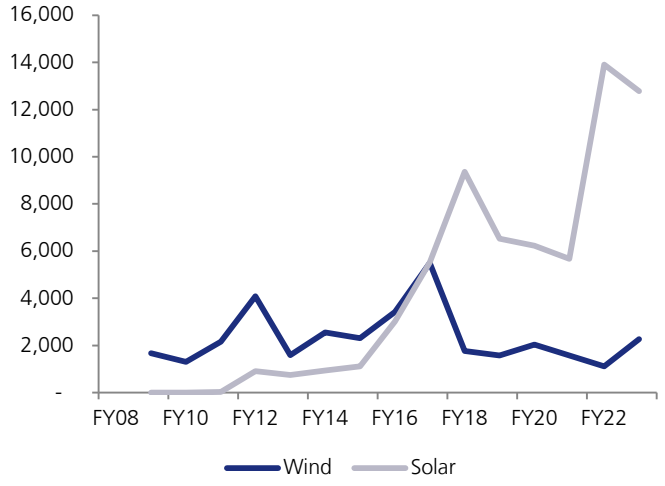
Source: JM Financial

## Phase-IV: Beginning of a new era

Scaling up India's ambitious agenda to combat climate change, India during COP26 in 2021 declared its commitment to increase its power generation capacity from non-fossil energy capacity to 500GW and meet 50% of its energy requirements through renewable energy by 2030. This included the installation of 280GW of solar power and 140GW of wind power. Further, the National Institute of Wind Energy estimates wind power potential of 302.2GW at 100 meters, 695.5GW at 120 meters and 1,164GW at 150 meters above ground level in India. Out of this, a potential of about 214GW has been estimated with more than 30% CUF and about 57GW with more than 35% CUF.

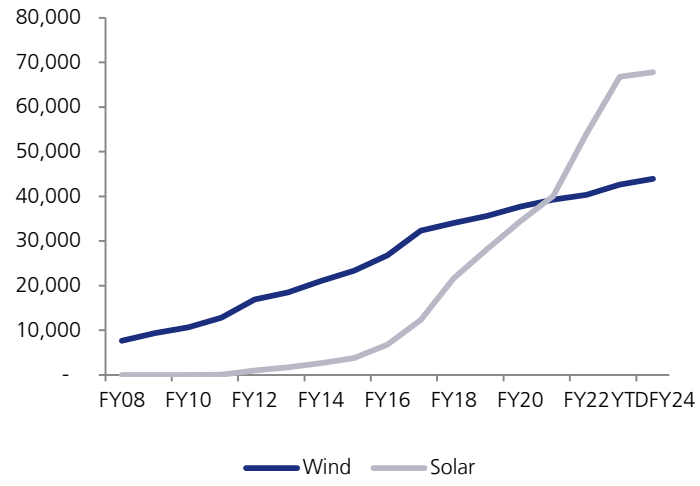
Wind power generation capacity in India has significantly increased in recent years. But, with the total installed wind power capacity of 44GW, it is still significantly lower than the potential which is mainly spread across the southern, western, and north-western states.

**Exhibit 24. Annual capacity addition (MW)**




Source: Industry, JM Financial

**Exhibit 25. Annual installed capacity (MW)**

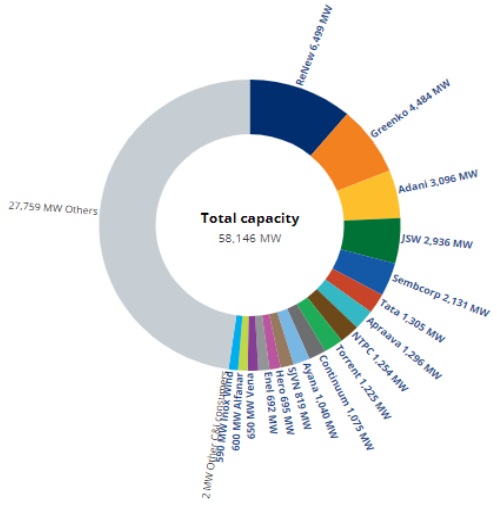



Source: Industry, JM Financial

## India's wind energy market

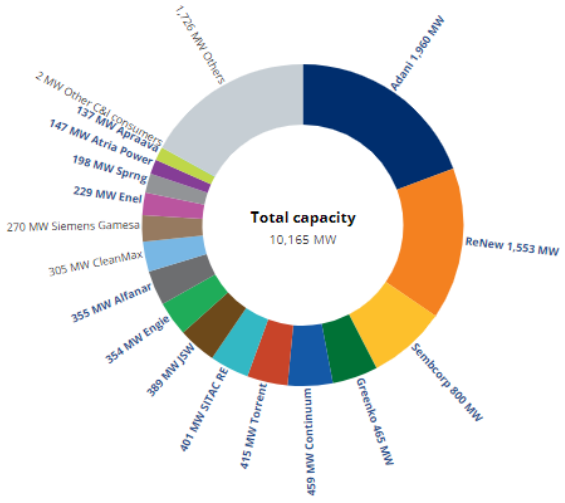
India's wind energy market is highly fragmented. Some of the major players in the market include Torrent Power, JSW Energy, INOX Wind Energy, NTPC Limited, Suzlon Energy Limited, Vestas Wind Systems AS, and Siemens Gamesa Renewable Energy SA., among others.

**Exhibit 26. Major developers in wind energy sector (installed capacity including pipeline), MW**




Source: Bridge to India

**Exhibit 27. Major developers in wind energy sector (over last 5 years), MW**




Source: Bridge to India

As can be witnessed, over the last few years, the entry of new players has increased in the wind sector on the back of favourable policy changes, industry tailwinds and increasing demand for renewable sources of energy. Closer look at renewable energy ambitions of India's some of the largest utility players indicate greater momentum and consolidation in the industry in future.

- Torrent power: The current installed capacity stands at 1,183MW with another 764MW under construction. The company is also evaluating other opportunities for RE portfolio acquisition simultaneously. TPW has set a target of achieving 5,000MW of renewables portfolio over the next 3-5 years. The company has also allocated a large piece of land (c. 6000 hectares) where it plans to set-up c. 3000MW of solar-wind hybrid capacity.
- JSW Energy: The company recently unveiled its strategy 2.0 with a vision of pivoting towards an 'Energy Products and Services company'. The strategy includes 20GW generation capacity by 2030, Energy Storage capacity of 40GWh/ 5GW, Solar PV module manufacturing capacity of 1GW and, Green Hydrogen capacity of 3.8KTPA. Earlier in 2021, the company had unveiled its strategy to increase generation capacity to 20GW by 2030 only. JSWEL in Aug'22 acquired a RE portfolio of 1,753 MW from Mytrah Energy (India) Private Limited (MEIPL) comprising 1331MW of wind power plants. Currently, it has 2215MW of wind projects under construction which are expected to get commissioned by CY24 taking the total wind portfolio to 3.6GW by end of CY24.
- Tata Power: With a total renewable capacity of 6,571 MW, including 2,654 MW projects under various stages of implementation, the company is looking to annually add 2-2.5GW renewable capacities (mix of group captive and utilities) going forward.
- NTPC: NTPC has an installed RE capacity of 3.3GW with another 5.9GW under construction. Further, additional 10.8GW RE projects are under pipeline, which include a mix of ground mounted solar, floating solar, wind and some small hydro. NTPC is implementing and planning 36GW RE capacity in different states through UMREPP scheme. It also has the largest floating solar portfolio of 262MW in India. NTPC plans to add 16GW of RE capacity comprising of wind and solar in next 3 years.
- SJVN: The company has set a target of achieving 50,000MW of installed capacity by 2040 with 96% contribution from non-fossil fuels. Company currently has close to 3.2GW of RE projects under construction.
- Adani Green: The company currently has 8.3GW of RE portfolio including 1.2GW of pure wind and 2.1GW of hybrid capacities. It has set a target of 45GW of RE portfolio by 2030 with 12GW of capacity already under construction.
- Renew Power: Renew Power's clean energy portfolio stands at approx. 13.7 GWs on a gross basis comprising of a total commissioned capacity of 7.98 GW and an additional 5.72 GW of committed capacity as of 31st Mar'23. It is one of the largest utility-scale renewable energy solutions providers in India in terms of total commissioned capacity. It operates wind, solar, and hydro energy projects in India.

# Key initiatives by the government

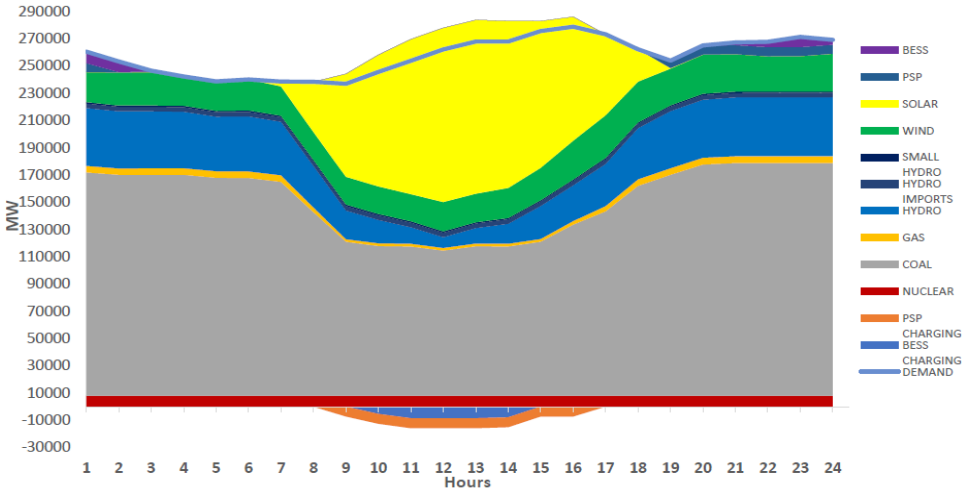
In recent years, the Government of India has made multiple interventions to revive the sector and take it to the next level of growth. Some of the major initiatives are:

## National Wind-Solar Hybrid Policy

Solar and wind power are slated to play an important role in the transition toward decarbonised electricity systems. However, their integration into the energy mix is highly compromised due to the intermittency of their production caused by weather and climate variability, both across days and hours.

In India, demand curves usually have one morning peak and one evening peak. Currently, around 22% of daytime demand is met by solar and around 5% of evening peak is met by wind power.

Exhibit 28. Generation and demand curve on a typical day in May'26




Source: National Electricity Plan 2023, JM Financial

But as the sun sets in the evening and demand rises, ramping up generation is required. This is partially met by wind power since wind speeds are typically higher during the early mornings and evenings when solar power generation is zero. This ramp rate will increase significantly with the integration of more solar into the grid. The higher the ramp rate, the higher the costs associated with maintaining grid stability.

Since peak operating times of wind and solar systems occur at different times of the day and year, wind-solar hybrid can be an effective solution to address some of these issues. Wind power plants integrated with solar power plants can partially take care of the morning and evening peaks in the demand curve. These hybrid plants are designed to act as a single source of clean power, with average capacity factors far higher than individual solar or wind plants.

Exhibit 29. Capacity Factor for wind generation

| Season | Monsoon | | | Summer | | | Winter | | |
|---|---|---|---|---|---|---|---|---|---|
| Scenarios | Day Peak | Evening Peak | Night off-peak | Day Peak | Evening Peak | Night off-peak | Day Peak | Evening Peak | Night off-peak |
| Region | % | % | % | % | % | % | % | % | % |
| NR | 50% | 70% | 60% | 50% | 70% | 60% | 10% | 35% | 10% |
| WR | 55% | 75% | 65% | 55% | 75% | 65% | 10% | 20% | 20% |
| SR | 55% | 75% | 65% | 55% | 75% | 65% | 0% | 20% | 0% |
| ER | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| NER | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |

Source: CEA, Industry, JM Financial

**Exhibit 30. Capacity factor for solar generation**

| Season | Monsoon | | | Summer | | | Winter | | |
|---|---|---|---|---|---|---|---|---|---|
| Scenarios | Day Peak | Evening Peak | Night off-peak | Day Peak | Evening Peak | Night off-peak | Day Peak | Evening Peak | Night off-peak |
| Region | % | % | % | % | % | % | % | % | % |
| NR | 90% | 0% | 0% | 90% | 0% | 0% | 90% | 35% | 10% |
| WR | 80% | 0% | 0% | 85% | 0% | 0% | 90% | 20% | 20% |
| SR | 80% | 0% | 0% | 85% | 0% | 0% | 90% | 20% | 0% |
| ER | 80% | 0% | 0% | 85% | 0% | 0% | 90% | 0% | 0% |
| NER | 80% | 0% | 0% | 85% | 0% | 0% | 90% | 0% | 0% |

Source: CEA, Industry, JM Financial

Recognising the complementarity of wind and solar, the National Wind Solar Hybrid Policy was announced in 2018. The policy provided for flexibility in a share of wind and solar components in a hybrid project, subject to the condition that, the rated power capacity of one resource be at least 25% of the rated power capacity of another resource for it to be recognised hybrid project.

**Exhibit 31. CUF range (%)**

| Particulars | CUF range (%) |
|---|---|
| Standalone Solar | 18-22% |
| Standalone Wind | 24-26% |
| Solar-Wind Hybrid | 45-60% |

Source: CEA, Industry, JM Financial

Additionally, WSH projects result in efficient use of transmission infrastructure and offer more reliable power compared to standalone solar or wind projects. These advantages enable a 5-7% drop in capital cost, resulting in an overall reduction in tariff. This is what makes discom and corporate consumers particularly keen on WSH projects

## Open Access Rules 2022

In 2022, the government notified Electricity (Promoting Renewable Energy through Green Energy Open Access) Rules, 2022 to further accelerate India's ambitious renewable energy programme which has emerged as a huge stepping stone towards achieving India's renewable journey.

As per the rules, any consumer can demand green power from discoms. Further, the limit of Open Access Transaction has been reduced from 1MW to 100kW for green energy, to enable small consumers also to purchase renewable power through open access.

The above-mentioned policy action coupled with corporate net zero targets, EU's Carbon Border Adjustment Mechanism and investor mandates has resulted in corporate consumers rushing to adopt more renewable power and have opened possibilities for large and small industries, commercial consumers, and large households to source renewable RTC power, which, in turn, has created a new stream of opportunities for wind power.

**Exhibit 32. Electricity cost savings in Open Access model**

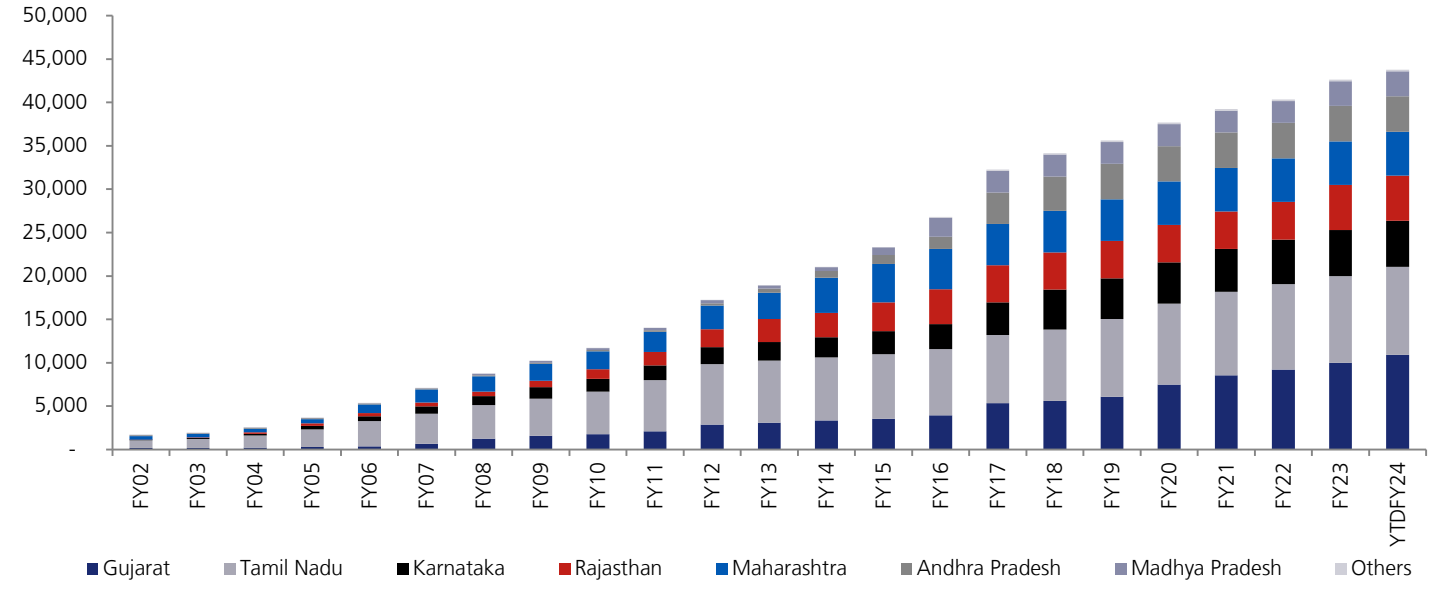
| Particulars | FY24 |
|---|---|
| HT 2A Industrial | 7.40 |
| HT 2B Commercial | 9.25 |
| | INR/kWh |
| State transmission charges | 0.87 |
| Wheeling charges | 0.38 |
| Cross-subsidy charges* | 0.00 |
| Addl surcharge* | 0.00 |
| PPA price** | 3.90 |
| Net landed cost | 5.15 |
| | |
| Savings/ HT 2A Industrial | 2.25 (30%) |
| Savings/ HT 2B Commercial | 4.10 (44%) |

Source: Industry, JM Financial, * exempted for captive/group captive, **avg industry

## Discontinuation of Reverse Auction

In Jan'23, GoI significantly overhauled auction norms and put an end to the inefficient process of reverse bidding for wind energy projects. It also established a formal procedure to ensure that capacity additions for wind-based power generation are spread across all eight windy states in the country, including Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu and Telangana.

**Exhibit 33. State-wise installed capacity break-up (MW)**




Source: NIWE, Industry, JM Financial

## Separate Renewable purchase obligation (RPO) for wind

The Ministry of Power in Jul'22 issued the Renewable Purchase Obligation (RPO) and Energy Storage Obligation (ESO) until the financial year 2029-2030. As per the revised norms, Wind RPO can be met only by energy produced from wind power projects commissioned after 31st Mar'22 which will boost wind installations in the country.

**Exhibit 34. RPO**

| Year | Wind RPO | HPO | Other RPO | Total RPO |
|---|---|---|---|---|
| FY23 | 0.81% | 0.35% | 23.44% | 24.61% |
| FY24 | 1.60% | 0.66% | 24.81% | 27.08% |
| FY25 | 2.46% | 1.08% | 26.37% | 29.91% |
| FY26 | 3.36% | 1.48% | 28.17% | 33.01% |
| FY27 | 4.29% | 1.80% | 29.86% | 35.95% |
| FY28 | 5.23% | 2.15% | 31.43% | 38.81% |
| FY29 | 6.16% | 2.51% | 32.69% | 41.36% |
| FY30 | 6.94% | 2.82% | 33.57% | 43.33% |

Source: MoP, JM Financial

## Long-term bidding trajectory

In Apr'23, GoI decided to invite bids for 50GW of renewable energy capacity annually for the next 5 years, i.e., from FY24 till FY28. These annual bids of ISTS-connected renewable energy capacity will also include setting up of wind power capacity of at least 10GW per annum. To expedite the execution, the government has also nominated SJVNL and NHPC as Renewable Energy Implementing Agencies (REIAs) in addition to existing SECI and NTPC Ltd.

Exhibit 35. RE bidding trajectory for FY24 (GW)

| Bidding Agency | Bidding Trajectory | Total |
|---|---|---|
| **SECI** | | |
| Solar, Hybrid, RTC, etc | 12.5 | |
| Wind | 2.5 | 15 |
| **NTPC** | | |
| Solar, Hybrid, RTC, etc | 12.5 | |
| Wind | 2.5 | 15 |
| **NHPC** | | |
| Solar, Hybrid, RTC, etc | 7.5 | |
| Wind | 2.5 | 10 |
| **SJVN** | | |
| Solar, Hybrid, RTC, etc | 7.5 | |
| Wind | 2.5 | 10 |
| **Grand Total** | | |
| **Solar, Hybrid, RTC, etc** | **40** | |
| **Wind** | **10** | **50** |

Source: MoP

## Other drivers of growth

- Green energy corridor: The availability of timely and reliable transmission infrastructure has been a challenge for the new renewable capacities. So, the government is building an Intra-State Transmission System Green Energy Corridor Phase-II. The transmission schemes will be implemented by the state transmission utilities (STUs) of seven states, i.e., Gujarat, Himachal Pradesh, Karnataka, Kerala, Rajasthan, Tamil Nadu and Uttar Pradesh for evacuation of ~20GW of RE power in the seven states by Mar'26. This will involve setting up 10,753 ckm of transmission lines and 27,546MVA capacity substations.
- ISTS waiver extension: To reduce the cost, the government allowed a waiver of ISTS for 25 years for the RE projects commissioned before Jun'25. ISTS waiver is applicable for C&I projects and G-TAM/ G-DAM markets till Jun'25. For COD in every year thereafter, ISTS charges will be levied at 25%, 50%, 75% & 100% of applicable charges respectively for 25 years.
- Green Hydrogen Policy, 2022: The government in Feb'22 introduced the Green Hydrogen Policy aimed at making India an export hub by increasing the production of green hydrogen and green ammonia to 5MMTPA by 2030. As per industry estimates generating 5MMTPA GH2 by 2030 will require an addition of 125GW of RE capacity, preferably on a round-the-clock basis.

# Evolving business environment

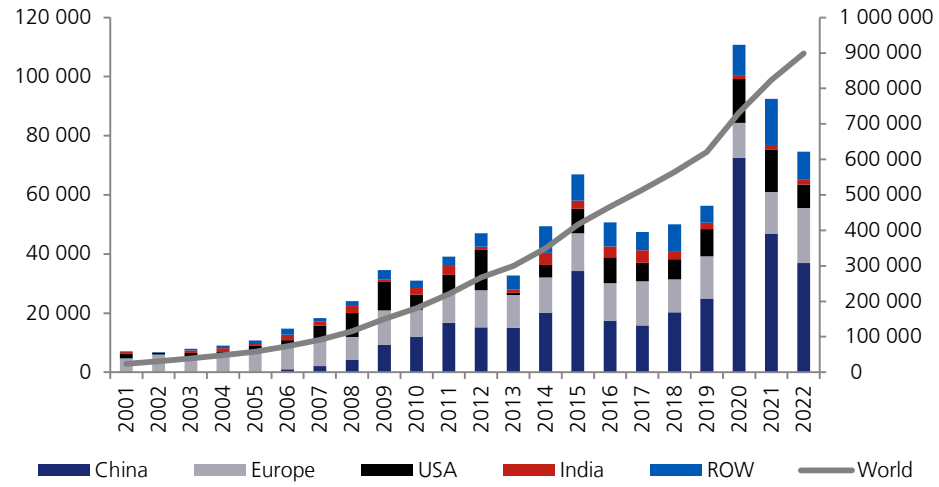
## Global business environment

Globally, wind power has grown rapidly since 2000, driven by R&D, supportive policies and falling costs. Global installed wind generation capacity – both onshore and offshore – has increased from 7.5GW in 1997 to 907GW in 2022, a YoY growth of 9%.

In 2022, wind electricity generation increased by a record 265TWh (up 14%), reaching more than 2,100TWh. This was the second-highest growth among all renewable power technologies, behind solar PV.

- China contributed half of global wind power capacity additions in 2022. It continues to lead in terms of wind capacity additions, with 37GW added in 2022, including 7GW in offshore farms.
- The European Union is accelerating wind deployment in response to the energy crisis, with 13GW added in 2022. New policies and targets proposed in the RE Power EU Plan and the Green Deal Industrial Plan are expected to be important drivers of wind power investment. The United Kingdom installed almost 3GW of offshore wind capacity in 2022, more than the rest of the world combined, excluding China. In 2022, the first floating wind farm was contracted in a Contract-for-Difference auction by the UK.
- The United States included generous new funding for wind power in the Inflation Reduction Act (IRA) introduced in 2022. Investment and production tax credits will boost capacity deployment in the medium term. In 2023, the first large-scale offshore wind farms on the American continent are expected to come online on the East Coast of the United States.

Exhibit 36. Country-wise capacity addition (MW)



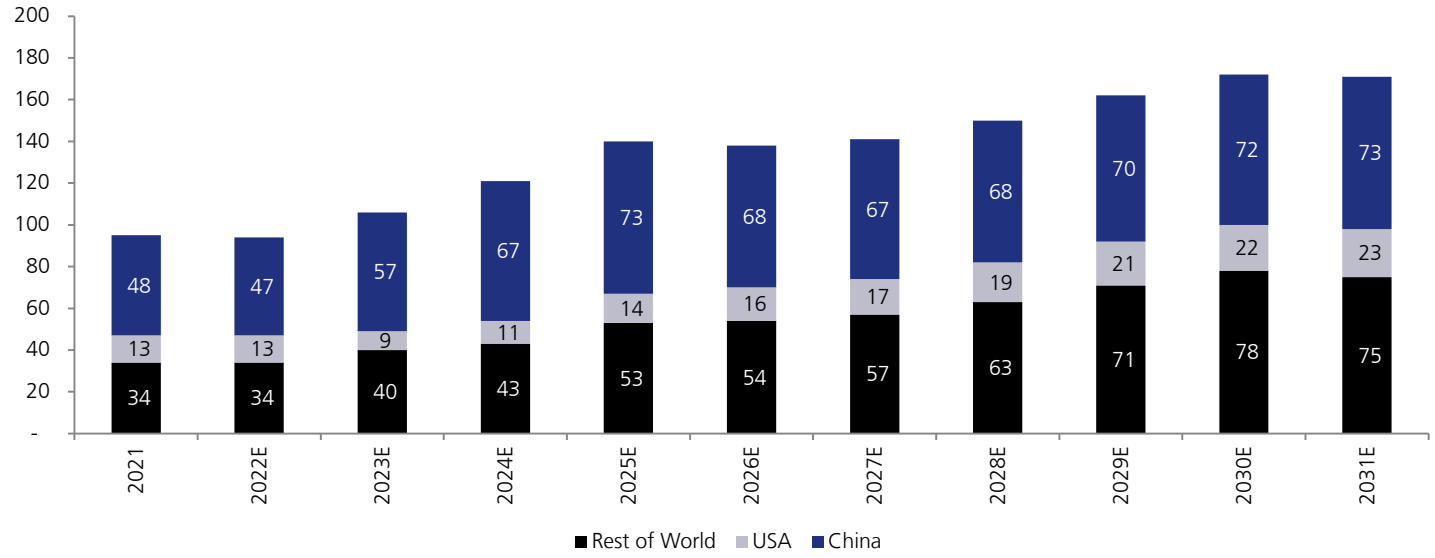

Source: IRENA, JM Financial

The global wind energy market will have 1TW of installed capacity by the end of the year. Wood Mackenzie estimates that it will expand by seven times this amount by 2032 led by China and the European Union supported by increased government commitments to decarbonisation, the US IRA and the need to ensure energy security and independence in Europe.

According to the Global Wind Energy Council (GWEC), China (513GW), USA (127GW), India (60GW) and Germany (53GW) continue to be the largest onshore markets, accounting for 71% of the total cumulative global installations projected for 2022-2031E. The '2TW' milestone is expected to be passed by the end of this decade, according to GWEC.

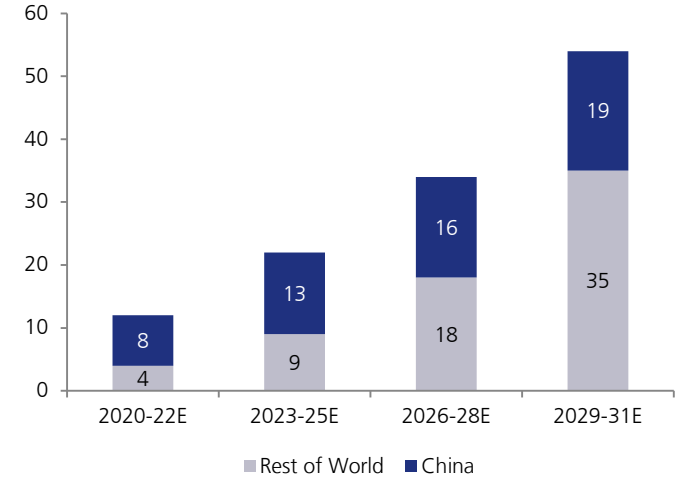
However, to get on track with the Net Zero Emissions by 2050 scenario, which envisages approximately 7,400TWh of wind electricity generation in 2030, the average annual generation growth rate needs to increase to about 17% as per estimates of IEA. Achieving this will require increasing annual capacity additions from 77.6GW in 2022 to 350GW in 2030.

Exhibit 37. Annual onshore and offshore installations 2021-31E (GW/year)



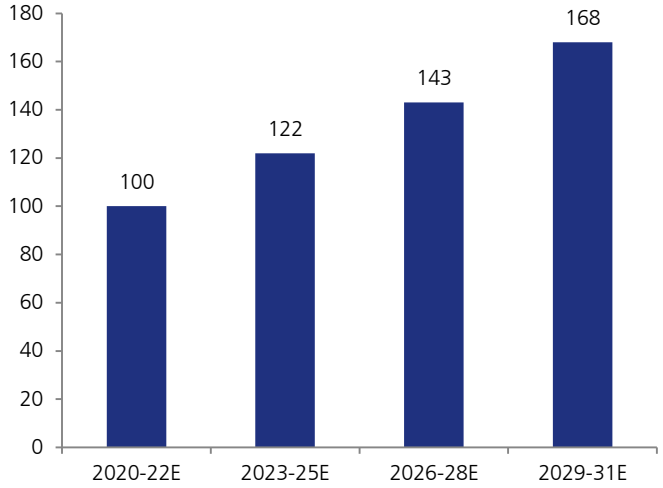

Source: Wood Mackenzie, JM Financial

Exhibit 38. Avg installations p.a. (Onshore & Offshore) 2020-31E (GW)




Source: Wood Mackenzie, JM Financial

Exhibit 39. Avg installations p.a. (Onshore & Offshore) 2020-31E (GW)




Source: Wood Mackenzie, JM Financial

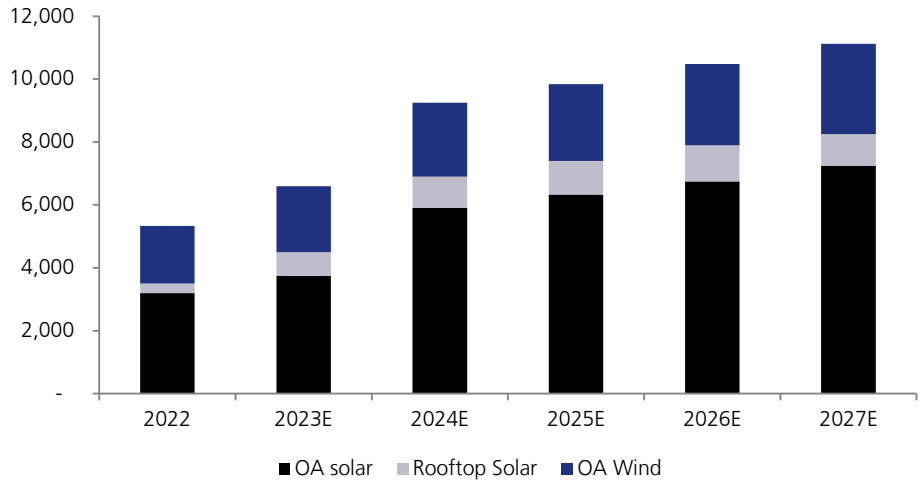
## Sizing up opportunity

India's wind energy sector is led by the indigenous wind power industry and has broadly shown consistent progress. The expansion of the wind industry has resulted in a strong ecosystem, project operation capabilities and manufacturing base. The country currently has the 4th highest wind installed capacity in the world, with a total installed capacity of 43.9GW as on 31st Jul'23. The government, through the National Institute of Wind Energy (NIWE), has installed over 800 wind-monitoring stations all over the country and issued wind potential maps at 50m, 80m, 100m and 120m above ground level. The recent assessment indicates a gross wind power potential of 302GW in the country at 100m and 695.50GW at 120m above ground level.

1. Utility-scale wind: MNRE has issued an agency-wise bidding calendar for 50GW of renewable energy projects for the current financial year. The calendar entails a schedule of 30GW of renewable capacity for the first 2 quarters and 20GW in the last 2 quarters. MNRE had stated that it will issue renewable project bids worth 50GW annually during FY24-28, which includes at least 10GW of wind tenders. CEA's National Electricity Plan in its projections has estimated installed wind capacity growing to 73GW by FY27 and 122GW by FY32. We expect annual tendering of 7GW over the next 5 years.

2. C&I segment: Commercial & industrial (C&I) segment consumed 926BU of electricity during FY23 including 226BU from captive sources. An 89BU of power was sourced from various renewable sources. Direct renewable procurement accounted for 7% of total consumption from the estimated renewable capacity of 26 GW as of Dec'22. It is projected that the total installed renewables capacity will grow from 26GW in Dec'22 to 75 GW by 2027 as costs fall sharply (30-40% cost savings) and the policy environment becomes encouraging. We believe that this can translate into additional demand for 1,000MW of wind power every year in the next 4-5 years.

Exhibit 40. Expected RE capacity addition in C&I segment, MW




Source: Industry, JM Financial

3. **Repowering policy:** Most of the wind turbines installed in India up to the year 2000 are of sub-MW capacity and are at sites having high wind energy potential. Some of the old wind turbines have already completed their design life while some are approaching the end of their design life. These wind turbines are not only inefficient in comparison to the latest technology but also have lower hub heights (in the range of 30-60m) in comparison to hub heights of 120-140m range being installed these days. The lower hub height wind turbines are not able to harness the higher wind speeds available at higher hub heights and result in a maximum achievable PLF of below 20%.

**Exhibit 41. Installed wind capacity (MW) completing 10-20 years of designed life in 2022**

| Sr. No. | States | Up to 2002 | 2002-03 | 2003-04 | 2004-05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-10 | 2010-11 | 2011-12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Andhra Pradesh | 93 | - | 6 | 22 | 0 | 0 | - | - | 14 | 55 | 54 |
| 2 | Gujarat | 181 | 6 | 29 | 52 | 85 | 284 | 616 | 314 | 297 | 313 | 790 |
| 3 | Karnataka | 69 | 56 | 85 | 202 | 144 | 266 | 190 | 316 | 145 | 254 | 207 |
| 4 | Kerala | 2 | - | - | - | - | - | 9 | 17 | 1 | 7 | - |
| 5 | Madhya Pradesh | 23 | - | - | 6 | 11 | 16 | 130 | 25 | 17 | 47 | 101 |
| 6 | Maharashtra | 400 | 2 | 6 | 49 | 545 | 485 | 268 | 183 | 139 | 239 | 417 |
| 7 | Rajasthan | 16 | 45 | 118 | 106 | 73 | 112 | 69 | 200 | 350 | 437 | 546 |
| 8 | Tamil Nadu | 877 | 134 | 371 | 676 | 876 | 578 | 381 | 431 | 602 | 997 | 1,083 |
| 9 | Telangana | 1 | - | - | - | - | - | - | - | - | - | - |
| 10 | Others | 4 | - | - | - | - | - | - | - | - | - | - |
| | Total capacity (MW) | 1,668 | 242 | 615 | 1,112 | 1,716 | 1,742 | 1,663 | 1,485 | 1,565 | 2,349 | 3,197 |
| | Cumulative capacity (MW) | 1,668 | 1,910 | 2,525 | 3,637 | 5,353 | 7,095 | 8,758 | 10,243 | 11,808 | 14,157 | 17,354 |

Source: NIWE, JM Financial

Recognising this, the wind power sector in India has been exploring the possibility of repowering older wind farms, a move that can accelerate capacity addition. Repowering means the deployment of newer and higher-capacity turbines in old wind farms. To optimally utilise the wind energy resources, repowering is required. As per the National Institute of Wind Energy (NIWE), the estimated repowering potential at present in the country is about 25.406GW (considering the wind turbines of less than 2MW capacity).

**Exhibit 42. Turbine-wise capacity break-up**

| States | 0.5 MW | 0.5-1 MW | 1-1.5 MW | 1.5-2 MW | 2 MW |
|---|---|---|---|---|---|
| Tamil Nadu | 1,181 | 2,919 | 1,813 | 1,474 | 4,100 |
| Maharashtra | 243 | 1,068 | 1,389 | 731 | 1,311 |
| Karnataka | 0 | 954 | 652 | 1,417 | 954 |
| Gujarat | 51 | 1,457 | 1,352 | 1,805 | 1,508 |
| Rajasthan | 39 | 1,192 | 788 | 915 | 1,231 |
| Madhya Pradesh | - | 290 | 260 | 1,012 | 290 |
| Kerala | - | 18 | - | 10 | 18 |
| Andhra Pradesh | 92 | 378 | 195 | 1,701 | 470 |
| **Total** | **1,610** | **8,280** | **6,449** | **9,067** | **25,406** |

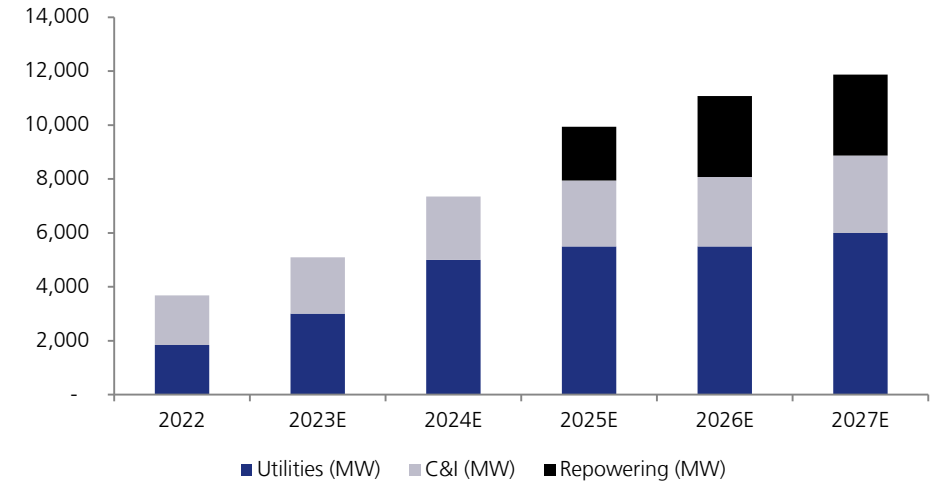
Source: NIWE, JM Financial

Accordingly, the government issued a draft 'National Repowering Policy for Wind Power Projects, 2022' to retire and replace old and less efficient wind turbines with technologically advanced and more efficient ones. Till now, this has not been successful in India. Most recently, the Parliamentary Standing Committee on Energy has asked MNRE to expedite the approval and implementation of the revised repowering policy on swiftly repowering old wind turbines.

We believe that it is imminent given the need for wind power and the resolve of the government to meet the country's renewable targets.

4. **Export opportunity:** WTG OEMs and the wider wind supply chain continue to invest in a manufacturing base in India for cost-competitiveness and regional export opportunities. Currently, India's wind exports stand close to 3GW p.a. We expect the same momentum to continue going forward over in the near term.

**Exhibit 43. Expected domestic wind capacity additions (MW)**




Source: Industry, JM Financial

# Suzlon: The story so far

## The beginning of a journey

Tulsa Tanti was ranked 10th on Forbes list of the 40 richest Indians with a net worth of USD 10bn. He was a mechanical engineer, who also held an under graduate degree in Commerce. Till the late 1980s, Tanti worked in a family-run textile company in Gujarat, producing polyester yarn. By 1990, the textile unit's survival was at stake because of the rising cost of electricity. The company was constantly innovating but wasn't able to control the price of power. The company decided to use wind energy for its power requirement. However, Indian turbine manufacturers had very little expertise in installing and maintaining wind farms and could not always bring the necessary skills together for one-off projects. Tanti, with no prior experience, installed machines on his own. He was able to generate reliable and cheap power by investing in two Europe-made wind turbines.

Tanti saw an opportunity for an EPC service provider, who could develop, execute, operate and maintain a project on behalf of the power plant owner, thus creating and capturing value. And then, Suzlon Energy was born in 1995, to manufacture wind turbine generators with an initial investment of USD 600,000. In 2001, he sold off the textile manufacturing plant to focus on Suzlon's development. This formed the core of Suzlon's business model – selling turnkey projects along with supply and maintenance contracts for businesses of all sizes (later, this model spilt over to other countries).

## Developing Indian market

At the time Suzlon entered the industry, the Indian market for wind energy was only beginning to develop. The Indian government had implemented favourable policies to encourage entry into grid-connected wind energy generation. The Indian wind turbine market was mostly dominated by Vestas, Enercon and NEPC (an Indian company that had a technical collaboration with a Danish company called Micon). Thus, Suzlon entered the industry at a period when most firms in the Indian market were selling European-made wind turbines that were relatively small by world standards.

Like other Indian firms, Suzlon began by gaining access to European technology via licensing agreements; it partnered with Sudwind GmbH Windkrafttanlagen, a German company (later taken over by Nordex SE) with considerable knowledge of the technology of wind turbines. With this initial partnership, Suzlon started to sell turbines in India - the first one was a 2.34MW wind farm project in Gujarat in 1995.

To gain engineering knowledge, Suzlon established a technical collaboration agreement with Sudwind. After Sudwind went bankrupt in 1997, Suzlon hired its engineers and began manufacturing the turbines. This acquisition enabled Suzlon to develop upstream capabilities. By combining operational knowledge of foreign technologies with knowledge of its domestic market, Suzlon deployed a strategy of selling locally manufactured turbines of technological sophistication comparable to its competitors at considerably lower prices - and became the clear leader in India's wind energy market in just 4 years.

## Creating differentiation

By 2004, Suzlon had become a dominant player in Maharashtra and established manufacturing facilities in other wind-rich states, namely, Tamil Nadu and Gujarat. The company's legacy relationships and its understanding of the textiles business also helped Suzlon bring the captive generation model as a means to cut costs for other textile industry clusters in these states.

The projects executed by Suzlon in the late 1990s and early 2000s set the standard for captive generation projects in the Indian market. One of these was a 62.5MW captive generation project for Bajaj Auto, one of India's leading automobile firms, in Pune, Maharashtra. This project allowed Bajaj Auto to significantly reduce their power and fuel expenditure through the wheeling and banking arrangements with the state utility, along with the major tax incentives.

Another key project by Suzlon, the Vankusawade Wind Park in Maharashtra, was set up to demonstrate the viability of the IPP scheme. In 2001, Suzlon acquired 42,355 hectares of land in the Satara district of Maharashtra & developed the site from scratch including resource surveys (previously the purview of the state nodal agency) and assess the road and grid infrastructure. Suzlon also commissioned and erected the turbines on its own, and then ran the wind farm. It set up the grid infrastructure and developed a wind park based solely on its S33 350kW turbines. By 2004, this was Asia's largest wind park.

Suzlon developed and refined this wind park model – acquiring and setting up assets which entailed a risk of delays and construction early on, then offering customers projects of various sizes with a short turnaround time (approximately 4-7 months) and providing a 'guaranteed' stable return for 20 years by the locked power purchase contracts with the state-level utilities. Suzlon took on the role of representative in negotiations with the utilities and in appealing to regulators and other machinery against payment risks, etc.

Suzlon also competed based on an extremely short turnaround time between an investment decision and the erection and commissioning. This ability to rapidly meet consumer demand constituted a key competitive advantage for Suzlon.

Another critical offering that Suzlon brought to its customers was access to credit banks in India, at a time when banks perceived wind power as a risky business. Suzlon helped project investors secure credit for their projects, putting the entire risk of the project on its balance sheet. Fuelled by strong growth, Suzlon's year-on-year cash flows helped create confidence in both lenders and investors, and this model was particularly prevalent during the late 1990s.

Its rapid growth attracted major private equity investments from the US-based Citigroup Inc and Chrys Capital, who together invested nearly USD 25mn in the firm. However, Suzlon's growth-aggressive model needed further diversification and Tanti believed that the only direction to expand would now be global.

## Capability building & global expansion

Suzlon's standard wind turbines were capable of supporting its Indian market demands but they were still lagging in terms of the industry's state-of-the-art standards. For entering foreign markets, its existing product portfolio was not sufficiently competitive.

Moreover, the Suzlon brand was unknown outside India, hence entering into foreign markets was very challenging. For overcoming these challenges Suzlon focused on acquiring industry players from Europe which was the centre of the global wind power industry. In 2000, it acquired AE-Rotor, a bankrupt Dutch firm. Soon thereafter, a subsidiary AE Rotor Techneik B.V. was formally incorporated in 2001 with a competence creation mandate focusing on the design of moulds and blades for wind turbines.

Subsequently, the company worked to strengthen the supply chain to secure adequate components to build its turbines in time.

To produce different varieties of blades in India, it bought manufacturing and marketing rights from Enron Wind, a bankrupt American firm. This purchase also gave Suzlon a state-of-the-art production line and technical support. In 2002, it set up an R&D subsidiary Suzlon Energy GmbH in Germany by acquiring a German firm AX 215 Verwaltungs GmbH. These early acquisitions were output oriented – i.e., they were aimed at getting skilled workers and the technologies required to catch up in output capabilities. Suzlon then targeted to acquire firms that possessed significant R&D knowledge in different technologies.

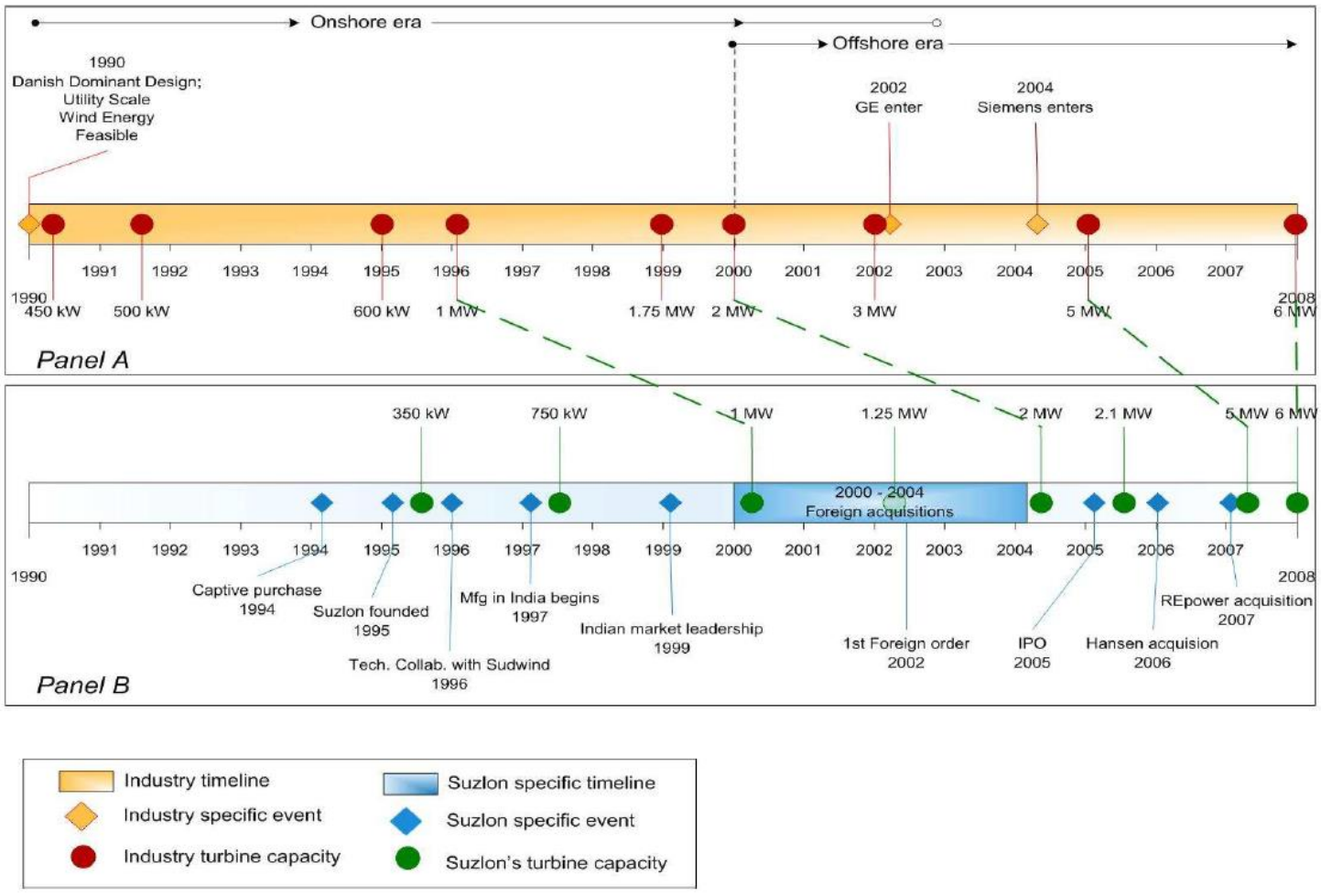
Finally, in 2003, Suzlon's expertise in Indian low-wind environments helped it secure project orders in the American Midwest. With this, the firm decided to establish its presence in other countries. In 2004, Suzlon set up a joint venture with one of its generator suppliers, Elin Motoren GmbH of Austria; it brought in expertise by hiring Per Pedersen, COO of European giant NEG Micon, and began manufacturing generators in India. This significant knowledge and asset base, combined with investment in upstream R&D in India, helped Suzlon begin the indigenisation of multiple components of the turbine – effectively allowing specialised design

suitable for the local markets in which it operated. This also allowed the firm to diversify its product offerings from smaller turbines to mid-size turbines.

To fund this aggressive inorganic growth Suzlon listed itself on the Bombay Stock Exchange in 2005, raising approximately USD 350mn, with its shares being oversubscribed nearly 40 times.

Breaking off its license agreements in rotors with Aerpac BV and blades with Enron Wind, Suzlon then attempted two major acquisitions that were critical links in the global supply chain. Soon thereafter, Suzlon made two of its largest and most important acquisitions. In 2006, it bought Belgium-based Hansen Transmissions, a key supplier of cutting-edge gearboxes to Vestas, Siemens and Gamesa, and gained access to R&D and manufacturing capabilities in gearbox technology. Essentially, this made Suzlon a supplier to some of its competitors. Subsequently, Suzlon diversified its product offering even further, moving into large-scale on-shore and offshore turbines. It acquired REpower, a German company with capabilities of manufacturing 3.5-6.0MW turbines – at the time, the world's largest. Strategically, Suzlon gained early entry into a booming offshore wind industry in Europe as well as critical knowhow on handling and integrating such large machines.

Exhibit 44. Development of Suzlon vis-à-vis the wind industry




Source: Temple University, USA, JM Financial

While Suzlon was diversifying its operations across the world, its share of projects within India still made up a significant chunk of its revenue (~60% in 2011). India now had the fourth largest wind market in the world, supported by FiTs and renewable purchase obligations under the Electricity Act. However, at the state level, there were frequent policy changes and constant uncertainty. Agility combined with capturing the resources for good wind projects such as sites, land, infrastructure, government approval, etc. to gain early-mover advantage was more important than ever.

By 2007, Suzlon held the leadership position in the domestic market, but its end-to-end services model was facing increased competition. To compound the difficulties, its debt-heavy model and aggressive acquisition-based growth had created a large deficit, which was becoming increasingly difficult to fund. Between 2007 and 2008, Suzlon raised funds from multiple sources, including selling a 10% stake in Hansen and listing it on the London Stock Exchange.

By 2008, Suzlon had factories on four continents. It was operating in 16 countries – U.S., Australia, Belgium, Brazil, Canada, China, Denmark, Germany, Greece, India, Italy, Nicaragua, Portugal, Spain, the Netherlands and Turkey. With 13,000 employees, representing more than 14 nationalities, Suzlon now offered end-to-end wind power solutions.

The combined worldwide market share of Suzlon and its subsidiaries was about 10% in 2009, making it the world's third-largest wind turbine manufacturer. Suzlon referred to this as its "Suzlon edge", providing value to its customers while also propelling wind to be a more commercially viable renewable energy option.

## The beginning of the Dark Age

### Failure of blades

The year 2008 was also the beginning of the global recession and the industry started wondering whether Tanti would be able to achieve the ambitious annual growth rate of 50% for the next 5 years. In the same year, doubts about the reliability of Suzlon's products were raised in the US, where some turbines, installed in major projects across the South and Midwest, developed cracks in the rotor blades. For instance, Edison Mission Energy, a unit of Edison International, in 2008 reported the breaking of 144-foot-long windmill blades bought from Suzlon at three wind power sites in the Midwest. Suzlon had to recall 1,251 blades from its top-of-the-line turbines, which represented the majority of blades the company had sold to the US. But the incident was widely reported across western media and in India, resulting in its market capitalisation falling to INR 80bn from INR 680bn in 2010.

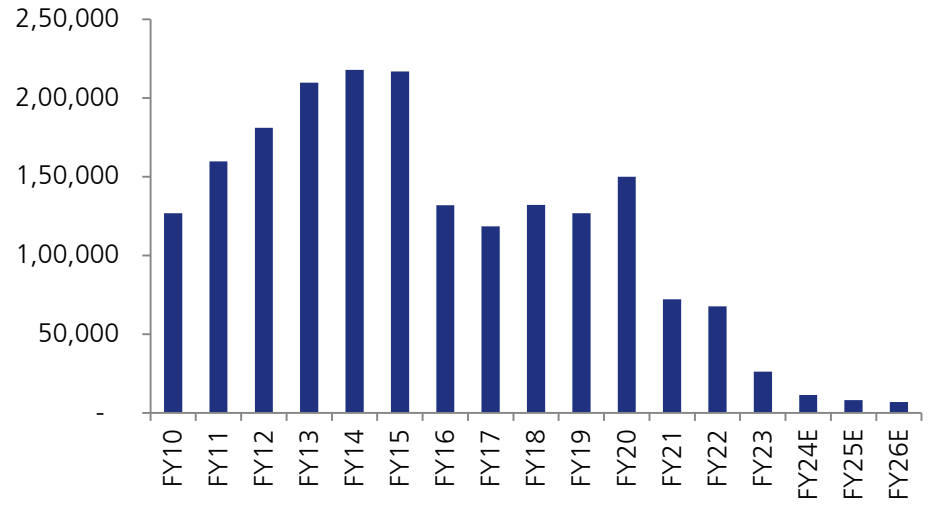
### Policy uncertainty in India

Then came policy changes in the domestic market. The Indian government was unhappy that the then policy regime encouraged investment in renewable energy sources but not the actual generation of power. So, in 2009, it increased FITs and introduced the generation-based incentive, market-based tradable renewable energy certificates and renewable purchase obligations. As a result, the nature of the investor in wind power began to change, as did the basis of competition. Projects became larger, foreign direct investment in wind power generation increased and interest in achieving and driving grid parity surged. Firms still relied heavily on the 'retail' market for wind power, but in addition, new turbine technologies emerged which claimed better overall efficiency and productivity – the gearless turbine, for example, introduced by newcomers to the market, cost less to maintain and had greater generation capacity. In addition, as IPPs emerged, some de-linked project development and operation, separating turbine supply from other services. Suzlon, while still a key turbine supplier to many IPPs, lost market share. Between 2007 and 2012, it dropped to 34% in the face of competition from turbine suppliers such as Gamesa, Enercon (now known as WinWinD), GE and ReGen Powertech, which focused on R&D and developing turbines tailored to local low-wind speed regimes. Thus, the policy regime and changing investor characteristics together changed the nature of the demand itself, which no longer required end-to-end services.

### Pains from debt

Suzlon found itself struggling to sustain its growth-led, debt-based business model. After 2009, it had to resort to further equity dilution in the core business and subsidiary firms both domestically and internationally. By 2011, the debt had grown to approximately USD 200mn, putting the board under enormous pressure. The firm had to spend massive amounts on a blade-retrofitting programme, further denting its cash flow. At the same time, to compete technologically, Suzlon began the development of its first wholly indigenous turbine designed specifically for IEC Class II and III regimes in India, the 9x platform, which incorporated multiple features from the global best-selling 8x platform. Reliability and grid-integration, along with lifecycle costs were then the design characteristics on which Suzlon was attempting to compete with other turbine manufacturers.

Exhibit 45. Company's debt over the years (INR mn)




Source: Company, JM Financial

## Global financial crisis

With a global downturn affecting the wind power industry along with the global economic crisis and a slowdown in the European wind power markets, Suzlon failed to grow at the pace required to sustain its debt. Between 2010 and 2012, the firm defaulted on several loans and underwent a massive corporate debt restructuring programme, diluting its equity further. By 2013, its market capitalisation, once nearly USD 1.5bn, had fallen to USD 450mn. While maintaining its presence globally, Suzlon's domestic revenue fell further as the Indian government's withdrawal of the 'accelerated depreciation' incentive severely dented growth in the 'retail' segment of the Indian wind market – the key segment for Suzlon. This policy uncertainty led to further risks and a tough business environment for Suzlon, exacerbating its debt-related problems. Thereafter, the company suffered and had to restructure debt five times because of its inability to service loans.

Exhibit 46. Global wind capacity additions (GW)


Source: GWIC, Industry, JM Financial

## Efforts to relieve debt

As of Aug'14, Suzlon's debt was over INR 80bn. On 22nd Jan'15, Suzlon announced the sale of Senvion SE, its wholly owned subsidiary, to Centerbridge Partners, a private equity firm in a deal valued at INR 72bn. Sun Pharmaceuticals promoter Dilip Shanghvi came as a White Knight and bought 23% stake for INR 18bn in 2015. Banks had mandated Suzlon to focus on the local market and to reorganise business to reduce cost. The deal saw Tanti's holding shrink to 24%, but management control remained with the Tanti family. Its total borrowings came down to INR 131.8bn in FY16 from INR 216.8bn in FY15. On 17th Jan'17, Suzlon Energy achieved 10,000MW installed wind energy milestone in India.

### Where are we now?

Suzlon underwent restructuring exercises on account of the unfulfilment of its debt obligations in the past. In the last year, the company has refinanced its existing debt replacing 16 lenders with two new lenders. It also converted its entire OCDs and CCPS which helped in bringing down the debt. Further, the company completed its rights issue of INR 12bn and utilised INR 9bn to prepay its outstanding debt obligation. The company had negative net worth due to past losses which recently turned positive, majorly on account of the rights issue and gain on the de-recognition of OCDs and CCPS. With debt reduction, lower interest cost and better financial risk profile, the company is in a good position to capitalise on the tailwinds in the wind sector. However, timely execution remains the key to turnaround in Suzlon's WTG vertical. Suzlon has also been consistently upgrading its product portfolio over the years. Suzlon installed India's tallest wind turbine at 160m in FY23 to maximise yields from low wind sites. During the year, the company also debuted its 3MW product series which is a customisable and versatile platform that can accommodate site-specific requirements. Suzlon's current order book of 1,582MW provides good visibility of revenue over the next 2 years. Out of the current order book of 1,582MW, c.50% is for the new 3MW series. Suzlon's latest product lines will have better realisation per MW as compared to the 2.1MW series and will have wider rotor diameter, delivering higher energy output at a lower cost. With the industry tailwinds in place, deleveraged balance sheet and a robust order book, we expect a strong pick-up in the company's performance going forward.

## Valuation

Given Suzlon's strong order book and the expected wind addition pipeline over the next 3 years we expect the company to deliver revenue and EBITDA CAGR of 31% and 38% respectively over FY23-26E. We expect Suzlon's EBITDA margin to inch towards 16% in FY26 from the existing 13.9% and adj PAT to come in at INR 19bn in FY26E. Based on the above, we expect Suzlon to report an EPS of INR 1.4/share in FY26E. With industry tailwinds in place, a deleveraged balance sheet and a robust order book, we expect a strong pick-up in the company's performance going forward. We initiate coverage on the stock with a BUY rating and a Sep'24 TP of INR 30/sh (based on a 25x Sept'25E EPS).

## Key Risks

- **Non-availability of good sites:** Wind resource is highly site-specific and available in eight states only, while solar resource is distributed across the country. The wind resources assessment carried out by the National Institute of Wind Energy (NIWE) estimated a total wind energy potential of 695GW at 120m hub height. However, to make the tariff commercially attractive, the wind power installation sites chosen are those which have an annual average capacity utilisation factor (CUF) of at least 30%. Thus, considering the availability of sites with an annual average of 30% CUF and above excluding the area where wind farms already exist and other exclusions such as protected areas, airports, elevations, etc., the total estimated wind energy potential could be much lower.
- **ISIS waiver:** About 97% of high wind potential sites are concentrated in eight states namely Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan, Telangana and Tamil Nadu. To encourage equitable development of renewable power, Ministry of Power (MoP), in November 2021, announced the waiver of ISTS charges on renewable energy projects, including solar, wind, pumped hydro storage, and projects with battery energy storage systems (BESS) commissioned until June 30, 2025. With the ISTS waiver, open access developers are able to connect their projects to the ISTS network to supply power to multiple states from their utility-scale open access RE projects. ISTS waiver also help reduce net landed cost for consumers by INR 0.70–0.80/kWh. Any discontinuation of the incentive will discourage development of open access RE market in the country.
- **Repowering policy:** Repowering is a big-ticket opportunity going forward. But, it has been successful in India due to unfavourable economics and a lack of enabling policies. MNRE is expected to come out with a new policy addressing stakeholders' concerns and encourage repowering.
- **Land availability:** In the past, the sector has faced challenges related to land availability & RoW, power evacuation, grid capacity, logistics constraints and infrastructure capability at the State level. Any recurrence of these may severely derail the timely execution of the projects.
- **Skewed business mix:** Most of the EPC players and equipment manufacturers have a skewed business mix with a focus on one sector, i.e., wind power. Any challenging environment in the sector may limit the performance improvement opportunities for the companies.

# Event timeline

## Exhibit 47. Key events in Suzlon's history

| Date | Event |
|---|---|
| 1995 | Suzlon Energy Limited founded in Maharashtra by Tulsi Tanti and the Tanti family. |
| 1995 | Sales contract with German company Südwind Energiesysteme to handle low-tech sales activities for Südwind in India and gain valuable industry experience |
| 1996 | Licensing agreement with Südwind to gather the engineering and manufacturing expertise in wind turbine technology |
| 1997 | Suzlon acquired Südwind Energy, Germany. |
| 2001 | The Tanti family closes textile business to focus solely on Suzlon Energy.<br>Executed captive generation projects for big-ticket investor Bajaj Auto.<br>Executed wind park projects to demonstrate the financial viability of wind energy investments.<br>Licensing agreement with Dutch company Aerpac to acquire expert knowledge in rotor blade design<br>Acquisition of manufacturing and marketing rights from Enron Wind Rotor Production, the Dutch subsidiary of Enron Wind to acquire the molds, production line, and technical support and assistance for rotor blade manufacturing |
| 2002 | Acquisition of German company 215 Verwaltungs to establish a research and development unit in Germany |
| 2004 | Suzlon Energy A/S founded in Denmark. Per Pedersen from NEG Micon joins Suzlon, develops global strategy.<br>Joint venture with Austrian company Elin Motoren to manufacture wind turbine generators in India.<br>Citigroup Inc and ChrysCapital invest USD 24mn for a collective stake of 15%. |
| 2005 | Acquired Hansen Transmissions International NV for USD 520mn. Funded by ICICI Bank, SBI, Deutsche Bank AG and Barclays Bank PLC.<br>Listed on the Bombay Stock Exchange and National Stock Exchange of India; raises ~USD 348mn.<br>Invested USD14mn in Minnesota, US in a manufacturing facility.<br>Took over Sarjan Engitech (engineering components firm)<br>Arrangement with Winergy for gearbox supply (within India). |
| 2006 | Entered Italian, Australian and South Korean markets.<br>Gained 53% market share in India & 7% market share globally.<br>Established rotor manufacturing facilities in Gujarat and Maharashtra.<br>Acquisition of Hansen Transmission International, Belgium to acquire technology for gearboxes and drive trains for wind turbines |
| 2007 | Acquired 33% stake in REpower for €453mn.<br>Raised USD 500mn in debt through the sale of zero-coupon convertible bonds in the US.<br>Raised USD 552mn through a follow-on offer of equity to qualified institutional buyers.<br>Hansen listed on the London Stock Exchange for ~USD 400mn.<br>Acquisition of REpower Systems, Germany to broaden the product portfolio to include the largest offshore wind turbines |
| 2008 | Strong focus on cost-efficiencies and reducing sourcing distances.<br>Acquired a further 37% stake in REpower.<br>SE Forge issued equity shares to IDFC Private Equity, raises 4,000mn rupees (~USD80mn).<br>Sold 10% stake in Hansen.<br>Completed a blade retrofit programme, adding significantly to the company's debt.<br>Completed a USD 383mn rights issue. |
| 2009 | Sold 2% stake to raise INR 230 crore rupees (USD 50mn).<br>Raised US$175m through an offer of global depository receipts. |
| 2010 | Celebrated 5,000MW of installations in India – cumulatively, nearly one-third of the Indian market.<br>Entered into a long book-order with leading IPPs. |
| 2011 | Exited Hansen by selling its remaining stake.<br>Launched 9x wind turbine platform in India.<br>Defaults on its foreign currency convertible bonds accumulated in the previous years. |
| 2012 | Entered into a corporate debt restructuring programme with a consortium of 19 banks/ lenders, raising working capital limits. |
| 2013 | Sold 75% of its Chinese subsidiaries. |
| 2016 | Sold Senvion (Repower) for EUR1bn and equity infusion of INR 18bn led to debt reduction of INR 60bn. |
| 2017 | Surpassed the milestone of 11,000 MW installed wind energy in India |
| 2018 | Installed and commissioned the new S128, the largest Wind Turbine Generator (WTG) in India |
| 2020 | Successfully completed Debt Restructuring in 2020<br>The first wind farm achieved an operational milestone of 20 years. |
| 2021 | During COVID-19 pandemic, wind farms across nine states with 13,000 MW of wind assets, including substations and over 13,000 km of HT lines/ EHV lines, achieved a total Machine Availability (MA) of 96.86% |
| 2023 | Reduction of debt by INR 75bn; Debt to equity conversion; Rights issue of INR 12bn; QIP of INR 20bn |

Source: Company, JM Financial

# Management Team

## Exhibit 48. Management team

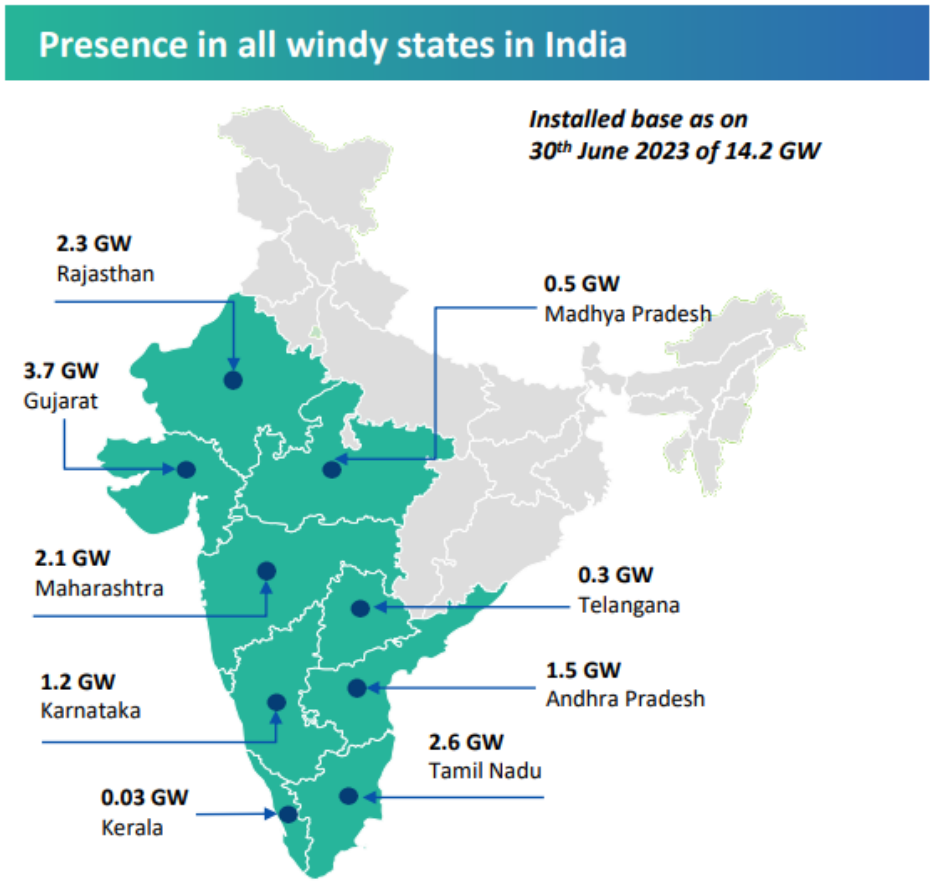
| Name | Designation | Profile |
|---|---|---|
| Vinod Tanti | Chairman and Managing Director (CMD) | ▪ Brother of late Tulsi Tanti and the eldest among remaining siblings, is aged 60 years, and is a founding member of Suzlon Energy Limited.<br>▪ Bachelors' in Civil Engineering.<br>▪ Has extensive experience of over 34 years managing various key functions at Suzlon. He was also the COO of Senvion, Germany, for the period from 1st Jun'12 till 15th Jun'13, at a time when Senvion was a global leader in wind turbine technology. |
| Girish Tanti | Executive Vice Chairman | ▪ Brother of late Tulsi Tanti and youngest among remaining siblings, aged 52 years, is also a founding member of Suzlon Energy Limited.<br>▪ Bachelor's in Electronics & Communication Engineering and holds a master's in Business Administration from UK.<br>▪ Has an extensive experience of over 27 years in renewables and international business. |
| JP Chalasani | Chief Executive Officer (CEO) | ▪ JP Chalasani joined the Suzlon Group in Apr'16 as Chief Executive Officer.<br>▪ Was reappointed as CEO of the Suzlon Group on 5th Apr'23.<br>▪ Renowned for his project management and people leadership skills, Chalasani brings to the company more than 40 years of experience of working in the Indian power sector, especially with companies like NTPC, Reliance Power and Punj Lloyd. |
| Himanshu Mody | Chief Financial Officer (CFO) | ▪ Joined the Suzlon Group as Chief Financial Officer in Jul'21.<br>▪ Has deep expertise in Finance and Strategy with specific focus on Corporate Finance, Mergers & Acquisitions, Fund Raising, Debt and Equity and Financial Restructuring.<br>▪ Brings over two decades of rich experience with leading Indian companies across sectors |
| Bernhard Telgmann | President Technology | ▪ Joined Suzlon in 2017.<br>▪ He is an expert in global technology-driven plant engineering and construction business.<br>▪ A strategist with keen sense of product innovation growth opportunities and drives successful development and launch of new products and technologies, ensuring reduced time to market and cost. He has more than 28 years of experience across engineering thermal power plants, consulting in fuel cells and wind energy.<br>▪ He has sound knowledge in product development, engineering and project execution in system and solution business. Prior to Suzlon, he held leadership roles in IAC, Senvion and Siemens. |

Source: Company, JM Financial

## Business Overview

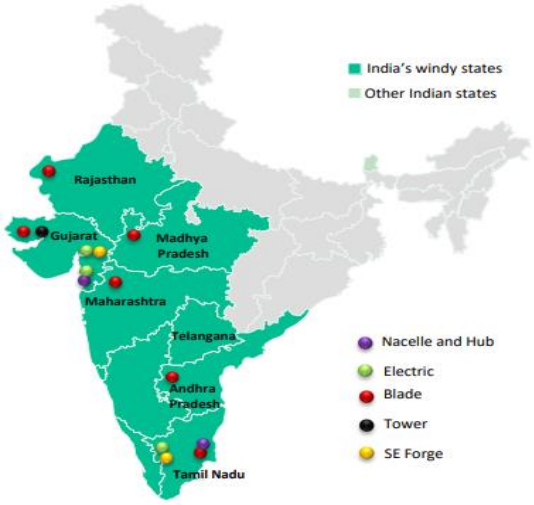
Founded in 1995, Suzlon is one of the leading global renewable energy solutions providers. Over the past 28 years, the group has installed over 20GW of wind energy in 17 countries across six continents. The Suzlon Group comprises Suzlon Energy Limited and its various subsidiaries. The Suzlon Group's manufacturing footprint is spread across India. It is a vertically integrated WTG manufacturer with a strong presence across the value chain and customer segments. It also undertakes installation and O&M of all WTG sales. Operations include design development and manufacturing of all major components, including rotor blades, tubular towers, generators, control equipment, gears and nacelles. It holds a cumulative 33% market share in India (14.2GW installed capacity in India as of 30th Jun 23). Apart from manufacturing, it offers a full gamut of wind project planning and execution services, including wind resource assessment, infrastructure and power evacuation, technical planning and execution of wind power projects. It also offers O&M services in India and overseas.

Exhibit 49. Geographical presence in India




Source: Company, JM Financial

## Exhibit 50. Manufacturing facilities of Suzlon




### Generator

Coimbatore

### Nacelle & Hub

Daman and Puducherry

### Rotor Blades

Anantpur, Badnawar, Bhuj, Dhule, Jaisalmer, Puducherry

### Tower

Gandhidham

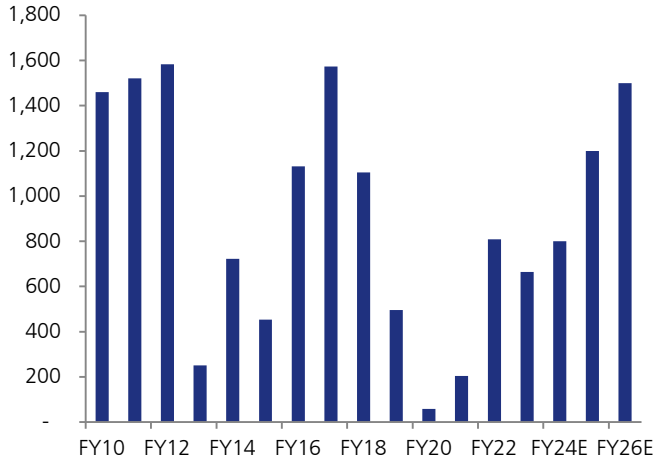
### Electrical

Daman, Vadodara

Source: Company, JM Financial

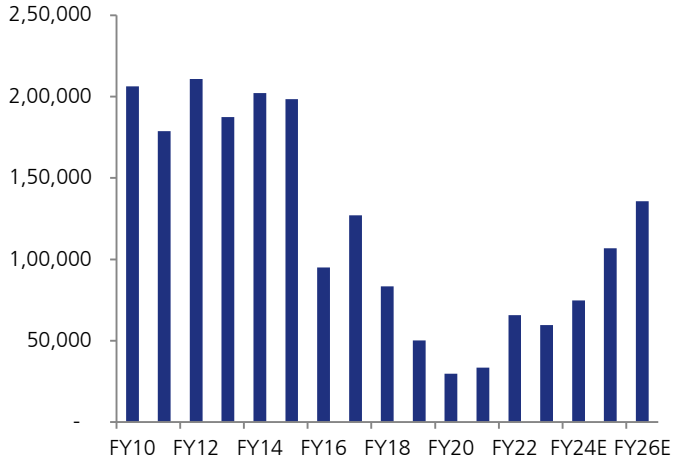
# Key charts

## Exhibit 51. Annual project commissioning (MW)



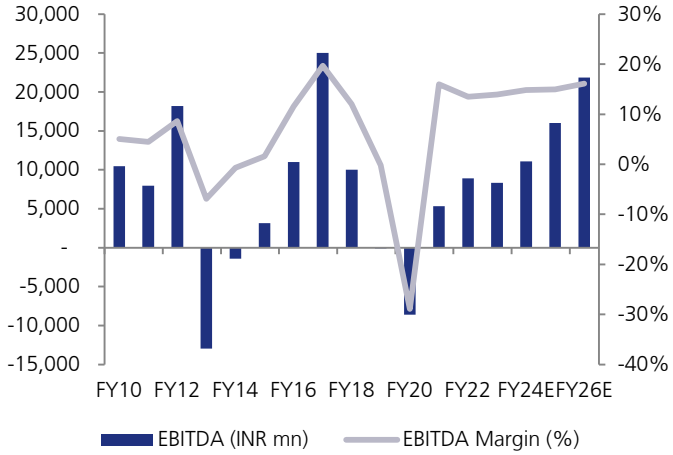

Source: Company, JM Financial

## Exhibit 52. Revenue (INR mn)



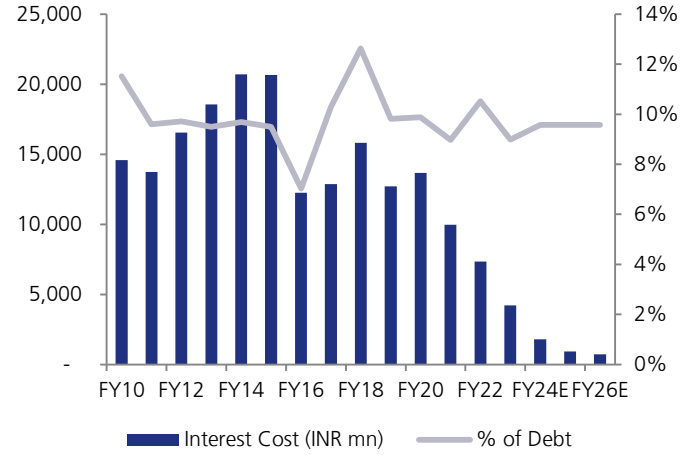

Source: Company, JM Financial

## Exhibit 53. EBITDA and EBITDA margin (INR mn)



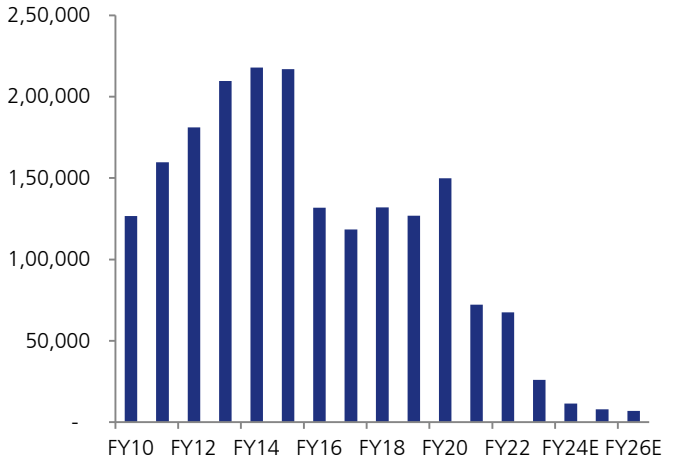

Source: Company, JM Financial

## Exhibit 54. Interest cost as a % of debt



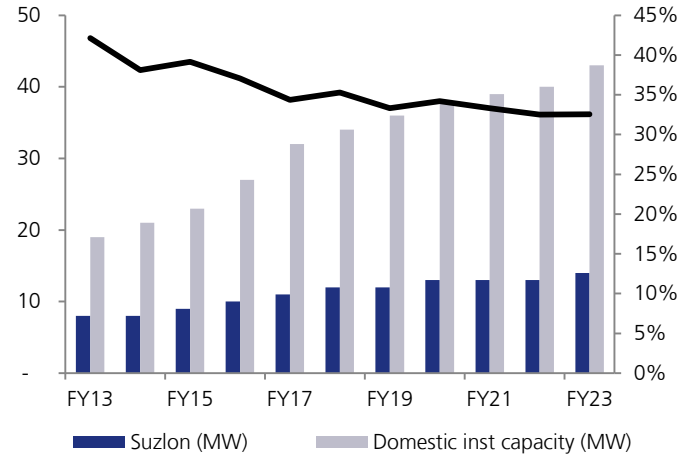

Source: Company, JM Financial

## Exhibit 55. Debt trend over the years (INR mn)




Source: Company, JM Financial

## Exhibit 56. Suzlon's market share trend




Source: Company, JM Financial

# Annexures

## Understanding WTGs (Technology, Performance, Costs)

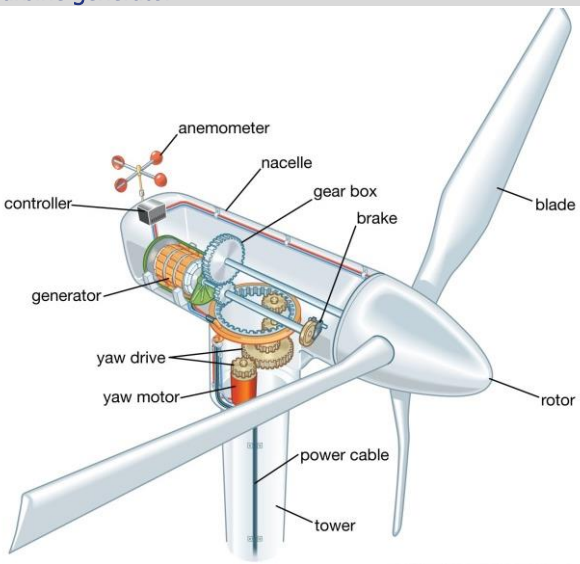
### How wind power is generated?

Wind – the movement of the air – is the result of temperature differences in different places. Uneven heating results in a difference in atmospheric pressure, which causes the air to move. The kinetic energy of the moving air (or wind) is transformed into electrical energy by wind turbines. The wind forces the turbine's rotor to spin, changing the kinetic energy to rotational energy by moving a shaft which is connected to a generator, thereby producing electrical energy through electromagnetism.

### Elements of wind power system

The basic elements of the wind power system are the blades, the rotor hub, the rotor shaft, the nacelle, the rotor brake, the gearbox, the generator and controller, the tower and the transformer.

Exhibit 57. Wind turbine generator




Source: Encyclopaedia Britannica, JM Financial

### Functioning of wind power system

The fiberglass-reinforced blades capture and convert the wind's energy to rotational energy. The rotor hub transfers the rotational energy to the rotor shaft, which is fixed to the rotor hub. The other end of the rotor shaft is connected to the gearbox, which changes the low rotating speed from the blades to a high rotating speed for input to the generator. Wind turbines incorporate a control system to prevent excessive rotation speeds in the high wind by adjusting the angle of the blades or; by using aerodynamic effects. The high-speed rotating shaft connected to the gearbox forces the shaft of the generator to rotate, converting the rotational energy to electricity through the use of electromagnetic induction. The rotor shaft, rotor brake, gearbox and generator components are housed within a nacelle, which is directly connected to the blades at a high elevation and is one of the main structures of the wind-generating system. To rotate the nacelle to align the wind turbine with the direction of the wind, the wind turbine has a mechanism called a yaw system. Modern large systems are installed with an active yawing system which is controlled by an electric control system with a wind direction sensor.

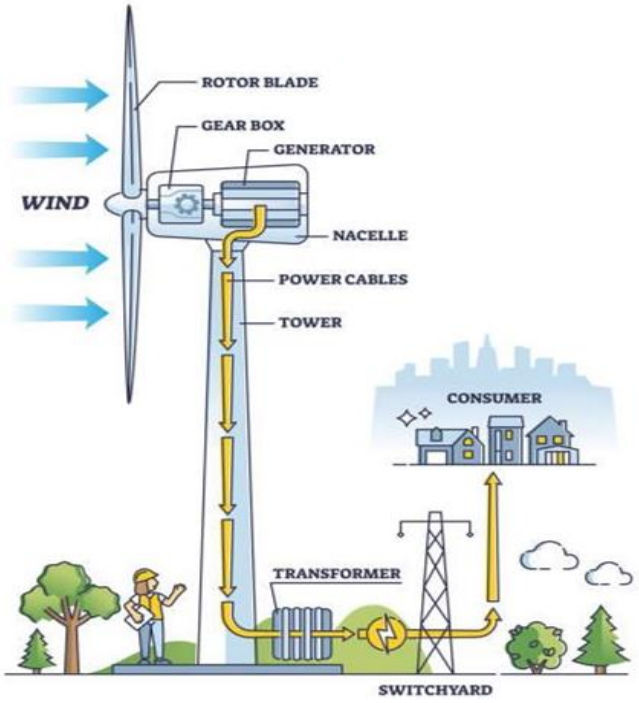
The rotor blades, rotor hub and nacelle are supported by an elevated on a tower. The tower height is determined by the rotor diameter and the wind conditions of the site. Many towers are made from steel tubes which allow access to the nacelle inside the tower, even in bad weather.

The control system has three main functions: controlling turbines (e.g., the rotating speed and yaw direction), monitoring and collecting operational data (e.g., on weather conditions,

or output/input data for the system, including electricity voltage and current, rotating speed, yaw direction, vibration frequency of blade and nacelle) and communicating with operators.

A transformer is usually placed at ground level and transforms the electricity from the generator to the required voltage on the grid. The aerodynamic loss of energy at the blade/rotor is about 50-60%, the mechanical loss of energy at the gear is 4% and the electromechanical loss at the generator is 6%. Overall, the efficiency of wind power generation is 35-45%.

Exhibit 58. How is wind energy generated?



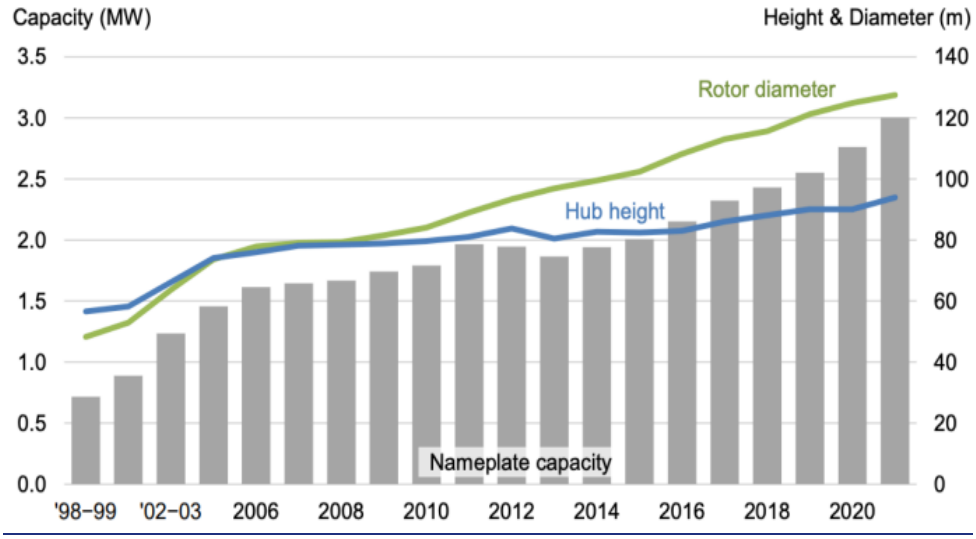

Source: Industry

### Factors affecting power generation

Wind power is proportional to the dimensions of the rotor and the cube of the wind speed. Theoretically, when the wind speed doubles, the wind power increases eight times. The main factors of the output power are the swept area (related directly to the length of the blades) and the wind speed. A wind turbine's hub height is the distance from the ground to the middle of the turbine's rotor. Larger rotor diameters allow the rotating blades to sweep more area, capture more wind, and produce more electricity. Turbine towers are becoming taller to capture more energy since winds generally increase as altitudes increase.

Hence, the industry has been innovating newer designs with larger blades and more powerful turbines resulting in a continual increase in the size of wind turbines. In 1985, turbines had a rated capacity of 0.05MW and a rotor diameter of 15 metres. The largest commercially available wind turbines to date reach 280m in World (16MW in China) and 120m in India (5.2MW in Gujarat).

Exhibit 59. Technology development of WTG




Source: NREL, JM Financial

## Levelised cost of wind power

The cost of wind power equipment significantly depends upon the price of commodities such as steel (used in the tower, contribute around 40-45% to the material cost), as well as copper, zinc, manganese, chromium, nickel, molybdenum and rare earths used in the gearbox, generator and metallurgy of the tower. Turbines account for roughly half of the total cost of a wind project.

According to the International Renewable Energy Agency (IRENA), the onshore wind-weighted average total installed cost in India fell from USD 3,760 per kWh in 1990 to USD 926 per kWh in 2021. Further, the weighted average LCOE of commissioned onshore wind projects in India fell from USD 0.2374 per kWh in 1990 to USD 0.0299 per kWh in 2021.

According to the CEA's National Electricity Plan 2022, the capital cost of wind power projects is expected to reach INR 77.9 million per MW by FY32 from INR 61.6 million per MW in FY23.

Exhibit 60. Levelised cost breakdown (2023 USD/MWh)

| Particulars | Sub group | Levelized cost of energy ($/MWh) | % of total cost |
|---|---|---|---|
| Turbine | Rotor | 5.9 | |
| | Nacelle | 9.7 | |
| | Tower | 3.9 | 48% |
| Balance of System | Development | 0.5 | |
| | Engineering & Management | 0.2 | |
| | Foundation | 1.4 | |
| | Site Access & Staging | 0.7 | |
| | Assembly & Installation | 0.8 | |
| | Electrical Infrastructure | 2.5 | 15% |
| Financial | Contingency | 1.7 | |
| | Construction Finance | 0.5 | 5% |
| Opex | Operational Expenditure | 12.6 | 32% |
| **LCOE** | | **40.4** | **100%** |

Source: NREL, JM Financial

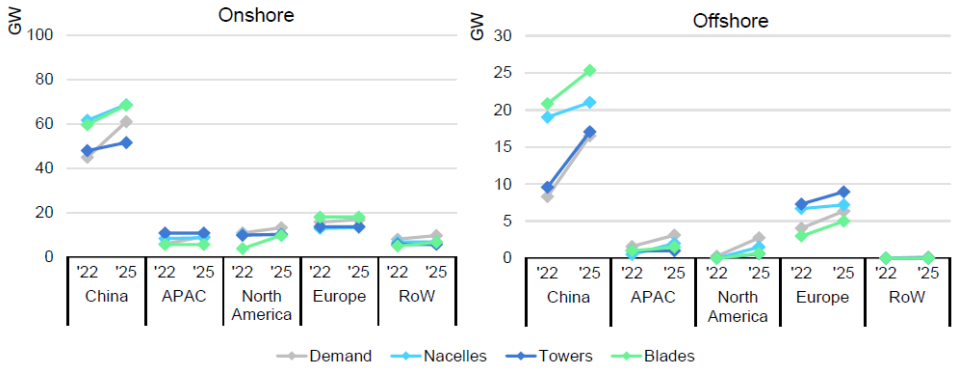
## Manufacturing landscape

Globally, wind equipment manufacturing continues to expand but slowly. In 2022, manufacturing capacity for the main wind power components (nacelles, towers and blades) remained mostly unchanged from the previous year at 110-120GW. According to announced expansion plans, global production capabilities are expected to increase in line with anticipated demand in the next 3 years, resulting in approximately 120-140GW of capacity as estimated by IEA. The realisation of announced projects would bring global wind manufacturing capacity to only about one-third of what is required in 2030 to meet the demand envisaged in the Net Zero Emissions by 2050 Scenario (NZE).

Unlike solar PV manufacturing, wind equipment production is less concentrated geographically, as suppliers prefer to locate production plants close to demand centres due to the high costs and risks associated with transporting large and fragile components over long distances.

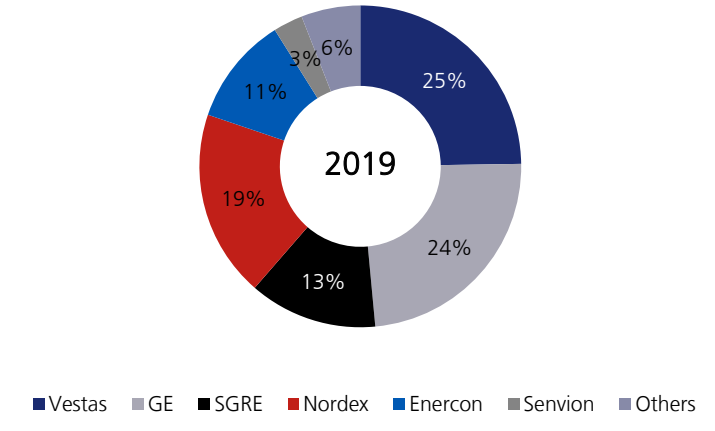
Until 2025, China is expected to remain the largest manufacturing hub for all main wind energy components in the medium term, with 60-80% share of global capacity. However, the United States' first manufacturing plants for offshore wind equipment are also anticipated to come online in this period to support planned offshore wind farm deployment.

**Exhibit 61. Wind equipment manufacturing capacity by region and component, 2022-25**



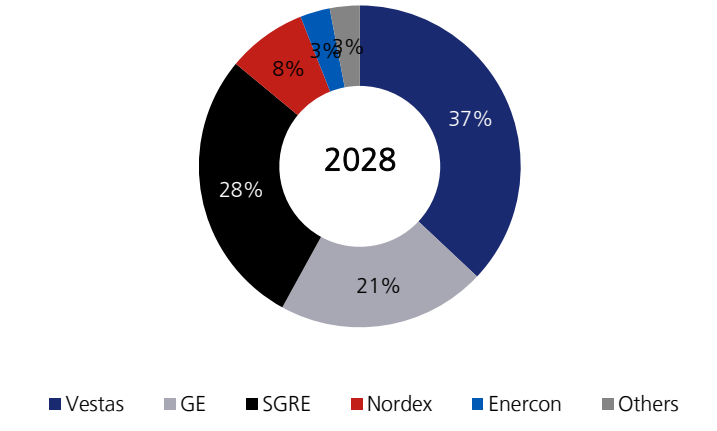

Source: IEA, JM Financial

**Exhibit 62. Global ex.China WTG OEM market share (GW)**




Source: Wood Mackenzie, JM Financial

**Exhibit 63. Global ex.China WTG OEM market share forecast (GW)**




Source: Wood Mackenzie, JM Financial

## Manufacturing base for wind power equipment in India

Manufacturing in India was set in motion by a series of licensing agreements between 1990 and 2005 with Danish (Vestas, Micon) and German (Enercon, Nordex, DeWind, Sudwind GmbH) firms among many others from the global wind energy industry.

Since then, wind turbine generator technology has evolved and state-of-the-art technologies are available in the country for the manufacture of WTG with 70-80% of indigenisation. MNRE has enlisted type and quality certified wind turbines under the 'Revised List of Models & Manufacturers' (RLMM) mandating manufacturing of Hub and Nacelle assembly in India. All the major global players have their presence in India and over 35 different WTGs models are being manufactured by 15 different companies. The unit size of machines has gone up to 3.6MW.

The current annual production capacity of wind turbines in the country is around 12GW out of which around 3-4GW of wind turbines and components are exported to the US, Australia, Europe, Brazil and Asian countries.

Exhibit 64. List of active wind turbine manufacturers in India other than Suzlon

| N | Player | Particulars | Comments |
|---|---|---|---|
| 1 | Vestas Wind Technology India Private Limited | License/ Collaboration/ JV | Vestas Wind Systems A/S, Denmark |
| | | Rotor Dia (RD) (m) | 100 & 120 & 155 |
| | | Hub Height (HH) (m) | 75/80/95/100 & 118 & 102.5/ 105/ 118/ 120/ 136/ 137 |
| | | Capacity (kW) | 2000 & 2000/2100/2200 & 3600 |
| | | India Factory location | Chennai. Ahmedabad |
| | | Est. Annual Mfg. Capacity (MW) | 1000 |
| | | Commissioned capacity | 3278 |
| 2 | Siemens Gamesa Renewable Power Private Limited | License/ Collaboration/ JV | Siemens Gamesa Renewable Energy Innovation and Technology, S.L, Spain |
| | | Rotor Dia (RD) (m) | 114 & 122 & 122 & 145 & 145 & 145 & 145 |
| | | Hub Height (HH) (m) | 106/110 & 108/ 127 & 108/127 & 127.5 & 127.5 & 127.5 & 127.5 |
| | | Capacity (kW) | 2000 & 2100 & 2200 & 3465 & 3465 & 3600 & 3600 |
| | | India Factory location | Chennai, Tamil Nadu; Andhra Pradesh; Karnataka; Gurgaon; |
| | | Est. Annual Mfg. Capacity (MW) | 3000 |
| 3 | Inox Wind Limited | License/ Collaboration/ JV | AMSC Austria GmbH, Austria |
| | | Rotor Dia (RD) (m) | 113 & 100 |
| | | Hub Height (HH) (m) | 92/120 & 80/92 |
| | | Capacity (kW) | 2000 & 2000 |
| | | India Factory location | Spread across Gujarat, Madhya Pradesh and Himachal Pradesh |
| | | Est. Annual Mfg. Capacity (MW) | 1600 |
| | | Commissioned capacity | 2586 |
| 4 | GE India Industrial Private Limited | License/ Collaboration/ JV | General Electric Renewables, Espana, S.L. |
| | | Rotor Dia (RD) (m) | 132 |
| | | Hub Height (HH) (m) | 130 / 94 |
| | | Capacity (kW) | 2730 |
| | | India Factory location | Chakan Industrial Estate, Pune |
| | | Est. Annual Mfg. Capacity (MW) | 1000 |
| | | Commissioned capacity | 1465 |
| 5 | Nordex India Private Limited | License/ Collaboration/ JV | Nordex Energy Spain S.A.U, Spain |
| | | Rotor Dia (RD) (m) | 125 & 140 |
| | | Hub Height (HH) (m) | 120 & 120 |
| | | Capacity (kW) | 3000 & 3000 |
| | | India Factory location | Tamil Nadu; Bangalore, Karnataka; |
| | | Est. Annual Mfg. Capacity (MW) | 840 |
| 6 | Senvion Wind Technology Private Limited | License/ Collaboration/ JV | RE Technologies Gmbh, Germany |
| | | Rotor Dia (RD) (m) | 120 & 130 |
| | | Hub Height (HH) (m) | 120 & 120/130/140 |
| | | Capacity (kW) | 2300 & 2700 |
| | | India Factory location | Spread across Gujarat, Maharashtra and Karnataka |
| | | Estimated Annual Mfg. Capacity (MW) | 400 |
| 7 | Envision Wind Power Technologies India (Pvt.) Ltd. | License/ Collaboration/ JV | Envision Energy (JIANGSU) Co., Ltd., China |
| | | Rotor Dia (RD) (m) | 131.2 & 156 |
| | | Hub Height (HH) (m) | 100.3 / 120.3 & 140.53 |
| | | Capacity (kW) | 2500 & 3300 |
| | | India Factory location | Chakan, Pune |
| | | Est. Annual Mfg. Capacity (MW) | 600 |

Source: MNRE, JM Financial

## Offshore wind energy

India's 7,600-kilometer-wide coastline has the potential to generate approximately 70GW of electricity from offshore wind. The government notified the 'National Offshore Wind Energy Policy' in 2015. An updated 'Strategy Paper for Establishment of Offshore Wind Energy Projects' is issued by MNRE in Aug'23 suggesting three development models with following bidding trajectory:

Exhibit 65. Indicative auction trajectory for offshore wind (MW)

| Year | Model-A (VGF Model) | Model-B (Non-VGF Model with Exclusivity Over Seabed) | Model-C (Non-VGF Model without Exclusivity Over Seabed) | Total Auction |
|---|---|---|---|---|
| FY24 | 0.5 | 4 | - | 4.5 |
| FY25 | 0.5 | 3 | - | 3.5 |
| FY26 | - | 3 | 4 | 7 |
| FY27 | - | 3 | 4 | 7 |
| FY28 | - | 1 | 4 | 5 |
| FY29 | - | - | 5 | 5 |
| FY30 | - | - | 5 | 5 |
| **Total** | **1** | **14** | **22** | **37** |

Source: MNRE, JM Financial

### The potential of offshore wind energy

Based on the preliminary assessment from satellite data and data available from other sources, eight zones each in Gujarat and Tamil Nadu have been identified as potential offshore zones for the exploitation of offshore wind energy potential. Initial assessment of offshore wind energy potential within the identified zones has been estimated to be about 70GW off the coast of Gujarat and Tamil Nadu only.

### Tariff & cost

As per the joint report 'Financial Modelling of Offshore wind in India (FIMOI)' from MNRE, DEA, NIWE, IREDA Tamil Nadu shows the lowest cost potentials, with an LCoE that could be as low as 7.4 INR/kWh in 2025 and 5.2 INR/kWh in 2030. In Gujarat, the LCoE is expected to reach 11.2 INR/kWh in 2025 and 7.8 INR/kWh in 2030. By comparison the expected LCoE of future offshore wind farms in Denmark under very favorable conditions is expected to reach approximately 4.5 INR/kWh by the late 2020's.

### Capacity utilisation factor of offshore wind projects

The annual average CUF of offshore wind energy projects in India is 35-55% for Tamil Nadu and 35-40% for Gujarat as estimated by NIWE.

### Viability gap funding

A viability gap funding (VGF) is also proposed to establish 3GW of offshore wind energy projects (1GW off the coast of Gujarat and 2GW off the coast of Tamil Nadu). In addition, separate transmission and evacuation infrastructure will be built through central transmission utilities (CUTL) to enable power evacuation through these offshore wind power projects.

## Why blades are failing & their impact

With more than 90GW installed in 76 countries, Siemens Gamesa is one of the leading global OEMs created out of the merger of Siemens Wind Power A/S and Gamesa Corporación Tecnológica in 2017. Since the merger, Siemens Gamesa continues to focus on managing operational problems and the turnaround. The company contributed Euro 9.8bn (34%) to the revenue of the Siemens Energy with (5.9%) profit margin.

Recently, the company has been facing quality issues in certain components, including rotor blades and bearings among the onshore turbine fleet primarily in 4.X (4.0-5.2MW; rotor dia 132 & 145m) and 5.X (5.6-7.0MW; rotor dia 155&170m) onshore wind turbine platforms.

Exhibit 66. Siemens Gamesa: Blade failure


Source: Siemens Energy, JM Financial

However, other major OEMs such as Vestas and GE in recent years have also been facing a spate of similar equipment failures perhaps due to the ambition to establish turbines that are more powerful and bigger, designed better, which has overlooked manufacturing and quality discipline. It is feared that concerns over the turbines will slow down Siemens Energy's efforts for a turnaround of its subsidiary, Siemens Gamesa.

Exhibit 67. Blade failure

Source: Industry, JM Financial

# Financial Tables (Consolidated)

## Income Statement (INR mn)

| Y/E March | FY22A | FY23A | FY24E | FY25E | FY26E |
|---|---|---|---|---|---|
| Net Sales | 65,200 | 59,468 | 74,309 | 1,06,322 | 1,35,258 |
| Sales Growth | 97.9% | -8.8% | 25.0% | 43.1% | 27.2% |
| Other Operating Income | 618 | 237 | 445 | 441 | 450 |
| **Total Revenue** | **65,818** | **59,705** | **74,754** | **1,06,763** | **1,35,709** |
| Cost of Goods Sold/Op. Exp | 43,316 | 37,827 | 46,668 | 68,168 | 88,658 |
| Personnel Cost | 5,454 | 6,092 | 6,063 | 8,167 | 8,904 |
| Other Expenses | 8,154 | 7,467 | 10,954 | 14,433 | 16,291 |
| **EBITDA** | **8,895** | **8,319** | **11,069** | **15,994** | **21,856** |
| EBITDA Margin | 13.5% | 13.9% | 14.8% | 15.0% | 16.1% |
| EBITDA Growth | 66.5% | -6.5% | 33.1% | 44.5% | 36.6% |
| Depn. & Amort. | 2,598 | 2,597 | 1,805 | 1,914 | 2,003 |
| EBIT | 6,296 | 5,722 | 9,264 | 14,080 | 19,853 |
| Other Income | 222 | 196 | 236 | 283 | 339 |
| Finance Cost | 7,345 | 4,208 | 1,792 | 928 | 713 |
| PBT before Excep. & Forex | -827 | 1,711 | 7,708 | 13,435 | 19,479 |
| Excep. & Forex Inc./Loss(-) | -831 | -27,206 | 0 | 0 | 0 |
| PBT | 4 | 28,917 | 7,708 | 13,435 | 19,479 |
| Taxes | 1,666 | 44 | 0 | 0 | 0 |
| Extraordinary Inc./Loss(-) | 0 | 0 | 0 | 0 | 0 |
| Assoc. Profit/Min. Int.(-) | 127 | 383 | 383 | 383 | 383 |
| Reported Net Profit | -1,996 | 28,490 | 7,325 | 13,052 | 19,097 |
| **Adjusted Net Profit** | **-2,597** | **1,667** | **7,708** | **13,435** | **19,479** |
| Net Margin | -3.9% | 2.8% | 10.3% | 12.6% | 14.4% |
| Diluted Share Cap. (mn) | 9,217.4 | 12,272.0 | 13,588.6 | 13,588.6 | 13,588.6 |
| **Diluted EPS (INR)** | **-0.3** | **0.1** | **0.6** | **1.0** | **1.4** |
| Diluted EPS Growth | 0.0% | 0.0% | 317.7% | 74.3% | 45.0% |
| Total Dividend + Tax | 0 | 0 | 0 | 0 | 0 |
| Dividend Per Share (INR) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Source: Company, JM Financial

## Balance Sheet (INR mn)

| Y/E March | FY22A | FY23A | FY24E | FY25E | FY26E |
|---|---|---|---|---|---|
| Shareholders' Fund | -35,257 | 10,992 | 39,054 | 52,488 | 71,968 |
| Share Capital | 18,435 | 24,544 | 27,177 | 27,177 | 27,177 |
| Reserves & Surplus | -53,692 | -13,553 | 11,876 | 25,311 | 44,790 |
| Preference Share Capital | 0 | 0 | 0 | 0 | 0 |
| Minority Interest | -361 | 0 | 0 | 0 | 0 |
| Total Loans | 67,755 | 26,259 | 11,584 | 8,214 | 7,077 |
| Def. Tax Liab. / Assets (-) | -175 | -2 | -2 | -2 | -2 |
| **Total - Equity & Liab.** | **31,962** | **37,249** | **50,635** | **60,700** | **79,043** |
| Net Fixed Assets | 9,225 | 7,811 | 9,005 | 8,591 | 8,088 |
| Gross Fixed Assets | 20,348 | 21,656 | 24,656 | 26,156 | 27,656 |
| Intangible Assets | 1,255 | 619 | 619 | 619 | 619 |
| Less: Depn. & Amort. | 11,274 | 13,871 | 15,676 | 17,590 | 19,593 |
| Capital WIP | 152 | 26 | 26 | 26 | 26 |
| Investments | 2,952 | 4,624 | 4,624 | 4,624 | 4,624 |
| Current Assets | 51,141 | 42,179 | 55,544 | 68,508 | 90,159 |
| Inventories | 22,079 | 18,271 | 20,480 | 27,788 | 33,462 |
| Sundry Debtors | 13,770 | 11,704 | 14,336 | 19,890 | 22,308 |
| Cash & Bank Balances | 5,004 | 3,673 | 12,198 | 12,300 | 25,859 |
| Loans & Advances | 1,215 | 1,497 | 1,497 | 1,497 | 1,497 |
| Other Current Assets | 9,074 | 7,033 | 7,033 | 7,033 | 7,033 |
| Current Liab. & Prov. | 32,612 | 17,984 | 19,157 | 21,642 | 24,448 |
| Current Liabilities | 18,982 | 4,132 | 5,306 | 7,790 | 10,596 |
| Provisions & Others | 13,630 | 13,852 | 13,852 | 13,852 | 13,852 |
| Net Current Assets | 18,529 | 24,195 | 36,387 | 46,865 | 65,712 |
| **Total – Assets** | **31,962** | **37,249** | **50,635** | **60,700** | **79,043** |

Source: Company, JM Financial

## Cash Flow Statement (INR mn)

| Y/E March | FY22A | FY23A | FY24E | FY25E | FY26E |
|---|---|---|---|---|---|
| Profit before Tax | 4 | 28,917 | 7,708 | 13,435 | 19,479 |
| Depn. & Amort. | 2,598 | 2,597 | 1,805 | 1,914 | 2,003 |
| Net Interest Exp. / Inc. (-) | 6,697 | 3,532 | 1,556 | 646 | 374 |
| Inc (-) / Dec in WCap. | 1,570 | -5,432 | -3,667 | -10,376 | -5,287 |
| Others | 2,055 | -24,798 | 0 | 0 | 0 |
| Taxes Paid | 94 | -149 | 0 | 0 | 0 |
| **Operating Cash Flow** | **13,019** | **4,667** | **7,402** | **5,618** | **16,569** |
| Capex | -767 | -1,007 | -3,000 | -1,500 | -1,500 |
| Free Cash Flow | 12,252 | 3,660 | 4,402 | 4,118 | 15,069 |
| Inc (-) / Dec in Investments | 215 | 1,736 | 0 | 0 | 0 |
| Others | 368 | 120 | 236 | 283 | 339 |
| **Investing Cash Flow** | **-184** | **849** | **-2,764** | **-1,217** | **-1,161** |
| Inc / Dec (-) in Capital | 0 | 10,797 | 20,354 | 0 | 0 |
| Dividend + Tax thereon | 0 | 0 | 0 | 0 | 0 |
| Inc / Dec (-) in Loans | -7,234 | -13,388 | -14,675 | -3,370 | -1,136 |
| Others | -3,216 | -4,253 | -1,792 | -928 | -713 |
| **Financing Cash Flow** | **-10,450** | **-6,845** | **3,887** | **-4,299** | **-1,849** |
| **Inc / Dec (-) in Cash** | **2,385** | **-1,329** | **8,524** | **102** | **13,559** |
| Opening Cash Balance | 2,619 | 5,002 | 3,673 | 12,198 | 12,300 |
| Closing Cash Balance | 5,004 | 3,673 | 12,198 | 12,300 | 25,859 |

Source: Company, JM Financial

## Dupont Analysis

| Y/E March | FY22A | FY23A | FY24E | FY25E | FY26E |
|---|---|---|---|---|---|
| Net Margin | -3.9% | 2.8% | 10.3% | 12.6% | 14.4% |
| Asset Turnover (x) | 1.0 | 1.0 | 1.2 | 1.4 | 1.5 |
| Leverage Factor (x) | 0.0 | 0.0 | 2.5 | 1.7 | 1.5 |
| RoE | 0.0% | 0.0% | 30.8% | 29.4% | 31.3% |

## Key Ratios

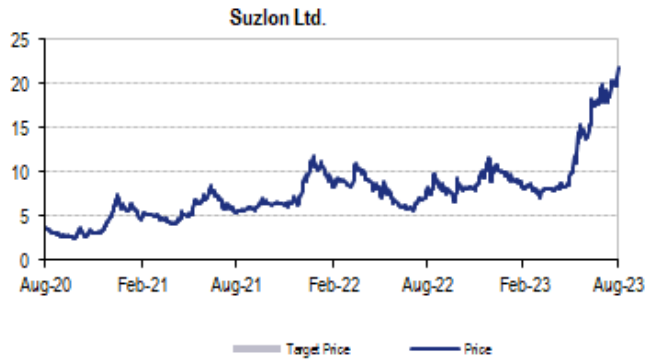
| Y/E March | FY22A | FY23A | FY24E | FY25E | FY26E |
|---|---|---|---|---|---|
| BV/Share (INR) | -3.8 | 0.9 | 2.9 | 3.9 | 5.3 |
| ROIC | 0.0% | 21.5% | 29.5% | 36.3% | 43.0% |
| ROE | 0.0% | 0.0% | 30.8% | 29.4% | 31.3% |
| Net Debt/Equity (x) | 0.0 | 2.1 | 0.0 | -0.1 | -0.3 |
| P/E (x) | -78.1 | 162.0 | 38.8 | 22.3 | 15.3 |
| P/B (x) | -5.8 | 24.6 | 7.7 | 5.7 | 4.2 |
| EV/EBITDA (x) | 29.8 | 27.1 | 18.3 | 12.4 | 8.4 |
| EV/Sales (x) | 4.0 | 3.8 | 2.7 | 1.9 | 1.4 |
| Debtor days | 76 | 72 | 70 | 68 | 60 |
| Inventory days | 122 | 112 | 100 | 95 | 90 |
| Creditor days | 118 | 28 | 29 | 31 | 33 |

Source: Company, JM Financial

## History of Recommendation and Target Price

| Date | Recommendation | Target Price | % Chg. |
|---|---|---|---|

## Recommendation History



# APPENDIX I

## JM Financial Institutional Securities Limited

Corporate Identity Number: U67100MH2017PLC296081
Member of BSE Ltd. and National Stock Exchange of India Ltd.
SEBI Registration Nos.: Stock Broker - INZ000163434, Research Analyst - INH000000610
Registered Office: 7th Floor, Cnergy, Appasaheb Marathe Marg, Prabhadevi, Mumbai 400 025, India.
Board: +9122 6630 3030 | Fax: +91 22 6630 3488 | Email: jmfinancial.research@jmfl.com | www.jmfl.com
Compliance Officer: Mr. Sahil Salastekar | Tel: +91 22 6224 1073 | Email: sahil.salastekar@jmfl.com
Grievance officer: Mr. Sahil Salastekar | Tel: +91 22 6224 1073 | Email: instcompliance@jmfl.com

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| Definition of ratings | |
|---|---|
| **Rating** | Meaning |
| **Buy** | Total expected returns of more than 10% stocks with market capitalisation in excess of INR 200 billion and REITs* and more than 15% for all other stocks, over the next twelve months. Total expected return includes dividend yields. |
| **Hold** | Price expected to move in the range of 10% downside to 10% upside from the current market price for stocks with market capitalisation in excess of INR 200 billion and REITs* and in the range of 10% downside to 15% upside from the current market price for all other stocks, over the next twelve months. |
| **Sell** | Price expected to move downwards by more than 10% from the current market price over the next twelve months. |

* REIT refers to Real Estate Investment Trusts.

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