

08 December 2023

India | Equity Research | Initiating Coverage

INOX Wind

Capital Goods

The perfect pitch

INOX Wind (INOX), a wind turbine supplier, is rebuilding its business. That said, we note that policy discontinuity in the wind sector did put INOX a bit under the weather between FY18-FY22. However, wind OEMs are now set to reap the benefits with a string of positive policy changes. Aided by a newly re-laid policy pitch, the company is priming itself by monetising its assets and reducing external debt. Under a grid dominated by renewables, wind has its place owing to complementarity with other RE resources. Consequently, we expect wind capacity addition to rise from 2GW in FY23 to >6.5GW in FY26E. INOX is poised to see its earnings rebound with the execution of 600MW/850MW in FY25E/FY26E. We expect earnings at INR 4.4bn in FY25E and INR 6.5bn in FY26E and initiate with a **BUY** and TP of **INR 425** (based on 25x FY26E EPS).

“The answer, my friend, is blowin' in the wind. The answer is blowin' in the wind” – Bob Dylan

A new re-laid pitch

The wind sector has endured torrid times between FY17-FY23 and is set to catch a fresh breath amid a new set of realities – a strong one being the urgent need to reduce carbon emissions by increasing penetration of renewables. An elementary deduction is that a grid with a stronger array of renewables needs more wind in the mix given its competitiveness and complementarity to solar. The government is pushing the pedal on: 1) removing reverse auction for wind; 2) wind and hybrid auctions; and 3) wind specific renewable obligations.

Paring external debt

INOX resorted to debt due to the losses it was mired in over the last few years amidst a dearth of orders. It has taken a number of steps to rein in debt, mainly by selling stake: 1) to private equity in the listed entity; 2) in O&M subsidiaries; 3) (promoter stake) in listed entity; and 4) infusing money to repay debt. Net debt is now expected to reduce significantly (FY26E net debt: EBITDA of 0.6x)

Duopoly in full stack supplier; strong public sector pipeline

With a slew of bankruptcies, competition has dwindled. This leaves two players (INOX and Suzlon) in the market who engage in supply, installation and maintenance of turbines. We reckon 50% of the overall wind market, including public sector entities, is looking for full stack supplier. Importantly, public sector entities will play a larger role in the upcoming renewables grid.

Financial Summary

Y/E Mar-31 (INR mn)	FY23A	FY24E	FY25E	FY26E
Net Revenue	7,370	29,715	37,448	53,467
EBITDA	(2,638)	2,771	5,883	8,171
EBITDA Margin (%)	(35.8)	9.3	15.7	15.3
Net Profit	(6,707)	(1,078)	4,439	6,482
EPS (Rs)	(20.6)	(3.3)	13.1	19.2
EPS % Chg YoY	(5.4)	(85.8)	(574.6)	45.7
P/E (x)	(17.7)	(124.4)	26.2	18.0
EV/EBITDA (x)	(51.0)	48.2	23.1	16.5
RoCE (%)	(8.8)	4.7	11.9	15.3
RoE (%)	(37.6)	(5.7)	25.3	28.5

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Market Data

Market Cap (INR)	118bn
Market Cap (USD)	1,421mn
Bloomberg Code	INXW IN Equity
Reuters Code	INWN.BO
52-week Range (INR)	369 /89
Free Float (%)	31.0
ADTV-3M (mn) (USD)	10.9

Price Performance (%)	3m	6m	12m
Absolute	81.1	143.9	197.6
Relative to Sensex	5.1	11.8	13.1

Outlook and valuation

Inox Wind is getting back on track, after facing a slowdown in conjunction with the wind energy industry. During this time, INOX saw a substantial spike in debt. The company has been deleveraging and we estimate its net debt to slim to ~INR 4.7bn by end-FY24. In addition, the industry is looking up and a revival led by a slew of policy actions is in the offing.

We initiate coverage on the stock with a **BUY** recommendation. Our P/E-based target price is **INR 425**, valuing the wind business at **25x FY26E EPS**, owing to renewed focus on wind capacity addition and improved order outlook in the near and medium term and adjust it for NCRPS of INR 18.7bn. We also add the value of the company's stake in Inox Green (valued at market cap adjusted for holding company discount of 15%).

Key risks – Delay in tendering activity, increase in competition and supply chain disrupting

Exhibit 1: Valuation [INR]

	Methodology	Stake	Value	Per Share
Value of Wind Business	25x FY26E EPS	100%	1,45,967	448
Less: NCRPS			18,700	57
Sub-total			1,27,267	391
Inox Green	Mktcap adjusted @15% for holdco	56%	11,379	35
Total			1,38,646	425

Source: I-Sec research

Exhibit 2: Peer valuation in the wind equipment space

	EV/EBITDA (x)			P/E (x)			RoE (%)		
	FY24E	FY25E	FY26E	FY24E	FY25E	FY26E	FY24E	FY25E	FY26E
Suzlon	65.3	49.5	31.9	286.0	87.8	38.5	15.1	35.4	44.7
Inox Wind	48.2	23.1	16.5		26.2	18.0	-5.7	25.3	28.5
	CY22	CY23E	CY24E	CY22	CY23E	CY24E	CY22	CY23E	CY24E
Vestas	25.7	14.8	9.8		40.6	21.6	1.1	17.0	26.3
Nordex	207.2	8.3	4.7		128.5	15.2	-25.8	1.7	14.0
Siemens Gamesa							-14.9	3.8	8.1
Goldwind	11.4	9.6	8.4	5.69	4.4	3.8	5.7	7.0	7.8

Source: Bloomberg, I-Sec research

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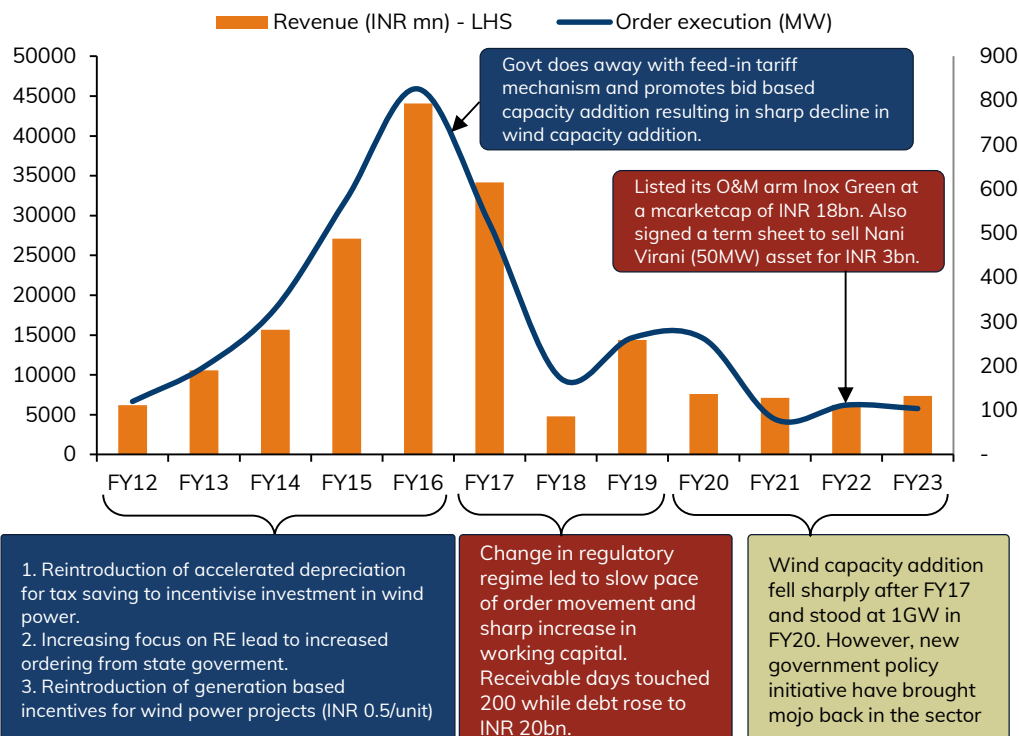
Investment Rationale

- The wind sector is undergoing a catharsis. It endured a downturn due to policy discontinuity that saw: 1) an emergence of reverse auction to procure wind power (FY17); 2) low prices discovered in auction; and 3) higher prices compared to solar.
- Renewables, especially wind, were playing peripheral roles in the energy mix between 2010–2022. The system relied more on coal and gas. However, renewables are likely to play a key role over the next few decades to reduce the carbon intensity from the grid.
- To decarbonise the grid, the choices available to the policy makers are: 1) wind; 2) solar; and 3) storage. The most optimal mix to reduce carbon emissions is a mix of wind, solar and storage. Note: Cost of storage is 4x the cost of wind and 5x the cost of solar.
- As a result, India is looking to add 8GW per annum of wind until FY30. The government has taken a number of steps to improve the playing field for wind developers. Such steps include: 1) removing reverse auction. 2) Targeting more wind specific auction of up to 10GW.
- Albeit, based on the last eight months, pure wind auctions have been few and far apart. However, auctions were conducted and the pipeline is filled with hybrid and complex auctions (requires significant wind addition).
- We reckon the wind market shall improve from 2GW in FY23 to 3.5GW in FY24E, 4.5GW in FY25E and 6.5GW in FY26E.
- Naturally, wind OEMs are likely to benefit. We note that there are two kinds of players in wind OEM market: 1) Type 1 – supplying turbines, as well as undertaking EPC and O&M; and 2) Type 2 – purely supplying turbines and spares (Type 2). Larger private IPPs prefer Type 2 suppliers; the rest of the universe prefers Type 1.
- We expect the Type 1 to form ~50-60% of the market with limited competition. INOX dominates the Type 1 market. We also highlight that public sector entities prefer Type 1 suppliers. INOX has a high success rates in NTPC tenders.
- Captive renewables market is seeing a huge traction. Note that renewable purchase obligations are also applicable on the captive consumers. While we have witnessed strong capacity addition announcement by large steel producers, we expect to see an increase in capacity addition by small and medium enterprises led by: 1) better policy for captives in Gujarat and Rajasthan; and 2) NIL transmission charges for power plants set up till FY25.
- INOX went through torrid times between FY18-FY22. Aided by a very strong promoter, it has been on monetisation spree to reduce the debt burden. Steps taken: a) sold stake in INOX Wind, b) sold stake in INOX Wind to private equity and c) promoters sold stake in INOX wind in two blocks and infused money in the company.
- We expect INOX's order book to see robust accretion in the next few months – 1) aided by auction by Indian government; 2) especially higher wins by public sector entities; and 3) new tenders by public sector entities. Note that current order book is 1.3GW.
- We estimate 500GW execution in FY24E and 850GW in FY26E. Also, as a result, we expect earnings to stage a sharp rebound to INR 4.4bn/INR 6.5bn in FY25E/ FY26E. We value 1) the wind OEM business at 25x FY26E earnings; and 2) The operation & maintenance (O&M) business (listed separately) at 15% discount to market cap. We initiate with a **BUY** with a target of **INR 425** per share.

Inox Wind's performance history

- Inox Wind commenced operations in 2009, partnering with AMSC to manufacture 2MW turbines for the domestic market. It also signed a license agreement with Windnovation for the manufacture of rotor blades based on their designs.
- As the domestic wind capacity addition started to pick up, INOX's execution volumes shot up to 826MW in FY16 (vs. 54MW in FY12). Also, order inflows remained strong and the order book grew to 1.1GW in FY16 (vs. 450MW in FY12).
- However, as India moved away from feed-in tariff mechanism to bid-based mechanism in 2017, wind capacity addition spiralled to 1.1GW in FY22 (vs. 5.5GW in FY17).
- This impacted Inox's execution, which dipped to 80MW in FY21 vs. its high of 826MW in FY17. Also, owing to lower execution, gross debt increased to INR 27bn as of FY23 (vs. INR 10bn in FY19).
- Positive outcomes on the regulatory front – removal of reverse e-auction bids, pooling of wind from various states, government mandate to tender 10GW of pure wind capacity, and need of wind capacity in RE mix to meet more complex power demand curves – has improved the outlook for wind capacity addition.
- Inox has significantly pared debt on its balance sheets as of H1FY24 with capital infusion worth INR 18.4bn from the promoters through NCRPS, issue of warrants and sale of the O&M arm. Thus, after the recent capital infusion, and sale of wind asset for INR 2.9bn, interest bearing debt as of FY24E is estimated at INR 4,340mn.

Exhibit 3: Snapshot of INOX's history



Source: Company data, I-Sec research

FY09-12: Birth of a new wind OEM

To increase the penetration of renewables, India and the world was promoting renewable energy (RE) by allowing higher tariff and imposing renewable purchase obligations. India's wind sector was seeing an uptick.

With that in the backdrop, INOX commenced operations in 2009 by signing an exclusive agreement with AMSC to manufacture their 2MW turbines for domestic market. It also signed a license agreement with Windnovation for manufacturing rotor blades based on their designs.

As per the license agreement with AMSC, Inox was required to pay: 1) a fixed royalty per wind turbine generator (WTG) produced for the first 450 WTGs with rotor diameters of less than 110 meters, and the first 245 WTGs with rotor diameters of more than 110 meters; and 2) a fixed service fee payable in five tranches.

Exhibit 4: Manufacturing capacity in FY12

Components	Location	Capacity installed
Nacelles and Hubs	Basal, Una, Himachal Pradesh	550 nacelles and hubs
Rotor blade sets	Rohika, Ahmedabad Gujarat	256 rotor blade sets
Towers	Rohika, Ahmedabad Gujarat	150 towers

Source: Company data, I-Sec research

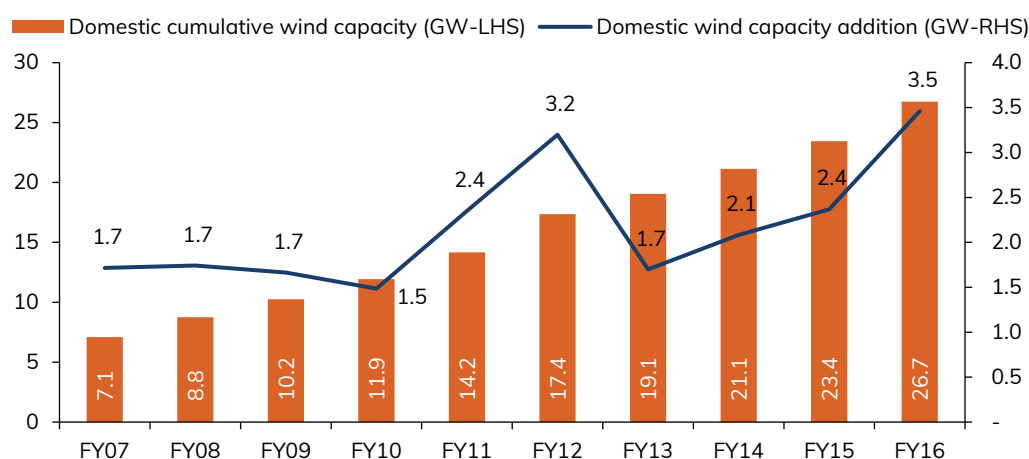
INOX set up three manufacturing facilities for manufacturing of nacelle, hubs, rotor blades and towers. The company produced and sold 54MW of WTGs till FY12, mostly to group captive companies.

FY13-17: Metamorphosis

India's wind sector capacity addition was picking up on the back of renewed policy thrust. Albeit, Suzlon, the market leader of wind turbine supplier, was undergoing through financial losses. INOX raised INR 5bn through initial public offer in 2015. It gained significant market share (>20%) in FY16 and FY17.

Domestic wind capacity addition increased to 26.7GW in FY16 (vs. 7.1GW in FY07).

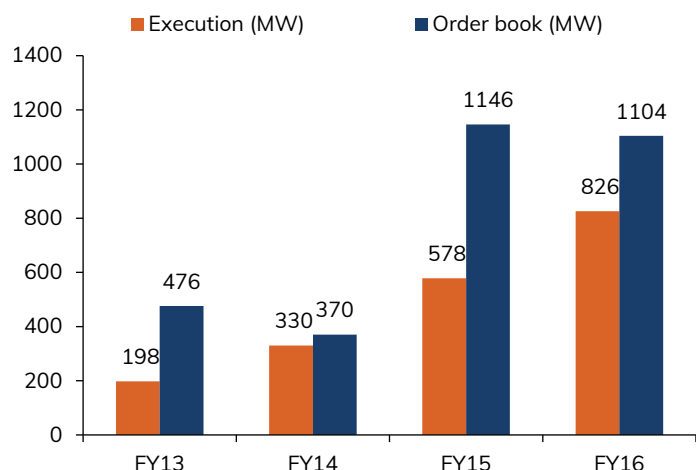
Exhibit 5: Strong wind capacity addition (GW)



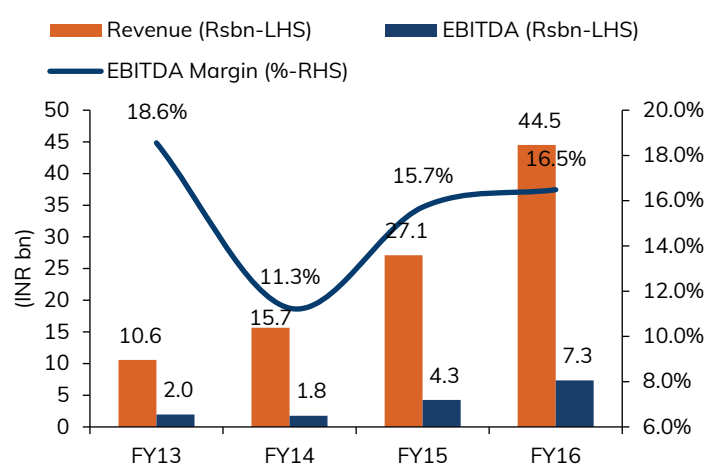
Source: Company data, I-Sec research

Robust execution growth of 4x to 826MW in FY16

After the successful completion of group captive orders of 200MW till FY12 and given the strong undercurrent for domestic wind capacity addition, order inflows for INOX remained strong and execution improved from 198MW in FY13 to 826MW in FY16. Meanwhile, the order book remained healthy (>1x annual execution).

Exhibit 6: Strong execution and order book growth as focus shifts to renewable capacity addition


Source: Company data, I-Sec research

Exhibit 7: Revenue growth of >4x with a stable EBITDA margin


Source: Company data, I-Sec research

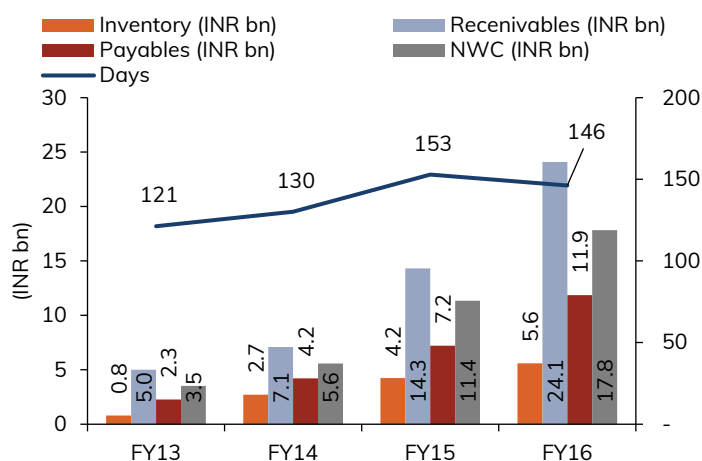
In line with the execution growth, revenue grew > 4x to INR 45bn in FY16 (vs. INR 11bn in FY12) and EBITDA grew to INR 7.3bn in FY16 (vs. INR 2bn in FY12). EBITDA margin remained largely stable around 16%.

EBITDA margin contracted in FY14, primarily owing to increased execution cost on sale of higher number of wind turbines, increased freight cost and increased royalty owing to depreciation of the INR.

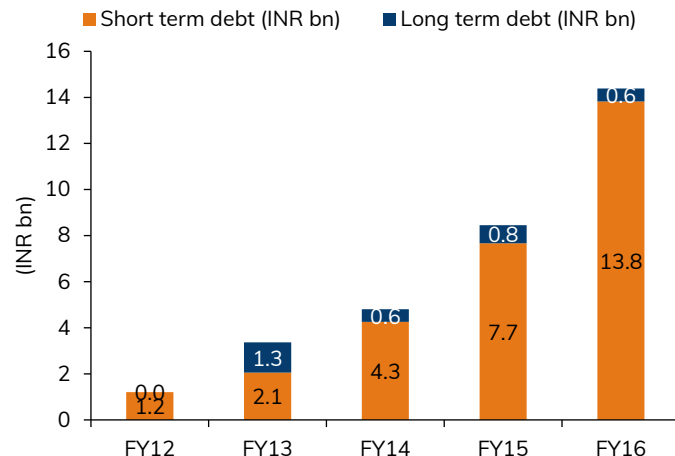
Working capital stable

As execution ramped up from 198MW in FY12 to 826MW in FY16, net working capital requirement grew to INR 18bn in FY16 (vs. INR 3.4bn in FY12). Net working capital requirement stood stable at 146 days as of FY16, in line with an increase in revenue.

However, this led to a sharp rise in short term debt to INR 14bn as of FY16 versus INR 1.2bn in FY12, largely in line with the increase in working capital requirement.

Exhibit 8: Stable working capital at 146 days


Source: I-Sec research

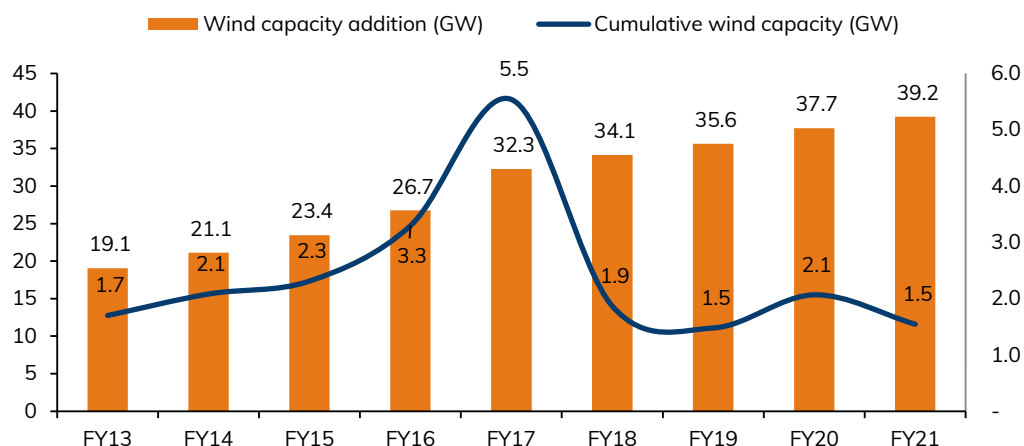
Exhibit 9: Sharp increase in short-term debt to INR 14bn, largely in line with increase in working capital


Source: I-Sec research

FY18-FY21: The sudden death

Up until FY17, India was following a feed-in tariff mechanism for the setting up of wind generation capacity. Under the feed-in tariff mechanism, DISCOMs entered into long term PPAs with a predetermined tariff for generation from wind capacities. The feed in tariffs were decided by state regulators based on the expected normative cost. Along with this, several other incentives like accelerated depreciation, generation-based incentives, etc. were provided for setting up wind capacities.

Exhibit 10: Wind capacity addition slumped to 1.5GW in FY21 (vs 5.5GW in FY17)



Source: I-Sec research

However, the government decided to do away with the feed-in tariff mechanism and introduced bid-based mechanism for incremental capacity addition. This led to –

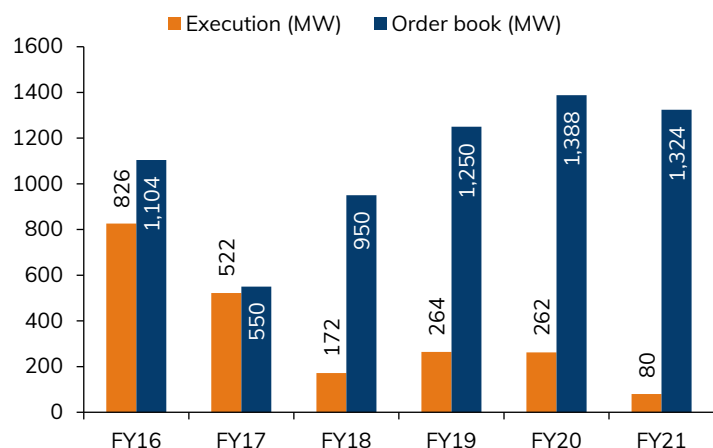
- Low tariff for wind capacity which led to lower investor interest;
- Concentrated wind capacity addition in high wind states such as Gujarat, Tamil Nadu, Karnataka and Andhra Pradesh. As low wind speeds in other states at lower tariff made wind capacity addition economically unviable.

Thus, there was a sharp drop in domestic wind capacity addition to 1.5GW in FY21 (as compared to 5.5GW in FY17).

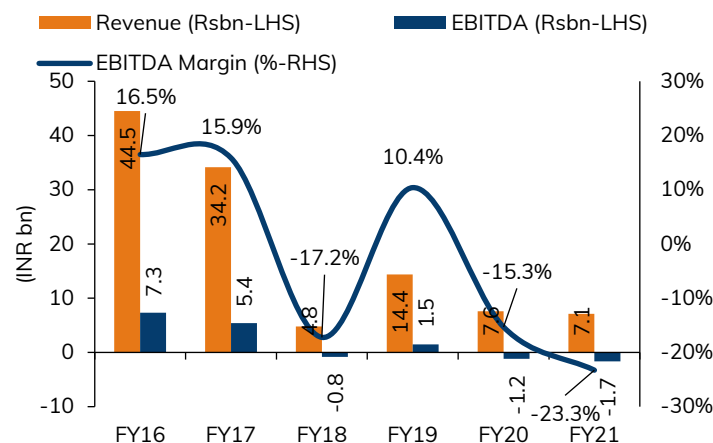
Sharp drop in execution and order book

With India moving away from the feed-in tariff mechanism, new capacity addition opportunities reduced as tariffs dropped sharply under the bid-based mechanism, and investors flocked to high wind states to set up wind capacities.

This led to lower opportunities for INOX and even cancellation of existing orders as DISCOMs preferred to move to bid-based mechanism. Thus execution fell to a low of 80MW in FY21 (vs. the high of 826MW in FY16).

Exhibit 11: Sharp drop in execution to 80MW in FY21 (vs 826MW in FY16)


Source: I-Sec research

Exhibit 12: Similar drop in revenue due to lower execution impacted profitability on lower capacity utilisation


Source: I-Sec research

Also, the order book dropped to 550MW in FY17, compared to 1,104MW in FY16 (largely owing to order cancellation and move to bid based mechanism).

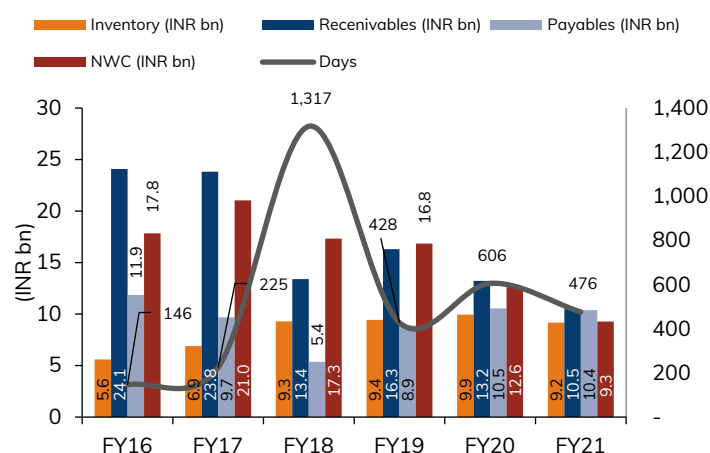
As revenue fell to INR 7.1bn in FY21 (vs. INR 45bn in FY16) on lower execution, EBITDA losses widened to INR 2bn in FY21 (vs. profit of INR 7.3bn in FY16).

Working capital deteriorates with execution slump

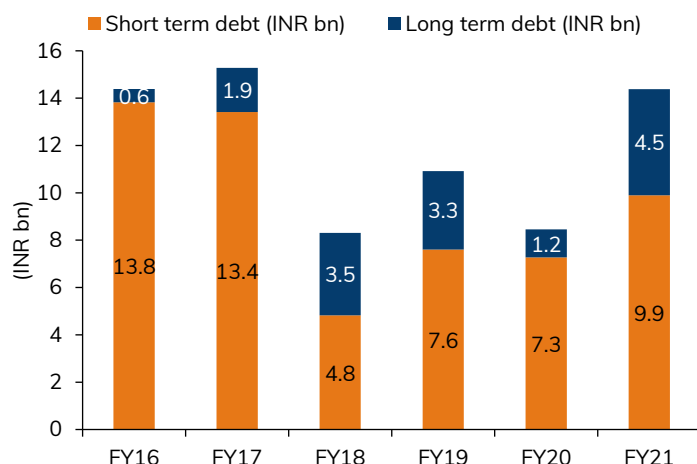
With the introduction of the new mechanism, existing orders were cancelled, project execution duration elongated along with projects being cancelled too as the discovered tariff was unviable in the long run, etc. On balance, this led to higher inventory levels despite lower execution.

Projects facing delays had difficulty in paying the OEMs for the equipment supply, thus leading to higher receivables too. This was all on the back of lower execution.

Thus, net working capital requirement shot up to 500 days in FY21 vs. FY16's 146 days.

Exhibit 13: Net working capital required deteriorates to 500 days as execution slumps


Source: I-Sec research

Exhibit 14: Short-term debt remains elevated despite lower execution impacting profitability


Source: I-Sec research

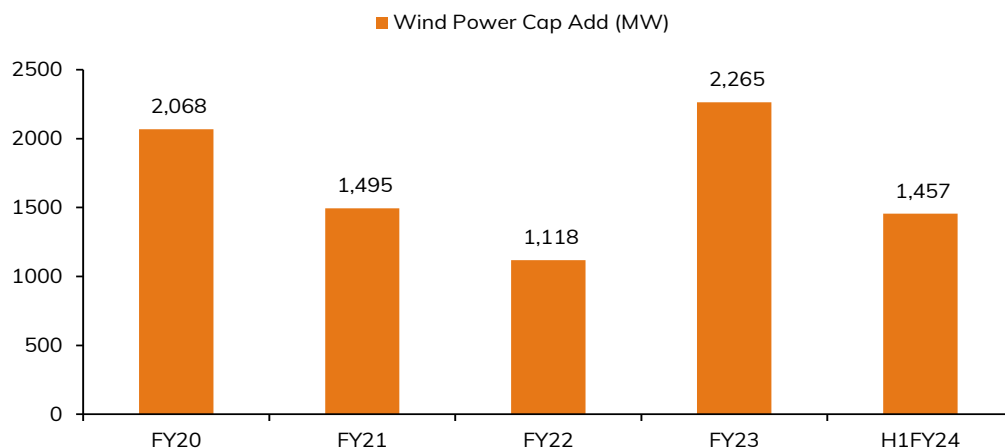
Thus, higher working capital requirement led to elevated debt levels despite lower execution, thus, impacting profitability owing to higher finance costs.

FY21-present: Rebuilding the business

Wind capacity addition picking up pace

After a slowdown, wind capacity addition has started picking up. Wind capacity addition fell to a low of 1.1GW in FY22 (from the highs of 5.5GW in FY17) before increasing to 2.3GW in FY23; and it has already touched 1.5GW in H1FY24.

Exhibit 15: Domestic wind capacity addition (MW)



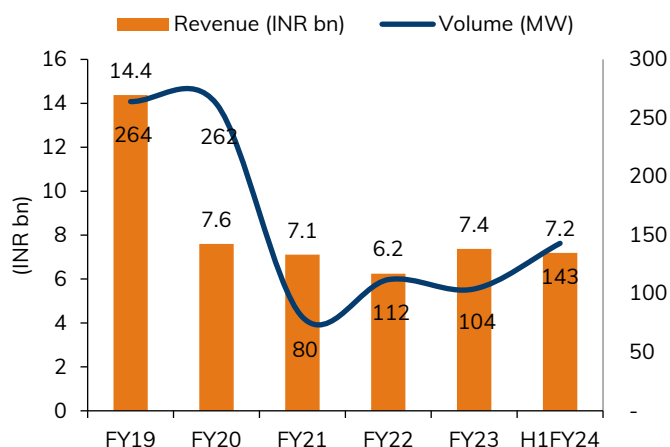
Source: I-Sec research

Worst likely to be over

As the wind capacity addition has picked up pace in the last couple of years, execution volume for INOX is also improving and thus the revenues. Volumes have increased to 143MW in H1FY24 from the lows of 80MW in FY21. Similarly, revenue has increased to INR 7.2bn in H1FY24, compared to INR 7.1bn in FY21.

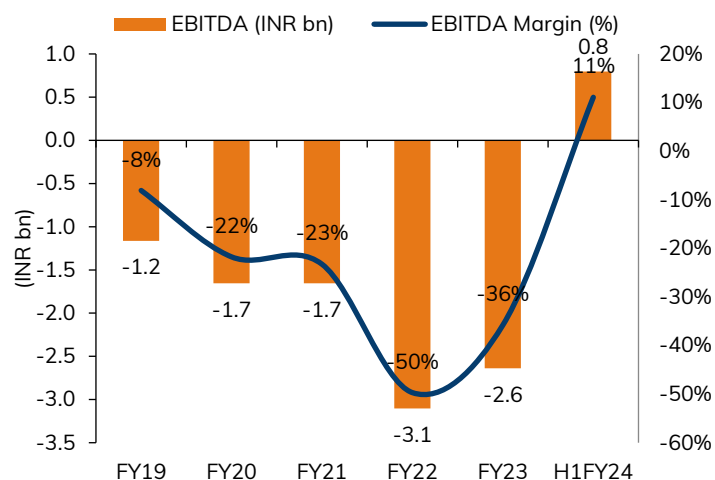
The operating margin has improved to 11% in H1FY24 compared to operating losses posted in the last five years. This can be attributed to higher execution, lower mix of legacy low-margin orders and general lower input price inflation.

Exhibit 16: Revenue improving with higher execution



Source: I-Sec research

Exhibit 17: Operating margins improving with execution

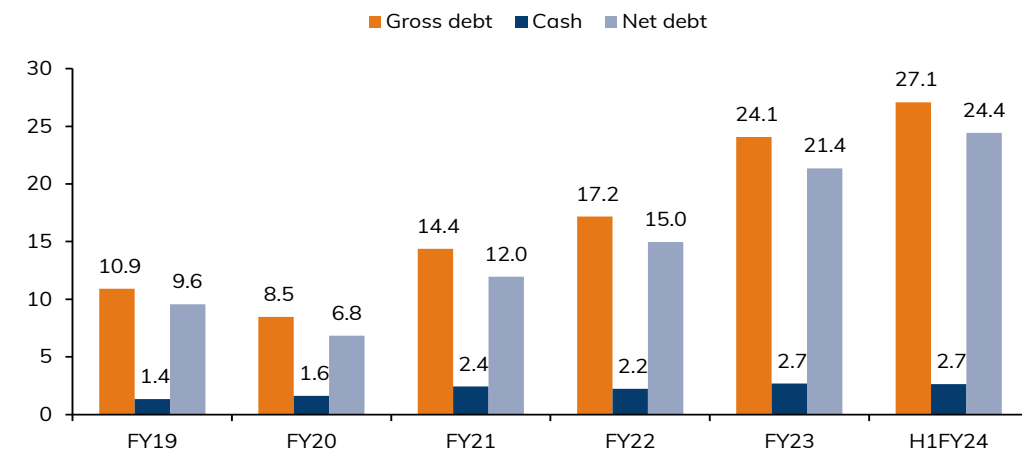


Source: I-Sec research

Easing debt level owing to promoter debt infusion

Owing to lower execution and inventory build-up of slow moving and cancelled orders, gross debt increased to INR 27.1bn as of H1FY24 (vs. INR 10.9bn in FY19). Net debt increased to INR 24.4bn (vs. INR 9.6bn in FY19).

Exhibit 18: Rising debt levels owing to increase in working capital

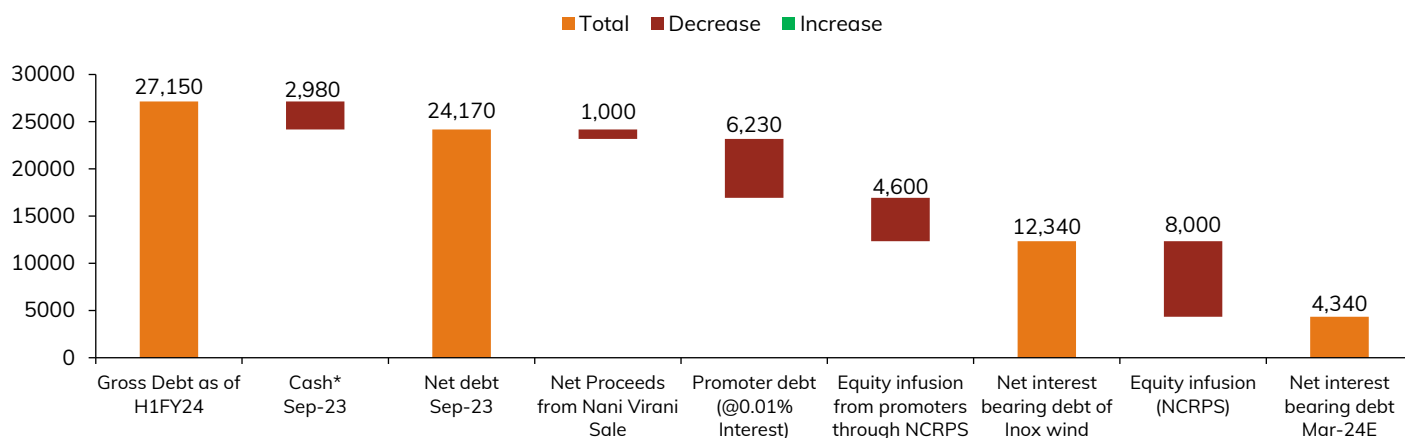


Source: I-Sec research

However, the promoters have till date infused interest free debt (interest cost of 0.01%) worth INR 18bn over the last five quarters and the recent sale of its wind asset (Nani Virani) for a total consideration of INR 2.9bn is likely to fructify by FY24E.

These proceeds will be used to repay high cost debt – a total of INR 21bn of debt is expected to be repaid by Mar'24E. Thus, INOX shall be net debt free by Mar'24E.

Exhibit 19: INOX's net interest paying debt to reach INR 4,340mn by FY24E



Source: Company data, I-Sec research | *includes non-current FDs

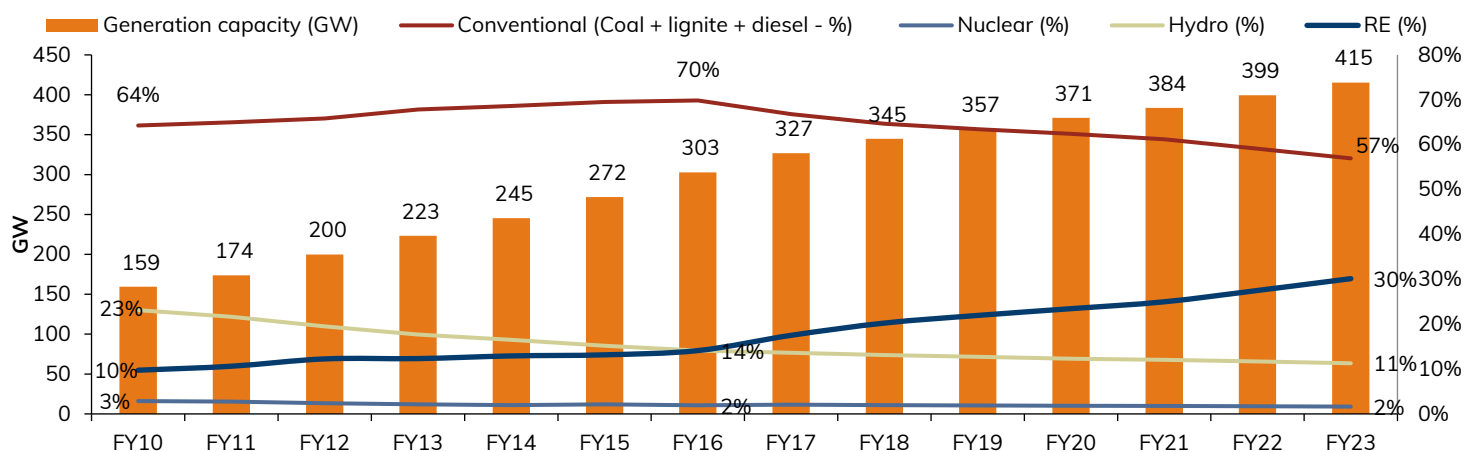
Wind capacity addition saw a slump

- India's RE generation capacity has grown at a CAGR of 15% over FY10-FY23 to 125GW as of FY23, outpacing total generation capacity growth of 7% in the same period.
- This led to share of RE capacity in total generation capacity to increase to 30% in FY23 (as compared to 10% in FY10).
- Solar capacity addition gained prominence owing to a sharp reduction in solar tariffs, increasing efficiency of solar capacity over the years and the relative ease of project execution compared to wind capacity.
- Wind power was 70% (12GW) of India's RE capacity in FY10, but dropped to 34% in FY23 (43GW). This was largely led by a steep rise in solar capacity and also sharp reduction in wind capacity addition.
- Wind capacity addition took a major hit in 2017, as India moved away from feed-in tariff mechanism to a bid-based tariff mechanism. This led to a strong dip in wind capacity addition from high of 5.5GW in FY17 to 1.1GW in FY22.

Strong capacity addition at 7% CAGR over last 14 years

India's generation capacity has witnessed growth of 7% CAGR over the last 14 years and has grown 2.6x over the period to 415GW as of Mar'23 (compared to 159GW as of Mar'10).

Exhibit 20: Domestic capacity addition grew at 7% CAGR to 415GW; RE capacity grew at 16% CAGR to 125GW



Source: I-Sec research

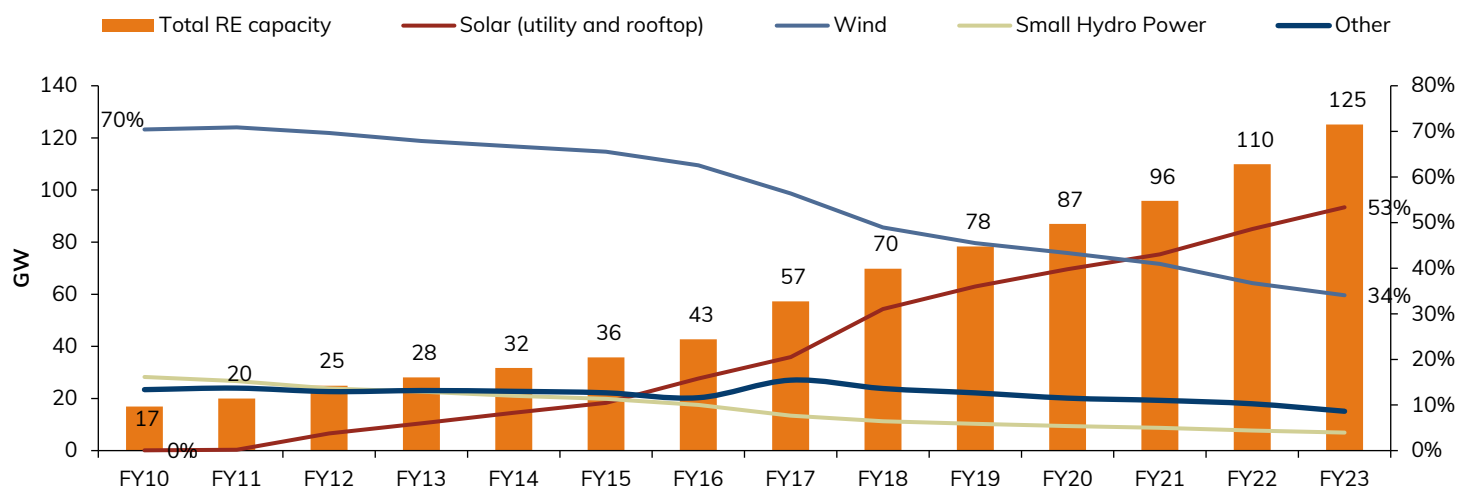
Bulk of the capacity addition was done via conventional (coal and lignite) capacity, as it increased from 84GW in FY10 to 211GW in FY23. However, owing to a general shift from coal-based capacity to RE coupled with reducing cost of RE power, RE capacity addition increased at a CAGR of 16% over FY10-FY23 to 125GW as of Mar'23 (vs. 16GW as of Mar'10).

The share of conventional capacity has reduced to 57% as of FY23 (vs. 64% in FY10), whereas RE's capacity has increased to 30% as of FY23 (vs. 10% in FY10).

RE capacity grew 7x to 125GW over last 14 years

Domestic RE capacity has been strong over the last 14 years. Total RE capacity has grown from a mere 17GW in FY10 to 125GW in FY23 at a CAGR of 15%. In FY10, wind capacity accounted for the bulk of RE capacity at 70% while solar capacity was negligible in FY10.

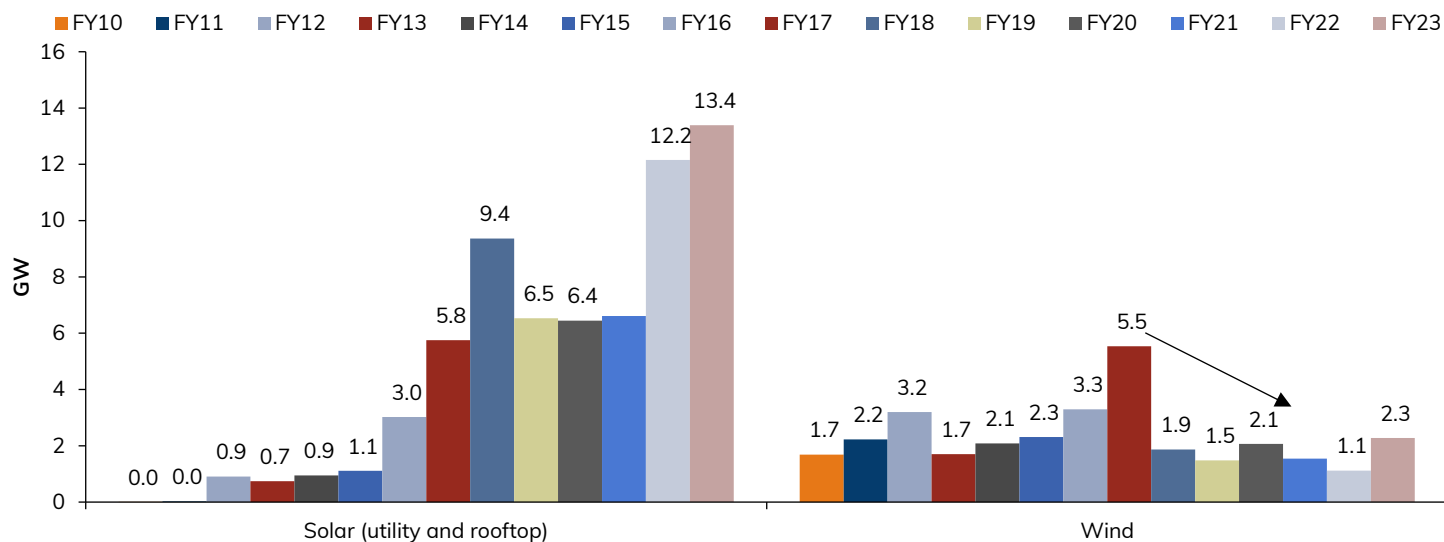
Exhibit 21: RE capacity at 125GW as of FY23; share of solar and wind at 53% and 34% respectively



Source: I-Sec research

However, with a sharp reduction in the cost of solar power over the years coupled with rising efficiency of solar capacity, solar capacity addition picked up pace and accounts for 53% (67GW) of total RE capacity as of FY23; while the share of wind capacity has declined to 34% (43GW) as of FY23.

Exhibit 22: Annual solar and wind capacity addition over the years



Source: I-Sec research

While annual solar capacity addition has grown exponentially over the years to 13.4GW in FY23, wind capacity addition peaked in FY17 at 5.5GW and incremental capacity addition has tapered off since.

Why did wind capacity addition peak in FY17?

Towards the turn of the century, as India started to focus on RE, the country introduced policies to promote and incentivise the installation of renewable power. With the changes in policies and bidding mechanisms there were several phases of both highs and lows as shown in Exhibit 23.

Generation-based incentive (GBI)

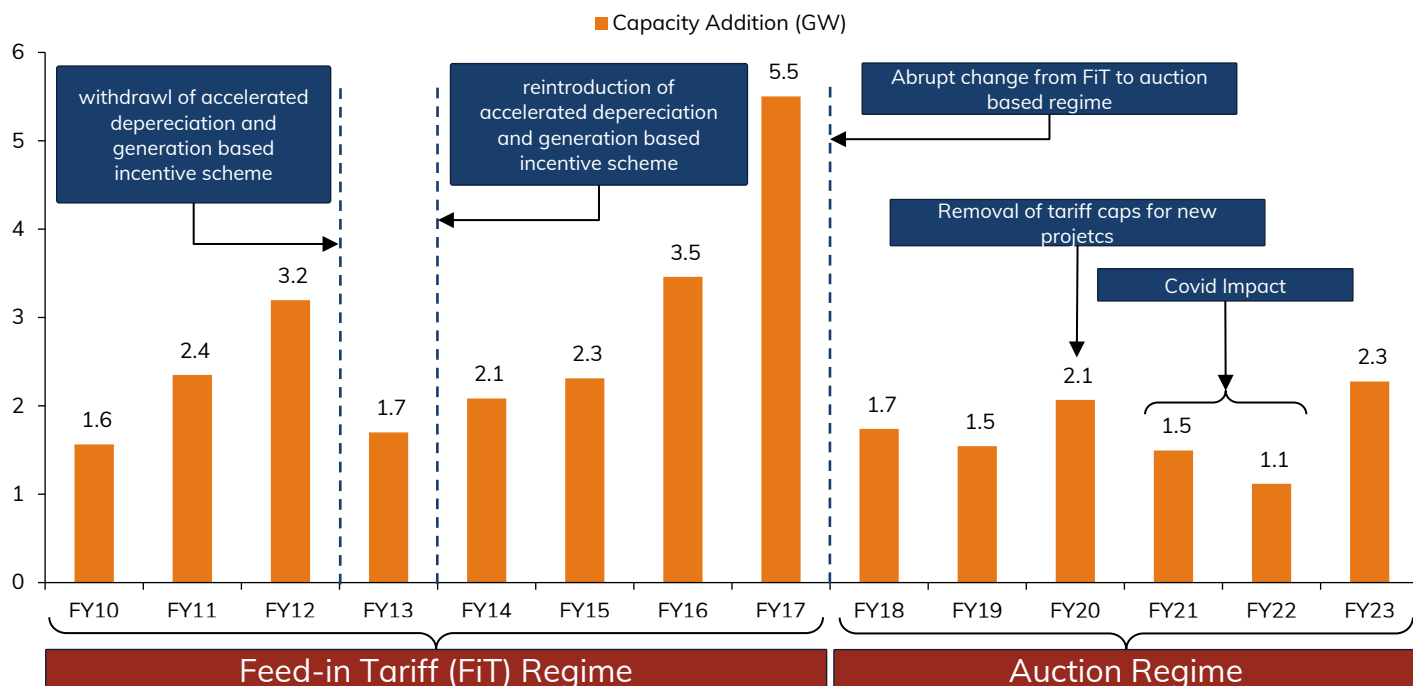
This policy provided an incentive of INR 0.50 per unit of electricity fed into the grid over and above the state-fixed tariff for a period of no less than four years and a maximum period of 10 years. This scheme was introduced to encourage the entry of large independent power producers and FDI to the wind power sector and increase actual generation of power by incentivising higher efficiencies with the help of generation/outcome-based incentives.

Accelerated Depreciation (AD) scheme

This scheme allowed investors to take advantage of high depreciation on assets in their initial years, which allows the asset owner to write-off more of the value of the asset during the initial years of ownership, thereby reducing the greater proportion of taxable income.

The objective of the scheme was to encourage private sector participation and investment in the development of projects as well as to drive growth of the domestic manufacturing industry. The AD scheme was withdrawn in response to concerns that it had: 1) incentivised the development of inefficient capacity, rather than generation; 2) appealed to a restricted group of investors; and 3) had become more of a tax instrument than a vehicle for the development of a sustainable industry.

Exhibit 23: Major events/changes in the wind industry



Source: I-Sec research

Shift away from feed-in tariff mechanism to bid-based price discovery

Prior to 2017, wind projects operated on a feed-in tariff mechanism, wherein the power buyer paid a fixed price (set prior to the execution of project) for the power purchased. Also, states gave various generation-based incentives towards the wind projects.

However, government scrapped the feed-in tariff mechanism in 2017 and introduced reverse e-auction bidding system for the awarding of wind projects. Under reverse e-auctions, participants understand the lowest bid at any given time and have an option to match their bid with the lowest bid or reduce the bid even further. The incentives too were removed under the bid-based mechanism.

This led to a sharp reduction in discovered prices in wind auctions, as developers rushed to win projects over profitability. The discovered prices were too low to make the entire project economically viable.

Rush to high wind states to get best sites

With India shifting away from the feed-in tariff mechanism, profitability of the bid-based wind projects depended heavily on the wind site's attributes – average wind speed, site terrain, etc.

This led to a rush from power developers to high wind states like Gujarat, Karnataka, Tamil Nadu, Kerala, etc. to set up wind capacities. Thus, wind capacity addition in the interiors of the hinterland dropped significantly.

Over a period of time, land acquisition in high wind states too became difficult owing to rising costs, depleting wind sites in high wind states and also local agitations.

...set for better times on a new relaid pitch

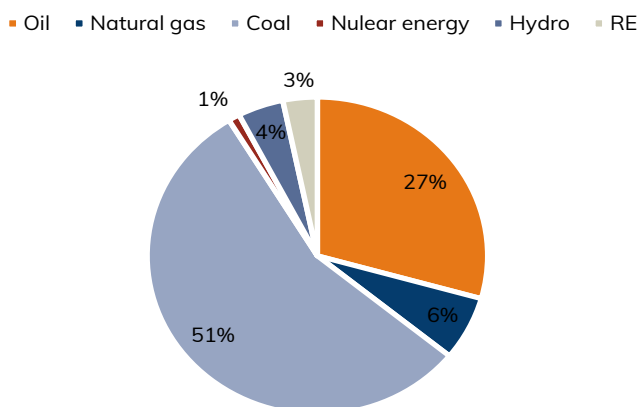
- Government has proposed to remove reverse e-auction in pure wind bidding.
- India is looking to reduce carbon emissions from generation of electricity. Note: Electricity contributes 50% of carbon emissions.
- To meet the demand and increase renewables penetration, the Indian government has planned wind capacity addition of 8GW per annum.
- It also wishes to auction the procurement from wind at 10GW per annum, However, the mix of tenders is in favour of hybrid bids.
- India has completed 3GW of wind auction (based on our assumptions of wind components in hybrid). Tender pipeline is healthy at 22GW (eq. capacity of 9GW).
- Government has set renewable purchase obligations for next six years. Specifically, it has also brought in separately wind renewable purchase obligation to ensure increase in wind capacity addition.
- To ensure that renewable purchase obligations are met, government has brought RPO obligations under Energy Conservation Act. It has brought penal provisions if obligations are not met. Hitherto, there was not

India doubles down on carbon pledge

India's carbon emission as of 2020 stands at 800mtoe (million tonne oil equivalent). Of this emission, oil contributes 27%, natural gas 6% and coal stands at 51%.

At the COP 21 summit in 2015, India had committed to reduce carbon intensity by 35% of its 2005 levels. And recently, in the 2022 COP 26 summit, India elevated the target to reduce carbon intensity of the economy by 45% of its 2005 level by 2030.

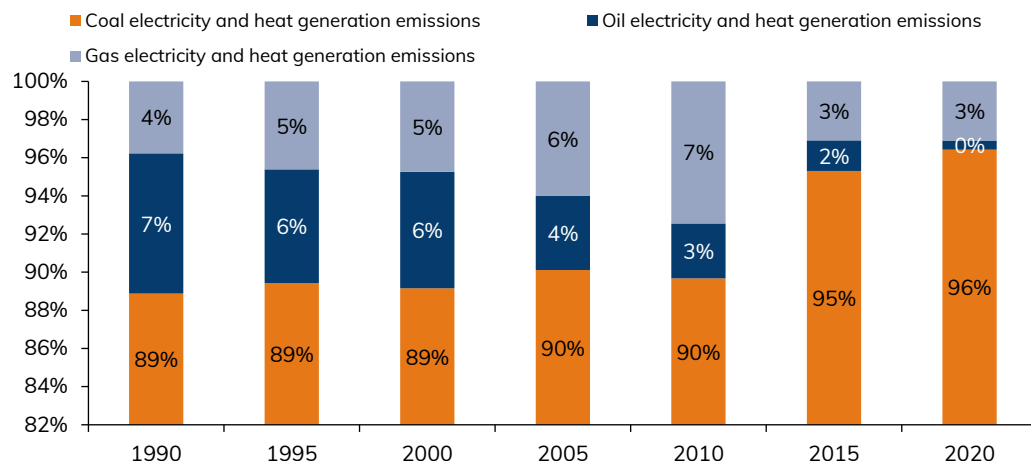
Exhibit 24: India's mode-wise share of carbon emission; carbon emission stood at 800mtoe as of 2020



Source: I-Sec research

Coal accounts for the largest share of carbon emission in the economy. Thus, to reduce the carbon intensity of the economy, it is essential to reduce the power sector's carbon footprint.

Exhibit 25: Mode-wise carbon emission from electricity



Source: I-Sec research

Since coal accounts for 96% of carbon emissions from the power sector, it is essential for India to reduce its dependence on coal to meet its target of 45% reduction in carbon emission by 2030.

A slew of positives from policy front

No reverse auction; closed envelope bidding

Since 2017, India moved away from feed-in tariff mechanism to reverse e-auction for the awarding of wind capacities. The reverse e-auction is a process where the bidders can compete online in real time. However, the wind capacities did not materialise due to irrational assumptions by the bidders – on evacuation and land acquisition for the most suitable sites.

Note that the reverse e-auction mechanism faced challenges, such as:

- Low tariffs affecting the profitability and sustainability of the developers
- Cancellation of bids due to non-compliance with ceiling tariffs or lack of demand from DISCOMs
- Developers rushed to select sites in a few high wind potential states leading to pressure on land and evacuation infrastructure
- Delays in signing power purchase agreements (PPAs) due to disputes over tariffs or land availability
- Lack of clarity on land and transmission availability and allocation
- Disincentivising innovation and quality improvement in technology and services

The government decided against reverse bidding for wind energy projects in Jan'23. It also said it would issue tenders inviting bids for 10GW of wind power projects every year until 2030.

Introduction of closed-envelope bidding

The new bidding mechanism will be based on a single-stage 'two envelopes' basis, where bidders will submit both technical and financial bids simultaneously. The technical bids will be opened first and evaluated for eligibility criteria. The financial bids will be opened only for those bidders who qualify in the technical evaluation. The bidder who quotes the lowest tariff will be declared as the successful bidder. The

cumulative capacity in any of the eight states will not be more than 2GW. Power from each state bids will be pooled and offered to DISCOMs on a single tariff-basis, under power supply agreements. The new bidding mechanism is expected to have several advantages over the reverse e-auction process, such as:

- Ensuring viable, fair and transparent price discovery based on market demand and supply
- State-wise bidding will be published in advance, which will provide certainty and stability to the developers and investors
- Encouraging innovation and quality improvement in technology and services
- Reducing disputes and delays in signing PPAs
- Optimising land and transmission utilisation across states
- Wind projects can come up in all the eight states, ensuring faster execution and even uniform growth

Stepping up the renewables auction trajectory – wind at 10GW

India is looking to auction of 50GW of renewables per year in the next five years. Of this, it has marked 10GW of bids for wind-specific renewables; the balance 40GW is likely to be solar, solar-wind hybrid, round-the-clock RE power, etc.

The government has also set monthly and quarterly targets for renewable capacity auctions for FY24 by NTPC, SECI, NHPC and SJVN – the RE implementing agencies. The government has directed the implementing agencies to bid 50GW of renewable capacity in FY24, of which 10GW is expected to be wind. While NTPC and SECI are mandated to auction 12.5GW of solar/hybrid and 2.5GW of wind each, NHPC and SJVN have been given targets to auction off 7.5GW of solar/hybrid and 2.5GW of wind each in FY24.

However, we note that apart from 10GW of wind, tender for 40GW consists of solar and hybrid capacity. Hybrid tender will entail the addition of wind capacities. As a result, the plan of 50GW auction could translate into ~15GW of wind capacity auction.

Exhibit 26: Source wise capacity addition plant till 2032

S.No.	Source	Capacity Addition in 2022-27 (MW)	Capacity Addition in 2027-32 (MW)	Total	Addition per year (MW)
1	Solar PV	131,570	179,000	310,570	31,057
2	Wind Power	32,537	49,000	81,537	8,154
3	Coal	25,580	25,480	51,060	5,106
4	Hydro*	10,814	9,982	20,796	2,080
5	Nuclear	6,300	6,600	12,900	1,290
6	Pumped Storage	2,700	19,240	21,940	2,194
7	Biomass	2,318	2,500	4,818	482
8	Gas Power	0	0	0	-
	Total (MW)	211,819	291,802	503,621	50,362
	Battery Storage (MW/MWh)	8,680 / 34,720	38,564 / 201,500		

Source: I-Sec research

The need for wind capacity addition is being acknowledged in the *National Electric Plan* for capacity addition over the next decade. It expects wind capacity addition of 81GW over 2022-32, which is equivalent to 8GW addition per annum.

Wind-specific auctions picking up again

After a slump in wind tendering activity in recent years, wind tendering activity is looking up again. India's power demand growth is expected to remain high in the coming years and given the general shift from conventional to RE power, demand for RE power is expected to increase at a higher pace.

Given the increasing power demand, the projects are becoming more complex. India started with the plain vanilla solar and wind capacities, having moved onto hybrid, RTC and now the latest firm despatchable RE power.

Exhibit 27: Recently floated RE tenders with potential wind capacity

Sr. No.	Tender floated by	Capacity (MW)	Type	Solar	Wind
1	SECI hybrid IV	800	Hybrid	800	240
2	SECI Tranche XV	1,300	Wind		1,300
3	SECI	1,500	Hybrid	1,500	450
6	GUVNL	1,000	wind		1,000
8	SJVN	1,500	Hybrid with storage	1,500	450
12	AEML	1,500	Hybrid	1,500	750
13	RUMSL	750	Hybrid	750	375
14	SECI-FDRE-I	500	FDRE	900	250
15	SECI-FDRE-II	1,500	FDRE	750	750
16	SECI-FDRE-III	800	FDRE	400	400
17	SECI-FDRE-IV	1,260	FDRE	630	630
18	NHPC-FDRE-I	1,500	FDRE	750	750
20	SECI tranche XIV	2,000	Hybrid	2,000	600
22	GUVNL	500	Hybrid	500	150
24	SJVN	300	Wind		300
Total		16,710		11,980	8,395

Source: I-Sec research

As the demand for firm RE increases, importance of wind in the RE generation mix is expected to rise (given wind capacities ability to generate after solar hours).

The trend is already surfacing in recent RE tenders floated by government agencies. We expect potential wind capacity addition from the recent tenders at 8.4GW.

Exhibit 28: Immediate opportunities with PSUs

Developer	Tender size (MW)	Type of tender	Last date of bid
NTPC	1000	Supply of turbines	20/12/2023
SJVN	300	Supply of turbines + O&M	26/12/2023

Source: I-Sec research

Recent tenders for supplying wind turbines for PSUs have an opportunity size of 1300MW. NTPC tender is pure wind generator supply tender for 1000MW, while the SJVN tender is for 300MW of turbine supply plus comprehensive O&M for 5 years.

Specific RPO for wind

By having a dedicated RPO for wind, the government can provide a stable and supportive policy environment for the growth of wind energy projects in India. This can help overcome some of the hurdles that the wind sector faces, such as securing land, connecting to the grid, building transmission lines, and setting fair tariffs.

A separate RPO for wind can also ensure fair competition for the wind sector and attract more investments and innovations in this domain. This can help achieve the national goal of 500GW of RE by 2030, of which 100GW is projected to stem from wind energy (currently at 43GW) as per National electric plan 2022.

The Ministry of Power introduced a specific Renewable Purchase Obligation (RPO) for the entire country, based on the source of generation. Thus, based on this policy, India has set a target to source 7% of its power consumption from wind energy by 2030.

Exhibit 29: India RPOs targets by 2030

Year	Wind RPO	Hydro RPO	Other RPO	Total RPO
FY23	0.80%	0.40%	23.40%	24.60%
FY24	1.60%	0.70%	24.80%	27.10%
FY25	2.50%	1.10%	26.40%	29.90%
FY26	3.40%	1.50%	28.20%	33.00%
FY27	4.30%	1.80%	29.90%	36.00%
FY28	5.20%	2.20%	31.40%	38.80%
FY29	6.20%	2.50%	32.70%	41.40%
FY30	6.90%	2.80%	33.60%	43.30%

Source: I-Sec research

If we consider a base demand CAGR of 8% till 2030, India will require to source ~180BU of wind power by 2030 – and India produced 70BU of wind energy in FY23 from 42GW of capacity. Thus, the country will need to procure additional 110BU from wind capacity and it will require ~75-80GW of additional wind capacity, assuming a PLF of 25% by 2030 to meet the RPO target.

Repowering – to increase market size

India started wind energy installation in 2003. A number of turbines are old and of lower capacities leading to suboptimal utilisation of the wind resources at the site. Many of the old turbines installed in the initial years are of sub-MW capacity installed at high wind sites, thus underutilising the potential of these sites.

Exhibit 30: Repowering potential is strong at 25.4GW

States	Capacity below 0.5MW	Capacity below 0.5MW-1MW	Capacity below 1MW-1.5MW	Capacity below 1.5MW-2MW	Total
Tamil Nadu	1.2	2.9	1.8	1.5	7.4
Maharashtra	0.2	1.1	1.4	0.7	3.4
Karnataka	0.0	1.0	0.7	1.4	3.0
Gujarat	0.1	1.5	1.4	1.8	4.7
Rajasthan	0.0	1.2	0.8	0.9	2.9
Madhya Pradesh	-	0.3	0.3	1.0	1.6
Kerala	-	0.0	-	0.0	0.0
Andhra Pradesh	0.1	0.4	0.2	1.7	2.4
Total	1.6	8.3	6.4	9.1	25.4

Source: I-Sec research

The draft repowering policy was floated by the power ministry to incentivise the replacement of these older turbines with new larger ones. Aim is to replace all turbines less than 2MW size under the new Policy. Overall, out of 25GW of turbines currently installed, <2MW are operational.

Note that the Karnataka state regulator has approved repowering of the old turbines.

Eligibility criteria for repowering of wind turbines

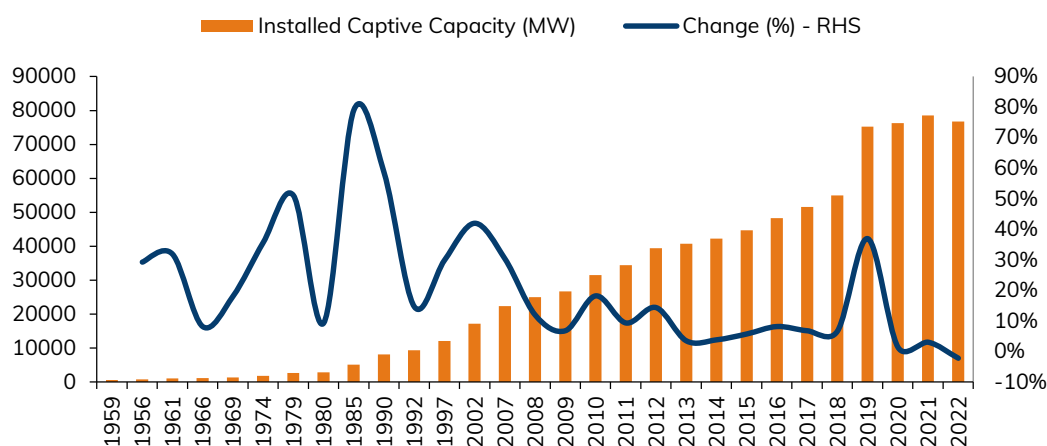
- Wind turbines rated below 2MW capacity
- All wind turbines not in compliance with latest quality norms
- Turbines which have completed design life
- Commercial and voluntary consideration after 15 years

...aided by further easing of pitch for captives

- India captive power consumption is at 235BU. Incrementally, captive consumers are looking to meet their electricity needs through renewables to reduce their carbon footprint (partly aided by ESG ratings)
- Note that the renewable obligations are also applicable to captive consumers and captive consumers are more likely to meet their obligations
- Also, the interstate transmission charges are NIL for renewables aiding in the favourable outlook
- Further, the state's renewable policies are allowing higher capacity addition for wind sector. For example: Wind capacity addition by a captive consumer in Gujarat was capped; under the new policy, the cap has been removed
- Plus, INOX group has set up its own renewable IPP platform to meet renewable demand across its group companies

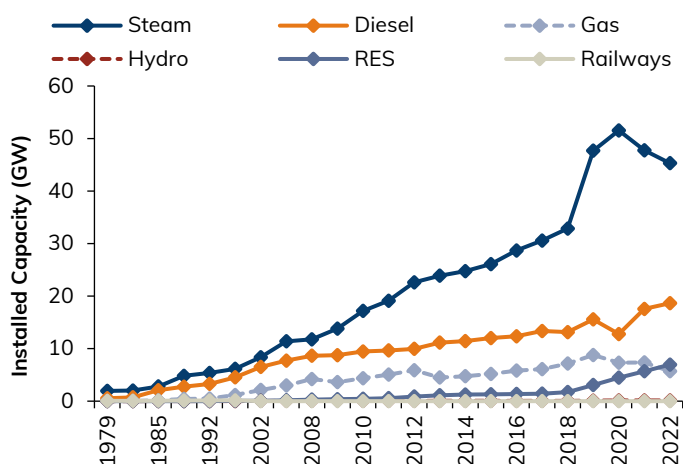
Installed captive capacity has remained flat since 2019. However, there has been growth in installed captive solar power capacity, which has been offset by a decrease in captive thermal power capacity.

Exhibit 31: Installed captive power capacity has remained flat since 2019



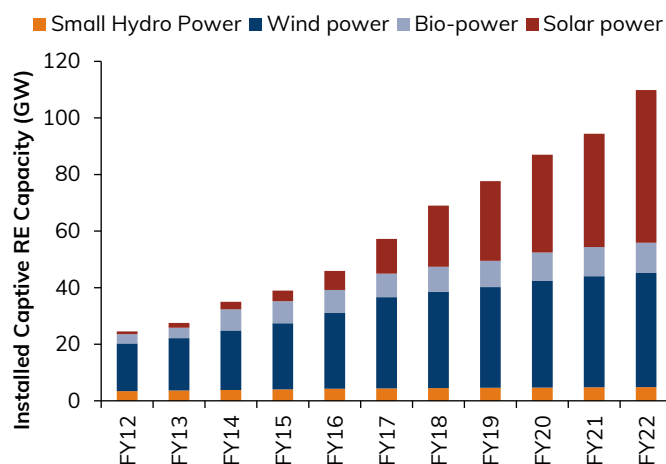
Source: CEA, I-Sec research

Exhibit 32: RE captive installed capacity is on the rise



Source: CEA, I-Sec research

Exhibit 33: Captive solar power capacity has grown fastest



Source: CEA, I-Sec research

How much of the captive capacity can shift to RE?

Industrial and commercial activities need a stable source of supply. Thus, captive generation and consumption largely depends on thermal coal-based capacity. Captive generation stood at 235BU in FY22, growing at 5.6% CAGR over the last decade.

However, owing to growing demand from consumers for ESG compliant products, C&I segment is looking to add more of RE captive capacity for consumption.

Exhibit 34: Source wise captive power generation [BU]

Year	Thermal				Hydro	RES	Total
	Steam	Diesel	Gas	Total			
2012-13	113	8	21	142	0.1	1.8	144
2013-14	118	9	20	147	0.1	1.9	149
2014-15	128	10	21	159	0.1	2.7	162
2015-16	137	8	21	166	0.1	2.0	168
2016-17	138	9	23	170	0.1	2.3	172
2017-18	144	8	25	177	0.1	2.3	180
2018-19	184	5	20	209	0.3	3.7	213
2019-20	206	2	25	233	0.3	6.3	240
2020-21	193	3	22	217	0.3	7.2	225
2021-22 (P)	204	2	20	226	0.4	8.5	235
CAGR (%)	6.8%	-14.1%	-0.4%	5.3%	12.8%	19.2%	5.6%

Source: I-Sec research

The trend is already evident when we compare the mode of captive power generation. Power generation from RE sources has registered a CAGR of 19% over the last decade to 8.5BU in FY22 (vs. 1.8BU in FY12). Coal-based generation CAGR has been 7% to 204BU during the same period while gas and diesel based generation have declined.

Exhibit 35: Estimated wind capacity addition requirement

	C&I captive base power demand growth (%)	Estimated base demand at 2030 (BU)	RES base demand (BU) at 50% RPO	Wind base demand at 50% share of RES	Wind capacity (GW) at 50% share of RES and 30% PLF
Bear case	5%	347	174	87	33
Base case	7%	404	202	101	38
Bull case	9%	468	234	117	45

Source: I-Sec research

We estimate captive RE sources to account for 50% of the base demand for C&I segment by 2030.

Under the base case, it will require sourcing of 202BU from renewable sources by 2030. Given the RTC power requirement for industrial customers, 50% of the RE will need to be sourced from wind capacities; thus, assuming 30% PLF for wind energy, 38GW of incremental wind capacity will be needed by 2030.

Under the bear case scenario, this incremental capacity addition is expected at 33GW and under the bull case it stands at 45GW.

We expect this trend of decreasing installed captive thermal power capacity to continue as industries adopt ESG. Hence, as industries add RE captive capacity, wind addition will receive a boost.

We believe that companies installing captive capacity will opt for players who provide end-to-end solutions. Hence, we believe INOX could potentially be a key beneficiary, as it is one among the only two players that provide end-to-end solutions.

Positives from new state policy for captive capacities

Gujarat and Rajasthan have recently unwrapped their respective new RE policies for captive usage. The new policy does not have any restriction on share of wind capacity, compared to contracted demand. In contrast, the earlier policy restricted it to 50% of the total contracted demand.

A major boost to wind capacity addition

If a C&I consumer contracts for 1GW of power through RE capacity, only 50% of that capacity could be wind and the rest solar. Further, considering 30% and 20% PLF for wind and solar, respectively, the customer could get only 250MW of power.

Thus to bridge this gap, the restriction on share of capacity has been removed. Thus, based on the PLF available at the RE site, the combination of solar and wind can be adjusted as per necessity and given the nature of wind plant to be able to generate at night as well, wind capacity addition is likely to get a major boost.

Snap of captive RE projects announcements in last 12month.....

Borosil Renewables

Borosil Renewables has already installed a 1.5MW wind power project. It is also in the process of investing in a captive 10MW wind-solar hybrid plant to generate RE for captive consumption.

Thermax

Thermax has commissioned a 45.80MW wind-solar hybrid captive power plant in the state of Gujarat. The facility has an installed capacity of 24.3MW of wind energy and 21.50MW of solar energy.

Welspun

As part of the environmental, social, and governance (ESG) journey, the company has entered into an arrangement for supply of RE under captive structure from Clean Max Thanos (CTPL). The company has subscribed to 26% equity share capital of CTPL by paying INR 380mn; the remaining 74% shareholding of CTPL is held by Cleanmax Group.

Hindustan Zinc

Hindustan Zinc has acquired 26% in Serentica Renewables India 4 Pvt Ltd for supply of 200MW.

UPL

UPL Ltd acquired 26% stake in Clean Max Kratos Pvt Ltd, which is into RE. Clean Max Kratos would develop and maintain a hybrid 28.05MW solar and 33 MW wind power project under the captive model, as envisaged under the electricity laws.

CEAT

CEAT has signed a Limited Liability Partnership agreement with Yellowstone Clean Energy LLP to invest up to INR 6mn in Cleanwin Energy Five in September Sep'23

In line with the norms to avail power for captive use, this also makes CEAT a 26% shareholder in Cleanwin Energy. Cleanwin will provide 5MW wind power to CEAT plants in Bhandup and Nashik, complementing these facilities' existing solar energy plants.

Grasim

ABReL Solar has operational solar capacity of 49.2MWp in Madhya Pradesh, Maharashtra and Uttar Pradesh. Furthermore, it is setting up 30-MWp solar and 21MW wind power capacities in Mahuva, Gujarat. ABReL holds 74% stake in ABReL Solar, while Hindalco, the captive power procurer for the entire capacity, holds the remaining.

Hindalco

Ayana Renewable Power has signed an agreement with aluminium and copper manufacturer Hindalco for round-the-clock supply of 100MW RE power. It will develop 330MW of solar and wind power generation capacity, backed with pumped hydro storage solutions from Greenko Energies, to supply carbon-free power to Hindalco.

...aided by higher capacity addition by public sector

- Indian government has set a target to install 500GW of RE energy by 2030
- In order to meet this target, Indian public sector entities are likely to increase their participation in setting up renewables sector
- We expect the likes of NTPC, SJVN, NHPC and NLC to have their fair share in RE capacity addition hybrid and pure wind auction
- Public sector entities select wind OEM suppliers through bids. Note: Bidders need to meet financial net worth criteria

The Indian government has set a target to install 500GW of RE capacity by 2030, as compared to 170GW as of FY23 (including Hydro capacity). To meet this target, Indian public sector entities are likely to step up their participation in RE capacity addition.

Given the low cost of borrowing for the public sector entities, we believe they are the best-placed to have significant market share of India RE capacity.

Exhibit 36: Existing RE capacity addition plans and pipeline (GW)

	RE capacity targets (GW)	Existing pipeline (GW)
NTPC	60	20
NLC	6	2.1
NHPC	NA	1.6
SJVN	5	3.5
Total	71	27

Source: I-Sec research

As per existing announcements, public sector enterprises have a total RE-based capacity addition plan of 71GW with a pipeline of 27GW. NTPC has the highest share among the public sector enterprises at 60GW and has a project pipeline of 20GW.

NLC has planned to add 6GW with a pipeline of 2GW, SJVN has plans to add 5GW with a pipeline of 3.5GW and NHPC has not yet announced any targets, but has a pipeline of 1.6GW.

Owing to the recent down turn in wind capacity addition, some of the leading players of the past have faced significant financial stress and running a negative net worth as on date (refer annexure II). This is likely to dissuade, and even disqualify in some cases, these companies from participating aggressively in the PSU tenders.

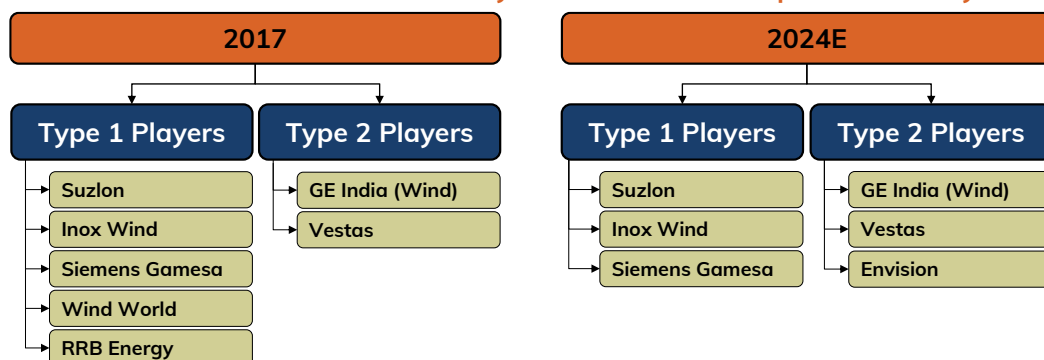
Also, we believe, public sector entities are likely to opt for wind players that provide end-to-end solutions. Given the exit of some of the major players in recent times, the duopoly in the domestic wind segment (providing supply + EPC + O&M) is likely to be the major beneficiary.

.... & Duopoly in full stack suppliers

- Wind turbine market constitutes two kind of suppliers: Type 1 is full stack suppliers (or turbine supply + EPC + O&M and Type 2 is turbine suppliers
- Indian wind turbine market has seen its share of bankruptcy owing to the downturns. As a result, a number of domestic players, with the ability to offer supply, EPC and O&M, have gone bankrupt.
- INOX and Suzlon are the only full stack suppliers left. Note: Siemens Gamesa, a significant marketshare holder historically, has negative net worth and is also facing financial issues at the parent company, making it unlikely to be participating player.
- A large set (>50% of market) of customers is looking to procure wind turbines from full stack supplier. Also, public sector entities are likely to procure from full stack supplier.
- We expect full stack suppliers to remain a duopoly in the medium term. Note: NTPC and SJVN are looking to select OEMs for 1.3GW capacity in the near term.

While India has several wind players, Suzlon and INOX are the only end-to-end solution providers (i.e. Supply+EPC+O&M).

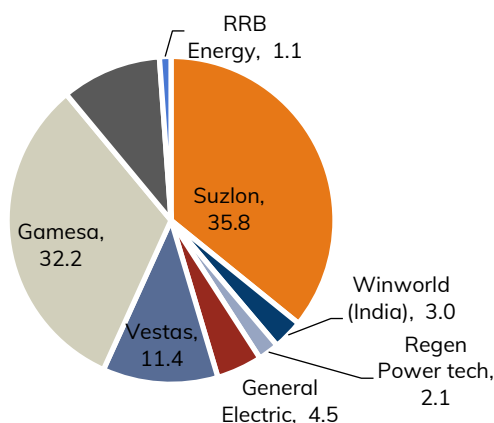
Exhibit 37: Inox and Suzlon are the only end-to-end solution providers today



Source: I-Sec research | Note: Type 1 players are full stack players (Supply+EPC+OEM), while Type 2 are suppliers only.

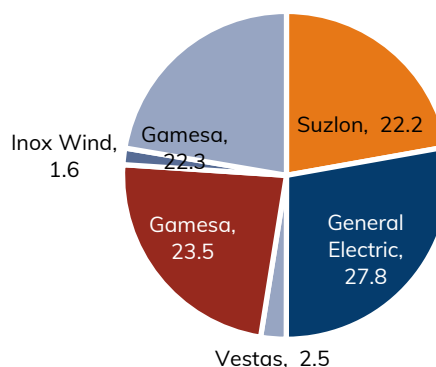
We believe players such as Siemens Gamesa who have not yet exited the EPC market, will do so soon after making continuous losses since FY18 (see Annexure II).

Exhibit 38: Market share of various WTG manufacturer in FY17 (%)



Source: Industry, I-Sec research

Exhibit 39: Market share of various WEG manufacturer in FY23 (%)



Source: Industry, I-Sec research

Additionally, as can be seen in Exhibit 37 and Exhibit 38, market fragmentation has reduced over the years due to non-participation/exit of some players. With the reduction in number of full stack suppliers and reducing market fragmentation, INOX and Suzlon could likely benefit the most from the resulting void in the Indian market.

...INOX readying for better times

- INOX has seen infusion of INR 22bn by sponsors and shareholders in last 24 months
- The money has been used to reduce external debt. We estimate net external debt: EBITDA to be <1
- It has won 350MW (25%) of the order book from public sector entities
- It has launched new turbines of 3MW. Note that market has moved to 3MW turbines

Company's high debt – a concern of the past

Inox Wind Energy Ltd, (holding company of Inox Wind) sold stake worth INR 13bn in the company over the last two quarters. The promoters have invested this cash into Inox Wind's NCRPS which will be used by the company to reduce their debt. As a result, Inox Wind's interest bearing debt is expected to reduce to INR 4.3bn by Mar'24 vs. INR 18bn as of Mar'23.

Exhibit 40: The company soon to be free of interest bearing debt

Inox wind debt profile	INR mn	Comments
Gross Debt as of H1FY24	27,150	
Less: Cash and cash equivalent	2,980	Includes non-current FDs as well
Net	24,170	
Less: Proceeds from sale of Nani Virani (net of debt)	1,000	Inox Wind expects to conclude sale of Nani Virani for INR 2,900mn by end-FY24E
Less: Promoter debt (Interest cost of 0.01%)	6,230	Cash infused by promoters after selling stake in Inox Green
Less: Equity infusion from promoters through NCRPS	4,600	Cash infused by promoters through NCRPS in Q2FY24
Net	12,340	
Less: Equity infusion from promoters through NCRPS	8,000	Cash expected to be infused by promoters through NCRPS in Q3FY24E
Net remaining	4,340	

Source: Company data, I-Sec research

Steps taken to shed debt

- The promoters infused INR 6.2bn in FY23, after selling some stake in Inox Green at the time of Inox Green's IPO.
- Inox Wind promoters have infused INR 4.6bn through the issuance of NCRPS in Q2FY24. This amount was raised through a stake sale of INR 5bn.
- Additionally, the promoters announced an infusion of another INR 8bn (pre-taxes and fees) through issuance of NCRPS. The promoters have successfully completed a stake sale of INR 8bn in Oct'23 to fund the same.
- Management has decided to sell Nani Virani Wind asset for a consideration of INR 2,900mn. The sale is expected to conclude in FY24.

Hence, we see INOX's interest bearing net debt to be at ~INR 4,340mn by Mar'24E.

Exhibit 41: Promoter's block deals in FY24

Date	No. of Shares	Price (INR/share)	Value (INR mn)
08-Aug-23	2,39,96,859	208	4,991
31-Oct-23	3,83,62,000	210	8,065
Total	6,23,58,859	209	13,056

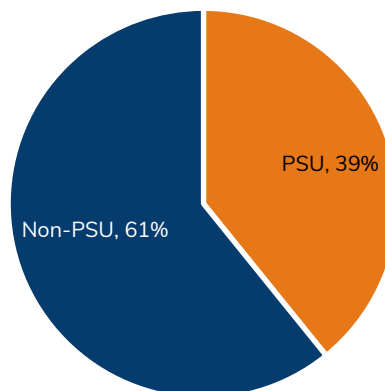
Source: I-Sec research

Healthy presence in PSU orders

Of the total order book of 1.3GW as of Sept-23, Inox hold orders worth 500MW from NTPC. Of this 500MW, it has received a repeat order of 150MW in FY24E.

PSU orders stand at 39% of the total order book and non-PSU stand at 61%

Exhibit 42: Healthy presence in PSU orders



Source: I-Sec research

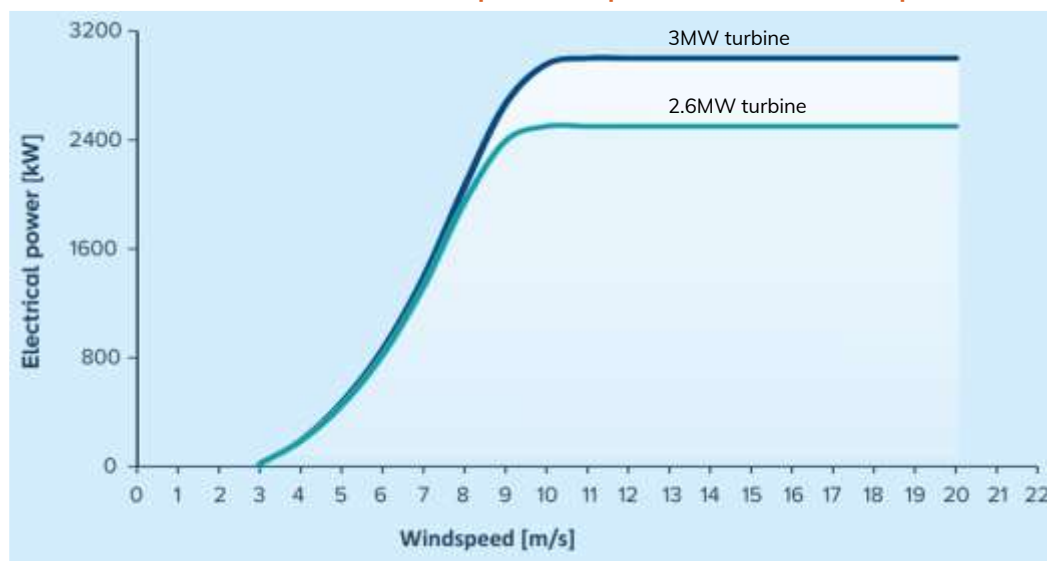
Given the high RE capacity pipeline for NTPC, and its present and historical association with NTPC, Inox is well placed to capitalise on this opportunity, in our view.

Future ready products – the 3MW WTG

INOX received certification for their 3MW wind turbine in H1FY24. In the same manner as their 2MW turbine, the company sourced the technology from AMSC, Austria, a wholly-owned subsidiary of US-based American Superconductor Corporation, for exclusive manufacturing of these turbines.

INOX has to pay a royalty of EUR 10,000 (INR 0.9mn) per turbine to AMSC only for the first-250 3MW turbines manufactured by INOX.

Exhibit 43: 3MW turbines have more power output at the same wind speeds



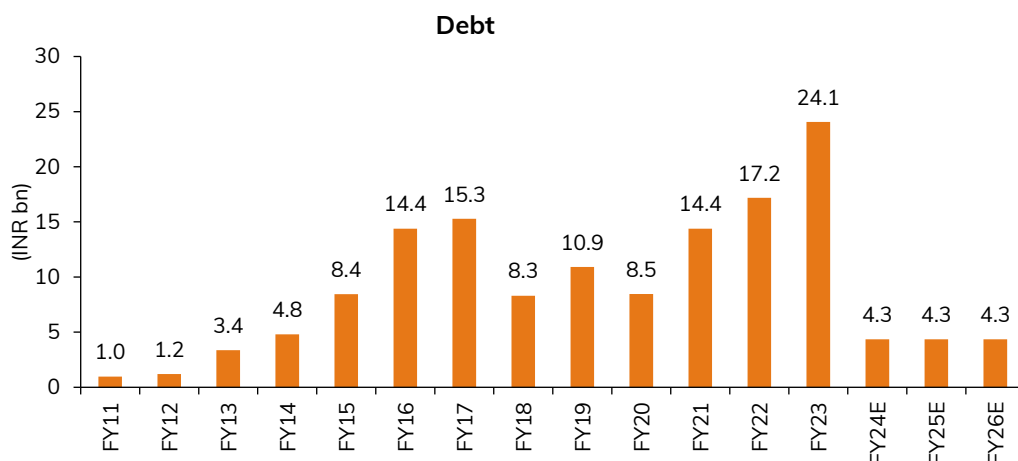
Source: Industry, I-Sec research

Financial analysis and assumptions

Debt analysis

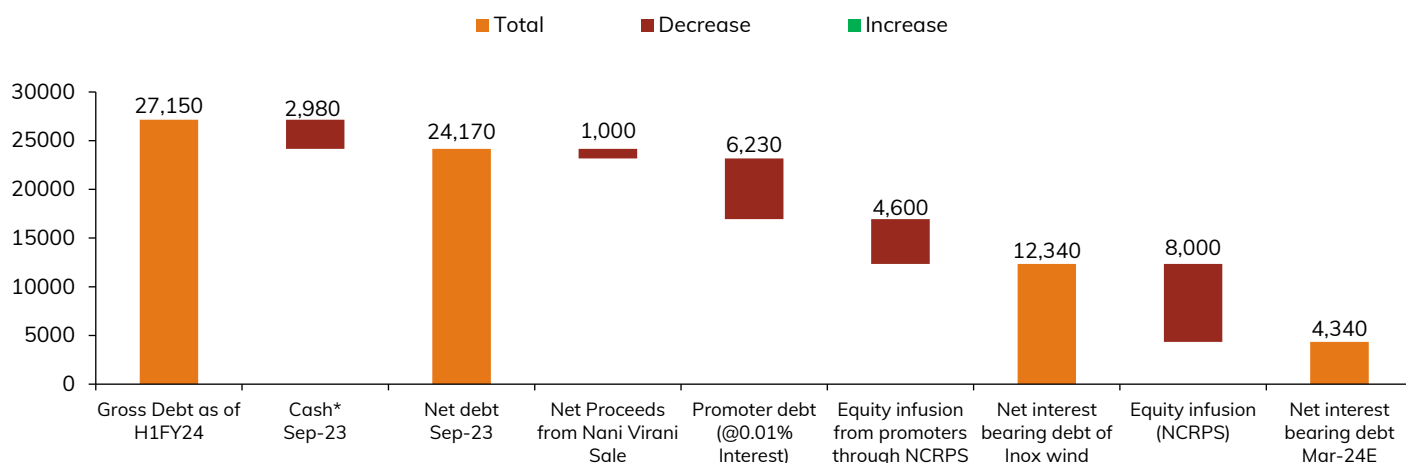
We factor in the reduction in the company's net interest bearing debt to INR 4.3bn by Mar'24E, from INR 27.15bn as of H1FY24. The company has infused INR 7,600mn in Q3FY24 (promoters have successfully sold INR 8,000mn worth of shares in Oct'23; assuming INR 400m for taxes and transaction fees) and sale of Nani Virani will be completed by end-FY24E for INR 2.9bn.

Exhibit 44: Company's debt position



Source: Company data, I-Sec research

Exhibit 45: Inox Wind's net debt to reach INR 4,340mn by FY24E



Source: Company data, I-Sec research

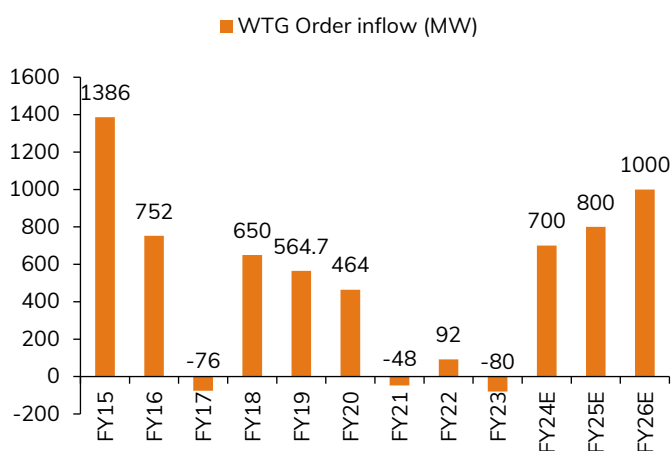
Order book analysis

INOX has struggled with order inflows in the past three years owing to lower tendering and auctions of wind projects in the domestic market. However, with the government's policy measures, tendering and awarding activity of wind projects has picked up in the last few quarters.

INOX has recently won two orders in H1FY24 from NTPC for 150MW and AB Energia for 100MW, taking the total order inflow for H1FY24 to 250MW. INOX currently has an outstanding order book of 1,276MW. We assume the outstanding order book to grow at CAGR of 14% to 1,670MW by FY26E.

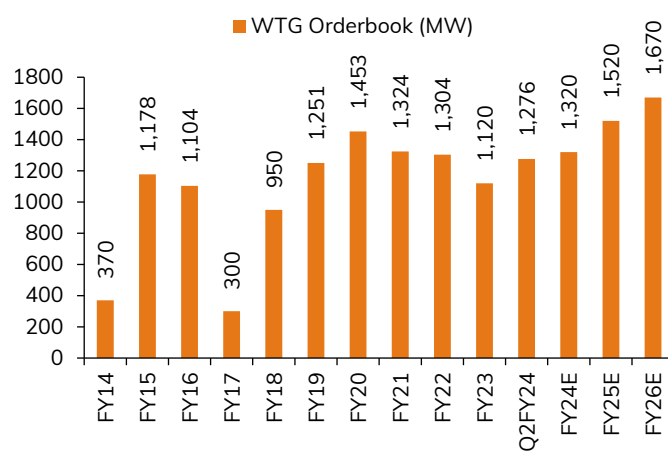
However, note that the current order book consists of a slow moving order of 500MW. Thus, taking the net executable order to 776MW as of Sep'23.

Exhibit 46: Order inflow trend of company



Source: Company data, I-Sec research

Exhibit 47: Order book trend of company



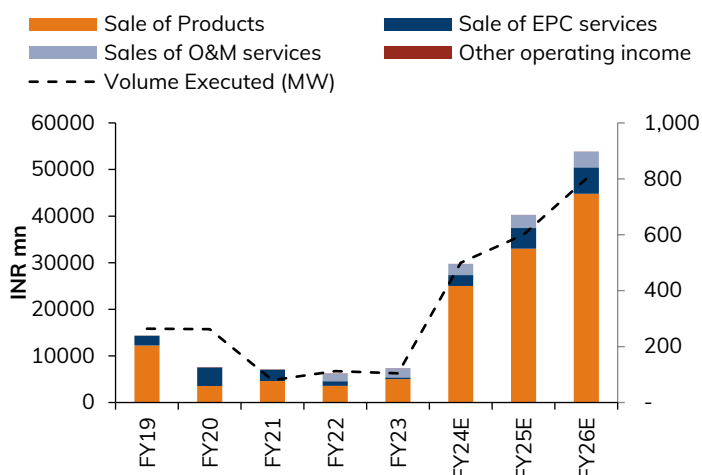
Source: Company data, I-Sec research

Revenue analysis

We model improved execution of 500MW/600MW/850MW over FY24E/FY25E/FY26E, resulting in revenue growth of 94% CAGR from FY23 to FY26E.

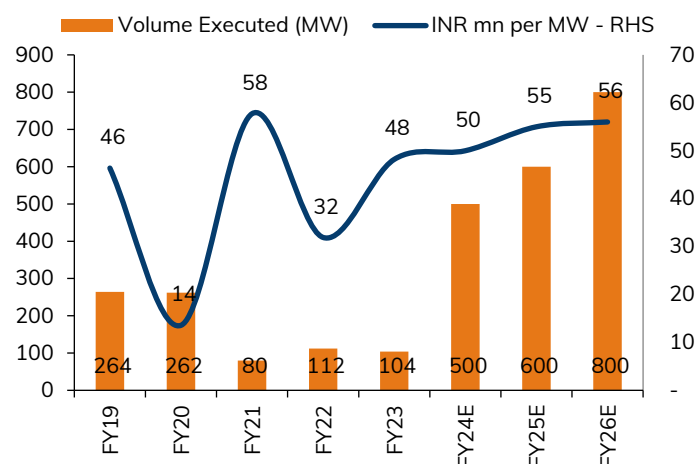
We anticipate all three revenue streams – product sale, EPC revenue and O&M services to grow at 108%, 146% and 20% CAGR, respectively, over FY23-FY26E.

Exhibit 48: Revenues expected to improve with increasing execution



Source: Company data, I-Sec research

Exhibit 49: We estimate improved execution over the next 3 years



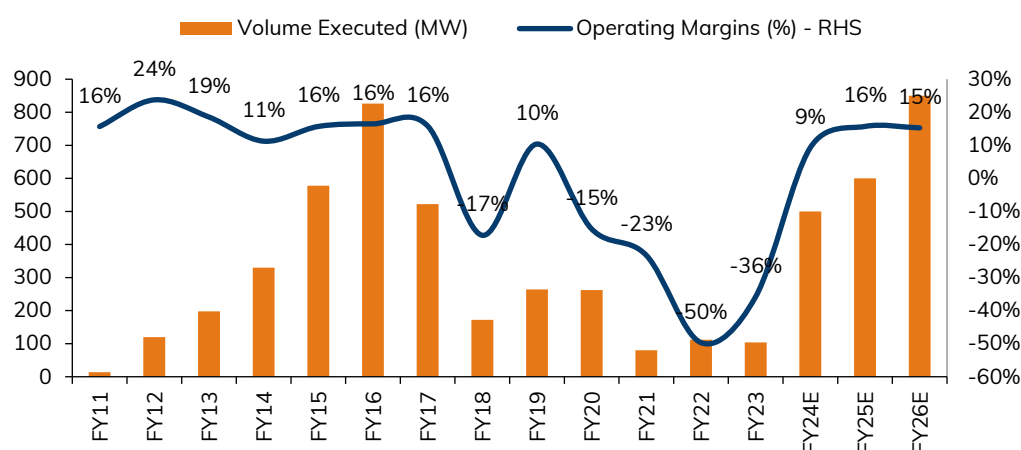
Source: Company data, I-Sec research

Margin analysis

With execution falling sharply after FY17, a lot of orders were cancelled, leading to inventory build-up. This inventory took a long time to be liquidated as new order inflows dried up. This led to a sharp contraction in gross margins and thus impacted operating margins as well.

We believe margins will return to FY16 levels of ~16% due to operating leverage backed by improvement in volume execution and growth in order inflow, as wind power orders gain traction.

Exhibit 50: We expect margins to improve as operating leverage kicks in on higher execution

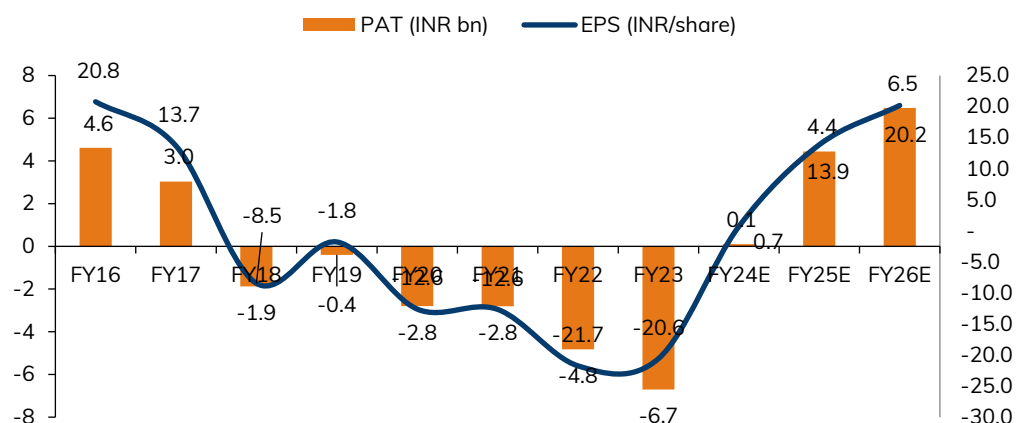


Source: Company data, I-Sec research

Profits estimated to breach FY16 highs

Inox Wind reported highest profit in FY16 of INR 4.6bn on the back of high execution and subsequently fell from FY17-FY23 on account of operating losses due to lower execution, rising debt and related finance costs.

Exhibit 51: Profits estimated to touch INR 6.5bn in FY26E



Source: I-Sec research

However, with successive rounds of capital infusion in the recent times, interest bearing debt is estimated to reduce to INR 4.7bn in FY24E. Also, operating margins are expected to improve with growth in execution.

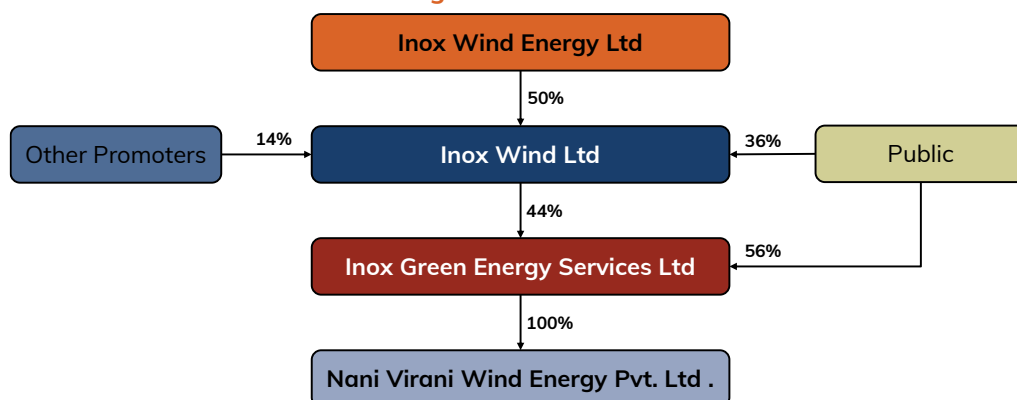
Thus PAT is expected to grow to INR 6.5bn in FY26E as compared to the loss of INR 6.7bn in FY23.

Inox Green – the O&M arm of Inox Wind

Inox Green is a wind power O&M service provider. They provide long-term O&M services for wind farm projects, specifically for wind turbine generators (WTGs) and the common infrastructure facilities on the wind farm which support the evacuation of power. They enjoy synergistic benefits as a subsidiary of Inox Wind, especially since Inox Green has an exclusivity agreement with Inox Wind to provide exclusive O&M services for all WTGs sold by Inox Wind through the entry of long-term O&M contracts between the WTG purchaser and Inox Green for a duration which typically range between five to 20 years

Inox Green is a 100% subsidiary of Inox Wind and owns a 100% subsidiary called Nani Virani which is a 50MW wind farm located in Gujarat. The company has recently decided to sell Nani Virani plant for a consideration of INR 2,900mn and the transaction is expected to be completed by FY24.

Exhibit 52: Inox Green shareholding structure

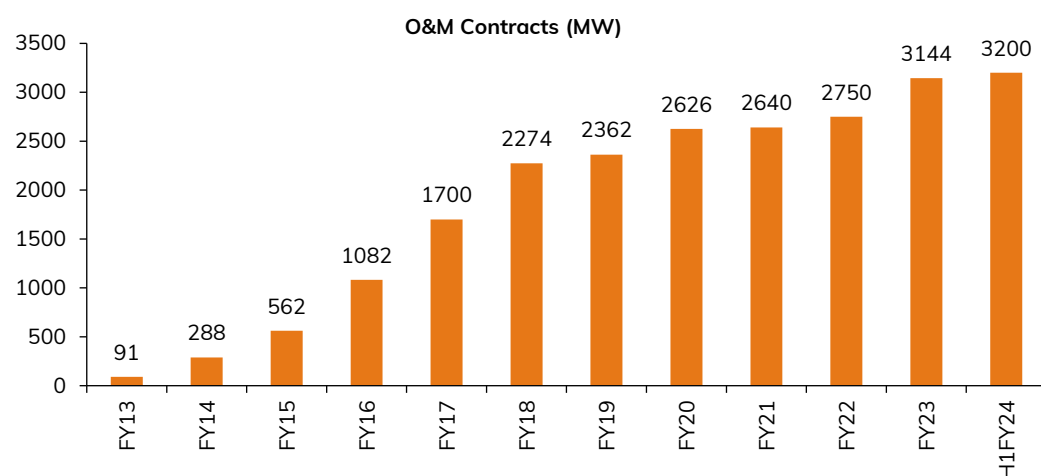


Source: Company data, I-Sec research

The business

Their business is one with stable incomes and high cashflow generation. Customers sign long-term contracts (5–20 years) with the company for O&M of the clients' wind farms and Inox Green gets paid on an annual basis.

Exhibit 53: O&M contracts with Inox Green

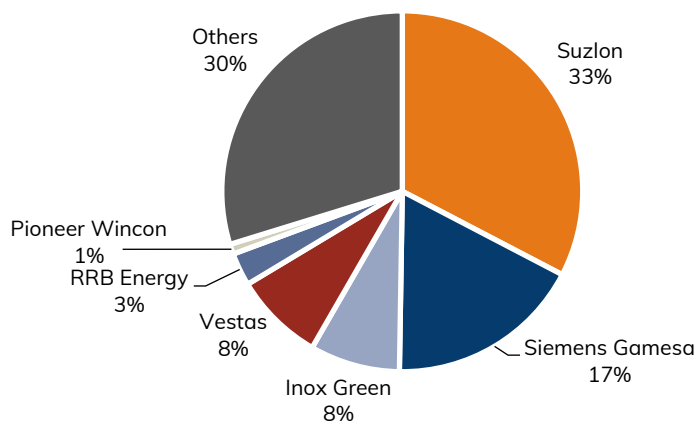


Source: Company data, I-Sec research

Market share and growth opportunity

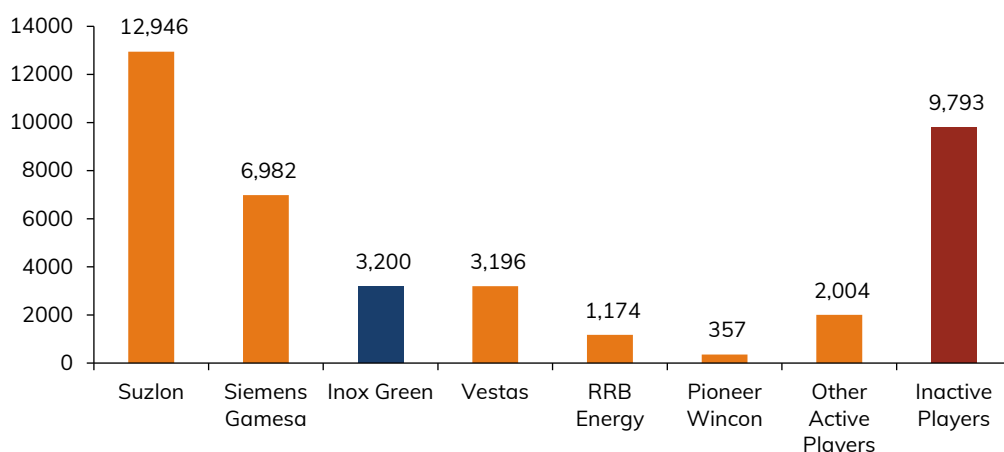
Inox Green is the third-largest player in the O&M space with an 8% market share. It is open to acquisitions to grow its market share. As per the company, there are currently 9,793MW projects with inactive players that can be potential acquisition targets.

Exhibit 54: Inox Green has third largest O&M portfolio in the country



Source: Company data, I-Sec research

Exhibit 55: 9,793MW worth wind assets with inactive players



Source: Company data, I-Sec research

Exhibit 56: Inox Green key financials

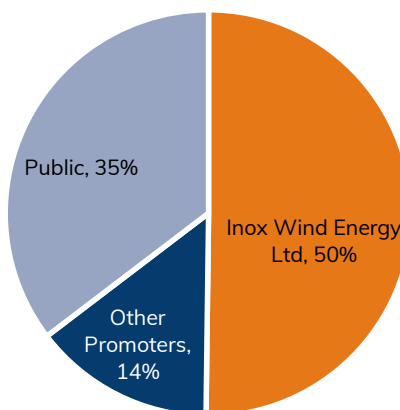
INR mn	FY20	FY21	FY22	FY23
O&M Contracts (MW)	2,626	2,640	2,750	3,144
Revenue	1,653	1,722	1,722	2,542
O&M expenses	560	539	627	1,542
Other operating Expenses	28	173	56	198
Employee benefits expense	182	188	217	262
Total Expenses	771	900	900	2,003
EBITDA	883	822	822	540
EBITDA margin (%)	53%	48%	48%	21%
Depreciation	396	491	502	653
EBIT	487	331	320	-113
Finance Cost	530	605	548	710
Other Income	68	140	181	399
Exceptional Items	2	-190		35.134
PBT	28	-323	-47	-389
Tax	11	-46	2	-185
PAT	17	-277	-50	-204

Source: Company data, I-Sec research

Inox Wind overview

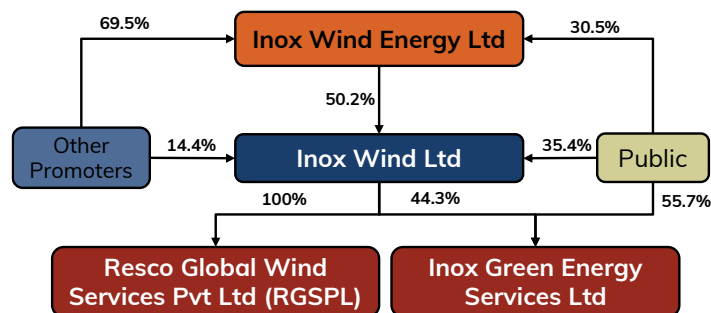
Inox Wind is a fully-integrated manufacturer of key components of WTGs. The company also offers turnkey solutions for the development of wind power projects, from concept to commissioning, including O&M.

Exhibit 57: Company shareholding



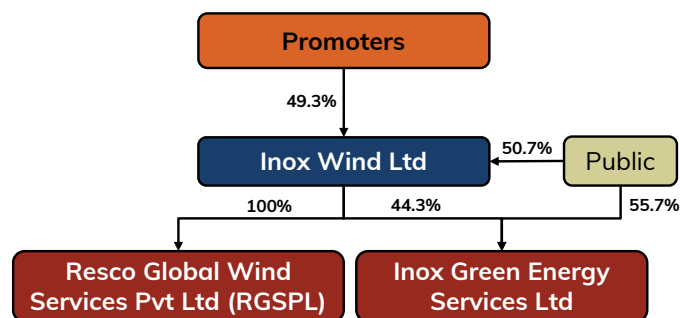
Source: Company data, I-Sec research

Exhibit 58: Pre-merger company structure



Source: Company data, I-Sec research

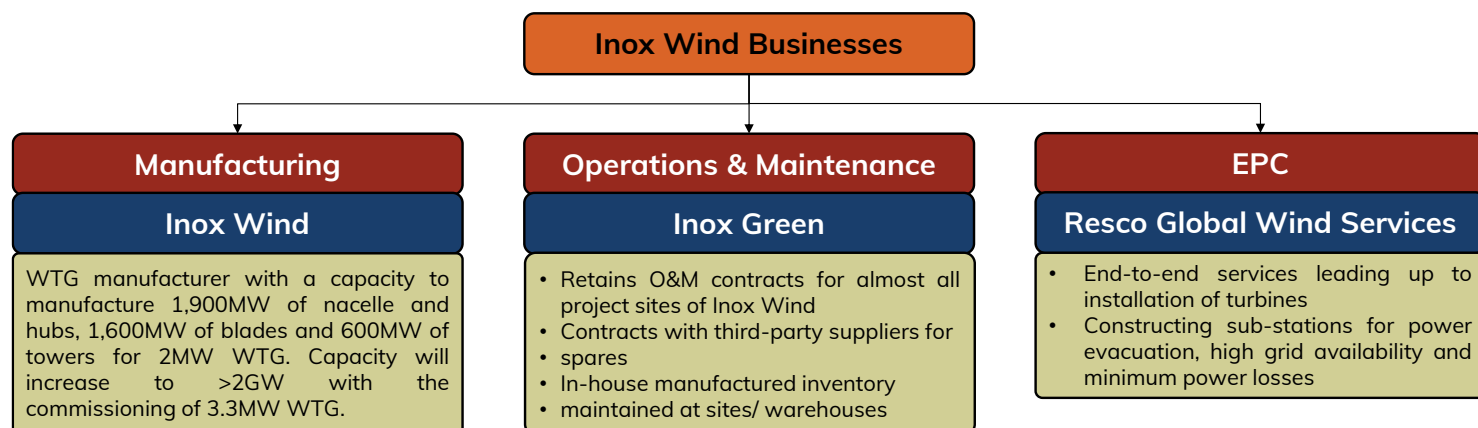
Exhibit 59: Post-merger simplified company structure



Source: Company data, I-Sec research

Inox Wind Energy Ltd and Inox Wind Ltd are being merged into a single entity to simplify the business structure.

Exhibit 60: Business verticals of Inox Wind



Source: Company data, I-Sec research

Technology Licenses

AMSC, Austria

Inox Wind has sourced technology from AMSC, Austria, a wholly owned subsidiary of US-based American Superconductor Corporation, for the exclusive manufacture of 2MW and 3–3.3 MW wind turbines in India.

Inox Wind has to pay a royalty of EUR 10,000 (INR 0.9mn) per turbine to AMSC only for the first-250 3MW turbines manufactured by Inox Wind.

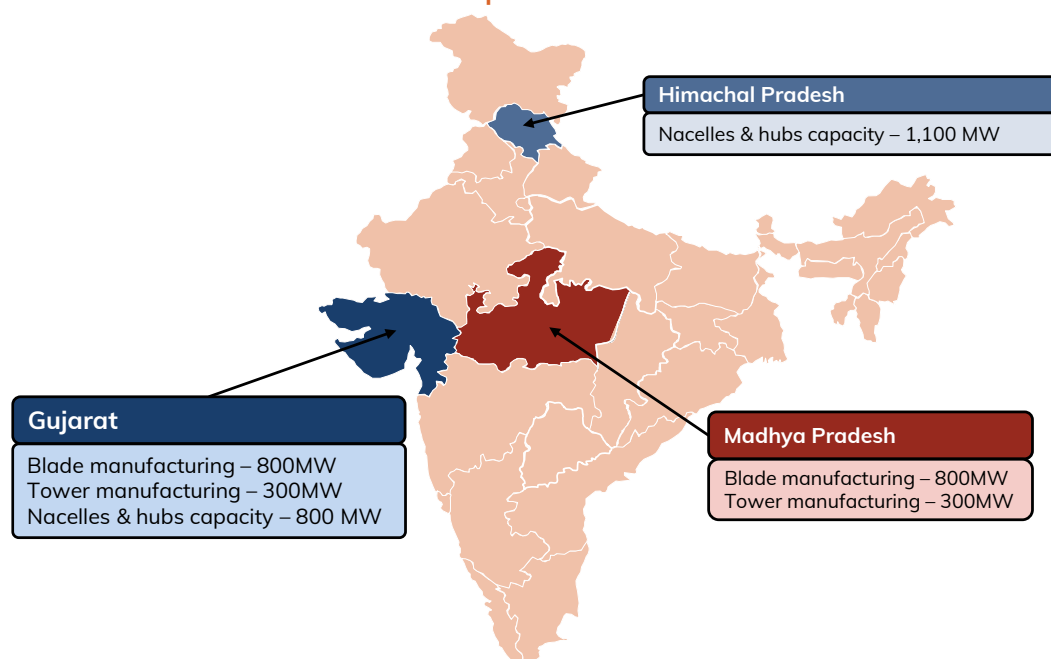
Wind Novation Engineering

Inox Wind has a non-exclusive license from Wind Novation Engineering Solutions GmbH, Germany to manufacture rotor blade sets in variant of 93, 100 and 113-meter rotor diameter for 2MW and 146-meter rotor diameter for 3–3.3MW.

Manufacturing facilities

Inox Wind has blade manufacturing capacity of 1,600MW, tower manufacturing capacity of 600MW and nacelles and hub manufacturing capacity of 1,900MW.

Exhibit 61: Inox Wind's facilities are spread across three states in India



Source: Company data, I-Sec research

Exhibit 62: Board of directors and key managerial personnel

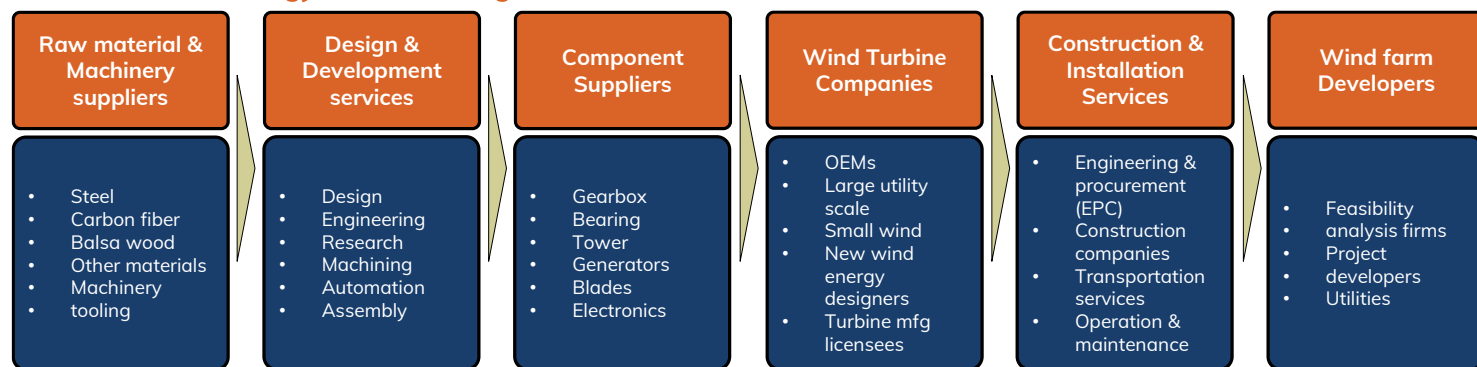
Name	Designation	Comments
Board of Directors		
Devansh Jain	Whole-time Director	Holds a dual major degree in Economics and Business Administration from Carnegie Mellon University and has more than 10 years of work experience in various management positions
Manoj Shambhu Dixit	Whole-time Director	Holds a Master's Degree in Mechanical Engineering from Indian Institute of Management Research and Technology, Ahmedabad, Gujarat. He has more than 24 years of experience in Power Management, Project Development, Power scheduling, land acquisition and regulatory approvals & government policy matters related to power. He has been associated with InoxGFL Group since 2008. In the past, he was associated with Perfect Refractories Limited and Gujarat Fluorochemicals Limited.
Mukesh Manglik	Non-Executive Director	Holds a Bachelor's Degree in Electrical Engineering from Veermata Jijabai Technological Institute, Mumbai. He has over four decades of expertise in the design and development of power electronics and process controls, including more than 20 years in the wind sector. He has extensive knowledge of wind turbine generator engineering, operations, maintenance, and commissioning. He has been associated with the InoxGFL Group since 2008 and is heading the Company's Engineering and Product Development Department. He is also on the boards of various InoxGFL Group companies.
Shanti Prashad Jain	Independent Director	Is a Fellow Member of the Institute of Chartered Accountants of India. He has four decades of experience as a Chartered Accountant and Direct Tax Consultant. He is a senior partner of M/s. Shanti Prashad & Co., Chartered Accountants in New Delhi, and specialises in taxation concerns for a number of reputable companies and banks.
Bindu Saxena	Independent Director	Has completed her Bachelor's in Commerce and in Law from Lucknow University. She is an Advocate and is a partner of the Law firm M/s. Swarup & Company, New Delhi. She has over three decades of experience as a corporate attorney with experience in commercial transactions and projects in India and overseas.
Venkatanarayanan Sankaranarayanan	Independent Director	Holds a Bachelor's degree in Commerce from Madurai University. He has an experience of more than three decades in Finance and Taxation. He is on the boards of various companies including Inox Green Energy Services Limited and Triumph Trading Limited.
Key managerial personnel		
Kailash Lal Tarachandani	CEO	Has more than 23 years of experience in the field of strategy management, global project execution, product management, business development. Prior to joining IWL in May 2013, he was associated with Kenerseys Private Limited, Pune, Vestas Wind Systems, Alstom Power (Switzerland) and Larsen and Toubro Limited. He holds a Bachelors Degree of Technology in Electrical Engineering from Indian Institute of Technology, Kanpur and a Master's Degree in Business Administration from INSEAD, France
Narayan Lodha	CFO	Has more than 18 years of rich experience in the areas of Financial Planning, Reporting, MIS, Budgeting & Business Strategy, Banking & Finance, Cost Controls, Taxation, Auditing and Secretarial. He was previously associated as Chief Financial Officer of large infrastructure companies like Bhilwara Energy Limited. He is a qualified Chartered Accountant from the Institute of Chartered Accountants of India and also a qualified Company Secretary from the Institute of Company Secretaries of India.

Source: Company data, I-Sec research

Annexure I: Wind turbine value chain and cost break up

The wind energy value chain consists of several steps – from raw material supply to electricity transmission. The diagram below illustrates the prominent supporting products/services and opportunities available along the entire wind energy value chain.

Exhibit 63: Wind energy manufacturing – value chain

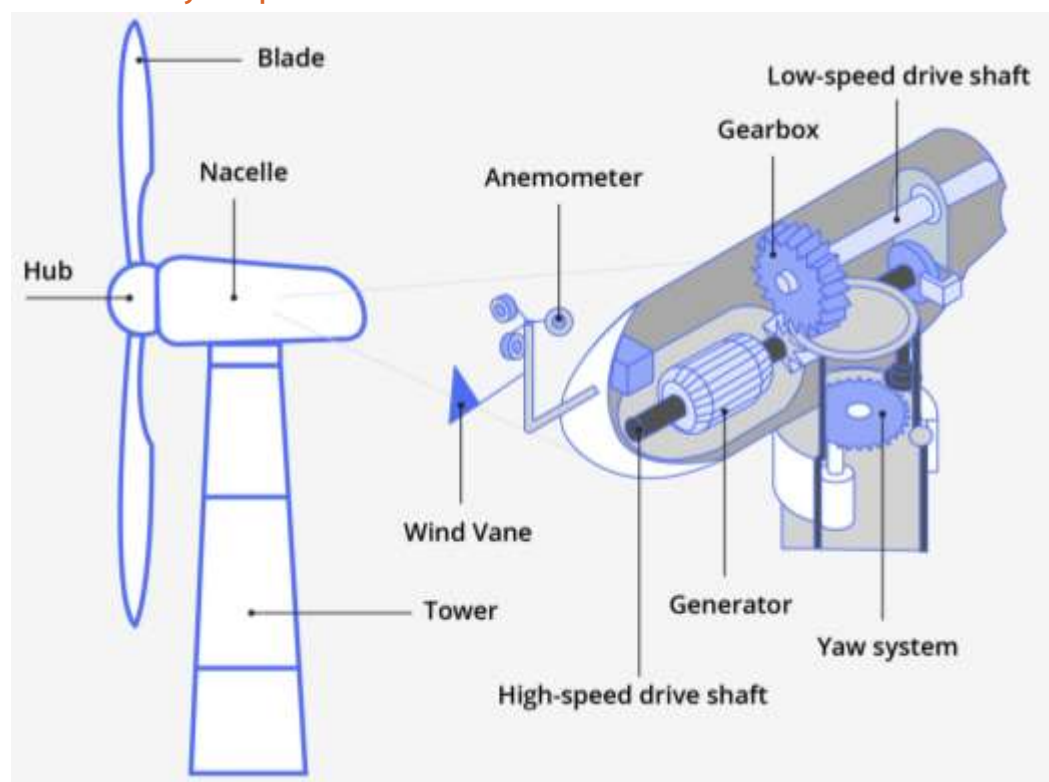


Source: Industry, I-Sec research

The primary components in a wind energy generating system are:

- Rotors and blades
- Nacelle and controls
- Generator and power electronics
- Tower components

Exhibit 64: Key components of wind turbines



Source: Industry, I-Sec research

Annexure II: Other major wind player financials

Exhibit 65: Siemens Gamesa has been making losses since FY18

INR mn	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Revenue	1,29,084	42,411	56,097	54,757	35,621	44,194	60,395
Growth (%)		-67%	32%	-2%	-35%	24%	37%
Cost of goods	97,710	29,975	48,091	51,397	24,565	29,101	50,015
Gross Profit	31,374	12,435	8,006	3,360	11,057	15,094	10,381
Employee expenses	3,058	3,023	2,807	3,456	3,011	3,692	4,543
Other expenses	12,911	7,261	8,496	13,785	17,315	18,832	17,698
EBITDA	15,405	2,151	-3,297	-13,881	-9,270	-7,430	-11,860
EBITDA Margin (%)	12%	5%	-6%	-25%	-26%	-17%	-20%
Depreciation	1,563	2,116	2,354	2,207	1,741	1,635	1,551
EBIT	13,842	35	-5,650	-16,088	-11,011	-9,065	-13,411
Other income	508	802	139	267	426	368	171
Finance Costs	1,384	1,663	1,367	2,777	2,339	1,317	2,380
PBT	12,966	-826	-6,878	-18,598	-12,924	-10,015	-15,620
Exceptional Items	-	-	-	10,320	2,622	-	-
Tax	4,472	-292	118	-	68	84	13
PAT	8,494	-533	-6,997	-28,917	-15,614	-10,099	-15,633
Key Balance sheet item							
Net worth	27,180	26,673	17,756	-3,950	-2,090	-4,611	-5,765
Net Debt	2,593	12,980	14,596	27,412	23,692	23,504	27,132

Source: Company data, I-Sec research

Exhibit 66: GE India (wind division) financials

INR mn	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Revenues	18,490	12,600	7,242	10,543	28,996	32,708	43,244
EBITDA	1,377	63	-2,149	-8,261	-10,311	980	6,241
Operating margin (%)	7%	1%	-30%	-78%	-36%	3%	14%
Depreciation*	400	400	400	400	400	435	425
EBIT	977	-337	-2,549	-8,661	-10,711	545	5,816
Interest	390	551	37	118	6	51	351
PBT	587	-888	-2,586	-8,779	-10,717	494	5,465

Source: Company data, I-Sec research | *Assumption based on FY17-22

Exhibit 67: Vestas India financials [INR mn]

Vestas India	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Order backlog						43,165	37,045
Revenues	11,245	22,741	36,885	50,253	37,371	49,645	45,188
EBITDA	-1,408	852	435	2,484	3,110	-1,389	3,329
Operating margin (%)	-13%	4%	1%	5%	8%	-3%	7%
Depreciation*	155	562	1,257	1,176	1,952	2,016	1,720
EBIT	-1,563	290	-822	1,308	1,158	-3,405	1,609
Interest	126	562	1,379	1,856	1,409	1,297	1,523
PBT	-1,689	-272	-2,201	-548	-251	-4,702	86
PAT	-41	-351	-1,472	-688	-274	-4,188	-215
Key Balance sheet item							
Net worth	4,518	4,280	4,139	3,434	3,181	-983	-1,122
Net Debt				18,675	22,789	22,811	19,174

Source: Company data, I-Sec research | *Assumption based on FY17-22

Exhibit 68: Suzlon key financials (INR mn)

INR mn	FY19	FY20	FY21	FY22	FY23
Net sales	50,247	29,729	33,458	65,818	59,705
EBITDA	2,795	(4,227)	5,343	8,894	8,318
OPM (%)	5.6	(14.2)	16.0	13.5	13.9
Other income.	500	276	199	222	194
Interest	12,699	13,673	9,963	7,347	4,207
Depreciation	3,419	4,186	2,584	2,598	2,597
PBT	(12,823)	(21,810)	(7,005)	(829)	1,709
PAT	(12,704)	(21,885)	(7,051)	(2,495)	1,664
Reported PAT	(12,665)	(26,422)	1,004	(3,222)	28,870

Source: Company data, I-Sec research

Annexure III: Cap Goods companies' valuations

Exhibit 69: Valuations for our Cap Goods companies universe

Companies	EV/EBITDA			P/E		
	FY23	FY24E	FY25E	FY23	FY24E	FY25E
AIA Engineering	25.6	23.7	21.8	33.6	32.3	30.3
Apar Industries*	16.1	14.2	13.5	29.0	23.7	24.3
Bharat Heavy Electricals Ltd	58.3	-79.2	40.0	113.8	-112.8	124.4
Carborundum Universal Ltd	30.7	27.8	22.6	54.8	51.0	40.2
CG Power & Industrial Solution*	69.7	55.8	44.8	98.3	78.5	63.4
Engineers India Ltd	17.7	12.1	9.6	25.4	20.5	16.9
GE T&D India Ltd	98.9	41.2	27.7	512.6	81.4	49.5
Grindwell Norton Ltd	45.5	39.1	33.1	67.0	58.5	49.0
Hitachi Energy India Ltd*		45.9	31.3		83.0	50.9
Honeywell Automation India Ltd	58.9	52.1	41.9	73.8	65.7	53.5
ISGEC Heavy Engineering Ltd	20.1	16.0	14.8	39.3	29.4	26.7
KEC International Ltd	22.7	13.9	10.3	113.4	32.8	19.9
Cummins India Ltd	36.5	32.6	27.4	47.4	42.7	36.1
Kalpataru Projects Internation	0.9	0.7	0.6	24.1	18.7	14.5
Larsen & Toubro Ltd	22.3	20.4	16.1	37.8	32.8	25.7
Siemens Ltd	53.7	44.4	35.8	71.4	65.0	52.8
Suzlon Energy Ltd	50.0	41.6	26.8	287.8	88.4	38.7
Techno Electric & Engineering	47.0	23.6	16.5	63.4	35.3	26.8
Thermax Ltd	54.5	48.0	33.3	71.3	63.5	44.3
Voltamp Transformers Ltd	-3.2	-3.5	-3.8	28.6	24.8	22.2
	CY22	CY23	CY24	CY22	CY23	CY24
ABB India Ltd	91.2	55.7	47.4	146.6	77.2	65.2

Source: Bloomberg, I-Sec research *Bloomberg Estimates

Exhibit 70: Shareholding pattern

%	Mar'23	Jun'23	Sep'23
Promoters	72.0	72.0	64.6
Institutional investors	1.9	2.7	10.1
MFs and others	0.0	0.0	6.0
FIs/Banks	0.0	0.1	0.4
Insurance	0.0	0.0	0.1
FIIIs	1.9	2.6	3.6
Others	26.1	25.3	25.3

Source: Bloomberg

Exhibit 71: Price chart



Source: Bloomberg

Financial Summary

Exhibit 72: Profit & Loss

(INR mn, year ending Mar-31)

	FY23A	FY24E	FY25E	FY26E
Net Sales	7,370	29,715	37,448	53,467
Operating Expenses	5,446	2,350	2,758	3,383
EBITDA	(2,638)	2,771	5,883	8,171
EBITDA Margin (%)	(35.8)	9.3	15.7	15.3
Depreciation & Amortization	1,062	1,062	1,062	1,062
EBIT	(3,699)	1,709	4,822	7,109
Interest expenditure	3,407	2,886	374	535
Other Non-operating Income	214	225	236	248
Recurring PBT	(6,892)	(952)	4,684	6,823
Profit / (Loss) from Associates	-	-	-	-
Less: Taxes	(185)	-	-	-
PAT	(6,707)	(952)	4,684	6,823
Less: Minority Interest	-	(126)	(245)	(341)
Extraordinaries (Net)	-	-	-	-
Net Income (Reported)	(6,707)	(1,078)	4,439	6,482
Net Income (Adjusted)	(6,707)	(1,078)	4,439	6,482

Source Company data, I-Sec research

Exhibit 73: Balance sheet

(INR mn, year ending Mar-31)

	FY23A	FY24E	FY25E	FY26E
Total Current Assets	30,875	56,951	70,218	98,781
of which cash & cash eqv.	2,702	3,739	5,802	6,933
Total Current Liabilities & Provisions	13,210	39,816	48,083	69,403
Net Current Assets	17,665	17,134	22,135	29,379
Investments	5,070	5,070	5,070	5,070
Net Fixed Assets	15,795	15,233	14,872	14,310
ROU Assets	-	-	-	-
Capital Work-in-Progress	1,232	1,232	1,032	832
Total Intangible Assets	-	-	-	-
Other assets	7,853	7,853	7,853	7,853
Deferred Tax assets	-	-	-	-
Total Assets	47,614	46,522	50,961	57,443
Liabilities				
Borrowings	24,063	24,049	24,049	24,049
Deferred Tax Liability	-	-	-	-
provisions	-	-	-	-
other Liabilities	6,188	6,188	6,188	6,188
Equity Share Capital	3,259	3,259	3,259	3,259
Reserves & Surplus	14,104	13,026	17,465	23,947
Total Net Worth	17,363	16,286	20,725	27,207
Minority Interest	-	-	-	-
Total Liabilities	47,614	46,522	50,961	57,443

Source Company data, I-Sec research

Exhibit 74: Cashflow statement

(INR mn, year ending Mar-31)

	FY23A	FY24E	FY25E	FY26E
Operating Cashflow	722	4,563	3,182	2,308
Working Capital Changes	(3,729)	1,568	(2,938)	(6,112)
Capital Commitments	(4,234)	(500)	(500)	(300)
Free Cashflow	4,956	5,063	3,682	2,608
Other investing cashflow	-	-	-	-
Cashflow from Investing Activities	(4,234)	(500)	(500)	(300)
Issue of Share Capital	-	-	-	-
Interest Cost	(3,407)	(2,886)	(374)	(535)
Inc (Dec) in Borrowings	6,881	(15)	-	-
Dividend paid	-	-	-	-
Others	511	-	-	-
Cash flow from Financing Activities	3,985	(3,026)	(619)	(876)
Chg. in Cash & Bank balance	474	1,037	2,063	1,132
Closing cash & balance	2,702	3,739	5,802	6,933

Source Company data, I-Sec research

Exhibit 75: Key ratios

(Year ending Mar-31)

	FY23A	FY24E	FY25E	FY26E
Per Share Data (INR)				
Reported EPS	(20.6)	(2.9)	13.9	20.2
Adjusted EPS (Diluted)	(20.6)	(3.3)	13.1	19.2
Cash EPS	(17.3)	0.0	16.3	22.3
Dividend per share (DPS)	-	-	-	-
Book Value per share (BV)	53.3	50.0	61.3	80.5
Dividend Payout (%)	-	-	-	-
Growth (%)				
Net Sales	18.0	303.2	26.0	42.8
EBITDA	(15.0)	(205.0)	112.3	38.9
EPS (INR)	(5.4)	(85.8)	(574.6)	45.7
Valuation Ratios (x)				
P/E	(17.7)	(124.4)	26.2	18.0
P/CEPS	(21.0)	(7,458.1)	22.3	16.3
P/BV	6.8	7.3	5.9	4.5
EV / EBITDA	(51.0)	48.2	23.1	16.5
P / Sales	16.1	4.0	3.3	2.3
Dividend Yield (%)	-	-	-	-
Operating Ratios				
Gross Profit Margins (%)	38.1	17.2	23.1	21.6
EBITDA Margins (%)	(35.8)	9.3	15.7	15.3
Effective Tax Rate (%)	2.7	-	-	-
Net Profit Margins (%)	(91.0)	(3.2)	12.5	12.8
NWC / Total Assets (%)	31.4	28.8	32.1	39.1
Net Debt / Equity (x)	0.9	0.9	0.6	0.4
Net Debt / EBITDA (x)	(6.2)	5.5	2.2	1.5
Profitability Ratios				
RoCE (%)	(8.8)	4.7	11.9	15.3
RoE (%)	(37.6)	(5.7)	25.3	28.5
RoIC (%)	(8.8)	4.7	11.9	15.3
Fixed Asset Turnover (x)	0.5	1.9	2.5	3.7
Inventory Turnover Days	606	401	223	235
Receivables Days	443	361	223	235
Payables Days	331	463	300	322

Source Company data, I-Sec research

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