



# Accelerating for a Better Tomorrow

Corporate Presentation  
April 2023

# JSW Group Overview



**Amongst India's leading  
Conglomerates with a  
turnover of US\$22 Bn**



## JSW Energy

- Power producer with 9.9 GW locked-in portfolio,
- Targeting 20GW by 2030 (81% renewable capacity)
- Market Cap: ~US\$ 5.0 Bn



## Infrastructure

- Amongst **Top 5** Indian port companies
- Operates environment-friendly seaports & terminals
- Targeting 200mtpa cargo handling capacity in next few years



## Paints

- India's new age Paints company offering a path-breaking Any Colour at One Price
- State-of-the-art Facilities in Maharashtra and Karnataka
- Ranks Number 1 in Industrial Coil Coatings



## Sports

- Supporting Indian sports ecosystem
- Teams Owned: Bengaluru FC, Delhi Capitals, Haryana Steelers



## Steel

- India's leading integrated steel producer
- Installed crude steel capacity of 29.2mtpa, growing to 38.5mtpa
- Market Cap: ~US\$ 21.2 Bn



## Cement

- India's leading Green cement company
- Current capacity of 17mtpa, with a medium term target of 25mtpa
- Product range includes PSC, GGBS, Concrete & Construction Chemicals



## Ventures

- Early-stage, tech-focused, VC fund
- Portfolio: Purple, LimeTray, Homelane, CureSkin and Zvlov



## Foundation

- Social development arm of JSW Group
- Footprint across 11 states and 15 districts
- Positively impacts more than a million lives across India



# JSW Energy : Our Vision

A wide-angle photograph of a solar farm at sunset. The foreground is filled with rows of solar panels, their surfaces reflecting the golden light of the setting sun. The panels are arranged in a grid pattern that recedes into the distance. In the background, a range of dark mountains is silhouetted against the bright, orange and yellow sky. The sky is filled with soft, wispy clouds that catch the light of the sun, creating a dramatic and warm atmosphere. The overall color palette is dominated by warm tones of gold, orange, and brown.

**Bringing positive transformation to  
every life we touch**

# JSW Energy : Transitioning towards green energy

**FY2025**

To become a 10 GW company

**FY2030**

To become a 20 GW company

**FY2050**

To become carbon neutral by 2050

**Energy Products and Services**

Energy Storage | Electrons to Molecules - Foraying into green hydrogen and its derivatives

# Agenda

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**Safety & Sustainability**

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**JSW Energy – At a Glance**

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**Operating & Financial Highlights**

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**Why JSW Energy?**

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**JSW Neo Energy Ltd**

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**Risk Mitigation**

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**Annexures**

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# Safety & Sustainability



# Continuing our Health & Safety Excellence Journey



**Zero** severe injuries/fatalities (Q3 FY23 & YTD)



**92%** of contractors covered by JSW CARES audit

9 Contractors achieve 5 Star rating & 3 contractors achieve 4 Star in a stringent Internal Safety Assessment



**63,000+** Cumulative Safety Observations Resolved YTD

Influencing 'positive safety behavior' of our workforce by reporting smallest of the safety considerations thereby avoiding any major / minor incident



**474** employees enrolled for 'Safety Champion Program' as per British Safety Council (BSC) Certification

474 employees across all major locations enrolled for Safety Champion Program covering 10 safety high standard eLearning modules with final examination conducted in association with BSC

## Enhancing Safety Understanding of Contractor Employees



- Barmer – Mock drill on fire in lignite conveyor belt and primary crusher conducted. Health and safety training on PPE and 10 critical rules undertaken
- Vijayanagar – On site 'emergency mock drill' conducted
- Ratnagiri – 'Mass tool box talk' on electrical portable tools safety conducted
- Baspa – Conducted a training session on "Fire Safety- Fire Prevention and Fire Fighting"

## Awards & Recognitions



Council of Enviro Excellence



# Sustainability: Framework and Policies

## 17 Focus Areas with 2030 Targets from 2020 as Base Year

<p><b>Climate Change:</b> Committed to being carbon neutral by 2050 Reduce our carbon emissions by more than 50%</p>	<p><b>Renewable Power:</b> Enhance the renewable power to 2/3rd of our Total Installed Capacity</p>	<p><b>Biodiversity:</b> No Net Loss for Biodiversity</p>
<p><b>Waste Water:</b> Zero Liquid Discharge</p>	<p><b>Waste:</b> 100% Ash (Waste) utilization</p>	<p><b>Water Resources:</b> Reduce our water consumption per unit of energy produced by 50%</p>

Operational Health & Safety	Resources	Social Sustainability	Local Considerations	Indigenous People	Human Rights
Supply Chain Sustainability	Employee Wellbeing	Air Emissions	Business Ethics	Cultural Heritage	Energy

**Aligned to National & International Frameworks**

<small>International Finance Corporation World Bank Group Creating Markets. Creating Opportunities</small>	<small>United Nations Global Compact</small>	<small>UNITED NATIONS GUIDING PRINCIPLES ON BUSINESS &amp; HUMAN RIGHTS</small>	<small>NATIONAL GUIDELINES ON RESPONSIBLE BUSINESS CONDUCT</small>

## Governance & Oversight by Sustainability Committee

<b>2</b> Independent Directors	Mr. Sunil Goyal
	Ms. Rupa Devi Singh
<b>1</b> Executive Director	Mr. Prashant Jain

## ESG Ratings – best amongst peers

CDP\* : A- (Leadership Level)

Sustainalytics: 27.8 (Medium Risk)

MSCI : BB

FTSE4Good Index constituent

## Carbon Neutrality by 2050

	<p>Committed to set science based targets to keep global warming to 1.5°C under SBTi</p>
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## Integrated Reporting since FY19



\*based on CDP climate change rating 2022. CDP water security rating 2022 is B (Management)

# Sustainability: Targets and Strategy

SD Targets		FY20 Actuals	FY30 Targets	Improvement	Strategic Initiatives and Approach
<b>Climate Change</b>	<ul style="list-style-type: none"> <li>GHG Emissions tCO<sub>2</sub>e/ MWh</li> </ul>	0.76	<b>0.304</b>	60%	<ul style="list-style-type: none"> <li>Increased share of renewable energy for deep decarbonization</li> <li>Process efficiency improvements</li> <li>Replacement of condenser tubes with graphene coatings</li> </ul>
	<hr/>				
<b>Water Security</b>	<ul style="list-style-type: none"> <li>Specific fresh water intake (m<sup>3</sup>/MWh)</li> </ul>	1.10	<b>0.591</b>	46%	<ul style="list-style-type: none"> <li>Maintaining zero liquid discharge across operations</li> <li>Optimising utilisation of rain water harvesting system</li> <li>Installation of technology for operating cooling towers with higher Cycles of Concentration with modified chemical regime</li> <li>Reuse of treated effluent of Sewage Treatment Plan for horticulture</li> </ul>
	<hr/>				
<b>Waste</b>	<ul style="list-style-type: none"> <li>Specific Waste (Ash) Generation (t/MWh)</li> </ul>	0.070	<b>0.032</b>	54%	<ul style="list-style-type: none"> <li>Integrated Strategy towards efficient waste management</li> <li>Optimizing utilisation of low ash coal</li> </ul>
	<ul style="list-style-type: none"> <li>Waste Recycled - Ash (%)</li> </ul>	100	<b>100</b>	-	
<hr/>					
<b>Air Emissions</b>	Specific process emissions(Kg/MWh)				<ul style="list-style-type: none"> <li>Ensuring ESP (Electrostatic Precipitator) Fields availability</li> <li>Optimising Lime dozing system efficiency</li> <li>Process efficiency improvements</li> </ul>
	<ul style="list-style-type: none"> <li>PM</li> </ul>	0.16	<b>0.053</b>	67%	
	<ul style="list-style-type: none"> <li>SOx</li> </ul>	1.78	<b>0.683</b>	61%	
	<ul style="list-style-type: none"> <li>NOx</li> </ul>	1.01	<b>0.373</b>	63%	
<hr/>					
<b>Biodiversity</b>	<ul style="list-style-type: none"> <li>Biodiversity at our operating sites</li> </ul>	-	Achieve <b>'no net loss'</b> of biodiversity		<ul style="list-style-type: none"> <li>Continue to enhance Biodiversity at all our locations and operations to achieve 'no net loss'</li> <li>Increase green cover across operations</li> <li>Eco-system studies (all seasons) in progress for finalising a Bio-diversity management plan at Barmer location.</li> </ul>

# Sustainability: Q3 FY23 Performance

## Key Highlights



### Climate Change

- TCFD assessment initiated by reputed ESG consultant
- Value Chain survey of suppliers initiated for assessment of supply chain sustainability.
- Increased share of renewable energy for deep decarbonization
- Wind Projects –SECI X – Progressive Commissioning Started



### Water Security

- Maintain zero liquid discharge across operations
- Reuse of treated effluent of Sewage Treatment Plant for horticulture
- Plan to review & improve water monitoring methodology by 3rd party to measure inconsistencies



### Waste

- Ash silo (45000 MT) completed in Ratnagiri. Testing & Commissioning in progress.
- Continue 100% Ash utilization initiatives at all plants through tie-ups with cement factories & similar businesses



### Air Emissions

- Ensuring ESP (Electrostatic Precipitator) Fields availability
- Process efficiency improvements
- Lime Dozing system availability and parameters optimization at Barmer for reduced air emissions

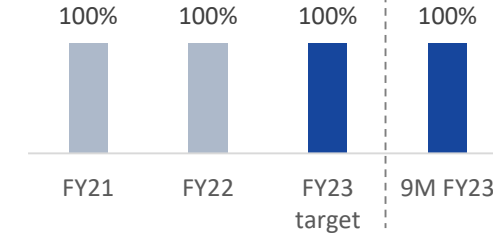


### Biodiversity

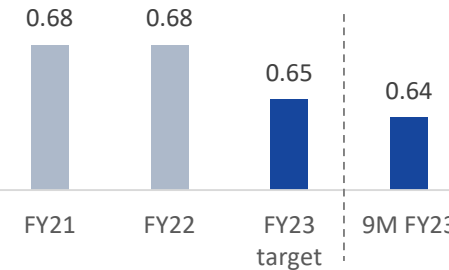
- Eco-System Study at Barmer - Summer and monsoon season report submitted by CII team. Winter assessment in progress.
- Biodiversity Assessment and Management Plan - Initiated the process at all the plants

## Performance

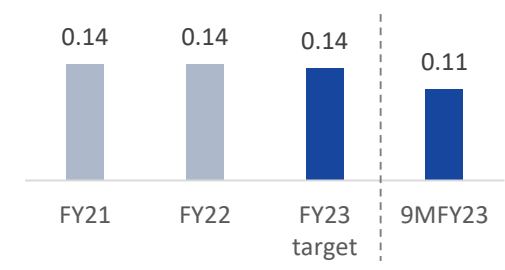
Ash Utilisation (%)



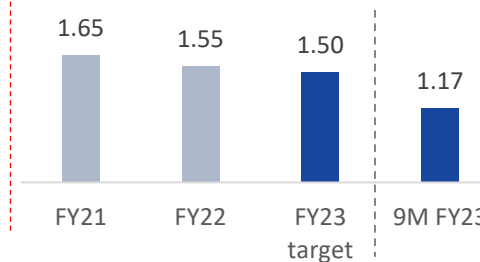
CO2 intensity (tCO2e/MWh)



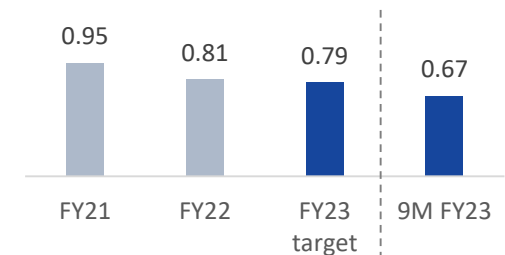
PM Emissions (kg/MWh)



SOx Emissions (kg/MWh)



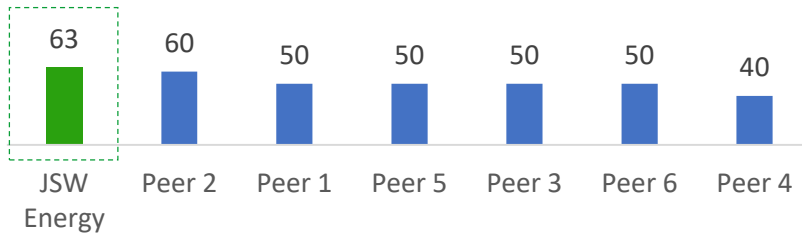
NOx Emissions (kg/MWh)



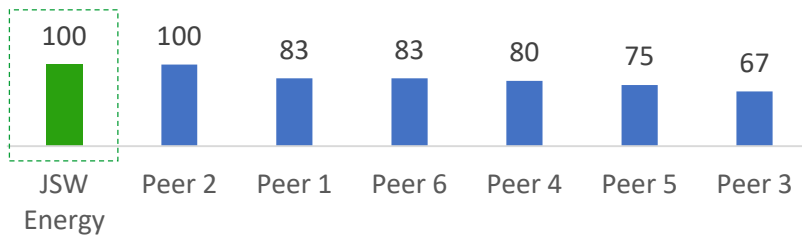
# Advantage JSW: Superior ESG Profile

## Board & Governance

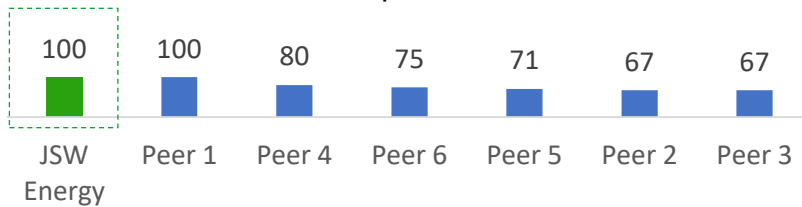
% Board Independent



% Audit Committee Independent

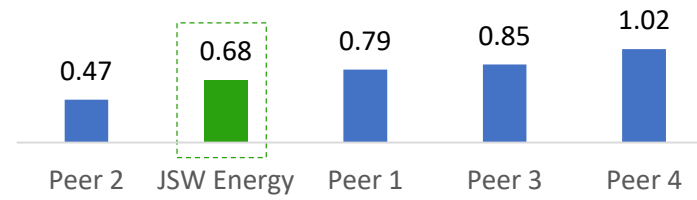


% Nomination & Remuneration Committee Independent

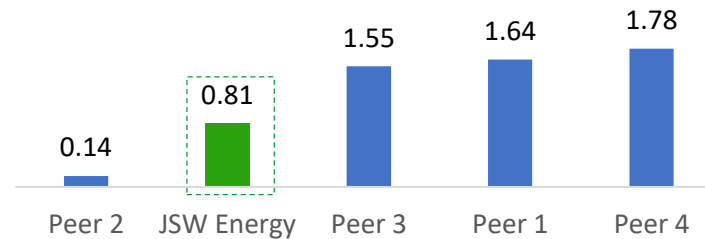


## Air Emissions

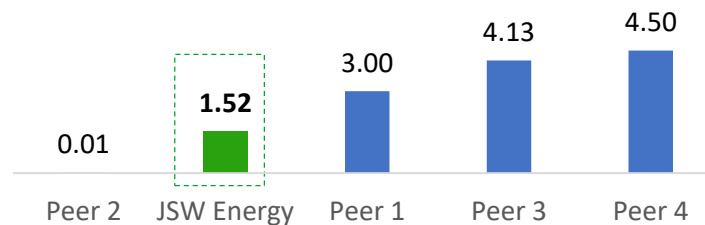
CO2 Intensity (t CO2e/MWh)



Specific NOx Emissions(Kg/MWh)



Specific SOx Emissions(Kg/MWh)



## Water & Waste Management

Specific Fresh Water Consumption (m3/MWh)



Ash Utilisation (%)



## ESG Ratings



Entity	CDP Rating
JSW Energy	A-
Peer 6	C
Peer 1	B
Peer 3	B
Peer 4	D
Peer 2	F
Peer 5	F



Entity	MSCI Rating
JSW Energy	BB
Peer 6	A
Peer 1	BBB
Peer 3	CCC
Peer 4	CCC

# Sustainability: Initiatives and Disclosures



- ✓ Assessment initiated by reputed ESG Consultants.
- ✓ Increased focus on achieving climate change target of 2030 and subsequently of becoming Carbon Neutral by 2050.

Task Force on Climate related Financial Disclosures

Sustainability Assessment for Supply Chain and Biodiversity Assessment for all plants Initiated

Plantation drives spanning across Vijayanagar, Barmer & Hydro Power Plants

Comprehensive ESG Data profile with ~300 factors across 15 sustainability frameworks

[JSW Energy](#)



[JSW Hydro Energy](#)





## Sports Promotion & Development

- **Project Shikhar:** Bringing powerful transformation in the field of sports with Project Shikhar
- Shikharite won the silver medal in the 6th Elite Women's National Boxing Championship, held at Bhopal from 20th to 26th December, 2022



## Health & Nutrition

- Total 3,725 individuals across Dharapuram (TN) and Ratnagiri (MH) screened at camps for eye problems, 634 received eye glasses.
- 2,089 patients benefitted through ambulatory services in Barmer (RJ), Kutehr (HP), Ratnagiri (MH)



## Education

- 15,760 children from Zila Parishad and other schools benefited through various education initiatives in Ratnagiri
- 16 Schools from Zila Parishad and other schools benefited through infrastructure interventions in Ratnagiri



## Community Development & Support

- **Project Margdarshak:** To empower rural India with access to applicable welfare schemes of central and state governments. 5,000 individuals got access via this program.
- **Solar Street Lights:** Installed 236 solar street lights in in Barmer, Kutehr, Dharapuram and Tuticorin.



[Health & Nutrition](#)



[Water & Environment](#)



[Waste Management](#)



[Agri-livelihoods](#)



[Education](#)



[Women's BPO & Livelihoods](#)



[Skill Enhancement](#)



[Art, Culture & Heritage](#)



[Sports](#)

# Strong Board Oversight and Leadership



**Mr. Sajjan Jindal**  
Chairman & Managing Director



**Mr. Prashant Jain**  
Joint Managing Director & CEO



**Mr. Pritesh Vinay**  
Director (Finance)



**Mr. Parth Jindal**  
Non-Executive, Non-Independent Director



**Ms. Rupa Devi Singh**  
Independent Director



**Mr. Sunil Goyal**  
Independent Director



**Mr. Munesh Khanna**  
Independent Director



**Mr. Rajeev Sharma**  
Independent Director



**Mr. Desh Deepak Verma**  
Independent Director

- **Majority Independent Board: 5/9 Directors are Independent**
- **Fully Independent Audit and Remuneration Committees**

- Audit Committee
- Compensation & nomination & remuneration Committee
- Risk management Committee
- Stakeholder's relationship Committee
- Corporate social responsibility Committee
- Sustainability Committee
- Permanent invitees to Sustainability Committee

## Our Core Principles



Accountability



Social Responsibility



Transparency



Environment



Integrity



Regulatory Compliance

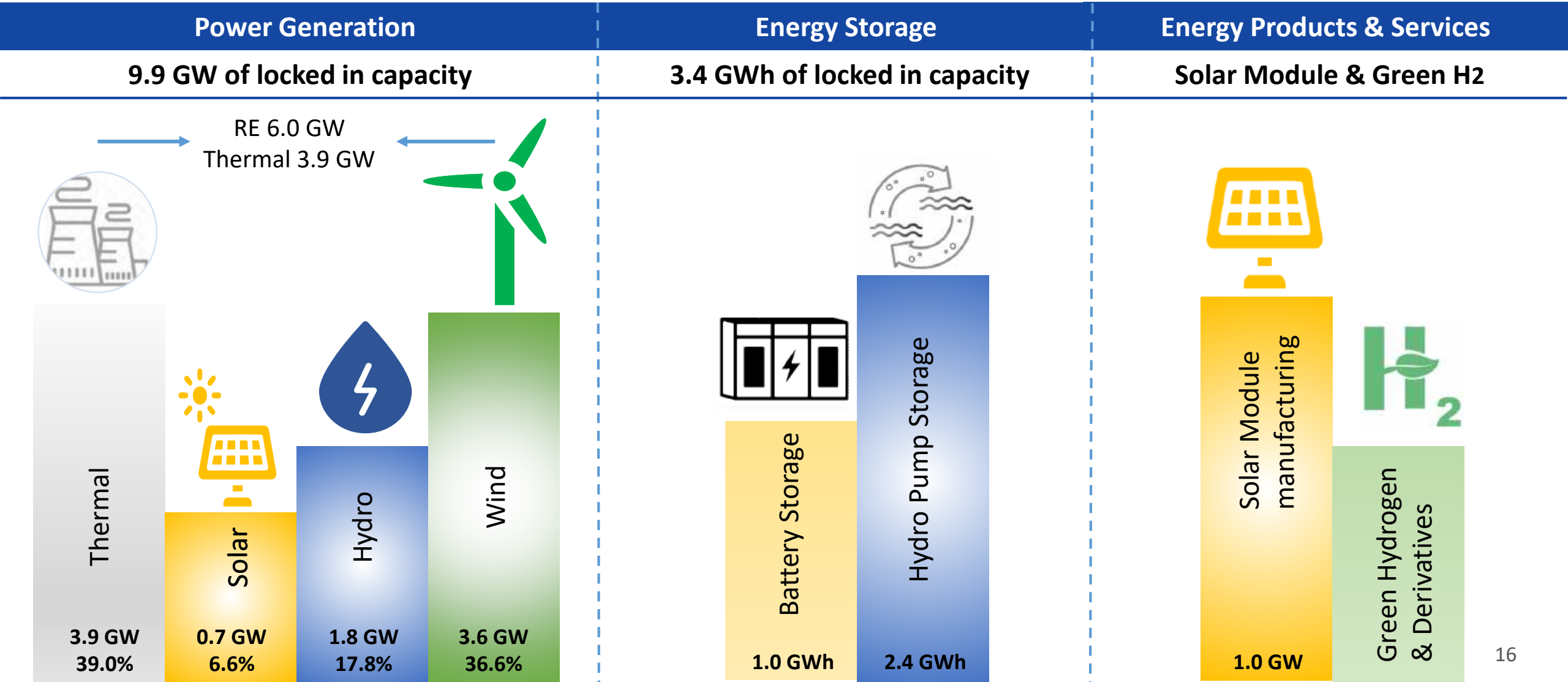
# JSW Energy – At a Glance



# JSW Energy – At a Glance

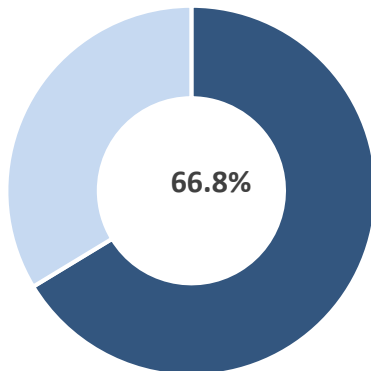


Well placed to achieve 10 GW of generation capacity ahead of stated timeline of FY25 and foray into New Age Businesses

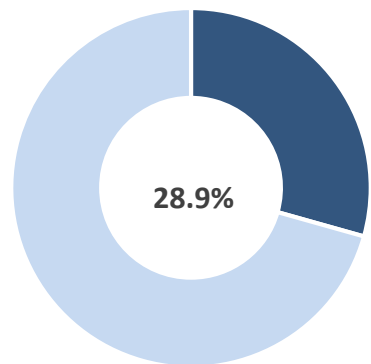


# Asset Overview – 9.9 GW Locked-In

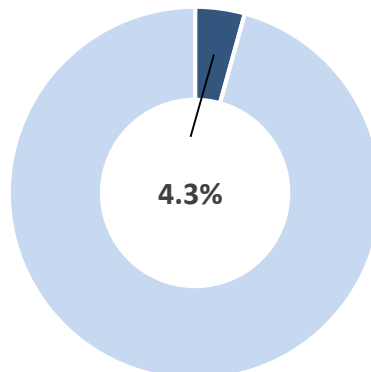
## Division of Locked in capacity



**Installed  
6,615 MW**  
 Thermal 3,158 MW  
 Wind 1,409 MW  
 Hydro 1,391 MW  
 Solar 657 MW  
 Includes 1,753 MW Mytrah RE Assets

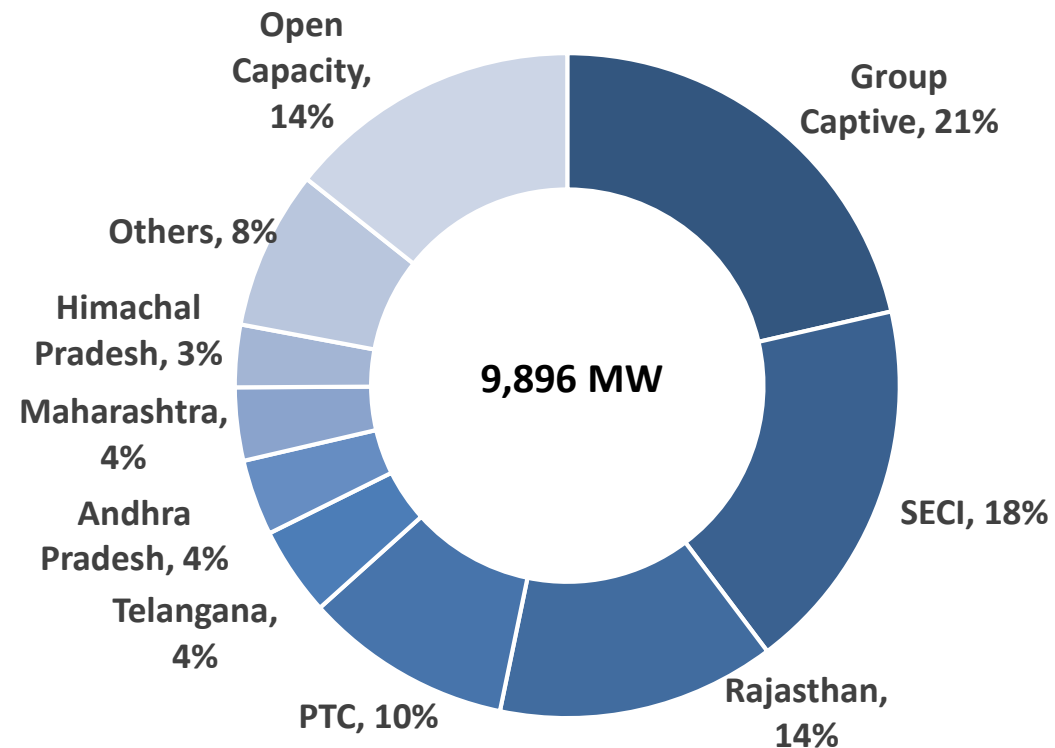


**Under-construction  
2,855 MW**  
 Wind 1,915 MW  
 Thermal 700 MW  
 Hydro 240 MW



**Pipeline  
426 MW**  
 Wind 300 MW  
 Hydro 126 MW

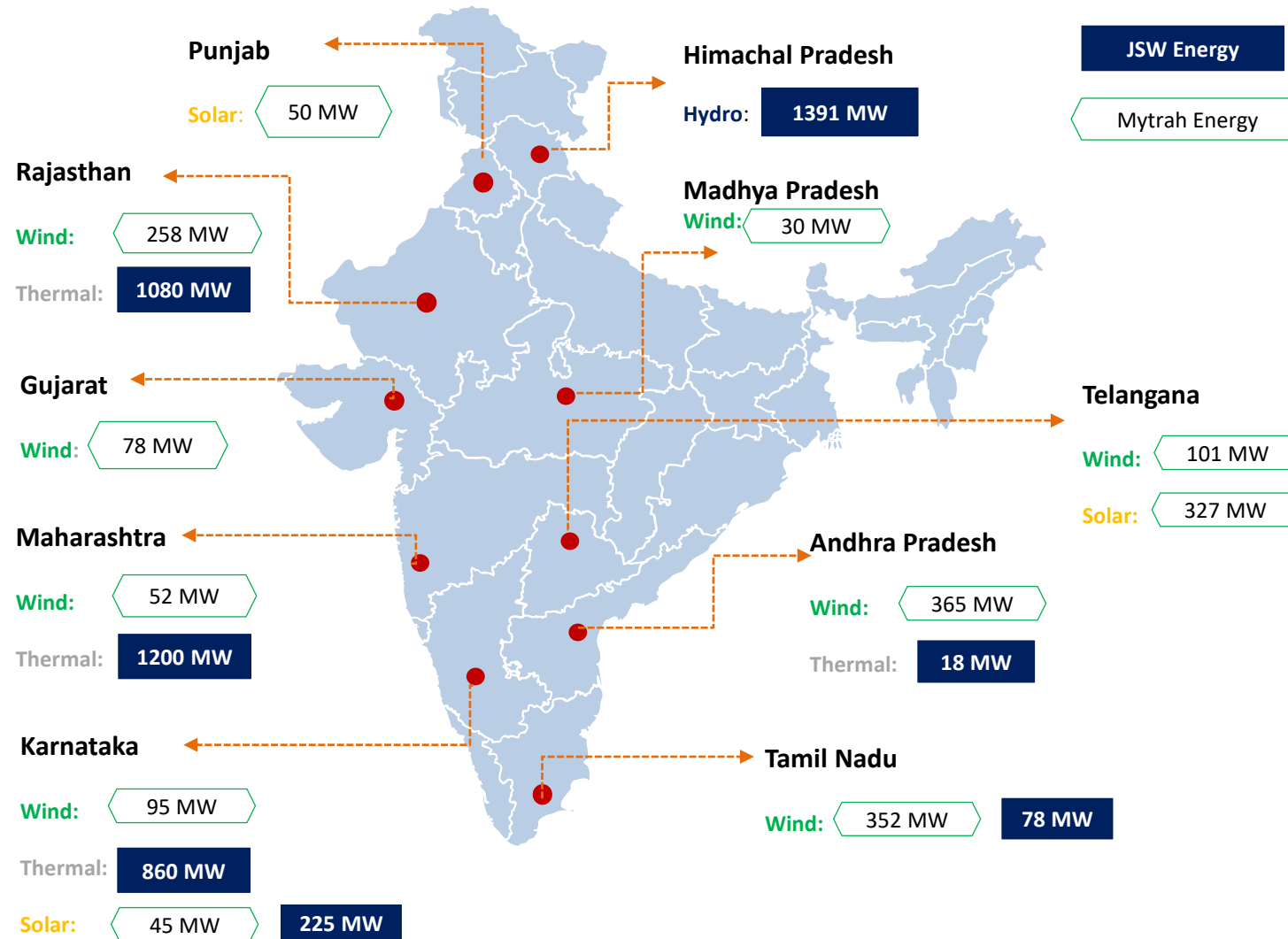
## Diversified Offtakers



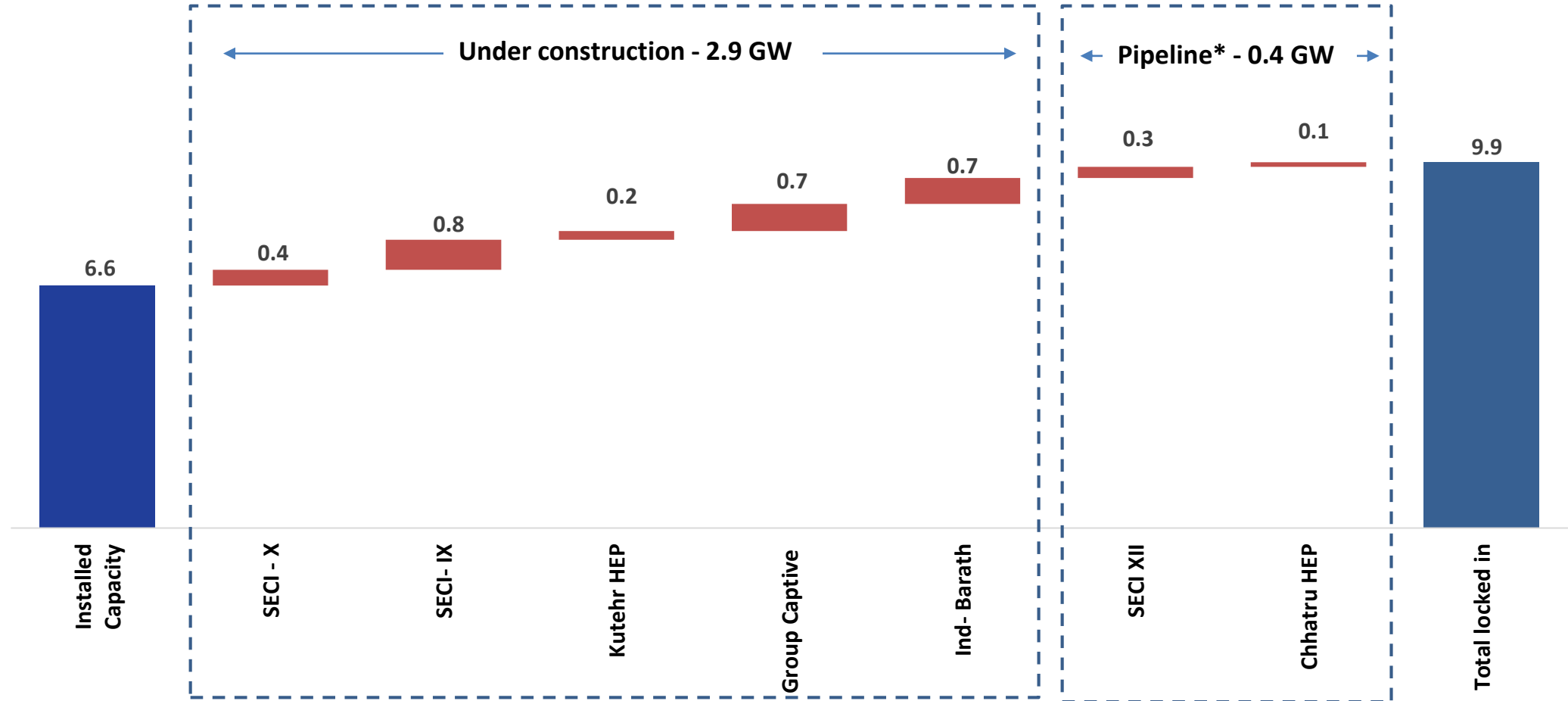
85% of capacity tied up under LT PPA generates ~95% EBITDA

# JSW Energy – Diversified plant locations

## Installed Capacity by Location (6,615 MW)



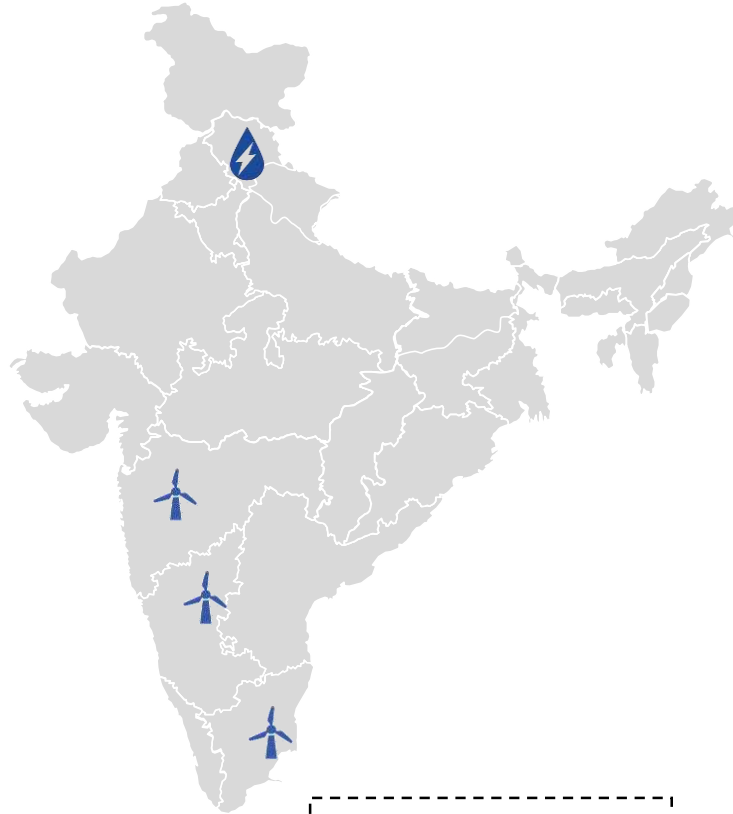
# 3.3 GW Projects - Under construction | Pipeline



**2.9 GW of Projects Under Construction | 426 MW Projects in Pipeline**

\*LoA/LoI received

# Under Construction Renewable Projects – 2.2 GW



Map for illustrative purposes, showing project locations

**Under-Construction:**  
 1,915 MW \*  
 240 MW

Under Construction Portfolio						
Plant	Capacity (MW)	Segment	Location	PPA/Offtaker	Scheduled Commissioning	Target Commissioning
SECI - IX	810	Wind	Tamil Nadu	25-Year; SECI	Dec-23	progressively from Q3 FY23
SECI - X	450	Wind	Tamil Nadu	25-Year; SECI	Jun-23	
Group Captive – JSW Steel	733	Wind	Karnataka, Maharashtra & Tamil Nadu	25-Year; JSW Steel	NA	progressively from Q1 FY24
Kutehr	240	Hydro	Himachal Pradesh	35-Year; Haryana Discom	-	Sep-24

### Metrics for RE projects (Incl. 225 MW of solar projects commissioned at Vijayanagar)

**Blended tariff** ₹ 3.08/unit (excl. hydro)

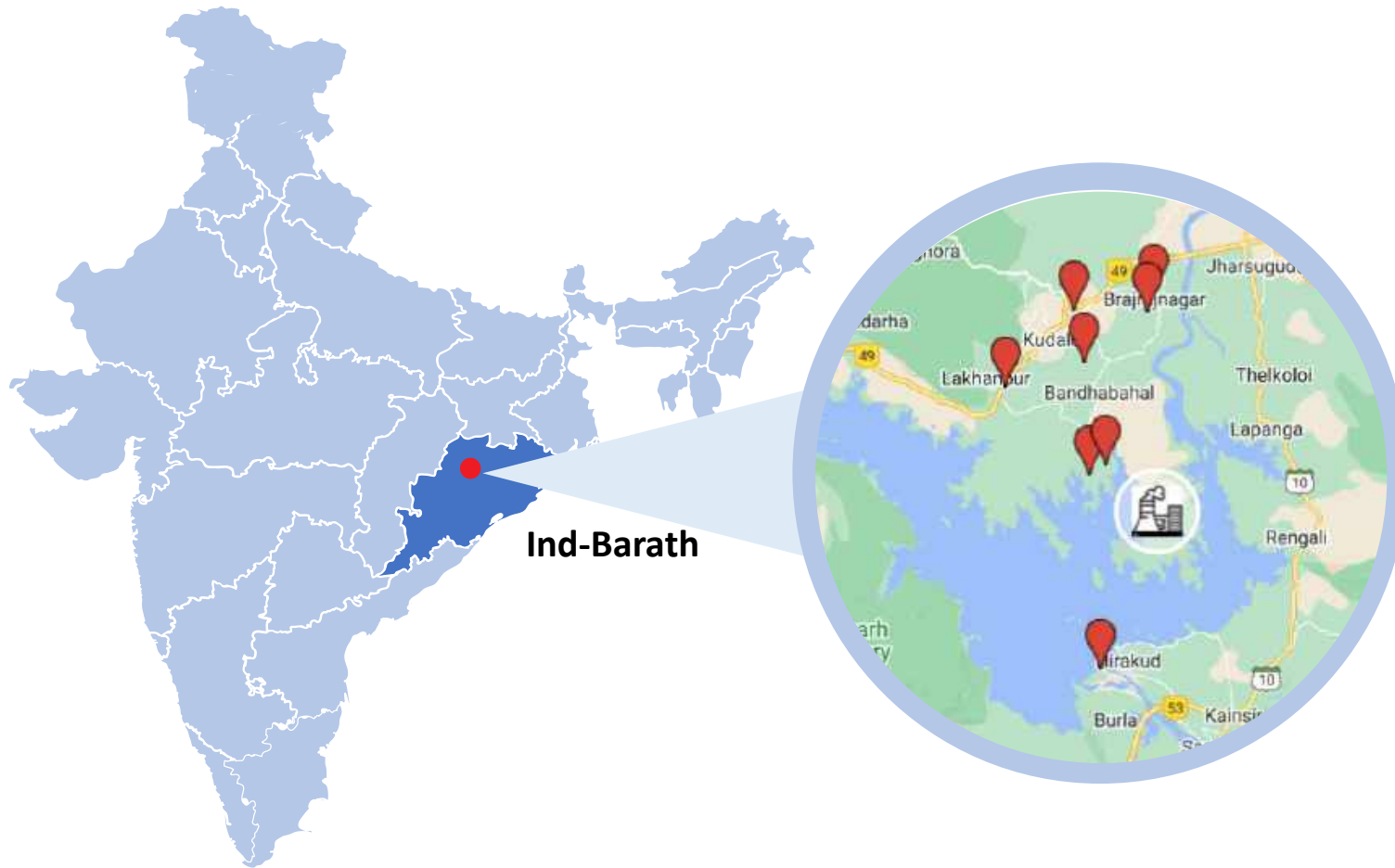
**PPA** PPAs Signed

**Capex**

- Total : ~ ₹ 16,660 Crore
- Committed: ~ ₹ 11,650 Crore
- Spent: ~ ₹ 5,500 Crore

\* Excludes 78MW of SECI X Wind project for which part-CoD has been received

# Under Construction Ind-Barath – 700 MW



Ind-Barath

Maps for illustrative purposes, showing project locations

## Ind-Barath: Asset Overview

- **Location:** Jharsuguda, Odisha
- **Configuration:** 2 x 350 MW | Thermal Power Plant
- **Technology:** Sub-critical TPP
- **Fuel Source:** Domestic coal
- Transaction completed in Dec-22

## Attractive Opportunity

- Attractive purchase consideration of ₹1,048 crore; further capex envisaged
- Located near the coal rich belt of IB Valley of Mahanadi Coalfields
- Ease of water access, from Hirakud Dam
- Optionality of varied offtake arrangements
- Accessibility: Rail: (Belpahar), Airport: (Raipur) and Port: (Paradip)

# Installed Portfolio – 4.9 GW (excl. Mytrah<sup>#</sup>)

## Barmer: 1,080MW

- **Configuration:** 8 X 135MW
- **Units operating:** since 2009<sup>3</sup>
- **Technology:** Sub-critical pithead Lignite based TPP
- **Fuel Source:** Captive Lignite mines of BLMCL<sup>1</sup>
- **Power Offtake:** Long Term PPA : 100%
- **Project Cost:** INR 7,165 Crore/ \$866mn<sup>2</sup>

## Ratnagiri: 1,200MW

- **Configuration:** 4 X 300MW
- **Units operating:** since 2010<sup>3</sup>
- **Technology:** Sub-critical TPP
- **Fuel Source:** Imported Thermal Coal
- **Power Offtake:** Long Term PPA: 91%
- **Project Cost:** INR 5,516 Crore/ \$667mn<sup>2</sup>

## Nandyal: 18 MW

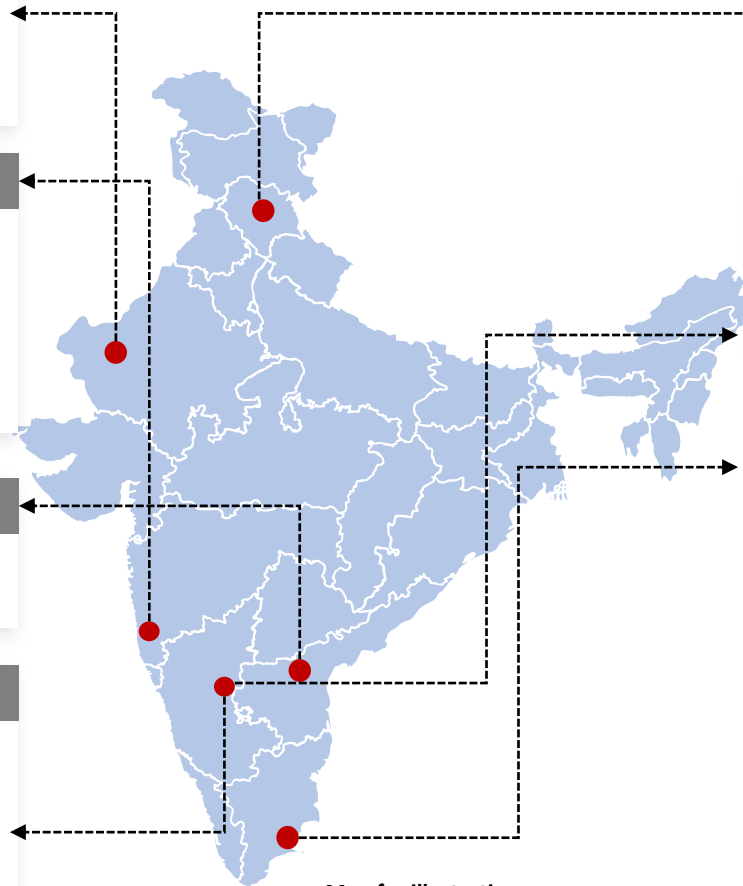
- 1x18MW Thermal Power Plant
- 100% LT PPA under Group Captive scheme

## Vijayanagar: 860 MW

- **Configuration:** 2 X 130MW and 2 X 300MW
- **Units operating:** since 2000<sup>3</sup>
- **Technology:** Sub-critical TPP
- **Fuel Source:** Imported Thermal Coal & Gas
- **Power Offtake:** Long Term PPA : 39%
- **Project Cost:** INR 3,096 Crore/ \$374mn<sup>2</sup>

## 4.9 GW installed

35% Renewable  
65% Thermal



Map for illustrative purposes, showing project locations

## Baspa II: 300MW & Karcham Wangtoo: 1,091MW<sup>4</sup>

- **Configuration:** 3x100MW (Baspa II) ; 4x272.75MW (Karcham)
- **Units operating:** Baspa II since 2003<sup>3</sup> and Karcham Wangtoo since 2011<sup>3</sup>
- **Technology & Fuel Source:** Hydro
- **Power Offtake:** Long Term(1300MW), Short Term(45MW)
- **Asset Value to JSW Energy:** INR 9,275 Crore/\$1,121mn<sup>2</sup>

## Solar: 10 MW

- Ground based and rooftop solar power projects across various locations with captive power tie-up within JSW Group

## Vijayanagar Solar: 225 MW

- **Configuration:** 225 MW AC
- **Power Offtake:** PPA with JSW Steel

## SECI X Wind : 78 MW

- **Configuration:** 450 MW (Part commissioning of 78 MW)
- **Power Offtake:** PPA with SECI

Remaining Avg. Life of PPA: ~19 years  
Remaining Avg. Life of Assets: ~28 years

1. Long term FSA with BLMCL for supply of lignite from its captive mines | 2. USD/ INR = 82.7 | 3. Denotes start of first unit in respective calendar year; TPP – Thermal Power Plant | 4. Current approved operational capacity at 1,045 MW. CEA approval received for uprating from 1,000 MW to 1,091 MW, in a phased manner over CY21 and CY22. # Mytrah in the entire presentation corresponds to acquired Mytrah RE assets of 1,753 MW capacity

# Operating & Financial Highlights



# Healthy Operations and Financials (excl. Mytrah)

**85%**

Capacity under LT PPA<sup>1</sup>

**~95%**

EBITDA contribution from LT

**21BUs**

Net Generation

**₹ 2,625 Cr**

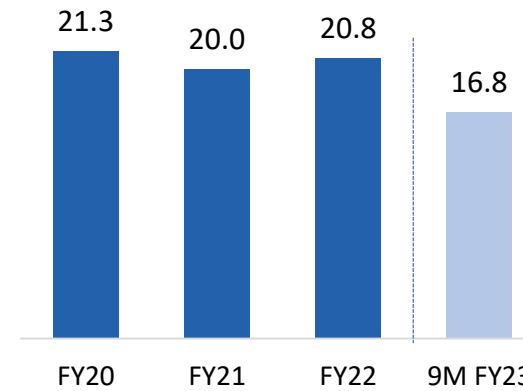
Cash PAT<sup>2</sup>

Figures are for FY22

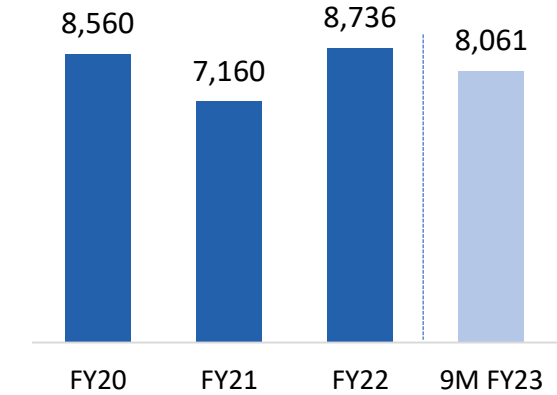
- Steady operations and robust financial: Track record of strong yearly cash profits of ~₹2,300 Crores.
- High LT PPA tie-up rendering high cash flow visibility
  - Almost all LT PPA under two-part tariff (imported/domestic fuel cost/forex pass through)
  - Remaining Avg. Life of PPA: ~19 years
  - Remaining Avg. Life of Assets: ~28 years
- Diversified off-takers
  - All plants placed favorably in Merit Order Despatch
  - Hydro projects under 'must-run' status
  - Consolidated Trade receivables at ₹ 1,628 Cr equaling to 69 receivable days as on Dec 31, 2022

Resilient business model with steady cashflow generation despite sectoral headwinds

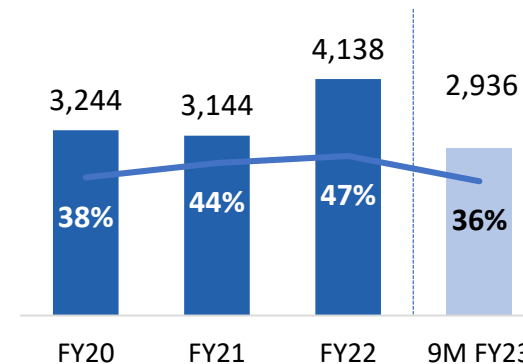
Net Generation (BUs)



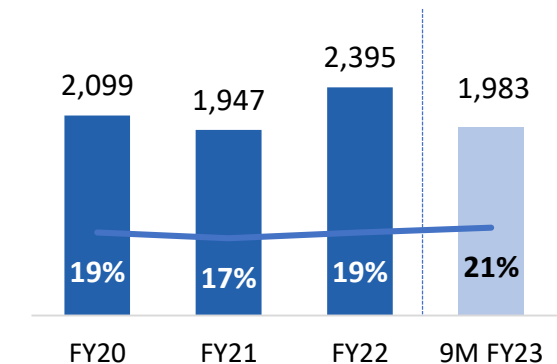
Total Income<sup>3</sup> (₹ Crore)



EBITDA & EBITDA Margin (₹ Crore)



Cash PAT<sup>2</sup> (₹ Crore) and Return on Adj.Net Worth



# Robust balance sheet to support renewable-led growth (excl. Mytrah)

**2.30x**

Net Debt/EBITDA

**0.54x**

Net Debt/Equity

**8.29%**

Wt. average cost of debt

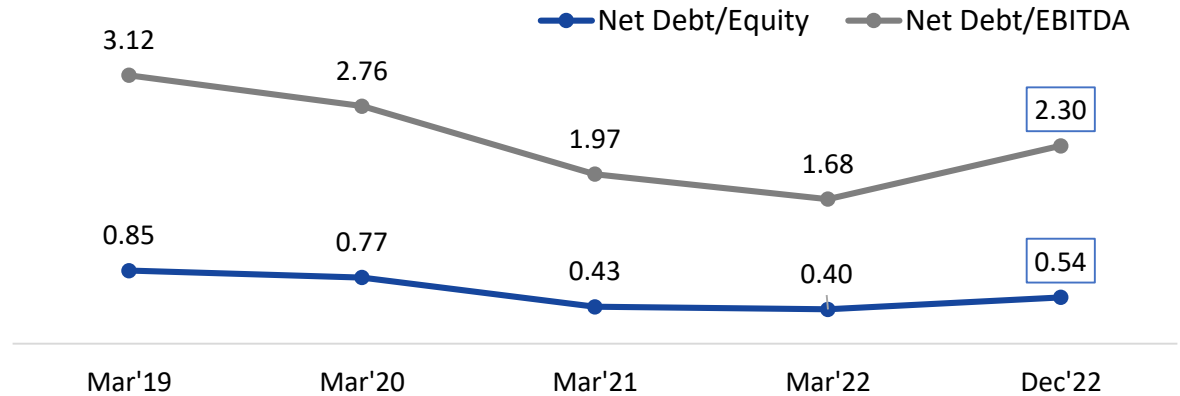
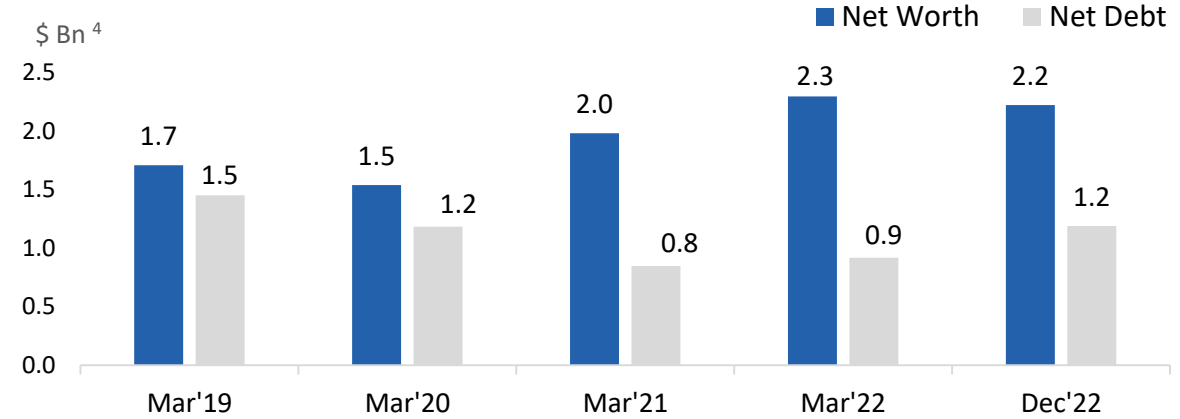
**69**

Receivable Days

Figures as of Dec 31, 2022

- ✓ Strong Liquidity with healthy cash balances: ₹ 3,029 Crore (**\$ 366 Mn<sup>3</sup>**)
- ✓ Financial flexibility enhanced by equity investments:
  - Holding 7Cr (70mn) JSW Steel shares of Value<sup>1</sup>: ₹ 5,379 Cr ( **~\$650 Mn<sup>3</sup>**)
- ✓ Healthy Credit Ratings:
  - India Rating & Research: AA (Stable outlook)
  - ICRA Ltd: ICRA AA (Stable)
- ✓ Access to diverse pools of liquidity
- ✓ Existing portfolio of 4.8 GW generating healthy CF & mid-teen equity IRR<sup>2</sup>
- ✓ Weighted average cost of debt is 8.29% as of Dec 31, 2022

## Large balance sheet headroom & strong cashflow available to pursue growth



ND/EBITDA for Operational Projects at 1.5x (Dec-22)<sup>5</sup>

1 Value of JSW Steel Share holdings as on Dec 31, 2022. Net Worth is impacted by change in value of listed equity investments through Other Comprehensive Income,

2. Calculated as FCFE Yield on Adj. NW is ~14%; Adj NW : Net worth adjusted for non-strategic equity investments held

3. 1 USD =82.7 INR

4 Conversion based on USD = INR spot rate as of respective date

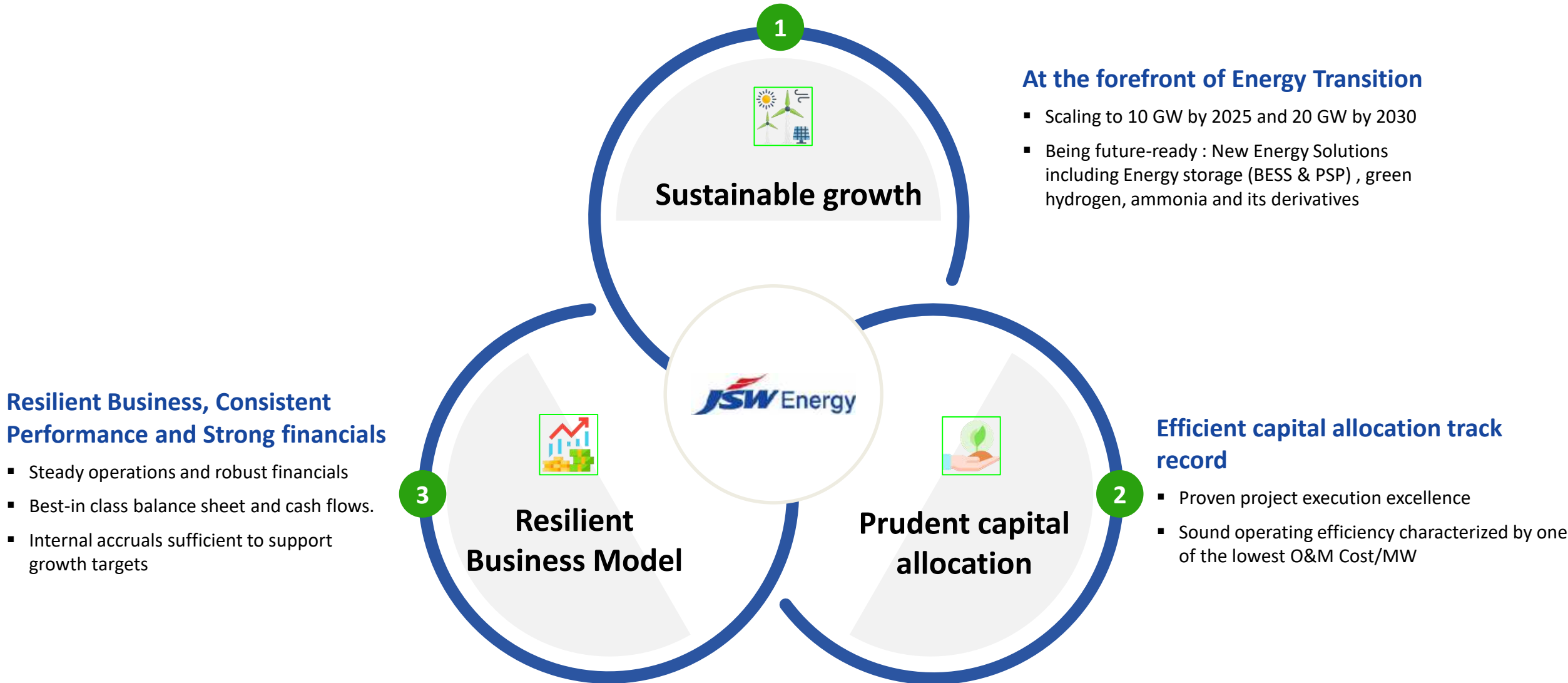
5. Based on net debt for operational projects of ₹3,365 crores; total net debt at the group level stands at ₹9,840 crores on Dec-22.

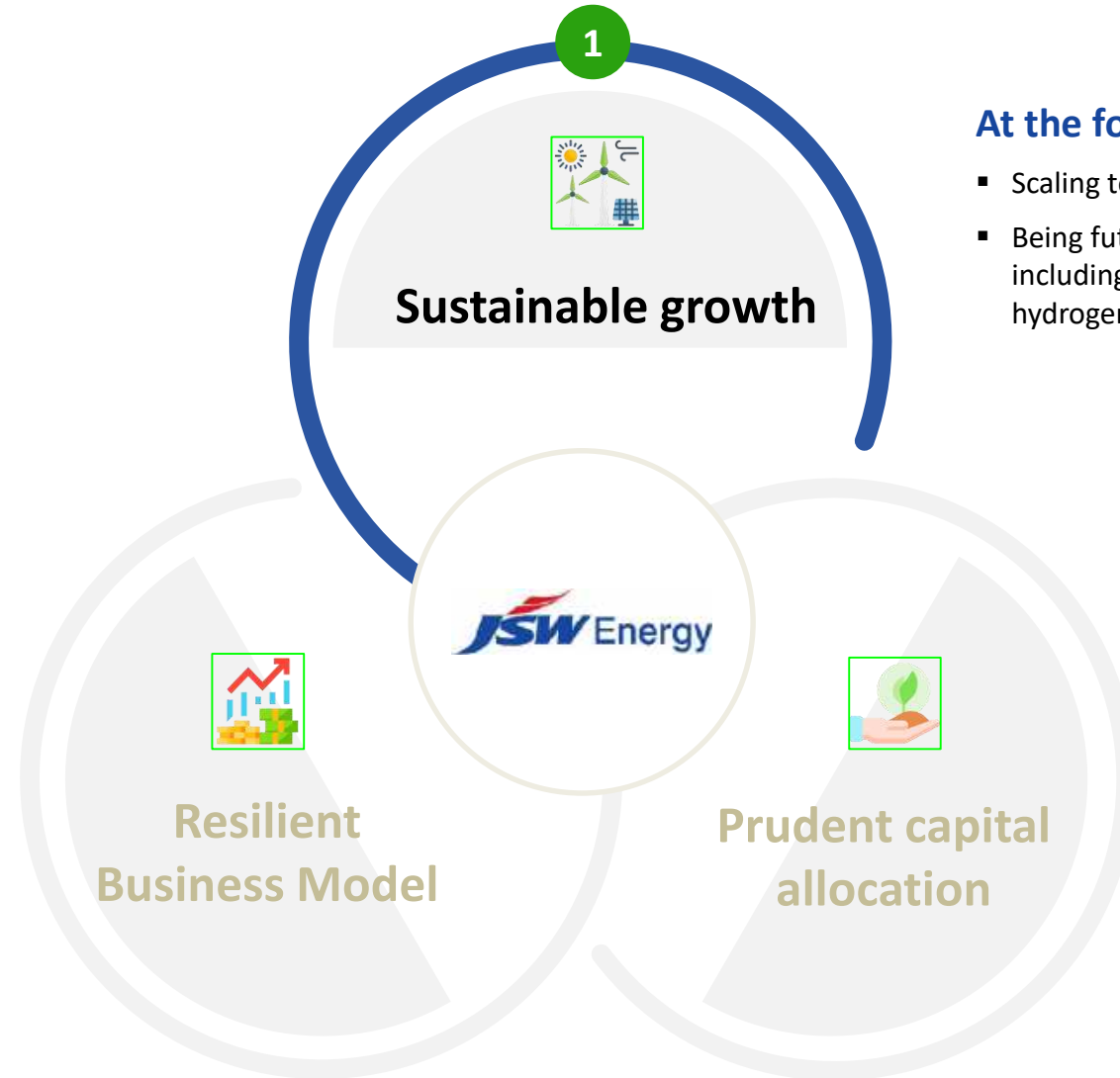
# Why JSW Energy ?

- Compelling Investment Story
- Key Highlights

An aerial photograph of a large dam and reservoir. The dam is a long, curved concrete structure with several spillways. The reservoir is a large body of greenish water. The surrounding area is hilly and has some vegetation. A prominent blue diagonal line runs across the image from the top left towards the bottom right.

Committed to reaching  
Net Zero emissions by 2050





## At the forefront of Energy Transition

- Scaling to 10 GW by 2025 and 20 GW by 2030
- Being future-ready : New Energy Solutions including Energy storage (BESS & PSP) , green hydrogen, ammonia and its derivatives

## Strategy Pillars

1



**Platform Capacity**  
Renewable Led Growth

2



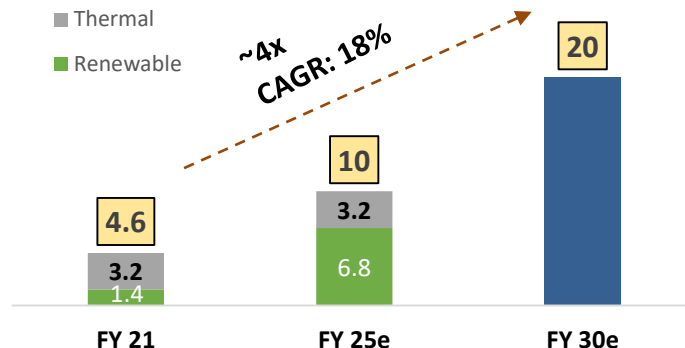
**Energy Services**  
Energy Storage and Grid Stability

3

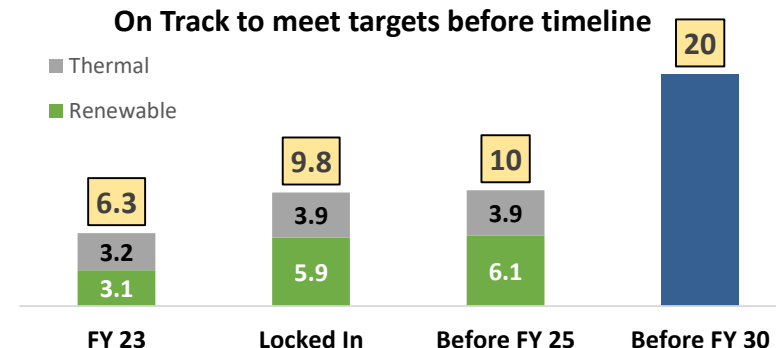


**Energy Products**  
Electrons to Molecules

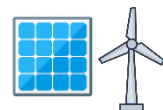
## Articulated Strategy



## Performance



Foray into renewable energy coupled with Storage solutions and products for the grid and commercial & industrial users



Backward integration in supply Chain:  
**Module and WTG Manufacturing**



Foray into energy to molecules business  
: **Green Hydrogen (GH)/Ammonia**



**Received LoA** for SECI BESS project of 500MW/1000MWh



**Hydro Pumped Storage (PSP)** - Received LoI for 300 MW PSP from PCKL  
Resources tied-up for ~9.8GW (~64 GWh) PSP in various states



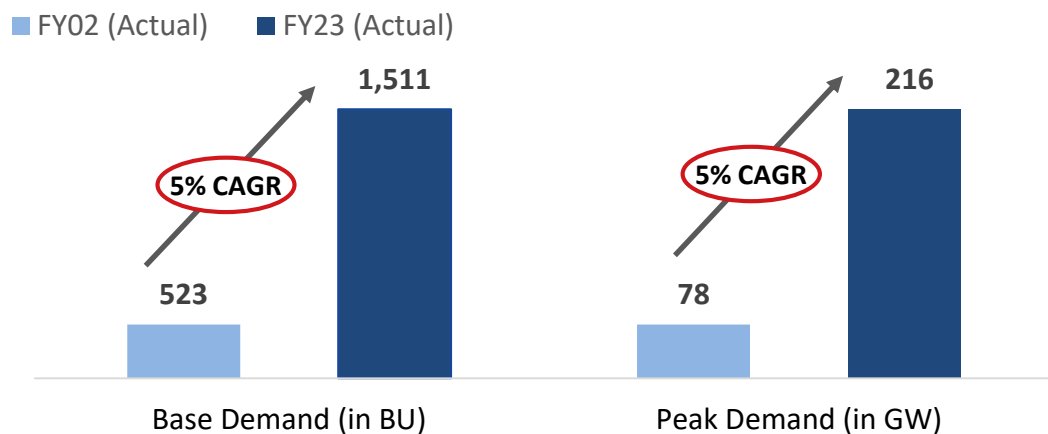
Awarded 1 GW of solar wafer, cell and module (W-C-M) capacity under PLI scheme.



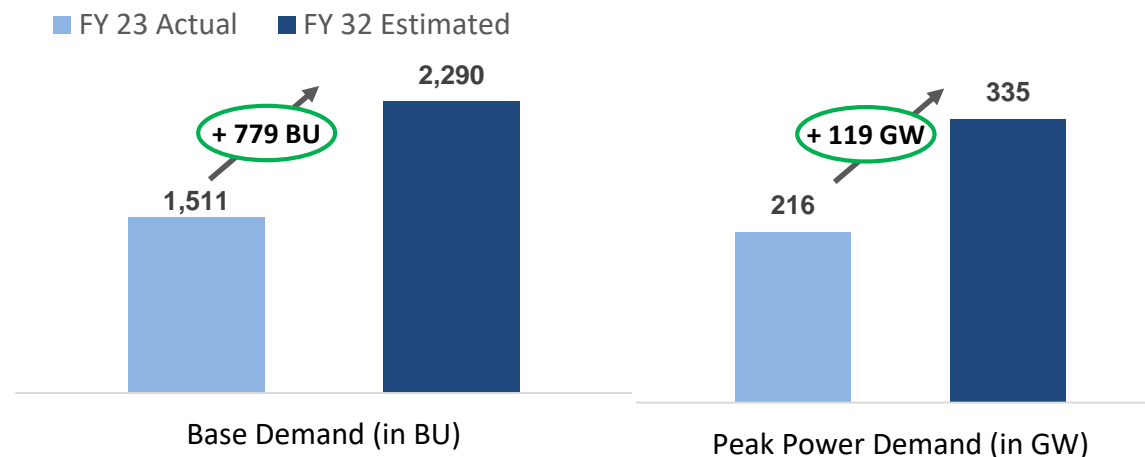
Intend to do a pilot green hydrogen project

# Significant Market Opportunity: Power Demand Growth to be met by RE

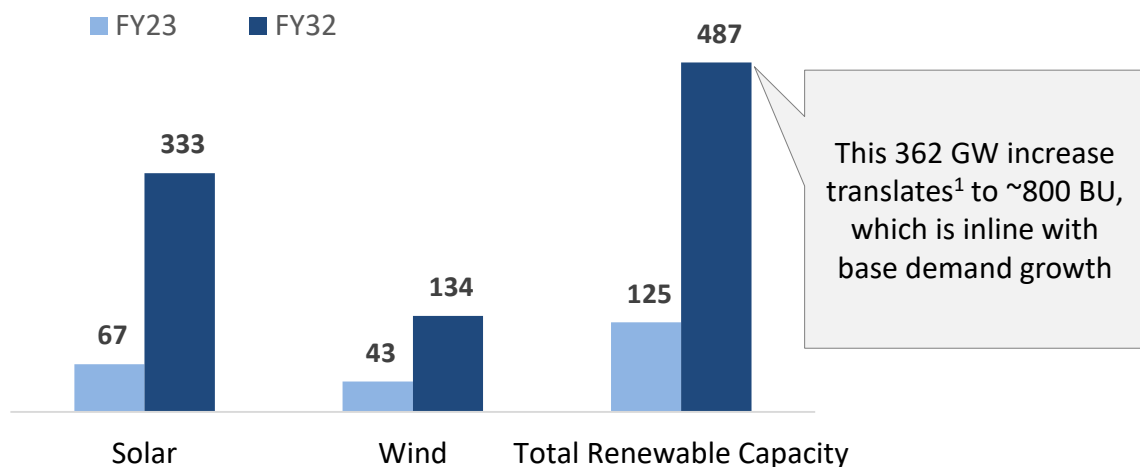
## Historical Power Demand Growth



## Similar growth expected in power demand over next decade



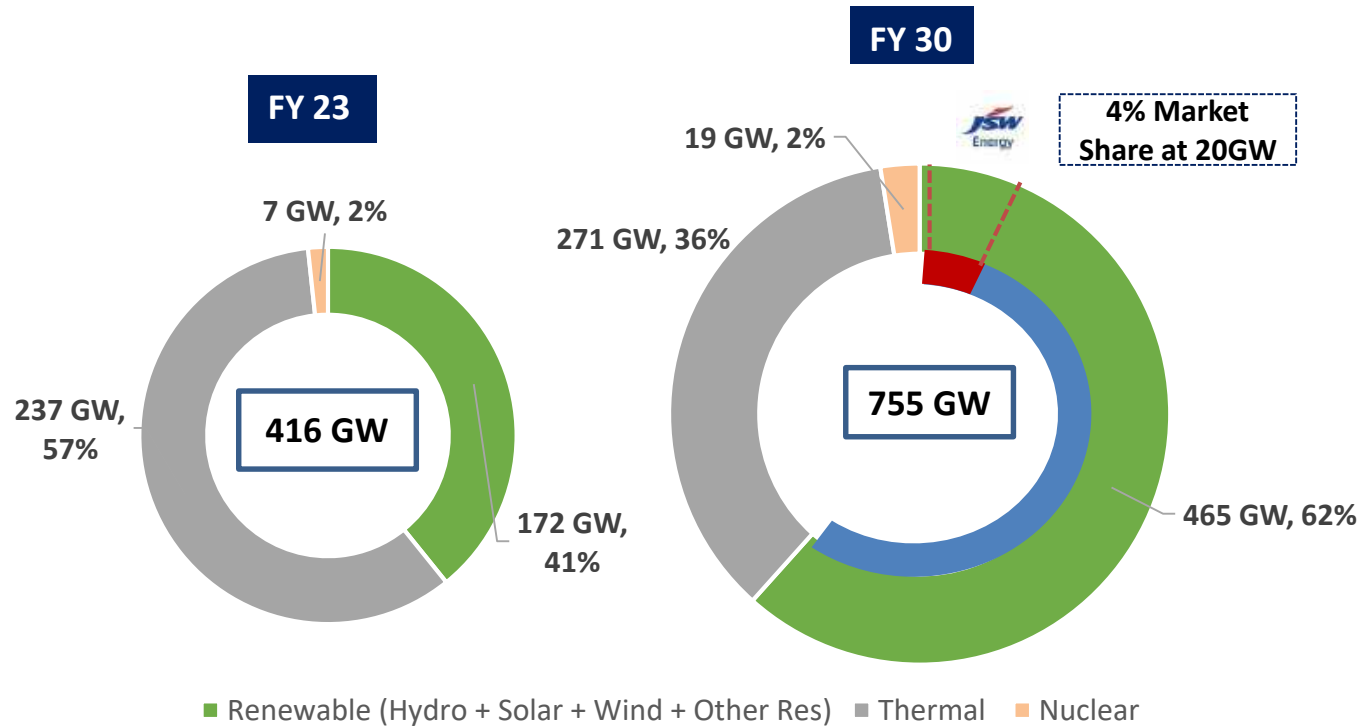
## Demand to be met incrementally with Renewable Energy



## Rapid Urbanization and universal electrification to drive power demand

- ✓ India's is world's third largest power producer, however has a low per capita consumption (~1/3<sup>rd</sup> of world average), this provides huge opportunity for growth
- ✓ Sustained economic growth has driven power demand in India, going forward, unlocking of demand from increased rural electrification and rapid urbanization to drive demand for power

India's share of Renewables is projected to increase from 41% in FY 23 to 62% in FY 30



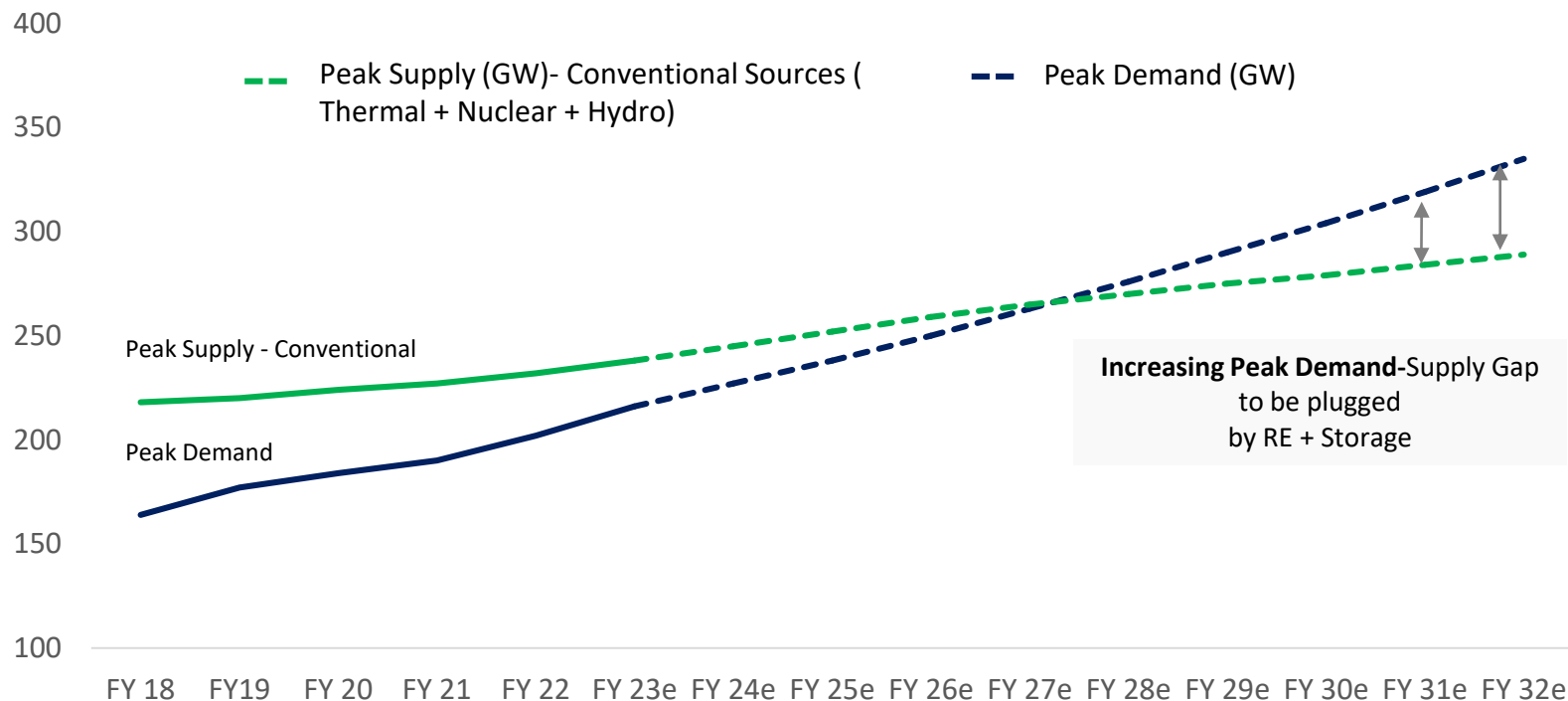
- JSW Energy's strategy is to grow its capacity to 20 GW by FY30 mainly through renewable capacity addition, which is in line with India's renewable energy growth trajectory
- Being part of JSW Group which has its presence across multiple business including steel, cement, infra and paints gives us the opportunity to further grow through group captive

## Changing Environment and our Approach

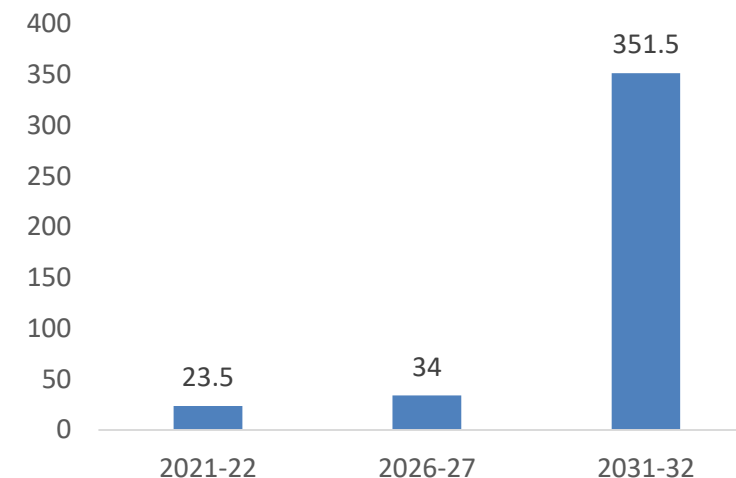
Domain	Environment	Our Approach
<b>Capital</b>	<ul style="list-style-type: none"> <li>• High cost of borrowing due to interest rate hike</li> </ul>	<ul style="list-style-type: none"> <li>• Bidding assumptions take into account interest cycles through life of project</li> </ul>
<b>Supply Chain</b>	<ul style="list-style-type: none"> <li>• BCD on imported Solar Panels/Cells</li> <li>• Uncertainty of supply of Solar panels and WTGs</li> </ul>	<ul style="list-style-type: none"> <li>• De-risking of supply chain through backward integration</li> </ul>
<b>Policy and Fiscal Support</b>	<ul style="list-style-type: none"> <li>• Draft Hydro PSP and Green Hydrogen policy</li> <li>• Budgetary support for Green Transition</li> </ul>	<ul style="list-style-type: none"> <li>• Early Mover in hydro PSP and BESS</li> </ul>
<b>Business Model</b>	<ul style="list-style-type: none"> <li>• Reduced bidding intensity combined with lower tariff discovery</li> </ul>	<ul style="list-style-type: none"> <li>• Bidding discipline with a targeted IRR and optionality of Group captive</li> </ul>

# Energy Storage critical in India's Energy Transition

## Peak Demand vs Supply from Conventional Sources (GW)



## Storage requirement (GWh)\*



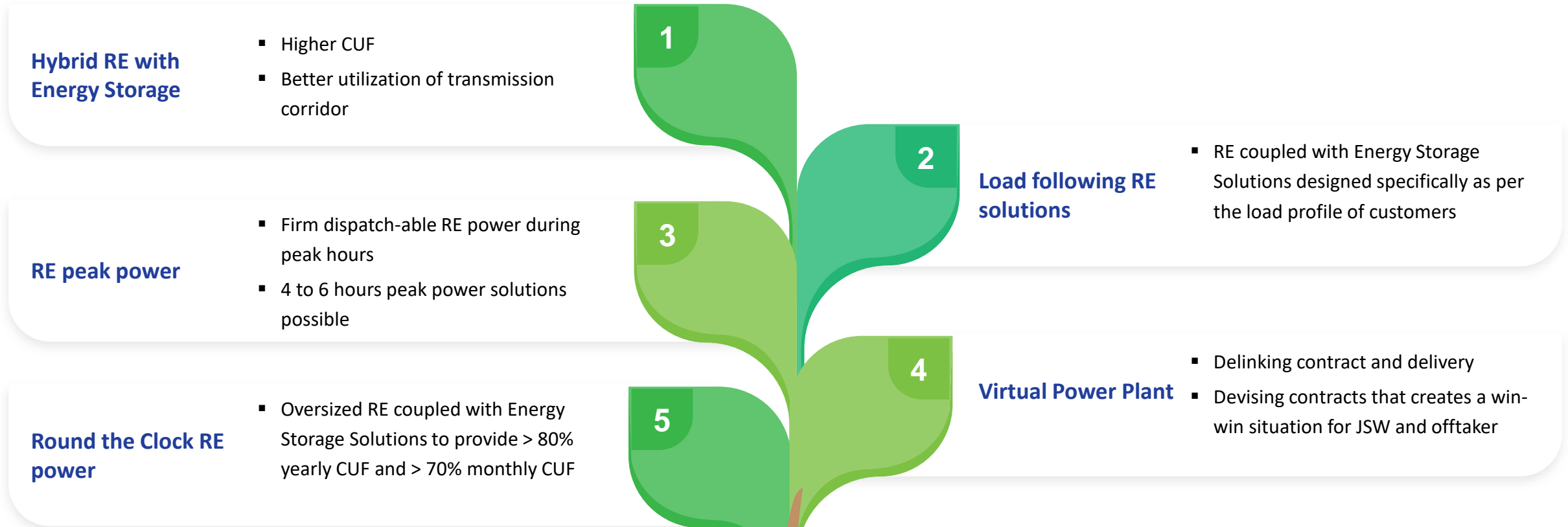
### Renewable Energy + Storage Solutions required to plug increasing Peak Demand-Supply Gap going forward

- Peak Power Demand is expected to grow at a CAGR of ~5% between FY22-32
- Old & Inefficient thermal capacities to keep on retiring YoY
- Hence, Increasing gap between Peak Demand and Peak Supply from conventional power sources (Thermal+Nuclear+Hydro) will be needed to be plugged by supply from renewable + storage capacities

### Draft National Electricity Plan projects a large requirement of Energy Storage for 2031-32

- Projections of the order of 70.3 GW of energy storage requirement till 2031-32

# Energy Storage – Enabler for New RE based products and services



Such new solutions have potential to command a higher premium than plain vanilla RE projects – thereby creating a competitive edge combined with higher returns

# Energy Storage Solutions: Battery Energy Storage Solutions (BESS)

## India's Market Potential



### 52GW/258GWh<sup>1</sup> installed capacity by 2032

- Facilitate RE capacity integration by addressing intermittency
- Balancing grid against load fluctuations
- Better utilization of transmission infrastructure



### Supporting India's Clean Energy commitments

- Waiver of ISTS charges allowed for BESS
- Integral to RTC power infrastructure for clean energy

## JSW's Plans

- ✓ LoAs received for SECI bid for the utility scale pilot BESS project (500MW/1000MWh)
  - Capacity charge of ₹10.85 lakh per MW per month
  - Pilot project is Build Own Operate Transfer (BOOT) with tenure of 12 years
  - Project will have Battery Storage Purchase Agreement for 60% of the capacity with SECI and balance is open for sale
  - Identified site is at Fatehgarh, Rajasthan
  - Participate in ancillary market with the open capacity
  - Mid-teen equity IRR expected from the project
  - Targeted commissioning by October 2024

# Energy Storage Solutions: Hydro Pumped Storage Projects (PSP)

## India's Market Potential



### Only 3.3 GW operational out of 97 GW potential

- Hydro Power Obligations to bolster development of PSPs
- Waiver of ISTS charges also allowed for Hydro PSP

### Supporting 50% energy requirement from renewable sources by 2030



Hydro PSP to provide adequate peaking reserves, reliable grid operation and integration of variable renewable energy sources

#### Key Highlights:

- Long Project Life
- Low construction cost and better PLF vis-à-vis conventional hydro projects
- Supports Grid Stability
- High tariffs with attractive returns

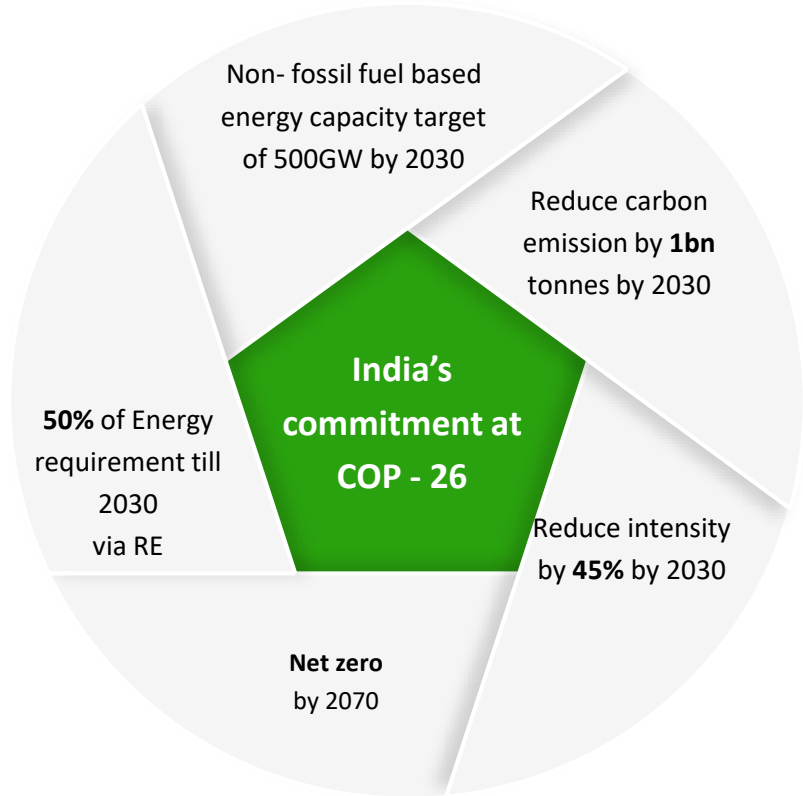
## JSW's Plans

- ✓ Received LoI for 300 MW PSP from Power Company of Karnataka Ltd
- ✓ Resources secured for 9.8 GW/ 64GWhr PSP
- ✓ First project will be a captive PSP at Vijayanagar, construction expected to commence in CY2023

State	MoU/LoI Dates	Capacity (GW)
Maharashtra	Sep-21 Sep-22	2.5
Andhra Pradesh	Mar-23	2.2
Telangana	Apr-22	1.5
Uttar Pradesh	Nov-22	1.2
Rajasthan	Dec-21	1.0
Chhattisgarh	Aug-22	1.0
Karnataka	Jun-22 Nov-22	0.4
Resources Secured		9.8
Target (by 2030)		10.0

- ✓ Benefit of JSW's proven experience with managing the largest hydro portfolio in the private sector
- ✓ Project Clearances : 3 Years | Project Construction: 3 Years

# Electrons to Molecules: Green Hydrogen Potential



## Advantage India

<p><b>Significant Hydrogen demand</b></p> <p>Current demand ~6 MMT expected to grow to ~24 MMT by 2050</p>	<p><b>Huge RE potential</b></p> <p>Existing RE capacity of ~165 GW (incl. Hydro) Target – 50% of energy requirement from RE by 2030</p>	<p><b>Low Tariffs</b></p> <p>RE tariffs in India (INR ~ 2-2.5)</p>
<p><b>India's Import Bill</b></p> <p>India is 3<sup>rd</sup> largest consumer of oil &amp; gas, imports ~85% of oil and ~50% of Gas</p>	<p><b>Clean energy Commitment</b></p> <p>GH adoption contributes to emission reduction &amp; meet energy demand</p>	<p><b>Infrastructure build</b></p> <p>Large part of India's infrastructure needs to be built out, allows better integration</p>

**Grey Hydrogen:** Currently, more than 95% of hydrogen is produced from fossil fuels via carbon intensive processes.

**Blue Hydrogen:** Grey hydrogen whose CO<sub>2</sub> emitted during production is sequestered via carbon capture and storage (CCS)

**Green Hydrogen:** Low or zero-emission hydrogen produced using clean energy sources

### Main production route

- Steam Methane Reforming (SMR)
- Coal Gasification

### Characteristics

- Intense CO<sub>2</sub>
- Low Cost

### Main production route

- SMR + CCS
- Coal Gasification + CCS

### Characteristics

- Low CO<sub>2</sub>
- High Cost

### Main production route

- Electrolysis using renewables

### Characteristics

- Zero CO<sub>2</sub>
- High Cost

## India's Market Potential

# H<sub>2</sub>

### Significant H<sub>2</sub> demand

- India - 2<sup>nd</sup> largest hydrogen demand base in the world
- H<sub>2</sub> demand expected to grow to ~24 MMT by 2050; can spur USD 65-70 Bn investments in incremental RE capacity



### National Hydrogen Mission

- Announced in the Union Budget 2021 for making a hydrogen roadmap for the country
- Government announced Green hydrogen obligation for Fertilizers and Refinery sector
- Incentives of ₹19,744 crores announced for development of green hydrogen capacity of at least 5 MMT/annum



### India's Clean Energy commitments

- Green H<sub>2</sub> adoption can contribute to emission reduction in allied sectors
- India has low RE tariff's: Electricity is ~80% of Cost of Green H<sub>2</sub>

## JSW's Plans

- ✓ To tap significant clean energy market opportunity in India and become a front-runner in a future hydrogen economy
- ✓ Utilisation potential across:
  - green steel making
  - green ammonia
  - chemical derivatives
  - hydrogen mobility
  - other industrial applications

# Compelling Investment Story



## Efficient capital allocation track record

- Proven project execution excellence
- Sound operating efficiency characterized by one of the lowest O&M Cost/MW

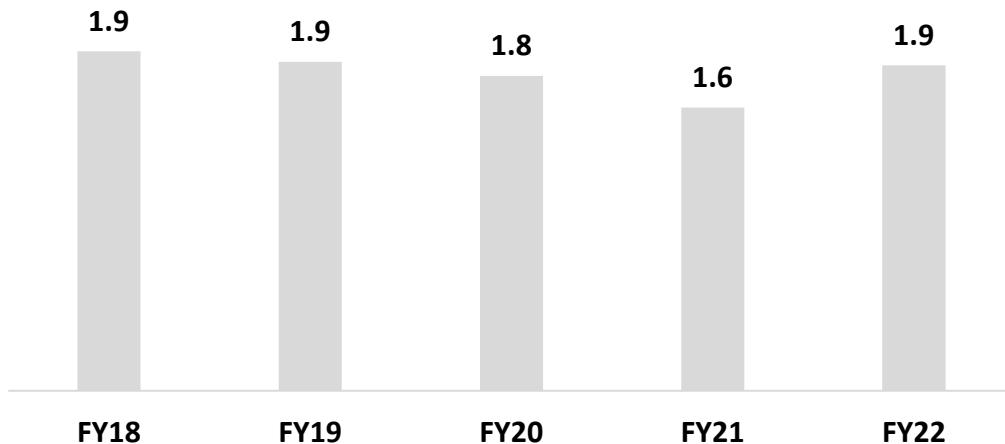
# Proven project execution and operational excellence...

Prudent and consistent capital allocation strategy for growth over a 25 year history

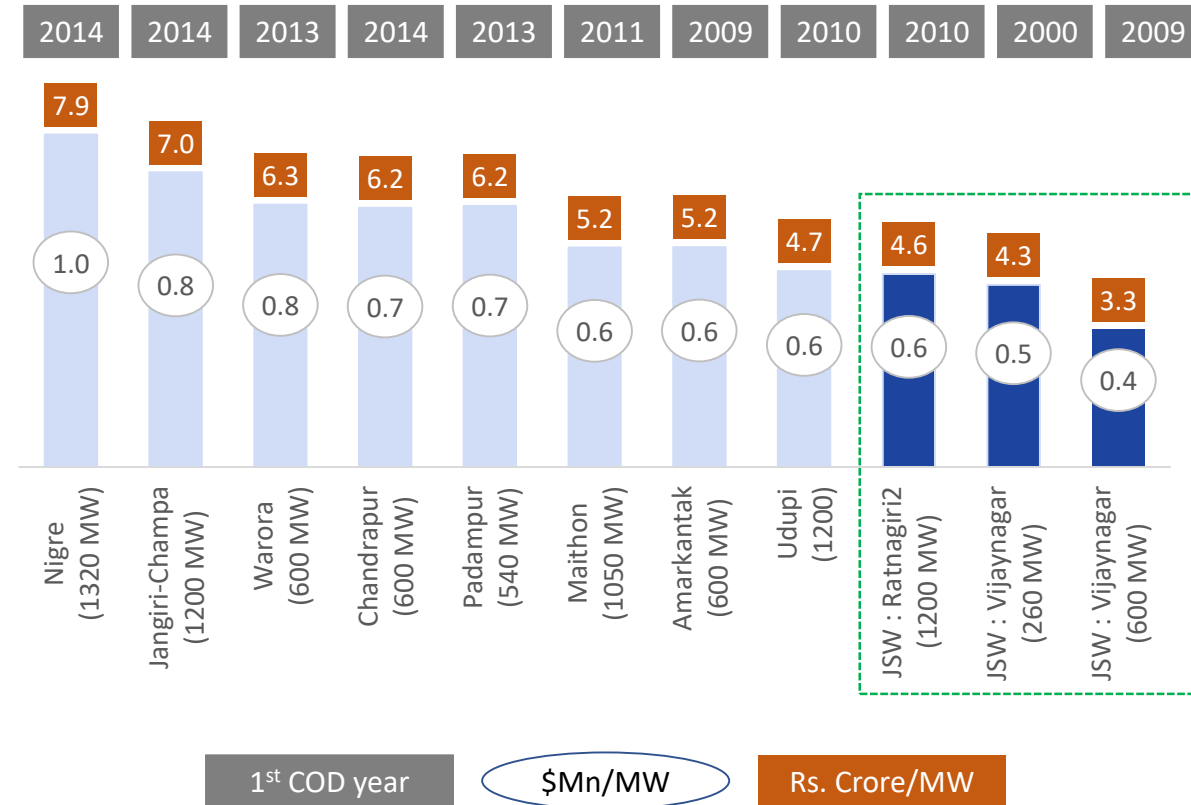
Business model resilient despite several sectoral headwinds over the last decade

Sound operating efficiency characterized by one of the lowest O&M Cost/MW

O&M Expenses (Rs Mn/MW)



## One of the lowest project execution cost in the industry



# Compelling Investment Story

## Resilient Business, Consistent Performance and Strong financials

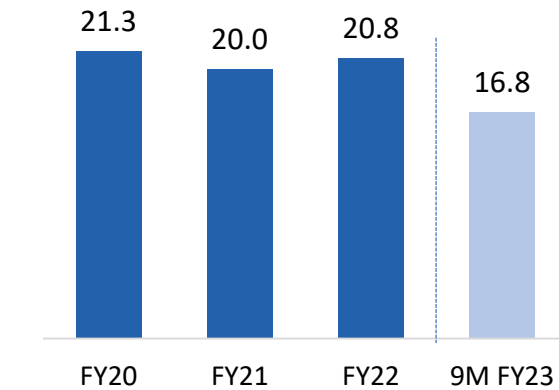
- Steady operations and robust financials
- Best-in class balance sheet and cash flows.
- Internal accruals sufficient to support growth targets



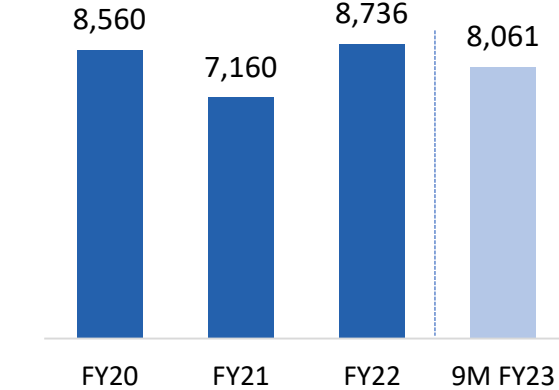
# Steady Operations and Robust Financials (4.8 GW)

## Consistent Asset Performance

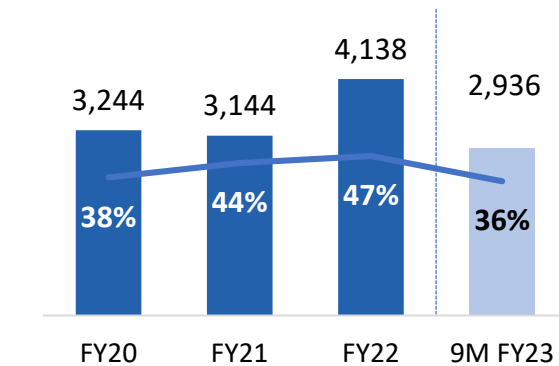
### Net Generation (BUs)



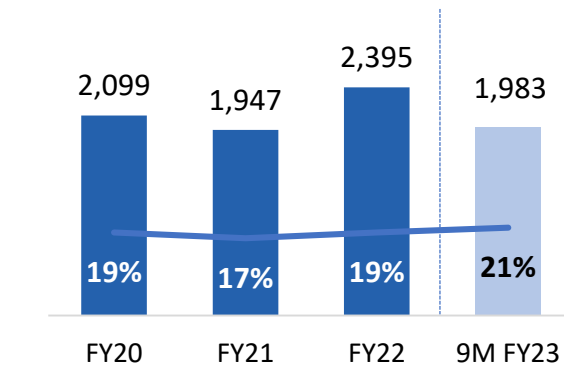
### Total Income<sup>1</sup> (₹ Crore)



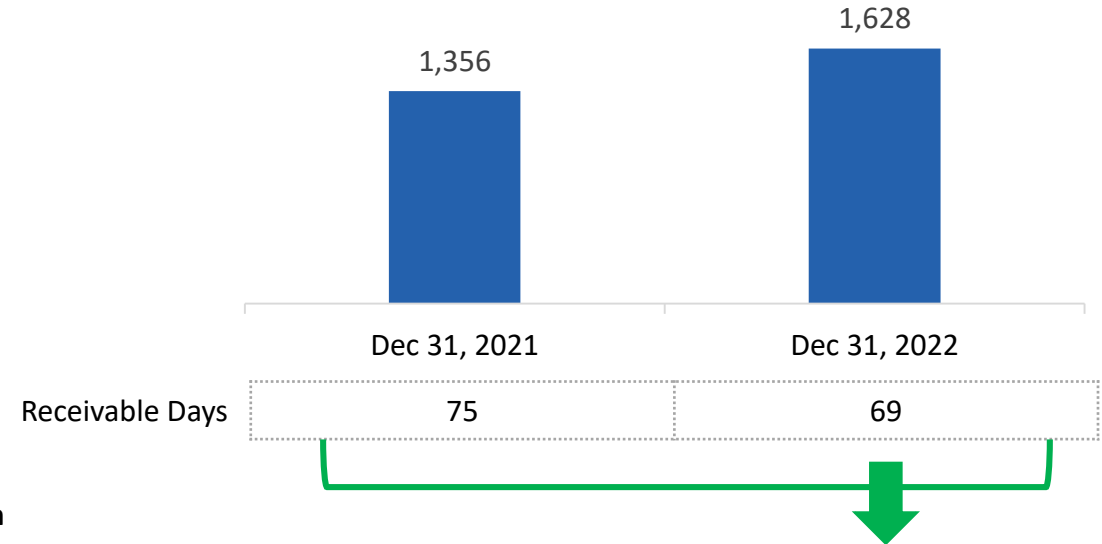
### EBITDA & EBITDA Margin (₹ Crore)



### Cash PAT (₹ Crore) and Return on Adj.Net Worth



## Low Trade Receivables<sup>2</sup>



- ✓ All plants placed favourably in States' Merit Order Dispatch
  - Further, Hydro plants under 'Must-run status' with no scheduling risk
- ✓ No history of any bad debts from routine long term trade receivables
- ✓ Payment security mechanism in force for power tied under long term PPA with discoms
- ✓ Recovery of late payment surcharge in case of delayed payments from discoms

# Best-in class balance sheet & cash flows to support renewable-led growth

## Large balance sheet headroom to pursue growth opportunities

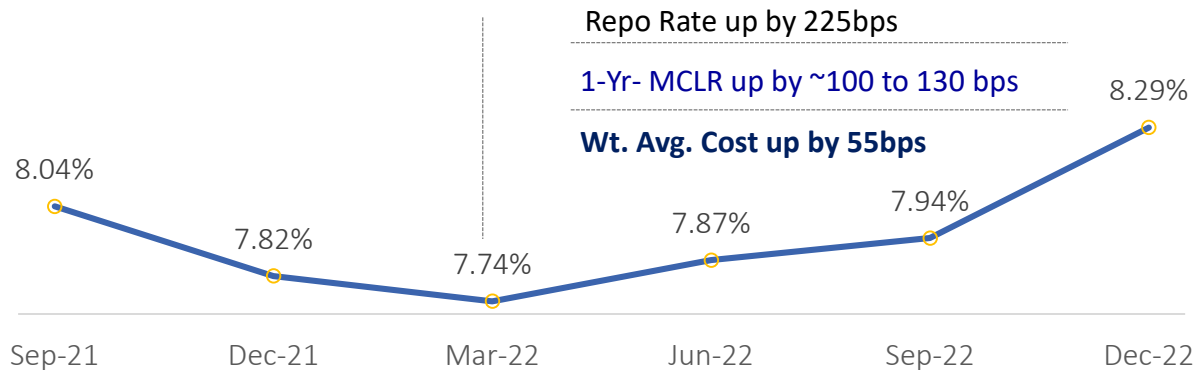
### Strong credit metrics :

Figures in ₹ Crore	As on Dec 31, 2022
Networth	18,392
Net Debt	9,840
Net Debt/EBITDA	2.30
Net Debt/Equity	0.54
Wtd. Average Cost of Debt	8.29%

### • Healthy Credit Ratings and access to diverse pools of liquidity

- ✓ India Rating & Research: AA (Stable outlook)
- ✓ ICRA Ltd: ICRA AA (Stable)

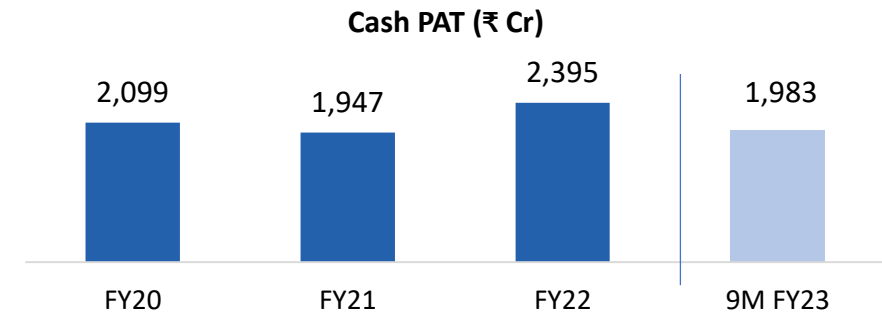
## Wt. Average Cost of Debt



## Healthy internal accruals to support growth

### Operational Portfolio (4.8 GW excl. Mytrah):








- **Steady operations and robust financial:** Track record of strong yearly cash profits of ~₹2,300 Crores<sup>1</sup>



- **Generating healthy CF & mid-teen equity returns**
- 85% of portfolio tied-up under Long Term PPA
  - ✓ Remaining Avg. Life of PPA: ~19 years
  - ✓ Remaining Avg. Life of Assets: ~28 years
- **Strong Liquidity with healthy cash balances<sup>2</sup>:** ₹3,029 Crore
- **Financial flexibility** enhanced by equity investments:
  - ✓ JSW Steel shares: 7 crore shares held (Value as on Dec 31, 2022: ~ ₹5,379 Crore)
- **No equity dilution envisaged for intended capex of ₹10,000 crore/annum for upcoming projects**

1. Applying the average return of 18% on current adjusted net worth 2. Includes unencumbered bank balances, FDs, and liquid mutual funds

# JSW Energy : Key Highlights

 <b>Proven Execution Excellence</b>	<ul style="list-style-type: none"><li>✓ Superior project execution skills: Projects set-up in lowest cost &amp; time</li><li>✓ Differentiated business strategy for growth to 20 GW, driven by Renewable</li><li>✓ Foraying in New Energy Platforms: Green Hydrogen, Energy Storage, Energy Products &amp; Services</li></ul>
 <b>Focus on Sustainability</b>	<ul style="list-style-type: none"><li>✓ Strong Focus on ESG – Leadership band with ‘A-’ score in the 2021 CDP Climate Change assessment</li><li>✓ Amongst the Highest rated power generation company in India by various independent ESG rating agencies</li><li>✓ To be Carbon Neutral by 2050; Committed to set science based emission reduction targets (SBTi)</li></ul>
 <b>Efficient O&amp;M</b>	<ul style="list-style-type: none"><li>✓ Sound operating efficiency characterized by one of the lowest O&amp;M costs in the sector</li><li>✓ Global best practices &amp; recognition in Safety: Barmer and Ratnagiri Plants awarded ‘SWORD OF HONOUR’ by British Safety Council</li></ul>
 <b>Steady EBITDA and Cash accruals</b>	<ul style="list-style-type: none"><li>✓ 85% of total portfolio tied up with LT PPA providing ~95% EBITDA and Cashflow generation</li><li>✓ Two-part tariff structure mitigating fuel and forex risk</li></ul>
 <b>Healthy Receivables</b>	<ul style="list-style-type: none"><li>✓ Receivables days at low levels in DSO terms.</li><li>✓ Favorable placement in Merit Order Despatch &amp; diversified off-takers mitigate Receivable risk</li></ul>
 <b>Strong Balance Sheet</b>	<ul style="list-style-type: none"><li>✓ Amongst the Strongest Balance Sheet in the sector: 2.30x Net Debt/EBITDA; 0.54x Net Debt/Equity</li><li>✓ Healthy debt metrics to be maintained while pursuing value accretive growth</li><li>✓ A healthy cash balance of ₹3,029 Cr and financial flexibility with JSW Steel equity shareholding</li></ul>
 <b>Low Cost of Funding</b>	<ul style="list-style-type: none"><li>✓ Proactive Debt Management: Weighted average cost of debt at 8.29%</li><li>✓ Raised a US\$ 707 million green bond to refinance debt for hydro entity in May’21</li></ul>

# JSW Neo Energy Ltd



# JSW Neo Energy – Green Energy Platform of JSW Energy

**JSW Energy Limited**  
9,896 MW

Ratnagiri – 1,200 MW  
 Vijayanagar – 860 MW  
 Nandyal – 18 MW  
 Solar – 10MW  
 JSWEBL – 1,080  
 Ind-Barath- 700  
**Total – 3,868 MW**

- Hydro Entities
- Solar/Wind Entities
- Products & Services

**JSW Neo Energy \***  
6,028 MW

## Energy Generation Portfolio

JSW Hydro Energy Limited (1,391 MW)  
(Karcham & Baspa)

JSW Energy (Kutehr) Limited (240 MW)

JSW Renew Energy Limited (810 MW SECI-IX)

JSW Renew Energy Two Limited (450 MW SECI-X)

JSW Renewable Energy (Vijayanagar) Limited (863 MW Captive)

JSW Renewable Energy (Dolvi) Limited (95 MW Captive)

Renewable Portfolio of Mytrah Energy (1,753 MW - Acquired)

Pipeline SECI XII 300 MW  
 Pipeline Chhatru HEP 126 MW

## Products & Services

**BESS – SECI Pilot**  
(500MW/1000MWh)

**PSP**  
LoI for 2.4 GWh  
MOUs signed for 64 GWh

Advanced high efficiency solar module (Awarded capacity under PLI)

**Green Hydrogen & Its Derivatives**

\*

All subsidiaries shown are wholly owned subsidiaries

# Green driving the platform capacity

JSW Neo 6,028 MW

Operational Assets – 3,447 MW

Under Construction & Pipeline – 2,581 MW



Wind

**3,624 MW**

Mytrah Assets:  
1,331 MW



Hydro

**1,757 MW**



Solar

**647 MW**

Mytrah Assets:  
422 MW

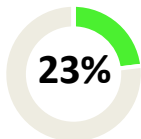


Hydro



1,391 MW

Karcham Wangtoo  
(1,091)  
Baspa (300)

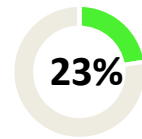


Wind



1,409 MW

Mytrah Wind (1,331)  
SECI X (78)

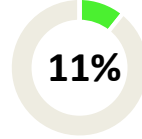


Solar



647 MW

Vijaynagar (225)  
Mytrah Solar (422)

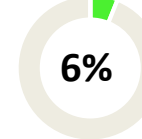


Hydro



366 MW

Kutehr (240)  
Chhatru (126)

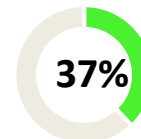


Wind



2,215 MW

SECI IX (810)  
SECI X (372)  
Captive JSW Steel (733)  
SECI XII (300)



Total capacity

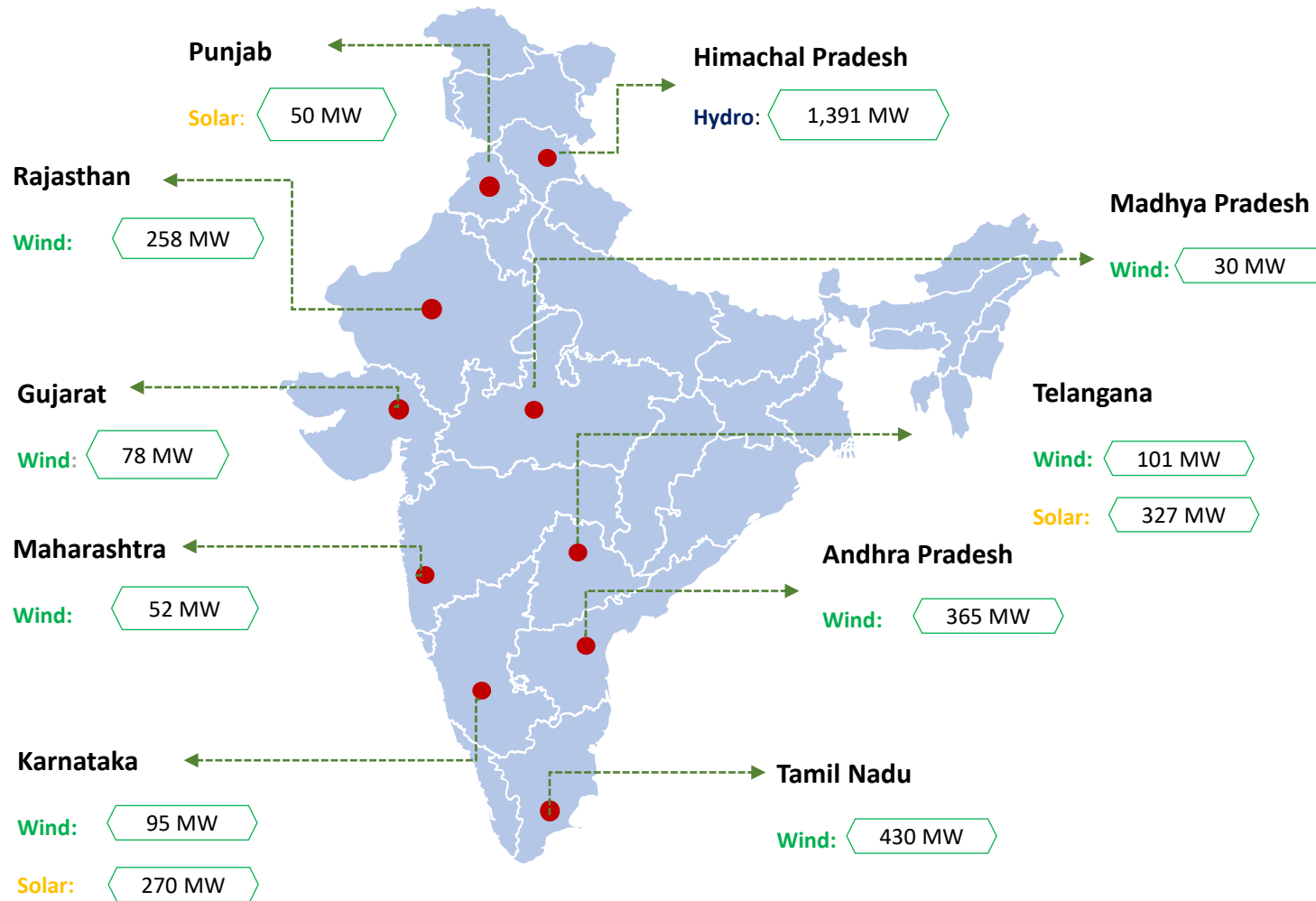
Plant (MW)

% of total locked-in  
capacity  
(6 GW)

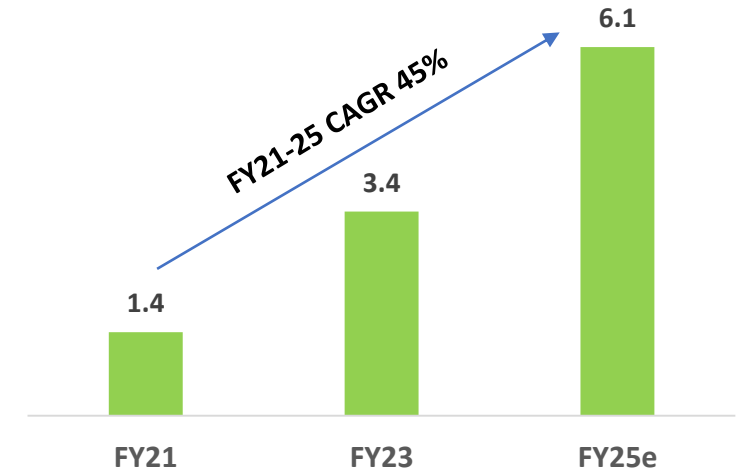
Total locked-in renewable capacity of 6,028 MW

# JSW Neo : 3.4 GW Operating Capacity

## Installed Capacity by Location



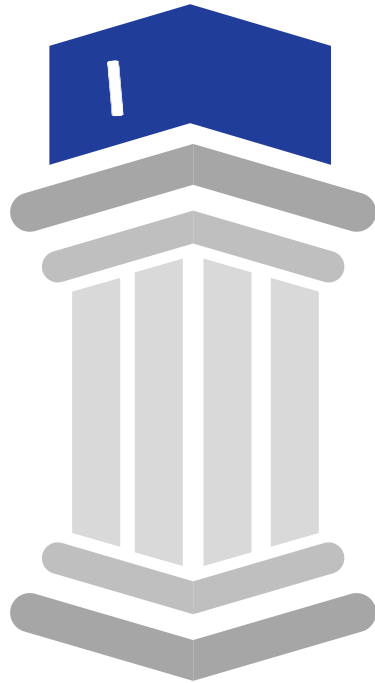
## JSW Neo Energy Capacity (GW)



- 6 GW capacity locked in
- Expected to generate mid-teen equity IRR
- No equity dilution to reach targeted capacity growth

Total installed capacity is 3,447 MW of which 97% is tied up under Long Term PPA

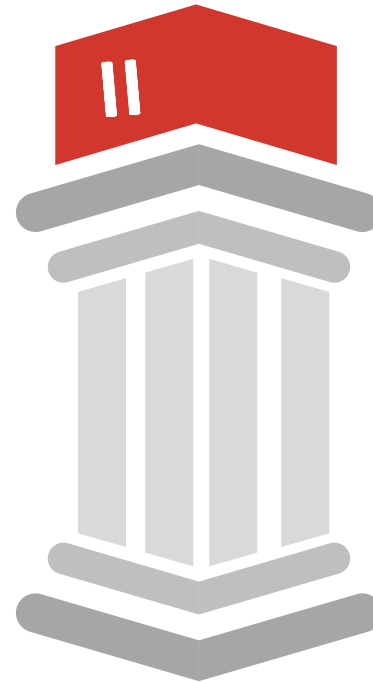
## Value Accretive Business Model



### Prudent selection of growth opportunities

- Bidding based on P90 generation assumption
- Conservative Interest rate assumptions
- Targeted selection- Targeting a niche segment of market offering healthy returns – Mid teen IRRs

## Implementation De-risking



### Life cycle approach

- Land acquisition, De- scoped project construction, power evacuation and O&M
- Power evacuation
- Proactive approach to get the PPA/PSA executed and tariff adoption

## Execution Efficiency



### Group's project execution excellence

- Fast execution while ensuring all safety guidelines

## Protecting Returns



### Value Accretive Business Model

- Bidding based on P90 generation assumption
- Conservative Interest rate assumptions
- Targeted selection- Targeting a niche segment of market offering healthy returns – Mid teen IRRs



### Implementation De-risking

- Land acquisition, De- scoped project construction, power evacuation and in-house O&M
- Proactive approach to get the PPA/PSA executed and tariff adoption



### Execution Efficiency

- Group's project execution excellence: Fast execution while ensuring all safety guidelines

## Enhancing IRRs



### De-scoped Project Execution

- No Turn key EPC contracts: instead creating value with split package approach
- Modular commissioning; Early onset of revenues



### Attractive Financing Solutions

- Debt loading coinciding with revenue generation
- Reducing Interest cost via refinancing



### Operational excellence

- Cost reductions due to Self O&M
- Technology Improvement

## Further Growth Opportunities



### Green Energy Needs of JSW Group and C&I customers

- JSW Group has aggressive growth plans in Steel, Cement and Paints businesses providing opportunities for group captive projects



### Power to X (PtX): Green Chemicals

- Green Hydrogen and Ammonia derivatives
- Green Methanol and derivatives

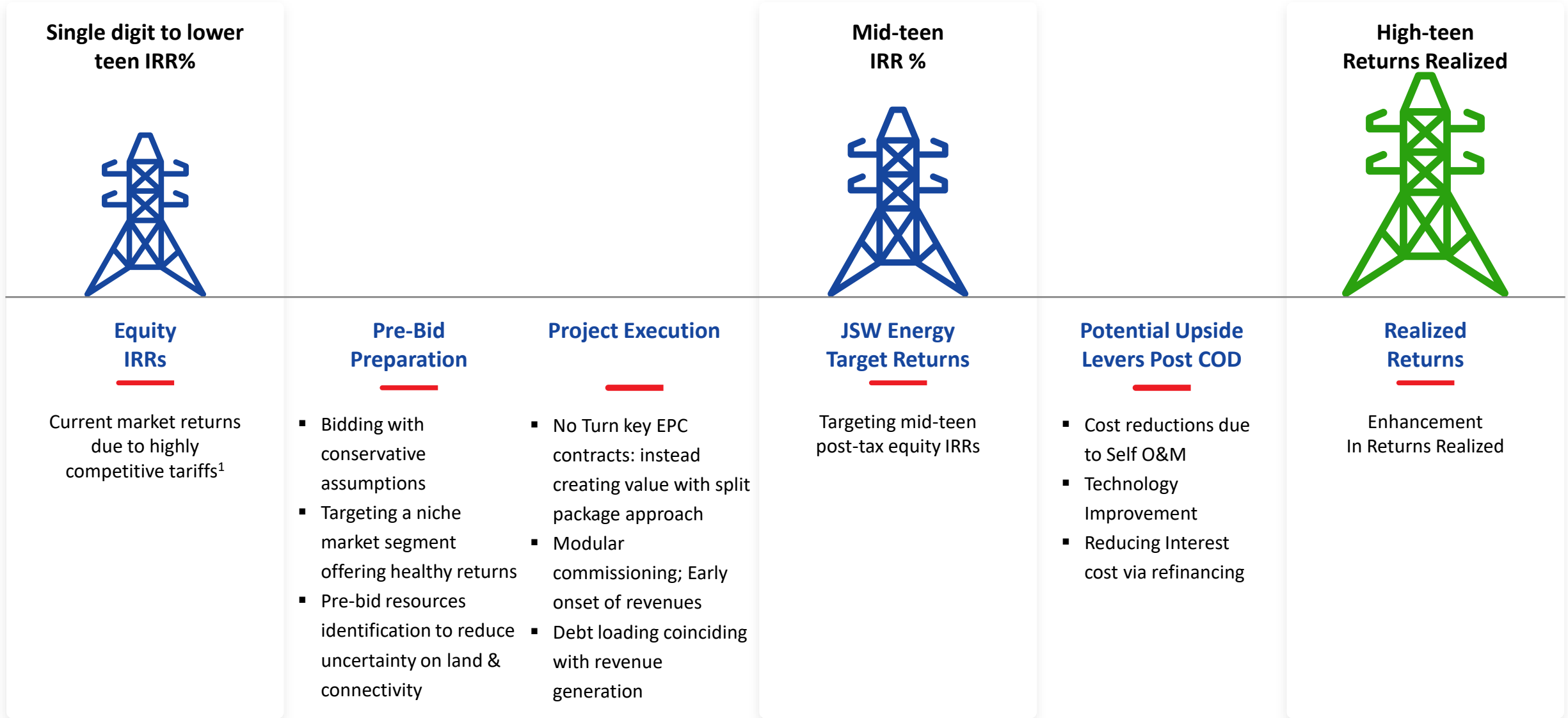


### Energy Storage: Hydro PSP and BESS



### Value Accretive M&A opportunities

# Growth Framework leading to industry-leading returns



1- Company market analysis; COD: Commercial operations date; IRR: Internal Rate of Return

# Risk Mitigation



# Adequately addressing key risks and concerns (1/2)

Key Risks/Concerns	Favourable Policy Support and Market Interventions	Mitigation Strategy by JSW Energy
<b>Demand risk (Clearing of PPA Backlogs)</b>	<ul style="list-style-type: none"> <li>▪ Well established central agencies (SECI, NTPC) for managing PPAs</li> <li>▪ Discoms/offtakers entering into new renewable long-term PPAs at commercially attractive tariff given pick-up in economic activity resulting in strong spot electricity prices</li> <li>▪ Renewable Power Obligation for RE and Hydro Projects, energy storage obligations also introduced thereby promoting energy storage projects</li> </ul>	<ul style="list-style-type: none"> <li>▪ Existing portfolio: 85 % PPA signed which forms about 95% of EBITDA</li> <li>▪ U/C portfolio: PPA signed for all renewable projects</li> <li>▪ Mix of Discoms and C&amp;I customer base</li> <li>▪ Targeting new areas of demand through Green Hydrogen and Energy storage</li> </ul>
<b>Receivable risk</b>	<ul style="list-style-type: none"> <li>▪ Payment security through mandatory provision of LCs before power off-take</li> <li>▪ Late payment surcharge fees are charged for delays</li> <li>▪ Cabinet approves US\$37 bn for power discom reforms</li> <li>▪ Defined framework for recovery of costs due to 'Change in Law'</li> </ul>	<ul style="list-style-type: none"> <li>▪ All plants placed favorably in States' Merit Order Dispatch</li> <li>▪ Portfolio diversified across multiple off-takers</li> <li>▪ No history of any bad debts from routine LT trade receivables</li> <li>▪ Recovery of late payment surcharge in case of delayed payments from discoms</li> </ul>
<b>Domestic industry for capacity addition</b>	<ul style="list-style-type: none"> <li>▪ ~\$2.9 bn production linked incentive scheme for high efficiency PV modules</li> <li>▪ ~\$2.2 bn scheme for ACC batteries</li> </ul>	<ul style="list-style-type: none"> <li>▪ Technology agnostic approach</li> <li>▪ To benefit from domestic capacity addition</li> </ul>

# Adequately addressing key risks and concerns (2/2)

Key Risks/Concerns	Favourable Policy Support and Market Interventions	Mitigation Strategy by JSW Energy
<b>Offtake Risk (revenue/volume)</b>	<ul style="list-style-type: none"> <li>Must-run status for renewable; Rule notified to provide regulatory support towards 'Must-run' status - Electricity (Promotion of generation from renewable sources of energy by addressing Must Run and other matters) Rules, 2021</li> </ul>	<ul style="list-style-type: none"> <li>Hydro plants under 'Must-run status' with no scheduling risk</li> <li>~98% of LT PPA under two-part tariff; Plant Availability maintained above normative across locations to recover fixed charge; fluctuations in fuel cost and forex are completely pass through</li> </ul>
<b>Soundness of Auction framework</b>	<ul style="list-style-type: none"> <li>Efficient and Transparent competitive bidding process</li> <li>Innovative models emerging: Hybrid solar, Renewable-plus-storage , Round-the-clock (RTC) renewable power</li> </ul>	<ul style="list-style-type: none"> <li>Highest ever single bid standalone capacity secured under any of the Indian renewable auction – 810 MW wind capacity awarded under SECI IX</li> <li>Participating in RTC bids</li> </ul>
<b>Grid Infrastructure capability</b>	<ul style="list-style-type: none"> <li>Development of dedicated Green Energy Corridors for evacuating RE capacity</li> </ul>	<ul style="list-style-type: none"> <li>Pump Storage and battery storage solutions offer opportunity to address grid balancing issues</li> <li>Received LOAs for 500MW/1,000 MWh SECI battery energy storage project</li> </ul>

Investor Relations Contact:

[ir.jswenergy@jsw.in](mailto:ir.jswenergy@jsw.in)

ESG Data Profile: [Link](#)

# Annexures



# Robust Cash Returns on Adjusted Net Worth

₹ crore (Unless mentioned otherwise)

Quarter ended	Mar-21	Jun-21	Sep-21	Dec-21	Mar-22	Jun-22	Sep-22	Dec-22
<b>Reported PAT</b>	<b>107</b>	<b>201</b>	<b>339</b>	<b>324</b>	<b>864</b>	<b>560</b>	<b>466</b>	<b>180</b>
Add: Depreciation	294	288	284	281	277	289	294	295
Add/(less): Deferred Taxes	27	21	32	26	(7)	84	42	14
(Less): Dividend Received	-	-	(46)	-	-	-	(122)	-
Add/(less): One-offs*	(83)	-	-	-	(492)	(120)	0	-
<b>Cash PAT</b>	<b>346</b>	<b>510</b>	<b>610</b>	<b>631</b>	<b>643</b>	<b>813</b>	<b>681</b>	<b>489</b>
<b>Cash PAT (TTM)</b>	<b>1,947</b>	<b>1,940</b>	<b>1,899</b>	<b>2,097</b>	<b>2,395</b>	<b>2,697</b>	<b>2,767</b>	<b>2,625</b>
<b>Adjusted Net Worth**</b>	<b>11,473</b>	<b>11,529</b>	<b>11,475</b>	<b>11,830</b>	<b>12,688</b>	<b>12,952</b>	<b>13,491</b>	<b>13,446</b>
<b>Cash Returns on Net Worth (%)</b>	<b>17%</b>	<b>17%</b>	<b>17%</b>	<b>18%</b>	<b>19%</b>	<b>21%</b>	<b>21%</b>	<b>20%</b>

**Strong cash returns of >18% translates to yearly cash profits of ~₹2,300 crores**

\*Refer note 4 of [Q4FY21](#) release and note 5 of [Q4FY22](#) release for Mar-21 and Mar-22 one-offs, respectively. Jun-22: Exceptional items ₹ 120 crore represents reversal of loss allowance made in earlier years on loan given to a party.

\*\* Adjustment in net worth by excluding the value of shares of JSW Steel

# JSW Energy's Corporate Journey

