## Delivering Promises Realising True Potential

**Corporate Presentation** July 2023



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- Power producer with 9.8 GW of generation portfolio,
- Targeting 20GW generation + 40GWh of Storage by FY30
- Market Cap: ~US\$ 5.8 Bn

# **JSW Group Overview**



Amongst India's leading **Conglomerates with a** turnover of US\$23 Bn<sup>1</sup>



#### Infrastructure

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



- 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



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





- India's leading integrated steel producer
- Installed crude steel capacity of 29.2mtpa, growing to 50mtpa by FY31
- Market Cap: ~US\$ 23.7 Bn



- 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



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



- 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**

# Bringing positive transformation to every life we touch

## JSW Energy : Transitioning towards green energy

#### FY2025

To become a 10 GW company

To become a 20 GW company and 40GWh Energy Storage

FY2030

To become carbon neutral by 2050

**FY2050** 

#### **Energy Products and Services**

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



Well placed to achieve 10 GW of generation capacity ahead of stated timeline of 2025 with foray into New Age Businesses



## **Developed a Pan India Footprint of Diverse Asset Base**



#### **Operational Capacity by CY 24 (9,780 MW)**



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## Well Diversified Portfolio – Focused on Maximising Cash Returns





## Thermal Assets | 3,858 MW



Total Thermal Assets		Operational As	Under Construction		
Total Thermal Capacity 3,858 MW		Ratnagiri	Barmer	Vijayanagar	Ind - Barath
Operational Capacity 3,158 MW	Installed Capacity PPA tied	1,200 MW 1,095MW	1,080 MW 1,080 MW	860 MW 338 MW	700 MW NA
	Net Generation LT	1,506 MUs (17% YoY)	1,730 MUs (8% YoY)	615 MUs (-20% YoY)	Located in coal belt
Under Construction	(MUs) 100%	1,752 MUs (29% YoY)	1,730 MUs (8% YoY)	998 MUs (7% YoY)	Easy access to water
Ind-Barath 700 MW					
	PLF/	71%/(98%)	82%/(87%)	99%/(100%)	Expected
	(Deemed PLF) 100%	74%/(98%)	82%/(87%)	58%/(59%)	FY24

~80% of Capacity Tied-up under Long-Term PPA

## **Renewables : Presence across all modes of generation**





# Agenda



Safety & Sustainability

**Healthy Operations and Financials** 

Why JSW Energy ?

JSW NEO – at a Glance

Appendix

# Safety & Sustainability

## **Continued Focus on Health & Safety Excellence**

All Figures are for Q1 FY24



#### Zero severe injuries/fatalities

Lost Time Injury Frequency Rate of zero at all the operational plants



#### 83% of contractors covered by JSW CARES audit

18 Contractors achieve 5 Star rating & 4 contractors achieve 4 Star and overall 72% contractors are 3 star and above, in a stringent Internal Safety Assessment and evaluation.



#### 19,000+ Cumulative Safety Observations Resolved

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

#### Training & Capacity Building at all locations

- ✓ First Aid, CPR and Basic Life support training (AED) completed at JSW Hydro Energy for Employees
- ✓ Awareness & safety Training for Lifting Tools & Tackles to associate workmen at Ratnagiri plant
- ✓ Hot work and LDO fire suppression training for Contractor workmen at Barmer plant
- ✓ Fire fighting training given to workmen of all critical functions at all locations

#### **Enhancing Safety for Employees, Contractors & Community**

- ✓ Mock drill conducted for leakage in caustic bulk storage tank at Barmer plant
- ✓ Awareness session on tuberculosis by Bellary District Health department at Vijayanagar Plant
- ✓ Program to raise awareness on the harmful & deadly effects of Tobacco use on World No Tobacco Day at Ratnagiri Plant
- ✓ A Mock Drill for unforeseen situation, rescue and life safety at Karcham Dam with DDMA, HHG and HP Police QRT at JSW Hydro Energy



## British Safety Council Award for OH&S



Five Star Occupational Health and Safety Audit – Five Stars –



This is to certify that JSW Energy Limited, Vijayanagar

after an extensive evaluation by a British Safety Council auditor, has been awarded a rating of Five Stars.



## **Sustainability: Framework and Policies**





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

FY19

**FY20** 

FY21

FY22

**FY23** 

## **Sustainability: Targets and Strategy**



SD Target	ts		FY20 Actuals	FY30 Targets	Improvement	Strategic Initiatives and Approach
Clim Cha	nate ange	<ul> <li>GHG Emissions tCO<sub>2</sub>e/ MWh</li> </ul>	0.76	0.215 *	60%	<ul> <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>
Wa Sec	ater curity	<ul> <li>Specific fresh water intake (m<sup>3</sup>/MWh)</li> </ul>	1.10	0.591	46%	<ul> <li>Maintaing 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>
<b>y t</b> wa	aste	<ul> <li>Specific Waste (Ash) Generation (t/MWh)</li> <li>Waste Recycled - Ash (%)</li> </ul>	0.070 100	0.032 100	-	<ul> <li>Integrated Strategy towards efficient waste management</li> <li>Optimizing utilisation of low ash coal</li> </ul>
Air Em	r nissions	Specific process emissions(Kg/MWh) • PM • SOx • NOx	0.16 1.78 1.01	0.053 0.683 0.373	67% 61% 63%	<ul> <li>Ensuring ESP (Electrostatic Precipitator) Fields availability</li> <li>Optimising Lime dozing system efficiency</li> <li>Process efficiency improvements</li> </ul>
Bio	odiversity	<ul> <li>Biodiversity at our operating sites</li> </ul>	-	Achieve <b>'no net loss'</b> of biodiversity	У	<ul> <li>Continue to enhance Biodiversity at all our locations and operations to acheive '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>

## **Engaging Leading Knowledge Partners**



#### **Current Status**

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES	<ul> <li>Studies to identify climate change related physical and transition risks, opportunities and financial impacts</li> <li>Evaluation based on Governance, Strategy, and Risk Management</li> <li>Best practices and peer comparison</li> </ul>	<ul> <li>Pre Final Report is under preparation and is expected to be completed in the current quarter</li> </ul>
Biodiversity & Ecosystem	<ul> <li>Phase 1 -Gap assessment and risk mapping using global biodiversity and TNFD* framework</li> <li>Phase 2 –NNL* studies based on site-wise baseline assessment</li> <li>Group level No Net Loss Strategy</li> </ul>	<ul> <li>Review of the draft report is under progress. Final discussion with consultant &amp; finalization of report in the current quarter</li> </ul>
Supplier Assessment	<ul> <li>Identification of risks associated with critical suppliers based on ESG scores from supplier assessment results</li> <li>Bridging ESG gaps via training and awareness sessions</li> <li>On-site audit via third party consultants</li> </ul>	<ul> <li>Supplier Assessment is in progress in phase wise manner, assessment based on ESG parameters</li> <li>Training and awareness sessions for the high risk suppliers being planned with Group Sustainability Team by Aug end.</li> </ul>
Human Rights	<ul> <li>Human rights training plan in FY24 on discrimination, empowerment, transparency etc.</li> <li>Collaboration with external agency for site-wise assessment</li> <li>Risk assessment and mitigation plan</li> </ul>	<ul> <li>Received quote from the renowned Consultants</li> <li>Discussion with two more consultants is pending which is expected to be completed by July end</li> </ul>

## **Sustainability: Q1 FY24 Performance**



#### **Key Highlights**

Climate	Increased share of renewable energy for deep decarbonisation				Ash U
Change	• Wind Projects – Part CoD received and generation started on ~130 MW capacity			100%	100
	Continuous focus on process improvements to reduce GHG emission			10078	100
	Maintained zero liquid discharge across operations				
Water Security	• Optimising utilisation of rain water harvesting system. 5,828 m3 water utilised by Ratnagiri Plant by this method			FY22	FY2
~~	Reuse of treated effluent of Sewage Treatment Plant for horticulture	CO2	intensity	(tCO2e/	'MWh
	<ul> <li>Reutilising nond ash as well as bottom ash in Boiler ~10,000 MT ash fed</li> </ul>	0.68	0.68		0.0
Waste	at Ratanagiri Plant.			0.60	0.0
	Continue 100% Ash utilization initiatives at all plants through tie-ups with cement factories & similar businesses				
	Ensuring ESP (Electrostatic Precipitator) Fields availability	FY22	FY23	FY24 Target	Q1 F
Air	Process efficiency improvements being done in all plant locations			Turber	
Emissions	<ul> <li>Lime Dozing system availability and parameters optimization at Barmer for reduced air emissions</li> </ul>	SO	x Emissio	ons (kg/ľ	VWh)
		1.55			
	• 'Eco-System Study' of 'Biodiversity Assessment report' submitted by CII and implementation of recommendation are under progress at Barmer		1.23	1.15	1.
Biodiversity	• Draft report of Biodiversity Assessment for Ratnagiri, Hydro, Wind Plant is received from CII				
	<ul> <li>Increase in green cover at all operations to achieve 'No Net Loss' of Biodiversity by 2030.</li> </ul>	FY22	FY23	FY24 Target	Q1

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#### Performance





PM Emissions (kg/MWh)



#### NOx Emissions (kg/MWh)



## **Sustainability: Empowering Our Communities**

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## **Sustainability: Empowering Our Communities**







#### Women's BPO and Livelihoods

JSW Shakti's women's-only rural BPO in Ratnagiri. Currently, 50 women have secured livelihoods at the centre.

#### Sports

Our Shikharites from Sangla: Deepika (66 kg Gold) and Ritu (52 kg Silver) shone at the Khelo India University Games 2023

#### **Health and Nutrition**

Individuals line up to avail the services of Health Camp in Sholtu, Himachal Pradesh

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## **Sustainability: Recognition of Global Best Practices**





Five Star OH&S Audit Award received by Vijayanagar Plant from British Safety Council



JSW Energy (Barmer) received the "2<sup>nd</sup> CEE National Environment Excellence Award 2023 in Exceptional performance and outstanding achievement in Environment Excellence" Organized by Council of Enviro Excellence



"Best Power Generator Award 2023" Organized by Council of Enviro Excellence (CEE) for JSW Energy (Barmer)



JSW Energy – Ratnagiri won the Runner Up Award in the Best Operating Thermal Power Plant Category by IPPAI (Independent Power Producer Association of India)



"Gold Award 2022 in Sustainability" Organized by Grow Care India

## **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



Mr. Rajiv Chaudhri Independent Director



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Majority Independent
Board: 6/10 Directors are
Independent
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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





Accountability





Transparency



Environment



Regulatory Compliance

# **Healthy Operations and Financials**

RACE

Sholtu Hydro Power Plant - Turbine

#### **Operating Locations: Pan India presence**



23

**Current Operational Capacity (6,696 MW)** 



## **Healthy Operations and Financials**



- Steady operations and robust financial: Track record of strong yearly cash profits of ~₹2,570 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: ~18 years
  - Remaining Avg. Life of Assets: ~25 years
- Diversified off-takers
  - All plants placed favorably in Merit Order Despatch
  - Hydro projects under 'must-run' status \_
  - Trade receivables (excl. Mytrah) at ₹ 1,426 Cr equaling to 58 receivable days as on June 30, 2023











LT : Long Term, ₹1 Crore = 10Mn; 1 - As on Mar 31, 2023 ; 2- Calculated as PAT+ Depreciation+ Deferred Taxes+ Exceptional items (on TTM basis as on Mar 31, 2023); 3-Not comparable YoY in FY21 due to Change to Job Work Model Partially

24

## **Robust balance sheet to support renewable-led growth**





Figures as of March 31, 2023

- ✓ Strong Liquidity with healthy cash balances: ₹ 2,572 Crore as of Jun 30, 2023
- ✓ Financial flexibility enhanced by equity investments:
  - Holding 7Cr (70mn) JSW Steel shares of Value<sup>1</sup>: ₹ 5,050 Cr
- ✓ Healthy Credit Ratings:
  - India Rating & Research: AA (Stable outlook)
  - ICRA Ltd: ICRA AA (Stable)
- ✓ Access to diverse pools of liquidity
- ✓ Operating portfolio generating healthy CF & mid-teen equity IRR
- ✓ Weighted average cost of debt\* is 8.48% as of Jun 30, 2023

Robust balance sheet & strong cashflow available to pursue growth



ND/EBITDA for Operational Projects at 3.5x (Jun-23)<sup>3</sup>



\* Including Mytrah's debt post refinancing and debt sizing package which is in place | \*\* Excl Mytrah receivables | # Including Mytrah Debt and excluding debt on under-construction projects

<sup>1</sup> Value of JSW Steel Share holdings as on Jun 30 2023

<sup>2</sup> Conversion based on USD = INR spot rate as of respective date

<sup>3.</sup> Based on net debt for operational projects of ₹10,146 crores; total net debt at the group level stands at ₹22,904 crores on Jun-23.

#### **Net Debt Movement**

Particulars in ₹ Cr





#### Combined ND/EBITDA is within the guided range of 3.5x-4.0x

#### **Progress on Under-Construction Projects**



#### Under Construction 3.1 GW, to be Commissioned by CY24



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# Why JSW Energy ?

- Compelling Investment Story
- Key Highlights

Committed to reaching Net Zero emissions by 2050

#### **Compelling Investment Story**





#### **Compelling Investment Story**







Growth driven by internal accruals

Normalised Net Debt/EBITDA to be in the range in 3.5x-4.0x Balance Sheet Size to grow at 22% CAGR

## Strategy 2.0 – 20 GW Generation + 40 GWh of Storage by FY30



#### Pillars for Self sustainable and Integrated road map

- Sustainable value creation focused on Cash Returns
- Internal Accruals and BS Headroom (no external capital)
- Organisational Capability and competency

#### **Growth Multipliers**

#### Portfolio generating healthy CF & 18% cash return<sup>1</sup>

- Steady operations and robust financials
  - Portfolio (excl. Mytrah) Cash PAT of > ₹2,500 Crore p.a.
  - Incremental cash accruals from commissioning of Under construction projects and integration of M&A deals

#### ✤ 85% of portfolio tied-up under Long Term PPA

- 85% of portfolio tied-up under Long Term PPA; Remaining
   Avg. Life of Assets/PPA: ~25 years / ~18 years
- Financial flexibility enhanced by equity investments: JSW Steel shares: 7 Cr shares held (Value as on June 30, 2023: ₹ 5,050 Cr)
- Healthy receivables management and low working capital cycle



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1 Adjustment in net worth by excluding the value of shares of JSW Steel \* Proforma Net Debt 32

#### Revised Guidance 2.0 (2023-2030) – No Equity Dilution Needed









Balance Sheet Size to Grow at 22% CAGR from FY 23 to FY30 | ~50% increase in capex vs Strategy 1.0

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



**Historical Power Demand Growth** 

Similar growth expected in power demand over next decade





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

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## **Participating in India's Green Transition**





• 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

## **Energy Storage critical in India's Energy Transition**



322

2030



Peak Demand vs Supply from Conventional Sources (GW)

-----Peak Demand (GW) -----Peak Supply (GW)- Conventional Sources (Thermal + Nuclear + Hydro)

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

forward

# 300 250 200 200 150 200 100 200

23.5

2022

Optimal generation mix report 2023 projects a large requirement for Energy Storage in 2030

 Projections of the order of 322 GWh of energy storage requirement by 2030

Peak Power Demand is	s expected to grow at a	a CAGR of ~6% betw	een FY23-30

- 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

Storage Capacity GWh\*

350

50

0
# Battery Storage (BESS) and Hydro Pump Storage (HPSP)





### JSW Energy

- 40GWh/ 5GW of energy storage capacity by FY 2030
- 3.4GWH of storage locked in (1GWh of BESS and 2.4 GWh of HPSP)
- Large Resources secured for ~72GWhr PSP/ 10.8 GW
- Growth through internal accrual

 Existing portfolio generating healthy CF & mid-teen equity IRR

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





# **Energy Storage – Unique Value Proposition as an Early Mover**



### Battery Energy Storage System (BESS)

#### LoA received for 500MW/1000 MWh SECI project in Jan-23

- Build Own Operate Transfer (BOOT) with tenure of 12 years
- 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
- Expected commissioning by CY24

Particulars	SECI (BESS)
Tender capacity	500 MW / 1000 MWh
No. of hours backup	2 hours
Purchase agreement tenure	12 years
RTE	Min 85%
No of cycles per day	2

#### Hydro Pump Storage (PSP)

- Received LoI for 2.4GWh (300 MW x 8 hours) PSP from Power Company of Karnataka Ltd (PCKL)
  - Target commissioning : 36 months from signing of PPA
  - PPA Duration: 40 years
  - JSW's proven experience with managing the largest hydro portfolio in the private sector

### Large Resources secured for ~72GWhr PSP/ 10.8 GW

State	MoU/LoI Dates	Capacity (GW)
Karnataka	22-Jun	0.9
	22-Nov	
Maharachtra	21-Sep	2.0
WidfidfdSfilfd	22-Sep	3.0
Uttar Pradesh	22-Nov	1.7
Rajasthan	21-Dec	1.2
Andhra Pradesh	23-Mar	1.5
Telangana	22-Apr	1.5
Chhattisgarh	22-Aug	1.0
<b>Resources Secured</b>		10.8

# **Electrons to Molecules: Green Hydrogen Potential**



Advantage India

Significant Hydrogen demand	Huge RE potential	Low Tariffs
Current demand <b>~6 MMT</b> expected to grow to <b>~24 MMT</b> by 2050	Existing RE capacity of <b>~165 GW</b> (incl. Hydro) Target – <b>50% of energy</b> <b>requirement from RE</b> by 2030	RE tariffs in India (INR ~ 2-2.5)
India's Import Bill	Clean energy Commitment	Infrastructure build



### JSW Energy

Contracted India's largest Commercial Scale Plant for production of Green H<sub>2</sub> (Capacity- 3,800 TPA). This is towards production of Green Steel

<b>Grey Hydrogen:</b> 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	Characteri	istics	Main production route	Characteri	istics	Main production route	Characteri	stics
Steam Methane Reforming (SMR)			SMR + CCS	↓		Electrolysis using renewables	Ļ	
Coal Gasification	Intense CO <sub>2</sub>	Low Cost	Coal Gasification + CCS	Low CO <sub>2</sub>	High Cost		Zero CO <sub>2</sub>	High Cost

# **Compelling Investment Story**





# 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 (₹ Mn/MW)





# **Compelling Investment Story**





# **Steady Operations and Robust Financials**





\*Includes Unbilled Revenue. \*\* Excluding Mytrah recievables



✓ All plants placed favourably in States' Merit Order Dispatch

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- 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

# **Robust Balance Sheet & Cashflows to aid growth**



### Balance sheet headroom to pursue growth opportunities

#### • Strong credit metrics

Figures in ₹ Cr	As on Jun 30, 2023
Networth	19,111
Net Debt	22,904
Net Debt/TTM Proforma EBITDA	4.7x
Net Debt/Equity	1.2x
Wtd. Average Cost of Debt	8.48% <sup>1</sup>

- Healthy Credit Ratings and access to diverse pools of liquidity
  - o India Rating & Research: IND AA (Outlook Stable)
  - ICRA Ltd: ICRA AA/ Stable





### Healthy internal accruals to support long term growth

### **Operational Portfolio**

- Generating healthy cash flow & mid-teen equity returns
- Steady operations and robust financial: Track record of strong yearly cash profits



- 85% of portfolio tied-up under Long Term PPA; Remaining Avg. Life of Assets/PPA: ~25 years / ~18 years
- Strong Liquidity with healthy cash balances<sup>3</sup>: ₹2,572 Cr
  - Financial flexibility enhanced by equity investments: JSW Steel shares: 7 Cr shares held (Value as on Jun 30, 2023: ₹ 5,050 Cr)

1 Including Mytrah's debt post refinancing and debt sizing package which is in place | 2 Based on net debt for operational projects of ₹10,146 crores; total net debt at the group level stands at ₹22,904 crores on Jun-23 | 3 Includes unencumbered bank balances, FDs, and liquid mutual funds | |# Including Mytrah Debt and excluding debt on under-construction projects 45

# **JSW Energy : Key Highlights**



Proven Execution Excellence	<ul> <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>
Focus on Sustainability	<ul> <li>Strong Focus on ESG – Leadership band with 'A-' score in the 2022 CDP Climate Change rating</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>
Efficient O&M	<ul> <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>
Steady EBITDA and Cash accruals	<ul> <li>✓ 85% of total portfolio tied up with LT PPA providing ~90% EBITDA and Cashflow generation in FY23</li> <li>✓ Two-part tariff structure mitigating fuel and forex risk</li> </ul>
Healthy Receivables	<ul> <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>
Strong Balance Sheet	<ul> <li>✓ Amongst the Strongest Balance Sheet in the sector: 4.7x, Net Debt/EBITDA; 1.2x Net Debt/Equity</li> <li>✓ Healthy debt metrics to be maintained while pursuing value accretive growth</li> <li>✓ A healthy cash balance of ₹2,572 Cr and financial flexibility with JSW Steel equity shareholding</li> </ul>
Low Cost of Funding	<ul> <li>✓ Proactive Debt Management: Weighted average cost of debt at 8.48%</li> <li>✓ Executed attractive refinancing and debt sizing package for Mytrah RE assets, cost saving of &gt; ₹240 cr</li> <li>✓ Raised a US\$ 707 million green bond to refinance debt for hydro entity in May'21</li> </ul>

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# JSW Neo Energy – at a glance

### **JSW Energy – Broad Structure**



### JSW NEO Energy – At a Glance

### **JSW NEO Energy**

**Energy to Molecules Integration** Green Hydrogen (GH)/Ammonia

# **10** GW

Diversified Asset Portfolio of 9.7 GW (61% Renewable)

# **3.9** GW

Thermal Capacity Installed – 3,158 MW Under Construction – 700 MW

# **5.9** GW

Renewable Installed – 3,528MW Under Construction – 2,384 MW

# 3.4 GWh

Energy Storage BESS – SECI 500MW/1000MWh Hydro Pump Storage (HPSP) – PCKL 300 MW/ 2400 MWH

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

Electrons to Molecules 3,800 tonnes of Green Hydrogen

Vijayanagar Solar Power Plant





### JSW Neo Energy Ltd

The Green Energy Platform of JSW Energy

5.9 GW of installed capacity by CY 24



# **Developed a Pan India Footprint of Diverse Asset Base**



### **Operational Capacity by CY 24 (5,912 MW)**



### JSW NEO – PPA Profile





### JSW Neo – Capacity growth







# **Energy Storage – Unique Value Proposition as an Early Mover**



### Battery Energy Storage System (BESS)

#### LoA received for 500MW/1000 MWh SECI project in Jan-23

- Build Own Operate Transfer (BOOT) with tenure of 12 years
- 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
- Expected commissioning by CY24

Particulars	SECI (BESS)
Tender capacity	500 MW / 1000 MWh
No. of hours backup	2 hours
Purchase agreement tenure	12 years
RTE	Min 85%
No of cycles per day	2

#### Hydro Pump Storage (PSP)

- Received LoI for 2.4GWh (300 MW x 8 hours) PSP from Power Company of Karnataka Ltd (PCKL)
  - Target commissioning : 36 months from signing of PPA
  - PPA Duration: 40 years
  - JSW's proven experience with managing the largest hydro portfolio in the private sector

#### Large Resources secured for ~72GWhr PSP/ 10.8 GW

State	MoU/LoI Dates	Capacity (GW)
Karnataka	22-Jun	0.9
	22-Nov	
Maharachtra	21-Sep	2.0
WidfidfdSfilfd	22-Sep	3.0
Uttar Pradesh	22-Nov	1.7
Rajasthan	21-Dec	1.2
Andhra Pradesh	23-Mar	1.5
Telangana	22-Apr	1.5
Chhattisgarh	22-Aug	1.0
<b>Resources Secured</b>		10.8

# **Green Hydrogen Opportunity – JSW Energy's Unique Positioning**

Ε

**Scalability** 



RTC RE Power at competitive prices

G

- Power is ~65-70% of variable cost for Green H<sub>2</sub> production
- Green H<sub>2</sub> a natural progression path for power companies banking on its competitive power cost
- JSWEL has RE resources with good CUF and profile along with large energy storage resources

 Valorization of Oxygen produced generating by-product credits

R

**Monetization of** 

byproducts

- O<sub>2</sub> produced in the Green H<sub>2</sub> to also be a part of the offtake agreement
- JSWEL's backward integration to solar module manufacturing along with secured energy storage resources, provides optionality of scaling up its Green H<sub>2</sub> capacity going ahead
- Low LCoE for Green H<sub>2</sub> provides optionality for manufacturing further downstream derivatives

 Co-location of Hydrogen Complex with JSW Steel's ecosystem

Ε

**Co-location with** 

Offtaker

- Sharing of common infrastructure like water, roads, rail, etc.
- Ability to execute and build plants at costs well below industry standards

Ν

Project

**Experience** 

- Operational excellence - Industry leading efficiency & high Equity IRRs
- Green H<sub>2</sub> project winwin for JSWEL and JSW Steel

Η,

Mutually

**Beneficial** 

- Decarbonisation for hard to abate sector (Steel)
- Using Green H<sub>2</sub> increases the productivity of Direct Reduced Iron (DRI) process and will help offset Carbon Tax on Exports of Steel.

# **Contracted India's Largest Commercial Scale Green Hydrogen Project**



### India's First Plant to Produce Green Hydrogen for Production of Green Steel



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Learning Curve from this project to offer Optionality to Scale Up for Future Projects

# Solar Module Manufacturing – Supply Chain De-risking



### NEED FOR BACKWARD INTEGRATION

Solar power is critical to transition towards green power

Tariff policy (BCD) restrictive, leading to high landed cost of cells and modules

Grid connected projects must use modules listed in ALMM

Supply reliability issue, limited domestic module capacity vs the requirement

Allocated 1 GW capacity under PLI scheme for Wafer-Cell-Module

### **BACKWARD INTEGRATION AT JSW ENERGY**

Allocated 1 GW of capacity under PLI for W-C-M

Supply Chain Derisking - strategic intent to utilize solar modules for captive usage

Eligible for ~₹ 320 Cr benefits under PLI scheme. Additional Incentives from State Government are under negotiation

Securing Resources – Location identified in Rajasthan, necessary approvals and ordering are in process

Capacity to be operational by April 2025 Capital expenditure of ~₹ 1,600 Cr

# **JSW Neo Growth Framework**





#### 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

#### 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





#### Group's project execution excellence

• Fast execution while ensuring all safety guidelines

### **Ensuring Consistent Value Creation**



### **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**





# **JSW Neo: Risk Mitigation**

JEW

1500

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



Key Risks/Concerns	Favourable Policy Support and Market Interventions	Mitigation Strategy by JSW Energy	
Demand risk (Clearing of PPA Backlogs)	<ul> <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> <li>Existing portfolio: 85 % PPA signed which forms about 90% 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>	
Receivable risk	<ul> <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> <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>	
Domestic industry for capacity addition	<ul> <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> <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	
Offtake Risk (revenue/volume)	<ul> <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> <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>	
Soundness of Auction framework	<ul> <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> <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>	
Grid Infrastructure capability	<ul> <li>Development of dedicated Green Energy Corridors for evacuating RE capacity</li> </ul>	<ul> <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

ESG Data Profile: Link

# Appendix

Mytrah Solar Plant (Hungund, Karnataka)

# Mytrah Asset Optimisation & Performance Improvement progressing well

# Mytrah Wind Assets (1,331 MW)



### Asset Optimisation & Performance Improvement Plan underway



### Expected generation improvement by ~700 MUs

### **Mytrah Wind - progress on track**





### **Actual Generation vs Wind Speed**









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# Mytrah Solar Assets (422 MW)



### Asset Optimisation & Performance Improvement Plan underway



Expected generation improvement by ~45 MUs



### **Mytrah Solar - progress on track**







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Q1 FY23 numbers are unaudited 70

# **Mytrah Progress on Track**







# Receivables Cycle Improving



### Strong collection in Mytrah Portfolio's Receivables underway



\* Excluding unbilled revenue \*\* Increased on account of higher revenue during wind season

### Monthly Collection consistently above the billing



JSW's strong collection efficiency in play

Continued focus on collection efficiency supports further reduction in the receivables

### Optimise Receivables Cycle to Healthy Levels within 12 months
# **Under Construction Projects**

Mytrah Solar Plant (Hungund, Karnataka)

## Ind-Barath 700 MW – Revival On Track – Commissioning in FY24





#### **Mechanical - Turbine**

- Turbine HIP & LP Rotor installed on the casing and alignment completed
- Generator electrical testing completed
- Lube oil & seal oil system pump & motor overhauling completed

### **Electrical Works**

- Transmission tower foundation work in progress
- Switchyard overhauling work started

### **Regulatory Approvals**

- Environment Clearance Consent to operate Unit 1 received, clearance application for Unit 2 under process
- PESO license expected in Q2 FY24

## Wind Power Projects – 2.2 GW





## Wind Projects (SECI IX,X, XII and Group Captive)

- 130 MW commissioned by end of Q1 FY24, currently ~150 MW commissioned
- Expected commissioning by CY 2024

## Kutehr Hydro Power Plant – 240 MW





### **Tunneling & Concreting**

 Completed ~ 95.9% (20.3 km) tunneling work (up from ~ 92.45 % in Q4)

#### **Electro-mechanical works**

 Spiral Case erection work for Unit-2 completed and for Unit 1 & 3 is in progress

### **Concreting Barrage**

 Completed ~73.50 % of Concreting of Barrage