Value is constantly created by an organisation from its wide range of interactions, activities, relationships, causes and effects. Through our six-capital approach, driven by our mission, vision and business model, we are gradually building an integrated approach to balance our resources, further strengthen our value creation journey, and encourage a longer view when determining our strategy and operations.

3

OUR CAPITAL-WISE VALUE-CREATION APPROACH

FINANCIAL CAPITAL

Prudent financial management system, robust balance sheet and best-in-class financial metrics enables us to constantly deliver value to all our stakeholders. Additionally, it gives us the capability to take advantage of the expanding prospects in India, a country with high aspirations for energy. The recently completed fund raise via QIP, bolsters the Company's "already strong" capital structure even further. It significantly enhances our financial flexibility, and enables us to accelerate our ambitious growth plans.

Power Plant, Ratnagiri

Description

This capital describes the financial resources that we already have (cash balance and cash equivalents) and also what is generated in the capital market.

Management Approach

We create value through sustainable growth generated by making optimal use of all our resources.

Significant Aspects

- Strong financial structure
- Operational efficiency
- Sustainable earnings
- Regular dividends
- Balanced growth

Key Performance Indicators	Material Topics	Strategy Linkage
• Growth in PAT • Growth in EBITDA	• Supply chain management • Energy efficiency • Risk management • Talent management • Talent retention	SO2 SO3 SO5 SO6

Market Capitalisation

₹ 86,987 crore
FY 2024

₹ 39,300 crore
FY 2023

121%

Pursuing value accretive growth through:

- Steady operations and robust financials
- High long-term PPA tie-up rendering high cash flow visibility
- Strong credit ratings
- Access to diverse pool of liquidity
- Healthy receivables
- Prudent and consistent capital allocation strategy for growth over our 25-year history

Stellar Financial Performance

In FY 2024, the Company demonstrated a robust financial performance as Total Revenue increased by 10% YoY at ₹ 11,941 crore, delivering highest-ever EBITDA of ₹ 5,837 crore, which was up 53% YoY. EBITDA increased as a result of new capacity additions, ongoing renewable energy projects and a strong performance by our thermal projects, besides new acquisitions in renewable and thermal projects made during the year. Profit After Tax (PAT) stood at ₹ 1,723 crore, as compared with ₹ 1,478 crore in FY 2023.

Consolidated Net Worth and Net Debt stood at ₹ 20,832 crore and ₹ 26,636 crore, respectively, resulting in Net Debt to Equity ratio of 1.3x. Net Debt to Proforma[1] EBITDA stood at 4.5x, with Net Debt to Proforma[1] EBITDA (excl. CWIP) at a healthy 2.9x. Cash generation continued to be strong with Cash PAT of ₹ 3,237 crore, higher by 26% YoY compared with ₹ 2,570 crore a year ago.

Liquidity continues to be strong with Cash Balances at ₹ 4,691 crore. The Board declared a dividend of ₹ 2 per share for FY 2024.

Successful Completion of QIP

Post the year end, JSW Energy successfully raised ₹ 5,000 crore through Qualified Institutional Placement (QIP). This marks the first-ever equity raise by the Company since its listing in 2010.

[1] Proforma EBITDA for FY 2024 includes EBITDA from two SPVs which were consolidated during Q1 FY 2024.

This is also the largest primary equity raise in the Indian power sector in the last decade, and among the top three largest primary equity raise in the Indian power sector.

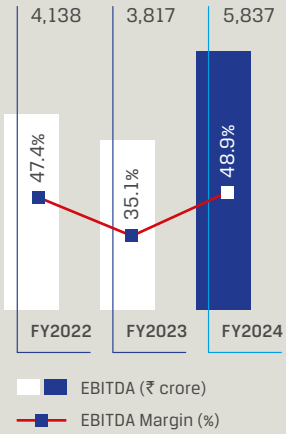
The QIP issue garnered a very strong interest from marquee global long-only investors, domestic mutual funds and insurance companies, reflecting their confidence in India's power sector outlook and the Company's unique and distinctive positioning as a leading player in the Indian power sector.

The overwhelming response to the QIP issue validates JSW Energy's positioning in the industry with best-in-class disciplined capital allocation track record, proven execution capabilities to build large-scale projects at competitive costs, operational excellence, and a strong pipeline of returns-accretive growth projects.

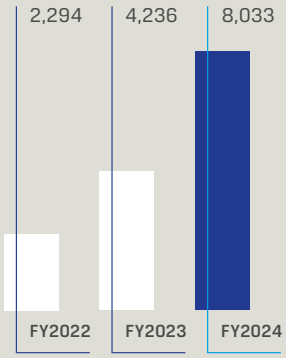
The proceeds from the QIP will enhance an "already strong" capital structure of the Company even further, while also significantly enhancing our financial flexibility, and enabling us to fast-track and accelerate our ambitious growth plans.

Power Plant, Ratnagiri

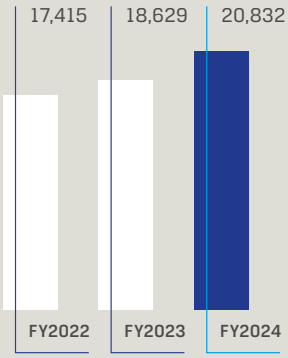
EBITDA (₹ crore) and EBITDA Margin (%)



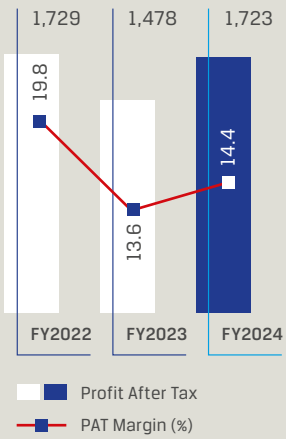
Capex (₹ crore)



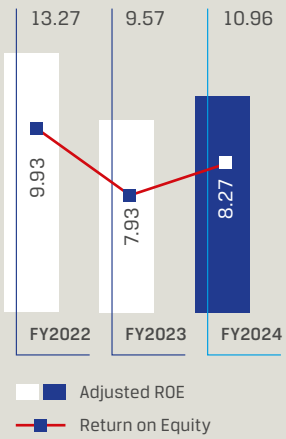
Net Worth (₹ crore)



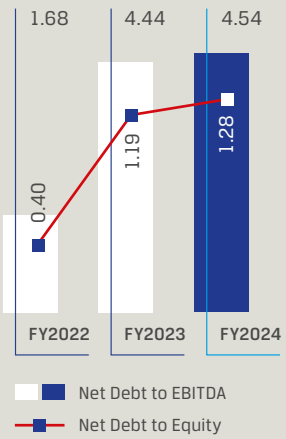
Profit After Tax (₹ crore) and PAT Margin (%)



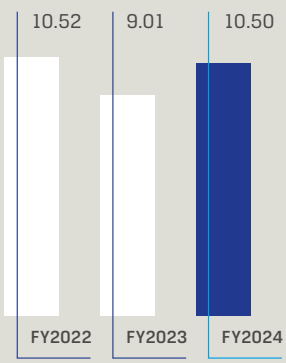
Adjusted ROE# (%) and Return on Equity (%)



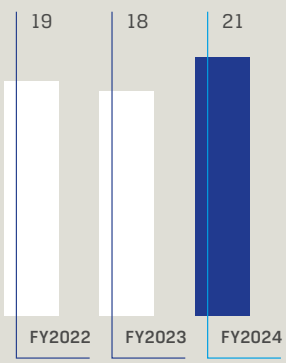
Net Debt to EBITDA* and Net Debt to Equity



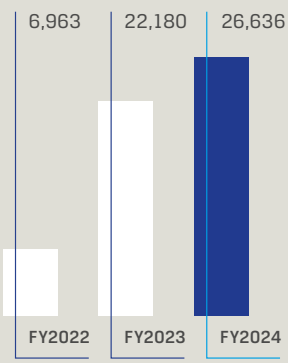
Earnings Per Share (₹)



Cash Profit to Adjusted Net Worth (%)



Net Debt (₹ crore)



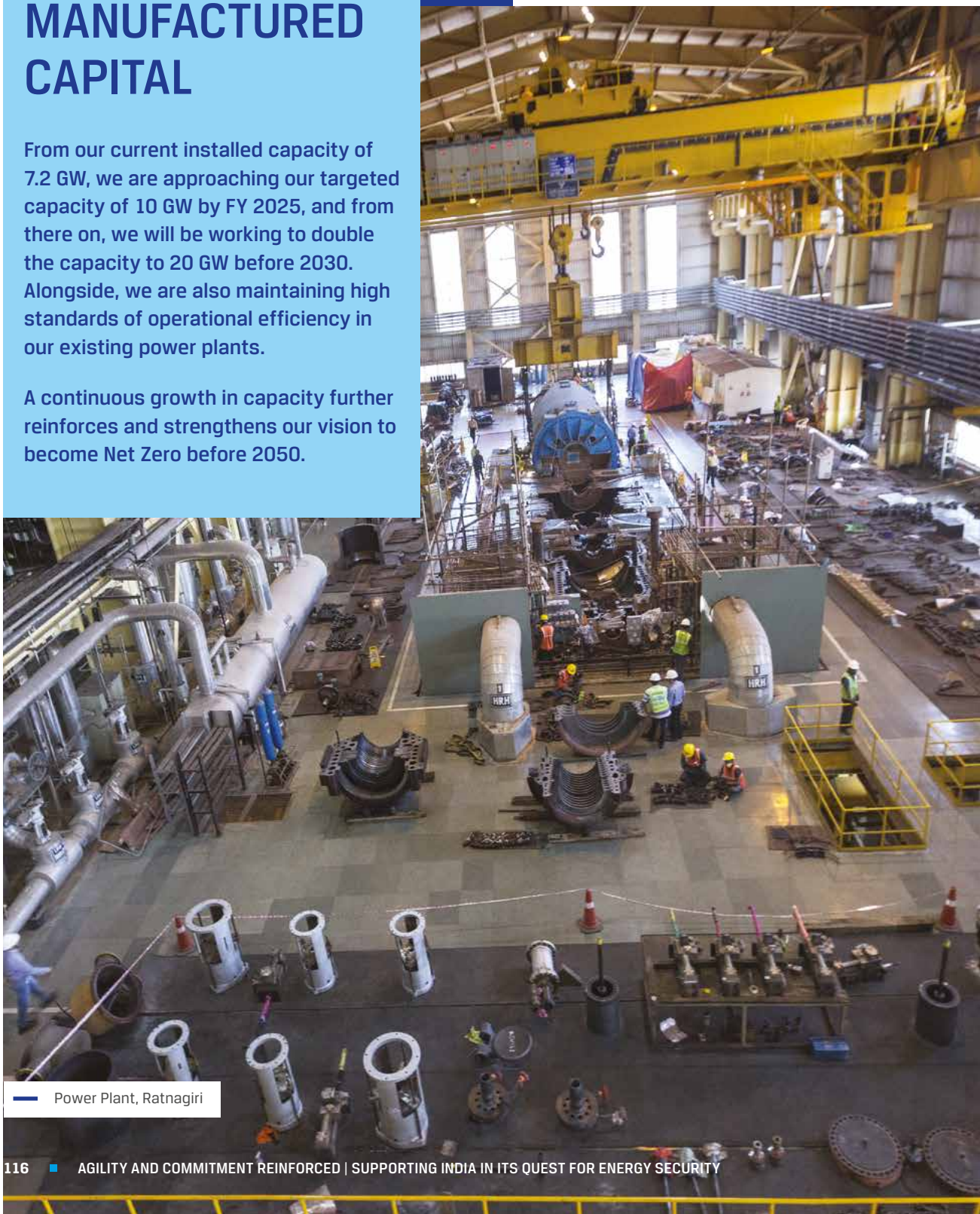
Adjusted for shares of JSW Steel Limited held by the Company & dividend thereof.

* Proforma

MANUFACTURED CAPITAL

From our current installed capacity of 7.2 GW, we are approaching our targeted capacity of 10 GW by FY 2025, and from there on, we will be working to double the capacity to 20 GW before 2030. Alongside, we are also maintaining high standards of operational efficiency in our existing power plants.

A continuous growth in capacity further reinforces and strengthens our vision to become Net Zero before 2050.



Power Plant, Ratnagiri

Description

This capital is about our tangible assets and how these are utilised to carry out our business activities. We navigate our investments to manage a diverse portfolio of assets and create value for our customers.

Management Approach

We aim to provide 'round the clock' reliable and affordable supply of power with increased share of renewables in the generation portfolio, thereby aligning our approach to combat climate change.

Significant Aspect

- Power generation
- Power transmission
- Power distribution
- Enabling RTC power through efficiency

Key Performance Indicators	Material Topics	Strategy Linkage
• Total installed capacity • Renewable capacity • Investment in renewable assets	• Efficiency of plants • Increase in renewable portfolio	S01 S04 S05

11 states
Presence

7,245 MW
Installed capacity

52%:48%
Generation Mix
Renewable: Thermal

From 260 MW in 2000 to 7,245 MW in FY 2024, we have drastically improved our power generation capacity. Our power plants have an established reputation for efficient operations and capabilities, and aim towards optimum utilisation of resources for power generation, transmission and trading.

Gross Generation by Source (MUs)

20,341 MU
Thermal

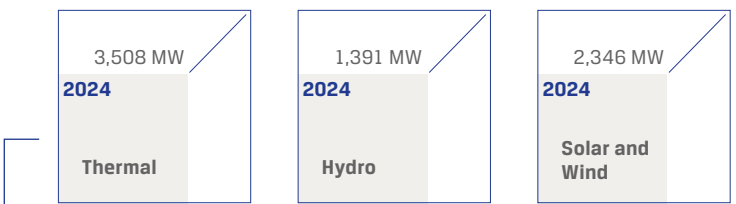
4,949 MU
Hydro

1,319 MU
Solar

3,210 MU
Wind

29,819 MU
Total

Increase in Power Generation Capacity

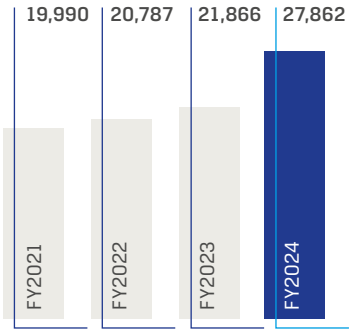


7,245 MW
Total Capacity in FY 2024

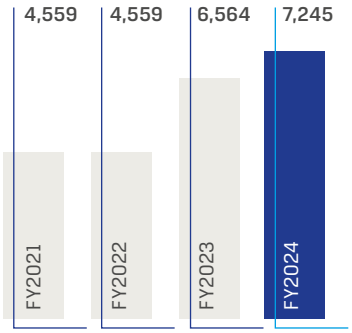
20,000 MW
Total Projected Capacity by FY 2030

Delivering Value for all our Stakeholders

Total Net Generation (MUs)



Installed Capacity (MW)



Annual capacity growth

2,005 MW
FY 2023

681 MW
FY 2024

Total Net Generation Growth

1,079 MU
FY 2023

5,996 MU
FY 2024

Total generation capacity: 7,245 MW

Generation by source

	FY 2024	FY 2023
Thermal	3,508	3,158
Hydro	1,391	1,391
Solar	675	657
Wind	1,671	1,358
Overall	**7,245**	**6,564**

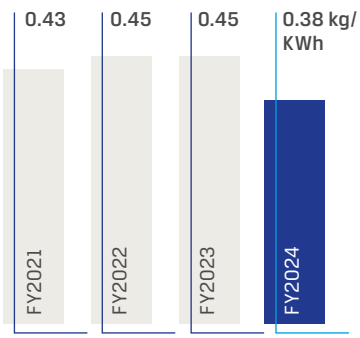
Power Plant, Barmer

Our Operational Performance

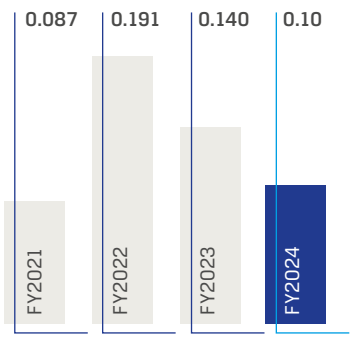
Excellence in our operational efficiency results in one of the lowest impact on the environment, amongst the peers. Optimum utilisation of primary fuels such as coal and lignite, and secondary fuels such as heavy fuel oil and light diesel oil is achieved due to our robust O&M practices. All our plant equipment are regularly refurbished in order to maintain efficiency, besides also implementing stringent standard operating procedures. Also, as the customer's boundary begins right after the Switchyard, there are no losses incurred on power transmission, leading to practically 'zero' transmission issues.

Key Performance Indicators

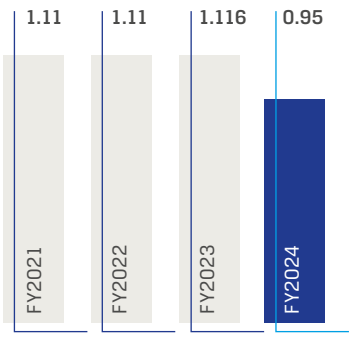
Specific Coal Consumption (KG/KWh)



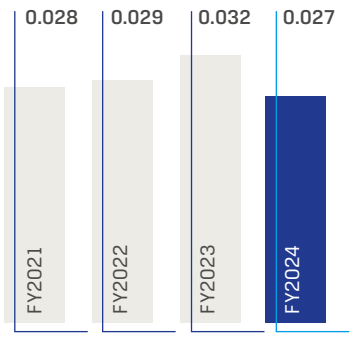
Specific Oil Consumption (M³/MU)



Specific Raw Water Consumption (M³/MWh)



Specific DM Water Consumption (M³/MU)



Thermal Plants

Plant Load Factor (%)

	FY 2024	FY 2023
Vijayanagar	58.3	51.2
Barmer	74.7	77.0
Ratnagiri	81.1	59.4
Ind-Barath	63.1	NA
Nandyal	59.7	8.8

Power Generation in FY 2024

Total Net Generation 18,526 MUs (Thermal)

Generation by source*

	Net	Gross
Vijayanagar	4,067	4,405
Barmer	6,329	7,084
Ratnagiri	7,850	8,546
Ind-Barath	196	212
Nandyal	84	94

* Rounded off to nearest integer

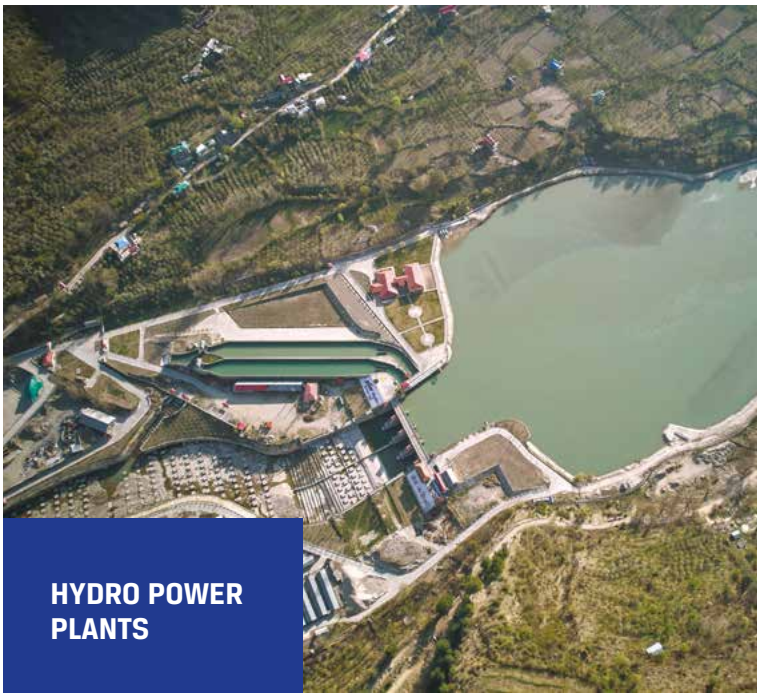
Utilisation of Ash in FY 2024

Total Ash Utilised: 13,64,733 MT

Ash Data	Vijayanagar	Barmer	Ratnagiri	Nandyal	Total
Generated (MT)	2,05,904.7	8,67,406.95	264.811	16,563	13,54,685.27
Utilisation (MT)					
Cement companies	1,18,530.4	6,04,366.47	71,619	16,563	
Brick making	33,121.7	2,67,638.89	5,450	0	
RMC	0	0	1,12,038	0	
Mines	0	0	0	0	
Dyke raising	0	0	7,918	0	
Exported through ships	0	0	73,236	0	
Recycled in Boiler	20,726.5	0	0	0	
Used in Projects	33,526.1	0	0	0	
Total Utilised (MT)	**2,05,904.7**	**8,72,005.36**	**2,70,261**	**16,563**	**13,64,733.68**
Total Utilised (%)*	**100.00**	**100.53**	**102.06**	**100.00**	**100.74**

* Additional quantity of legacy ash utilised over & above 100% as per requirement

45,000 MT Ash Silo at Ratnagiri



HYDRO POWER PLANTS

Hydro power contributes 19% to our total power generation capacity. Karcham Wangtoo is India's largest private sector hydro power plant, with its total installed capacity of 1,391 MW, and having achieved a plant load factor of 41.89% in FY 2024.

Baspa II has a 15-km transmission line up to the Jhakhri substation. As the customer's boundary starts from this level, it leads to a transmission loss of 7.53 MU. There were no transmission reliability issues with the customer.

A solar power plant of 1.03 MW capacity has been installed at Sholtu. This solar power is used internally for plant operations.

Power Generated NET

1,150.77	3,762.02
Baspa II	Karcham Wangtoo

4,912.79 MU
Total

Net Generation of Hydro Power Plants

4,913 MU
FY 2024

5,595 MU
FY 2023

Power Generation in FY 2024

Karcham Wangtoo

3,786.39	3,762.02
Gross (MU)	Net (MU)

Baspa II

1,162.75	1,150.77
Gross (MU)	Net (MU)

Overall Plant Load Factor (PLF) for Hydro Power Plants

FY 2023	FY 2024
47.84%	41.89%

PLF

	FY 2024	FY 2023
Karcham Wangtoo	41.25%	46.81%
Baspa II	44.12%	51.44%

SOLAR POWER PLANTS

JSW Energy is operating a 225 MW Solar Power plant near Vijayanagar, in Karnataka which is captive power plant for JSW Steel Plant at Vijayanagar. Apart from that we have acquired RE solar plants in various states having a 422 MW capacity with other small solar plants across various plant locations totalling about 18 MW add to the operating capacity.

Net Generation of Solar Power Plants

1,311 MU
FY 2024

417 MU
FY 2023

WIND POWER PLANTS

JSW Energy has a 1716 MW operational wind plants which includes SECI IX, SECI X and Acquired RE Wind plants. About 1960 MW of wind projects are under construction which includes SECI IX and X, SECI XII and Captive projects for JSW Steel. The under construction projects are mainly in Tamilnadu, Karnataka and Maharashtra states.

Net Generation of Wind Power Plants

3,112 MU
FY 2024

34 MU
FY 2023

Other Operational Assets

We have a combined capacity of 9 MTPA of lignite through Barmer Lignite Mining Company Limited in Rajasthan, our joint venture with Rajasthan State Mines and Minerals Limited.

We are engaged in trading of power since 2006 through JSWPTC (JSW Power Trading Company Ltd), a wholly-owned subsidiary of the Company.

We have also entered into a joint venture with Maharashtra State Electricity Transmission Company, Jaigad Power Transco Ltd (JPTL) for two 400 kV transmission lines in Maharashtra.

Quality Certifications

JSW Energy:

ISO/IEC 27001:2013 (Operational Technology)

ISO 9001:2015

ISO 14001:2015

ISO 45001:2018

ISO 50001:2018

JSW Energy (Barmer):

ISO 50001:2018

ISO 9001:2015

ISO 14001:2015

ISO 45001:2018

JSW Neo Energy:

ISO 9001:2015

ISO 14001:2015

ISO 45001:2018

JSW Hydro Energy:

ISO 9001:2015

ISO 14001:2015

ISO 45001:2018

JSW Energy (Vijayanagar):

ISO 9001:2015

ISO 14001:2015

ISO 45001:2018

ISO 50001:2018


TÜV NORD

CERTIFICATE

Management system as per
ISO 22301 : 2019

JSW ENERGY LIMITED
Village Nandiwada, Post Jaigad,
Tal. & District Ratnagiri - 415 614,
Maharashtra,
India

Electric Power Generation by Using Coal.


TÜV NORD

CERTIFICATE

Management system as per
ISO 9001 : 2015

JSW ENERGY LTD.
Village Nandiwada, Post Jaigad,
Tal. & District Ratnagiri - 415 614,
Maharashtra,
India

Electric Power Generation by using Coal.

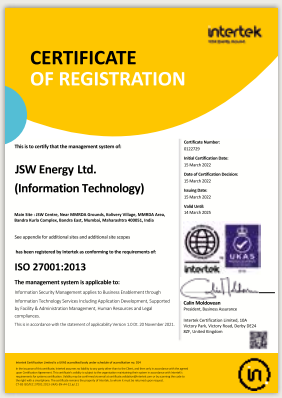

TÜV NORD

CERTIFICATE

Management system as per
ISO 9001 : 2015

JSW HYDRO ENERGY LIMITED
Shollu Colony, P.O. Tapri, Teh Nichar,
Distt. Kinnaur - 172 104, Himachal Pradesh,
India

Generation of Electricity through Hydro Power Project Plant.


intertek

CERTIFICATE
OF REGISTRATION

This is to certify that the management system of:

JSW Energy Ltd.
(Information Technology)

has been registered by Intertek as conforming to the requirements of:

ISO 27001:2013

The management system is applicable to:

Information Security Management applies to Business Enablement through Information Technology Services including Application Development, Supported by Facility & Administration Management, Human Resources and Legal compliances.

This is in accordance with the statement of applicability version 1.0.0. 20 November 2021.

Colin Middleton
President, Business Assurance

Intertek Certification Limited, 10A Victory Park, Victory Road, Derby DE24 8ZF, United Kingdom


Bureau Veritas Certification

JSW ENERGY (BARMER) LIMITED

VILLAGE/POST: BHADRESH, DIST.: BARMER – 344 001, RAJASTHAN, INDIA.

Bureau Veritas (India) Pvt. Ltd. (Certification Business) certify that the Management System of the above organization has been audited and found to be in accordance with the requirements of the Management System Standard detailed below

Standard
ISO 50001:2018

Scope of certification
GENERATION OF ELECTRICITY THROUGH OPERATION OF LIGNITE BASED THERMAL POWER PLANT

Original cycle start date: 10 December 2017
Recertification cycle start date: 08 December 2023

Subject to the continued satisfactory operation of the Organization's Management System, this certificate is valid until: 09 December 2026

Certificate No. IND.23.7659/E/N/N Version: 1 Issue date: 08 December 2023

Certification Authority
Jagdheesh H. MHASE
Director – CERTIFICATION, South Asia
Commodities, Industry & Facilities Division


Bureau Veritas Certification

JSW ENERGY LIMITED

POST BOX NO. 09, TORANAGALLU, BALLARI DISTRICT – 583 123, KARNATAKA, INDIA.

Bureau Veritas (India) Pvt. Ltd. (Certification Business) certify that the Management System of the above organization has been audited and found to be in accordance with the requirements of the Management System Standards detailed below

Standards
ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 & ISO 50001:2018

Scope of certification
GENERATION OF 2X130MW & 2X300MW ELECTRICITY FROM THERMAL POWER PLANT

Original cycle start date ISO 9001 & ISO 14001: 08 December 2007
Original cycle start date ISO 45001: 29 January 2021
Original cycle start date ISO 50001: 09 May 2014
Expiry date of previous cycle for ISO 50001: 30 November 2022
Recertification Audit date for ISO 50001: 01 October 2022
Recertification cycle start date: 07 December 2022

Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on: 07 December 2025

Certificate No. IND.22.9904/E/N Version: 1 Issue date: 07 December 2022

Certification Authority
Jagdheesh H. MHASE
Director – CERTIFICATION, South Asia
Commodities, Industry & Facilities Division


Bureau Veritas Certification

JSW ENERGY (BARMER) LIMITED

VILLAGE: BHADRESH, BARMER – 344 001, RAJASTHAN, INDIA.

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System of the above organization has been audited and found to be in accordance with the requirements of the Management System Standards detailed below.

Standards
ISO 9001:2015, ISO 14001:2015 & ISO 45001:2018

Scope of certification
GENERATION OF ELECTRICITY THROUGH OPERATION OF LIGNITE BASED THERMAL POWER PLANT

Original cycle start date: 10 November 2017
Expiry date of previous cycle: 09 November 2023
Recertification Audit date: 25 October 2023
Recertification cycle start date: 22 December 2023

Subject to the continued satisfactory operation of the organization's Management System, this certificate is valid until: 09 November 2026

Certificate No. IND.23.7364/M/U Version: 1 Issue date: 22 December 2023

Certification Authority
Jagdheesh H. MHASE
Director – CERTIFICATION, South Asia
Commodities, Industry & Facilities Division


Bureau Veritas Certification

JSW ENERGY (BARMER) LIMITED

VILLAGE: BHADRESH, BARMER – 344 001, RAJASTHAN, INDIA.

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System of the above organization has been audited and found to be in accordance with the requirements of the Management System Standard detailed below.

Standard
ISO 22301:2019

Scope of certification
GENERATION OF ELECTRICITY THROUGH OPERATION OF LIGNITE BASED THERMAL POWER PLANT

Original cycle start date: 27 January 2023
Expiry date of previous cycle: Not Applicable
Certification Audit date: 25 December 2022
Certification cycle start date: 27 January 2023

Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on: 26 January 2026

Certificate No. IND.23.1581/E/CU Version: 1 Issue date: 27 January 2023

Certification Authority
Jagdheesh H. MHASE
Director – CERTIFICATION, South Asia
Commodities, Industry & Facilities Division

HUMAN CAPITAL

Human Capital is at the heart of our success. We are building a more balanced and inclusive organisation that promotes cultural agility, global mindset, and diversity of experience. Our human capital can be attributed through our diversified and competent workforce, capable leadership and empowering culture and efficient operational excellence.

Power Plant, Vijayanagar

Description

This capital defines JSW Energy's people competencies, capabilities and experience and motivation to innovate, and their ability to understand, develop and implement an organisation's strategy.

Management Approach

We have developed an HR Strategy Model 'CARE Model' to create superior employee experience. Through its four key elements of Communication, Agility, Responsibility, and Elevation, the Model aims at creating the best experience for our internal and external stakeholders in ways of working. This enables our teams to remain aligned and synergised within the business while launching new initiatives and ensuring process efficiency.

Significant Aspect

Our Human Capital has facilitated growth of the Company, with an average tenure of 7.25 years, and fully supporting JSW Energy's foray into new opportunities. Our Human Capital supports growth in the business by facilitating effective negotiation, pursuance, critical data analysis and by way of long-term strategic planning.

Key Performance Indicators	Material Topics	Strategy Linkage
• Manpower Hiring • Digital Learning Journeys • Succession Planning • Leadership Development • Job Rotation • Reward & Recognition • Employee Wellness	• Ensuring right talent for the right role • Increasing capability building • Creating a leadership pipeline • Recognising high performance and continuous improvement • Creating an inclusive and safe working environment	**S02** (Leveraging our time-tested business model) **S06** (Nurturing our workforce)

Our Performance

Total employee strength

2,500
FY 2024

2,310
FY 2023

Gender diversity

124
FY 2024

104
FY 2023

Age diversity

up to 30 years	between 31-50 years	Above 50 years
263 FY 2024	**1,882** FY 2024	**355** FY 2024
202 FY 2023	**1,810** FY 2023	**298** FY 2023

Average hours of training per employee

25.52 hours
FY 2024

17.07 hours
FY 2023

Employee satisfaction ratio

(As per GPTW Certification 2023)

86%
FY 2024

74%
FY 2023

Lost Time Injury Rate

0.15
FY 2024

0.00
FY 2023

CARE Model

Communication	Agility	Responsibility	Elevation
55 Townhall Total Samwaad/Townhalls conducted pan-India	Monthly Learning Dashboard	Improved infrastructure for Female employees • Refurbished female washrooms • Newly constructed female washrooms	Launched initiatives like "Women of Energy" to highlight the achievements of women employees
4 Number of Quarterly Corporate Inductions	Monthly/Quarterly Learning Dashboard	Innovation projects carried out at plant locations published in the inhouse "BOLT" Magazine every quarter	'Parivaar ka Samachar' highlights achievements of employees' family members
130 Skip Level Meetings	Training as per My Development Plan – 60% average completion for E-Learning modules rolled out	**148** Number of Kaizen conducted	Recognition given to Top E-Learners
Bolt Magazine A Quarterly Magazine launched and Published 3 editions (Till December 2023)	Training provided on Statutory Compliances	**46** Number of Poka Yoke	Publishing achievement of our Employees and families in BOLT magazine
117 Monthly Birthdays celebrated pan-India	Future Fit Leaders Program	**36** Number of One Point Lessons	Ignite Awards for Innovation
41 Number of Employees Family Get Together arranged	Women of Future Program	CSR activities carried out at various locations (like Charkha, Bhadresh Skill School) published every quarter in BOLT Magazine	LAMHE Awards organised for people who have spent 10, 15, 20 or 25 years with the organisation (394 people given this award in FY 2024)
Employees undergoing Development Journies through	HReady 2.0		12
	Young Leaders Program 2.0		3

Employee Hiring

- Manpower hired on roll **- 344**
- Females hired **- 27**
- Males hired **- 317**
- Manpower hired as retainers **- 93**
- Number of employees offered a job **- 490**
- Number of jobs offered to female candidates - **32**
- Number of jobs offered to male candidates - **458**

Diversity and Inclusion

- Total Number of employees – **2,500**
- Number of women employees - **124**
- Number of differently abled employees - **6**

Gender Diversity

- Ratio of Male:Female **2,376:124**
- Male-Female Ratio **95.04:4.96**

Power Plant, Ratnagiri

Key Initiatives

- Talent Acquisition and Management: Through our Talent Management Framework, we take efforts in identifying, building and retaining talent for our current and future business needs. By leveraging our aligned efforts, we ensure consistency in our talent processes across the business. We encourage our employees to be agile and multi-skilled through our initiatives like Energy Shakers & Movers and Job Rotations.
- Learning and Development: Our learning and development initiatives are attuned with our organisational goals. By providing them with the right knowledge and skills they need to contribute to these goals, which will increase our overall efficiency and effectiveness.

Our aim is to become an 'Employer of Choice' by creating a culture of continuous improvement, where employees are empowered to develop their own skills and knowledge, leading to better performance for the overall Company. We continuously aim at improving the skills of our employees, and for this we have introduced 'My Development Plan' under which we assign learning journeys to our employees. These learning journeys are on Critical Thinking, Problem Solving, Presentation Skills, Change Management and Conflict Management by using blended tools like e-Learning and physical workshops.

63,798
Total training hours

58,837
Total training hours for Males

13,504
Online learning hours

4,949
Total training hours for Females

50,294
Offline learning hours

379
Total offline trainings conducted

45%
Increase in logins on JSW Learning Academy

2,196
E-Learning training modules completed

Compliance-based Training

98%
POSH trainings completed

1,157 (Out of 1,181)
POSH trainings completed

556
Number of employees that completed Code of Conduct insider trainings

1,365 or 92% (Out of 1,496)
Number of employees that completed JSW Values e-Learning module

Crucial conversations

7
Total number of sessions conducted

182
Number of Managers covered

My Development Plan

6
Modules assigned with average completion of 60%

Leadership Development and Succession Planning:

At JSW Energy, we are committed to hire, manage, develop and retain the best talent. As our responsibility to groom homegrown talent, we have created avenues for Leadership Development, such as Future Fit Leader, Springboard and Talent Board, to identify and groom high potential employees.

Talent Board created for

16 employees
Thermal

12 employees
Hydro

9 employees
Renewables

Individual Development Plans

37
Number of employees for whom IDPs are created
Thermal

28
Number of employees for whom check-ins are scheduled
Hydro

Job Rotation

JSW Energy believes in developing its internal talent pool for leadership roles in the organisation. To achieve this, it is important for employees to have exposure and experience in diverse functions and roles across the organisation. We remain committed to create and provide such opportunities to employees at different stages of their career. This is aimed at building and enhancing their domain knowledge and expertise across core and complimentary functions. The width and depth of the employees' experience over a period of time leads to creating a talent pool which is ready to lead various aspects of the organisation's growth and operations.

Rewards and Recognition

We believe in creating a culture of performance differentiation and rewarding quality improvements. For this purpose, we have established various rewards and recognition schemes at our plant sites to give due recognition to our employees who outperform in their roles or undertake process improvement initiatives.

Recognition schemes organised for employees in FY 2024

148
Kaizen

46
Poka Yoke

36
One Point Lesson

Other Initiatives

- Initiated Shabash Cards for recognition of Peers/Managers for appreciation on day-to-day activities
- Introduced JSW Spotlight for appreciating employees, peers and stakeholders
- Ignite Awards organised for appreciation for best Innovation Projects
- LAMHE Awards conducted for employees completing 10, 15, 20 or 25 years in the Company

394
Number of employees rewarded LAMHE Awards in FY 2024

Employee Engagement

Our employee engagement efforts are aligned with our vision and mission statements, and to our overall business objectives and strategies. By leveraging our CARE model, we remain committed to engaging with our employees.

We have introduced various engagement activities, wellness drives and competitions not only for our employees, but also for their family members. Engagement activities like Umang, celebration of festivals such as Holi, Diwali, Lohri, Christmas and many others facilitates employees in knowing each other better and developing a camaraderie between themselves. This helps them collaborate with each other during cross-functional team activities.

Several initiatives have been undertaken to encourage our employees in pursuing their hobbies like Beats & Chord, Photography, Literary Club & Chitrakala, among others. These platforms enabled the employees to engage in their hobbies beyond work.

Key Initiatives:

- Publishing employees' hobbies in BOLT, the quarterly magazine. Poems, photographs, travel stories and wellness stories give the employees a platform to showcase their talent to larger audiences
- Publishing 'Women of Energy' in BOLT to highlight the achievements of our women employees and to promote diversity and inclusion
- Celebrating diverse festivals such as Diwali, Navratri, and Ganesh Chaturthi, among others
- Conducting monthly birthday celebrations across our offices in India.

Employee Well-Being

Annual health check-ups organised at all our plant sites are aimed at ensuring that our employees remain fit and healthy at all times. For physical fitness, initiatives like UMANG and Jai Vinayak are conducted at the sites. Apart from this, we also celebrated International Yoga Day at most of our plant sites to highlight and reiterate the importance of yoga in mental and physical well-being for the employees.

Diversity, Equity & Inclusion (DEI)

We believe in offering equal opportunities to all our stakeholders and partners within business by way of merit. We conduct Prevention of Sexual Harassment (POSH) awareness campaigns at our plant sites to ensure our internal and external stakeholders are in a safe work environment.

We remain committed to adhering to the highest standards of ethical, moral and legal conduct of business operations. Through the Whistle Blower Policy, we encourage employees with genuine concerns about suspected misconduct to come forward and express these concerns without any fear of punishment or unfair treatment.

Power Plant, Nandyal

98%
Share of employees that have completed POSH module training

Organised Crèche facility at locations with women employees (within eligibility guidelines)

Published women employees success stories in BOLT, our inhouse quarterly magazine aimed at promoting and highlighting achievement of our women employees

Improved infrastructure for females by renovating and constructing separate washrooms across plant sites

21
Renovated

16
Newly constructed

Springboard
An initiative for development of future Women Leaders

Safety – Our Key Priority at JSW Energy

Building a Safe Work Environment

Health & Safety continues to be a core value for JSW Energy. All the teams at the Thermal, Hydro Power and Renewable businesses have safety systems in-built in their operational processes through systems including Safety Induction Training, Tool Box Talk (TBT), Permit to Work (PTW), and Safety Observations, and others. Major safety initiatives are being followed at all the operational locations and project sites to continuously maintain Health & Safety for all the employees and workers.

Key Safety Initiatives at Location

- Mock drill for snake bite response and rescue has been conducted at all WTG locations in Sandur, Tuticorin, Dharapuram and Vijayanagar solar locations
- Safety Stand Down meeting was conducted to create awareness about high-risk activities in the plants and projects
- Emergency preparedness mock drill and rescue to hospital using ambulance was conducted at all locations of Renewable Energy projects
- Mock drill for 'Fall from Height' conducted at Sandur site and Kutehr Hydro barrage location
- Mock drill for scrap fire response carried out at all Solar projects
- BHM High Risk mitigation initiatives carried out at major Thermal and Hydro power projects
- Contractor Safety Management (CSM) through Pre-Qualification assessment (PQA) improvement and JSW CARES assessment conducted at all locations

Occupational Health and Safety Trainings

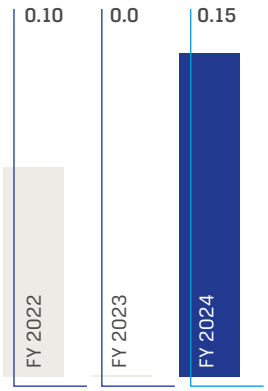
- Monthly Mock Drills for high-risk situations at all Thermal and Renewable Energy plants
- Compulsory Safety Induction Training for all employees at every single location
- GWO (Global Wind Organisation) certified safety trainings – 100% of targeted JSW employees (116) and associate employees (211) have completed their training
- Crane Safety Awareness and Fire-fighting Training conducted at Dharapuram site
- Mock drill for electrocution and rescue conducted at Mytrah solar plant location
- Behaviour-based safety trainings conducted at all renewable project site
- Open Excavation Safety Awareness training conducted at Vijayanagar Hydro Pumped Storage project site
- CPR Training, complete with a demonstration and first-aid given in bone fractures in emergency situations conducted at Power House, Kutehr project
- Training session on 'SCBA and Life-saving techniques' conducted at Baspa-II Power House, Sholtu Hydro plant

Digitisation in safety management

Logging safety observations through mySetu software has been extended to under-construction hydro projects, and will soon be extended to various renewable power projects. This will enable the Company to gain access to readily-available safety data at all times and also support various safety analytics across all plants.

JSW Energy is also working towards utilising the capabilities of Artificial Intelligence (AI) and Virtual Reality (VR) for safety training. Two AI-enabled VR training sessions were conducted at the Ratnagiri thermal power plant. Demonstrative training on conveyor belt safety and PPE safety, using VR modules, was conducted by external digitisation partners for all Plant HODs, with the module procurement process having been initiated. Going forward, these safety training modules will be gradually extended to all power plants.

Our Safety Performance (LTIFR*)



Loss time injury frequency rate

SOCIAL & RELATIONSHIP CAPITAL

Our stakeholders form an integral part of our decision-making process while we continually engage with them to understand their needs and expectations. As we expand our overall portfolio, we also prioritise on embedding sustainability and building resilience in our supply chain. And through our CSR-focussed initiatives, we continue to broaden our reach in enabling the communities to improve their lives and build sustainable livelihoods.

CSR Initiatives, Barmer

Description

This capital encapsulates JSW Energy's long-term associations with its key stakeholders, strengthening of key stakeholder relationships, and the ability to enhance their collective well-being.

Management Approach

JSW Energy promotes mutual trust and respect with all its stakeholders, and strives to improve the quality of the communities in which it has a presence.

Significant Aspects

- Community support
- Skill development
- Education and training

Key Performance Indicators	Material Topics	Strategy Linkage
• Total CSR Spend • Number of Direct Beneficiaries impacted • Saplings planted • Health and safety initiatives	• Customer satisfaction • Local sourcing • Cyber security	SO2

Our CSR Vision

To empower communities with sustainable livelihoods.

Our CSR Framework

Through the JSW Foundation, our CSR interventions are aimed at achieving better outcomes by adopting the SAMMS (Strategic, Aligned, Multi-stakeholder, Measurable and Sustainable) approach.

The SAMMS Approach – Aligned with Outcomes

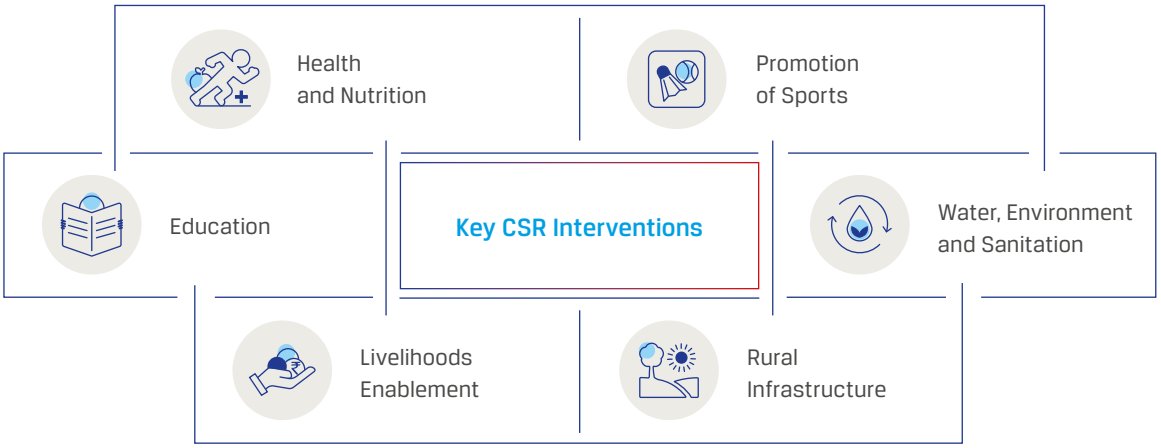
Strategic	>	Shared Value
Aligned	>	Linked to Business Case
Multi-Stakeholder	>	Company not acting alone
Measurable	>	Demonstrable
Sustainable	>	Avoiding dependency

CSR Committee + CSR Policy = CSR Governance

Our CSR Policy

Our CSR Policy aims at addressing several considerations of the society by following the process of social inclusion. Our key objective is to empower the communities we operate within. Our special focus remains on empowering women through special interventions and helping them become a strong and positive force for change.

We firmly believe in strengthening our Social Capital through our focussed interventions in the below areas



₹ 32.47 crore
Total CSR Spend

300
DIZ Villages

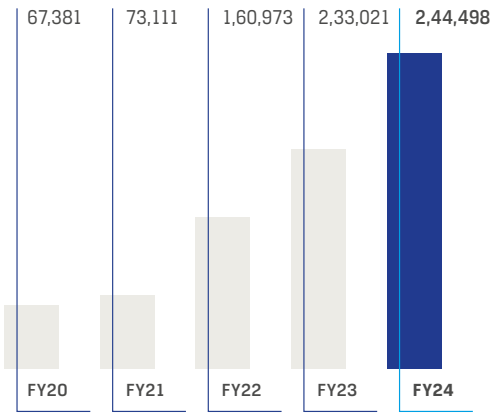
3+ Lakh
Population covered

460+
Women trained under Project Charkha

500+
Women trained in producing handicrafts

1,000+
Farmers engaged in Agriculture

Number of lives touched



- Strategies to optimise sustainable community growth
- Policies on Social Development

Key CSR Initiatives

Key thrust areas

₹ 2.53 crore
Health & Nutrition

₹ 9.33 crore
Education

₹ 3.67 crore
Agri and Skills Livelihood

₹ 6.83 crore
Water, Environment & Sanitation

₹ 1.68 crore
Promotion of Sports

₹ 8.43 crore
Community Development & Infrastructure

HEALTH & NUTRITION

Our Health & Nutrition initiatives for communities are supporting the Sustainable Development Goal (SDG) 3. The efforts under this focus area aim to enhance health and nutrition services at all levels of the healthcare systems by increasing awareness, contributing to infrastructure development, and encouraging community engagement to support the nation's efforts.

Key Focus Areas

- Enhancing public healthcare institutions
  - District Hospital
- Health outreach activities
  - Medical Health Vans
  - Community Clinics
  - Ambulance Services
- Implementing specific Intervention programmes
  - Vision Correction: Refractive errors and cataract surgeries

88,627+

Lives touched through Health & Nutrition initiatives

Enhancing Public Healthcare Institutions

The JSW Foundation, along with the district health office and district administration, has supported in enhancing the infrastructure in the district hospital of Barmer. The operation theatres, surgery OPD section, observation area, patient waiting area and laundry area have been enhanced. The support provided to the district hospital is currently benefitting **10,000+ patients in a year.**

Our Health Outreach Activities

Mobile Health Units

In association with HelpAge India, JSW Foundation provides doorstep healthcare services through Mobile Health Units (MHU) at Barmer, Rajasthan. These MHUs provide their services in 16 remote villages in the district, covering about 11,000 people. Every MHU is operated by a qualified doctor, a lab technician, a pharmacist and a driver.

The key mission of every MHU is to offer free medical treatment to the patients and ensuring that essential healthcare services and medication is readily available to them at all times. Additionally, the project places a strong emphasis on raising health awareness by empowering communities with adequate knowledge on preventive measures against common and preventable diseases.

Health Camps

In collaboration with the health department in Himachal Pradesh, JSW Foundation organised a multi-speciality health camp at Sholtu. A team of specialist doctors from the Indira Gandhi Medical College and Super Speciality Hospital, Shimla provided all types of health services to 5,346 patients who participated in the camp. Some of these health services included ultrasound, echocardiography (ECG), audiometry, X-ray, lab tests and surgeries.

Community Clinics

JSW Foundation provides primary healthcare services to community members at the Urja Health Centre in Ratnagiri. This centre is well-equipped with experienced healthcare professionals including medical doctors and nurses. In the reporting period FY 2024, the Health Centre attended 10,452 cases in its out-patient department (OPD).

Ambulance Services

Ambulance services play a crucial role in the healthcare system and support patients in need by providing timely medical intervention and transportation, thus contributing to improved outcomes and saving lives. JSW Foundation has provided ambulance services to 263 patients in Ratnagiri during the reporting period.

Implementing Specific Intervention Programmes

Vision Screening and Correction

Vision screening and correction play a significant role in identifying and addressing vision problems, ultimately improving an individual's quality of life and reducing the risk of vision-related complications. Regular screenings and access to appropriate corrective measures are some essential components of comprehensive eye care. In collaboration with expert agencies, JSW Foundation performs frequent eye examinations on individuals of all age groups, ranging from teenagers to elderly people, across several operational sites.

Eye screening tests were organised by JSW Foundation across locations. These were attended by 6,344 individuals.

In addition, the Foundation also provides prescription glasses to those with refractive errors. Nearly 250 individuals were supported in obtaining these glasses during reporting period. Moreover, we provided assistance to 22 individuals in getting cataract surgeries done, preventing irreversible blindness and providing a sense of independence in old age.

Ambulance and Mobile Medical Van, Barmer

PROMOTION OF SPORTS

Promotion of Sports

Project Shikhar

Project Shikhar, the flagship project of JSW Energy, was started in 2016 to nurture the boxing talent of young children at Sangla valley in Himachal Pradesh and to prepare them for high-level sporting events. Initially, it provided boxing kits and infrastructure support to individuals, and over time it evolved into a full-fledged support system for young boxers. The initiative aims at fostering the ambitions of aspiring boxers in villages.

Services provided:

- Talent identification
- Nutrition, coaching, equipments support
- Boxing and Gym practice sessions
- Deployment of coaches
- Training of local coaches
- Financial assistance through Shikhar Fellowship
- Exposure to world-class training institutes, such as the Inspire Institute of Sports (IIS), Bellary

04
Number of Training centres

95
Number of Trainees

05
Number of Coaches

115
Number of Participants in Competitions (till date)

20
Number of Competitions (till date)

Medal Tally Since 2016

S.No.	Medals	International	National	North Zone	State	District	Total
1	Gold	3	10	2	149	33	197
2	Silver	1	13	2	59	20	95
3	Bronze	2	24	1	71	18	116
	Total	**6**	**47**	**5**	**279**	**71**	**408**

Sports Culture at Schools

Provision of sports kits in schools is beneficial for promoting physical activity, fostering teamwork, and for enhancing overall well-being among students. Availability of sports kits ensures that all students have access to the necessary equipment for participating in physical education classes and extra-curricular sports activities.

JSW Foundation has provided various sports kits in government schools at **Dharapuram** and **Tuticorin** locations. These kits were accessible to 1,800 and 1,300, students respectively.

A volleyball court was renovated in Vilathikumlam taluka, Tuticorin which is helping about 100 volley ball players from the community. An indoor stadium for badminton has been developed at Toranagallu village in Bellary, which provides access to 1,000+ budding sports talent to hone their skills.

JSW Foundation at **Barmer** has supported a government school in developing a sports ground within the school premises to help **450 students** access it for physical education sessions and extra-curricular activities.

4,995+

Lives touched through promotion of sports initiatives

Renovation of Volleyball Court at Tuticorin

The local community in the Vilathikumlam taluka of Tuticorin has been active in playing and encouraging its youth to play volleyball. As a community game, volleyball is popular and much followed. After the community's volleyball court was degraded, JSW Foundation supported in renovation of its court grounds, stage and toilet facilities to encourage and promote volleyball practice and tournaments. The initiative has helped about 100 regular sports practitioners and others from the community.

Community Volleyball Court, Tuticorin

EDUCATION

10,294
Students benefited through educational initiatives

Early Childhood Education

At JSW Foundation, we take a comprehensive approach towards education, focussing particularly on early childhood education as a gateway to a brighter future for children. We firmly believe that laying a strong educational foundation during these formative years is crucial for their overall development. As part of our efforts, we have developed the learning environments in 5 Anganwadis and helped them become a model for others. These Anganwadis are currently nurturing 45 budding students and ensuring them access to better educational facilities and opportunities.

Foundational Literacy and Numeracy

Foundational literacy and numeracy are the basic skills of reading and writing that an individual needs to comprehend written texts, communicate effectively, and to engage in various aspects of life. We expanded our reach by extending our educational initiatives on foundational literacy, numeracy and extracurricular activities to 21 schools and benefiting a total of 2,243 students. Student engagement activities such as science exhibitions and competitions aim to ignite curiosity, foster critical thinking, and deepen understanding of various subjects.

School Infrastructure

Infrastructure is a critical component of an effective education system, as it provides the necessary physical spaces, resources, and support systems to create an optimal learning environment for students and educators. Improving school infrastructure is essential for promoting educational equity, enhancing student outcomes, and fostering holistic development. During the reporting period, JSW Foundation provided support by developing the infrastructure in 14 schools, which helped create a conducive learning environment for 2,286 students.

JSW Udaan

Our commitment to support deserving students is extended through the JSW Udaan Scholarship, through which we provided financial assistance of ₹ 73.40 lakh to 223 deserving students. The scholarship provides more than just monetary aid by empowering students to excel academically and grow personally, and enabling them to pursue their aspirations and realise their full potential.

Jindal Education Trust

We are honoured to have been awarded the ISO 9001:2000 certification, a key milestone in achieving our vision of educating leaders for the 21st century. The Jindal Education Trust (JET) provides support to numerous educational institutions through its flagship school, Jindal Vidya Mandir. These schools located at Ratnagiri and Sholtu provide education to about 1,181 students annually, by providing them with the most modern curriculum and excellent infrastructure facilities. The students in these schools are being groomed for the future with a vision of "Every Day, Every Child, A Leader".

WATER, ENVIRONMENT AND SANITATION

Water, environment, and sanitation are interconnected elements that play a crucial role in community development. Comprehensive approaches that address the interconnectedness of these elements are essential for promoting holistic development and improving the quality of life.

Water

JSW Foundation implements long-term plans for sustainable water resource management and enabling water security for drinking, domestic and agricultural usage in our communities.

Access to Drinking Water

To increase the supply of drinking water to communities, we design need-specific and sustainable solutions for all our locations. Due consideration is given on making these solutions sustainable over the long-term.

In the extremely remote hilly areas of Kutehr in Himachal Pradesh where spring water is the only source of water, JSW Foundation is working towards strengthening this precious water source to ensure an uninterrupted supply. To tap spring water, a pipeline of 3.15 km in Garola and 1.5 km in Ulansa gram panchayats was laid, and a storage tank was constructed at Lamu gram panchayat, benefiting over 4,500 people.

In the dry desert lands of Rajasthan where women and girls walk an average of 2-3 kilometres per day to fetch water, JSW Foundation ensures supply of safe drinking water through pipelines and hand pumps to even the remote dhanis (bastis/ hamlets) in Barmer. Through these interventions, we ensure drinking water sources for over 25,000 people and reducing the daily drudgery for women.

The Foundation provides potable water to a habitation of 2,490 people at three villages in Jharsuguda. In Tuticorin and Dharapuram in Tamil Nadu, and in Bomanghatta, in Vijaynagar at Karnataka, we make available safe drinking water by providing water purifiers in common areas and schools. This initiative has benefited over 8,000 people.

Water Resource Management

Our holistic approach to water management ensures that water is looked at as a shared natural resource. We support our communities in capturing and conserving water by constructing rainwater harvesting structures, undertaking soil and moisture conservation measures, providing treatment to check soil erosion, and empowering local communities to effectively manage created assets.

At Vadagapatti, a drought-prone area in Tamil Nadu, we embarked on a crucial mission to rejuvenate a heavily degraded lake. This lake was suffering due to siltation and weed invasion. The Foundation removed 1.5 lakh cubic metres of fertile silt, which was spread on over 200 acres of land. As water levels rose, the surrounding villages witnessed a resurgence in agricultural productivity. The rejuvenated lake now serves as a beacon of hope for the entire region, showcasing the tangible impact of proactive environmental stewardship

Under Construction Vadagapatti Lake, Tamilnadu

ENVIRONMENT

Increasing Green Cover

We understand and appreciate the significance of grasslands in the desert ecosystems of Barmer, and have been taking adequate steps to revitalise them. In the last five years, we have planted and nurtured saplings of native grass and plant species, thus promoting Silvipasture over an area of 25 acres. Additionally, we have also created a green oasis in the region by planting trees along a 5 km stretch to maintain 3,734 trees planted on the stretch. JSW Foundation has planted 1,200 saplings in Dharapuram and 1,000 saplings in Tuticorin in Tamil Nadu to increase the green cover during reporting period.

Promoting Renewable Energy

Leveraging solar lights to promote renewable energy represents a sustainable and inclusive approach to addressing energy access challenges, advancing environmental sustainability, and fostering community development. By harnessing the power of the sun, communities can illuminate pathways to a brighter, cleaner, and more equitable future. JSW Foundation has installed 362 solar street lights and high mast lights in the villages of Himachal Pradesh, Maharashtra and Tamil Nadu.

Sanitation

Sanitation plays a crucial role in community development by promoting public health, environmental sustainability, and social well-being. Sanitation interventions contribute to environmental sustainability by reducing pollution and protecting natural resources. Access to sanitation facilities and improved hygiene practices enhances health and well-being and also contributes to economic productivity within the communities. JSW Foundation continues to promote good sanitation practices in Direct Impact Zones (DIZ).

Community sanitation blocks constructed by JSW Foundation in Dharapuram and Tuticorin have provided access to more than 50,000 people annually. In Kutehr, JSW Foundation has provided support to 18 community sanitation units in 6 Gram Panchayats, providing access to about 2,000 people annually.

At Ratnagiri, beach clean-up drives are conducted with participation from student and community volunteers. JSW Foundation has constructed 134 metres of drainage line and 2 culverts to promote sanitation among 300 villagers in Mallapura, Karnataka.

In the last five years, we have also created a green oasis in the region by planting trees along a 5 km stretch and maintaining these trees planted here. Additionally, we have planted and nurtured saplings of native grass and plant species, thus promoting Silvipasture over an area of 25 acres in the plant vicinity

Near Power Plant, Barmer

SKILL DEVELOPMENT AND LIVELIHOODS

2,707
Lives touched through livelihood interventions

We facilitate sustainable livelihoods by providing skills for economic growth and inclusive development. Our key interventions focus on marginalised communities to have secured livelihood opportunities, enhance related skills and increased income, and help them move towards economic empowerment.

Project Charkha

Under Project Charkha, women are trained in traditional handloom weaving at JSW Foundation's Vocational Training Centre in Kinnaur valley and in Chamba, Himachal Pradesh to provide them with sustainable livelihoods. Kinnauri products such as shawls and stoles made of pure woollen yarn and woven in handlooms are popular and widely known for their intricate and fine weaving. Project Charkha develops the entrepreneurial skills of women by training them on multiple fronts.

Project Charkha's Areas of Training

- Product and design development
- Devising a viable business strategy
- Product marketing
- Soft skills
- Facilitating market linkages

460+
Number of Women trained under Project Charkha at Sholtu and Kutehr, Himachal Pradesh

Promoting traditional handicraft

At Barmer, JSW Foundation continues to support the enhancement of skills and livelihoods for the rural population by nurturing supportive ecosystems and innovations in handicrafts with 500 women artisans across 3 Gram Panchayats. With this, the Foundation brings together factors and conditions that help them in creating new opportunities and sustaining the ecosystem through employment and by providing enterprise linkages through innovative strategies.

JSW Foundation has established the Desert Pastorale Producer Company Limited and is working towards promoting traditional handicrafts of Applique and Mukka Art. In the reporting year, women artisans were trained in online marketing on digital platforms. A beautiful catalogue was prepared and uploaded on digital marketplaces like Flipkart and Meesho. Now women artisans are selling their products not only through the offline mode, but also on various popular online marketing platforms, and forms an important element of business sustainability.

500+
Women trained under handicraft project at Barmer, Rajasthan

Kaladham

JSW Foundation has developed Kaladham in Ratnagiri, which offers training and provides a marketplace to artisans from the neighbouring communities. Currently, about 200 artisans are associated with this initiative.

200+

Artisans associated with Kaladham in Ratnagiri

Agri-Livelihoods

Ratnagiri, which is located in the coastal region of Maharashtra, is known for its fertile land and favourable climatic conditions. This makes it well suited for various agricultural activities, including organic agriculture and medicinal farming. In FY 2024, JSW Foundation supported the establishment of two milk collection centres where associated farmers sell about 1,000 litres of milk daily.

The Foundation also supports farmers to develop dairy with the Indian variety of Gir cow. About 40 farmers sell an average of 600 litres of A2 milk at premium price on a daily basis.

The Foundation has also continued its support for organic and medicinal farming, which led more than 890 farmers getting engaged with organic and medicinal farming on about 225 hectares of land in Ratnagiri. These farmers were also supported for exposure and training on technical inputs for organic and medicinal farming.

Apple orchards are an integral part of the agricultural landscape and cultural heritage of Himachal Pradesh, and also contribute to the state's economy, tourism industry, and rural livelihoods. The sight of lush green apple orchards against the backdrop of the Himalayan mountains is a symbol of the natural beauty and bounty of Himachal Pradesh.

JSW Foundation continues to support the local community in apple orchards development on Gram Panchayat's land at Sholtu and Kutehr. Currently, the apple orchards are nurturing 2,000+ plants.

1,000+

Farmers are benefited under these initiatives at Ratnagiri and Sholtu

RURAL INFRASTRUCTRUE

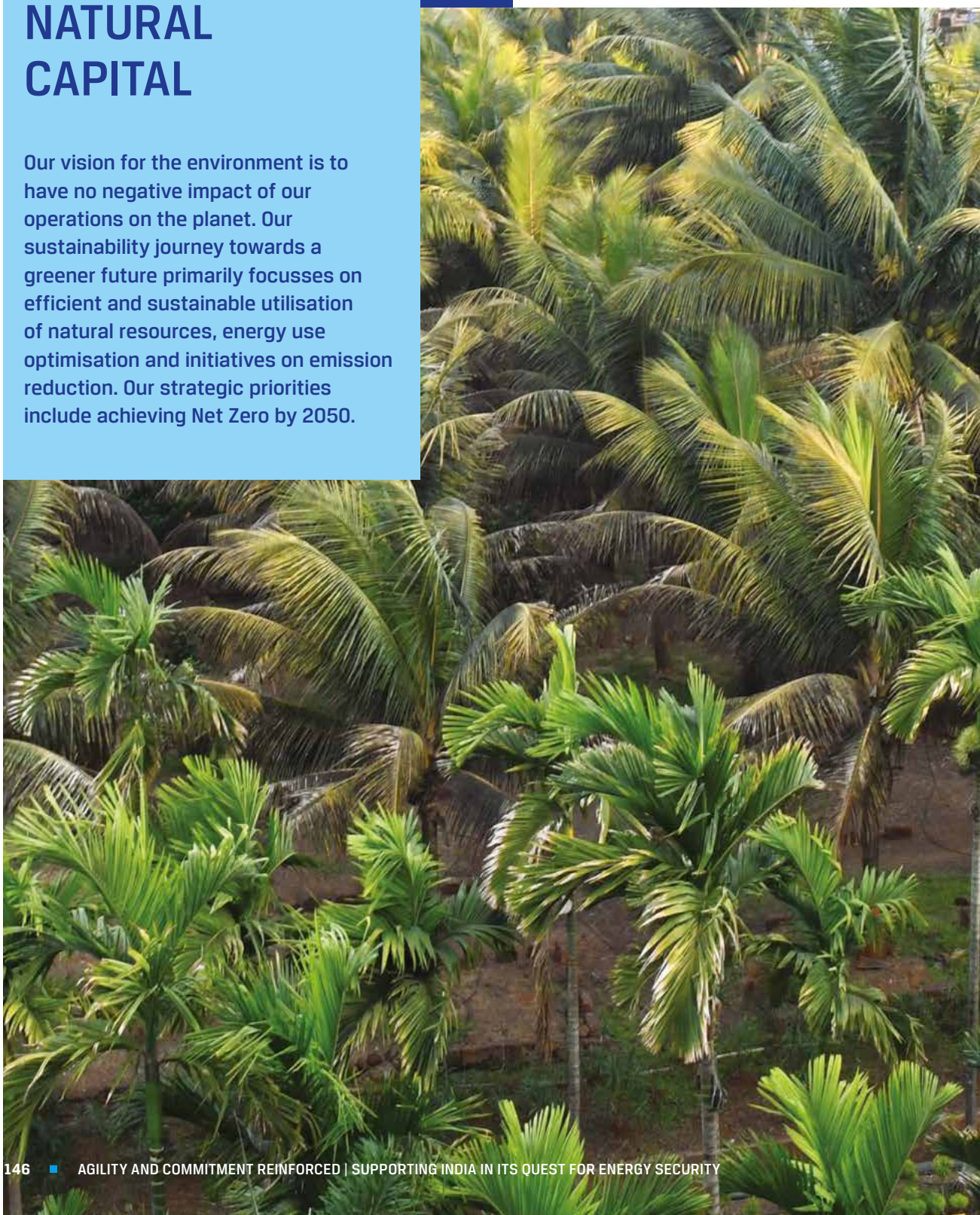
Most of the plant operations of JSW Energy are established in remote parts of India, which lack infrastructure compared to urban counterparts. Improving infrastructure in these remote regions is essential for promoting economic growth, enhancing livelihoods, reducing poverty, and fostering inclusive development.

JSW Foundation has supported the construction of a community hall in Sholtu and Kutehr to celebrate community functions and cultural events on occasions.

In Ratnagiri, a 1.2 km road has been constructed for providing easy access to neighbouring communities. This connectivity helps farmers in easily accessing their farms, especially in difficult situations like the monsoon. Construction of a community hall in Gowripura village in Vijayanagar is also under progress.

NATURAL CAPITAL

Our vision for the environment is to have no negative impact of our operations on the planet. Our sustainability journey towards a greener future primarily focusses on efficient and sustainable utilisation of natural resources, energy use optimisation and initiatives on emission reduction. Our strategic priorities include achieving Net Zero by 2050.



Description

Natural capital is the inventory of renewable and non-renewable natural resources of our ecosystem. It is about the investments made to protect depletion of natural resources and create a positive impact on the environment.

Management Approach

We are benchmarking KPIs on GHG emissions, water consumption, waste management and air emissions to create a sustainable ecosystem in the vicinity of our plants.

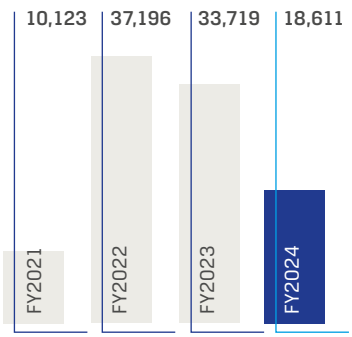
Significant Aspect

- Climate
- Preservation of biodiversity
- Management of environmental footprint
- Energy efficiency
- Preservation of natural resources

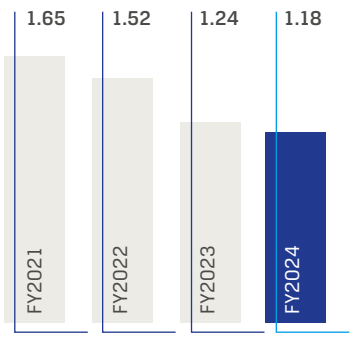
Key Performance Indicators	Material Topics	Strategy Linkage
• GHG emissions • Energy consumed • Energy saved • Water consumed • Water recycled • Waste generated and disposed	• Managing carbon emissions • Waste management • Water management • Biodiversity • Energy efficiency	S02 S04 S05

Key Performance Indicators

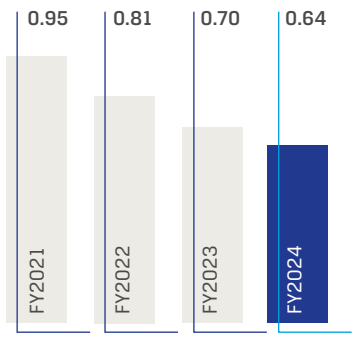
Number of Saplings Planted



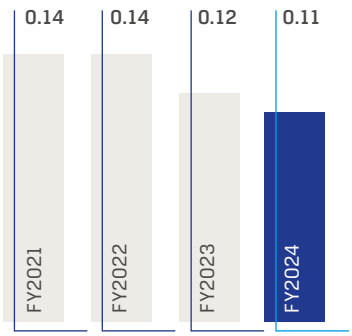
SOx (Kg/MWh)



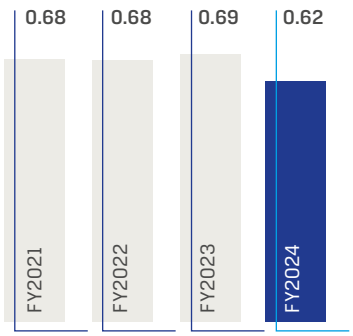
NOx (Kg/MWh)



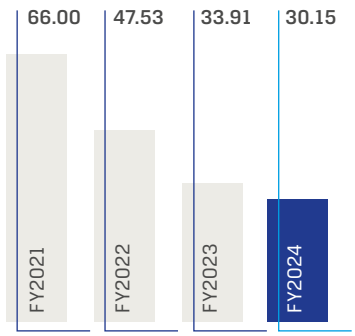
PM (Kg/MWh)



GHG Emissions Intensity (tCO_2/MWh)



Energy Savings (MU)



17,403 MT
Coal saving due to energy reduction and process improvements

2,03,000 MT
Estimated coal displacement due to use of waste gases in boiler

Plant-Wise Energy Saving Initiatives (FY 2024)

Barmer Plant

S. No.	Description of energy reduction initiative	Nature of initiative	Energy reductions in GJ	GHG emissions saved due to energy saving ($MTCO_2e$)
1	APH Tube Plugging done in Unit#2 (Energy savings - 1,925.51 KW)	Energy Saving	41,920.00	4,233.92
2	APH Tube Plugging/Replacement done in Unit#8 (Energy savings - 821.69 KW)	Energy Saving	11,683.79	1,180.06
3	APH Tube Plugging done in Unit#5 (Energy savings - 193.31 KW)	Energy Saving	4,352.67	439.62
4	APH Tube replacement done in Unit#6 (Energy savings - 898.95 KW)	Energy Saving	6,201.11	626.31
5	CT makeup pump power consumption optimisation	Energy Saving	291.03	29.39
6	Reduce power consumption of BFP by optimising the FCV pressure drop	Energy Saving	6,188.60	625.05
7	Reducing power consumption of HT Bed ash compressor by optimising the unloading hours	Energy Saving	1,773.35	179.09
8	Reducing ETP Power by installing VFD in Guard Pond Pump	Energy Saving	527.04	53.23
	Total		**79,126.193**	**7,313.453**

Ratnagiri Plant

S. No.	Description of energy reduction initiative	Nature of initiative	Energy reductions in GJ (Estimated annual average reductions in energy due to a particular initiative)	GHG emissions saved due to energy saving ($MTCO_2e$)
1	Turbine Sequential mode of operation of all four unit	Saving of coal	2,59,114	22,985
2	PA fans baffel replacement in Unit-3	Saving of Aux Power	4,250	1,025
3	Improvement in turbine cylinder efficiency of unit-3 by overhauling	Saving of coal	1,35,901	11,954
4	Improvement in Aux. Power Consumption by de-staging of CEP-B in unit-3	Saving of Aux Power	1,784	432
5	Improvement in Aux Power Consumption by de-staging of BFP 2A in Unit-2	Saving of Aux Power	1,874	453
6	Improvement in Aux Power Consumption by de-staging of BFP 3B in Unit-3	Saving of Aux Power	863	209
7	Improvement in Aux Power Consumption by de-staging of BFP 1B in Unit-1	Saving of Aux Power	588	142
	Total		**4,62,626**	**37,200**

Vijayanagar Plant

S. No.	Description of energy reduction initiative	Nature of initiative	Energy reductions in GJ	GHG emissions saved due to energy saving ($MTCO_2e$)
1	VFD installation in HFO Pump A SBU2	Energy savings	0.3	26.8
2	VFD installation in LDO Pump A	Energy savings	0.0	2.7
3	CWP-1A overhaul in SBU2	Energy savings	2.2	198.2
4	BFP power reduction in SBU2 due to FW flow reduction after TG overhaul	Energy savings	26.3	2,368.7
5	Optimise the generation pressure of Ash Handling Compressor in SBU2	Energy savings	0.5	48.8
6	First field hopper heaters of all Units stopped in SBU2	Energy savings	0.2	18.6
7	Hopper Heaters auto cut in & cut out temperature set points reduced in SBU2	Energy savings	1.0	90.8
8	Silo Blower is being stopped after bulker loading in SBU2	Energy savings	0.5	40.8
9	ESP Blower Being Stopped when the ash Conveying is stopped	Energy savings	0.2	14.3
10	Reduction of PA fan power consumption by 41 Kwh by reducing the primary air header pressure from 850mmwc to 780mmwc in SBU1	Energy savings	1.7	152.0
11	Avoid idle running of Lube oil pumps in SBU2 Mills	Energy savings	0.3	24.1
12	SBU1 U1 Seal air fan Chokage cleared in the unit running condition	Energy savings	0.248	22.31
13	SBU2 U1 GHR Improvement After TG Overhaul	Energy savings	10,121.50	15,954.04
14	Reducing Steam loss through flash tank venting at VAM discharge in SBU2	Energy savings	829.08	1,306.83
15	Vaccum improvement by COH & CW Pump overhaul	Energy savings	2,857.50	4,504.14
16	Heat rate improvement by APH Baskets replacement to reduce the leaving air temperature by 22 Deg C from 162 Deg C to 140 Deg C	Energy savings	6,226.03	9,813.80
	Total		**20,067.537**	**34,586.843**

Nandyal Thermal Power Plant (18 MW)

S. No.	Description of energy reduction initiative	Nature of initiative	Energy reductions in GJ	GHG emissions saved due to energy saving ($MTCO_2e$)
1	Only one SA fan taken into service at partial load of 4.5-10 MW, and savings estimated to be around 35 KW per hour	APC reduction and Energy saving	184.46	132.63
2	2 Drag Chain Feeders kept in service in place of 4 at part load operation of 5-9 MW, which, in turn resulted in 4.13-4.5 KWh power saving	APC reduction and Energy saving	23.72	17.05
3	ESP one field was isolated based on the SPM and savings estimated to be 25 KWh	APC reduction and Energy saving	395.28	284.21
4	During part load operations, only one BFP was taken in service up to 10 MW which resulted in saving of 250 KWh.	APC reduction and Energy saving	1,756.80	1,263.14
	Total		**2,360.261**	**1,697.028**

Environment Protection: Key Initiatives

AFFORESTATION

4,789
saplings planted at Vijayanagar Plant

THIS 7-ACRE LAND IS APT FOR MANGO PLANTATION DUE TO ITS FERTILE SOIL, GENTLE SLOPES AND PROXIMITY TO THE SEA.

Vijayanagar

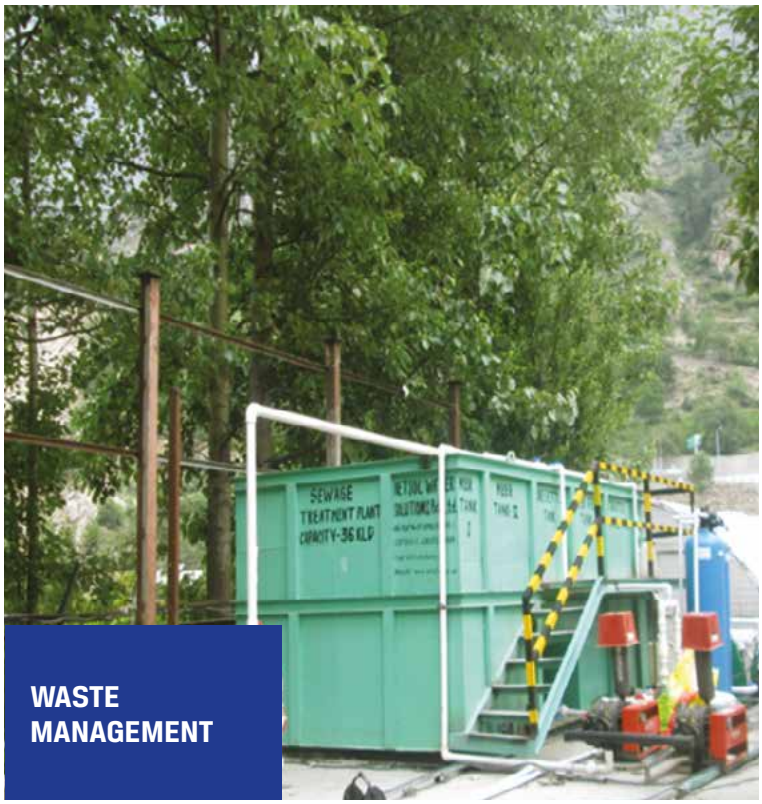
A passion for plantation

A total of 4,789 saplings have been planted inside the Vijayanagar Power plant to add to the greenery, along with maintaining all the gardens with lush green grass, artful boundary plants and beautiful hedges. Additionally, the Vijayanagar plant also celebrated the World Environment Day on 5th June, 2023 themed 'Solutions to Plastic Pollution' under the campaign #BeatPlasticPollution. To strengthen the existing green cover, a mass plantation was organised within the plant premises. Also, to motivate the employees and workers to continue their passion of plantation and gardening, a recognition of 'Best Horticulture Champion' was organised based on the efforts and work towards a clean and green city, and commitment and care for nature.

Ratnagiri

The Mango Haven

JSW Energy has embarked on a journey to create a sanctuary where mangoes reign supreme, and sustainability is perfectly aligned with innovation at a sprawling expanse of land. This 7-acre land is apt for mango plantation due to its fertile soil, gentle slopes and proximity to the sea. Besides the plantation, the land of stones and shrubs has been fully transformed by planting hundreds of trees, creating an expanse of green cover attracting the natural flora & fauna. By engaging local expertise and empowering dedicated manpower, we are fulfilling a deeper commitment to sustainability. As the orchard bears fruit, it will become more than just a source of sustenance, a transformational journey for the land, the people and Mother Earth.



WASTE MANAGEMENT

A 36 KLD SEWAGE TREATMENT PLANT (STP) HAS BEEN INSTALLED AT KUPPA CAMP. TWO MORE STPS, 600 KLD AT SHOLTU AND 15 KLD AT WANGTOO POWER HOUSE ARE ALSO INSTALLED TO MANAGE SEWAGE WATER.

Vijayanagar

The waste generated at the power plant, specifically bottom ash and mill rejection, was earlier disposed in landfills, which was costly and environment-unfriendly. The team created a process of converting waste materials of 20,720 MT into a viable fuel source. The pretreatment sludge totalling 550 MT was utilised by a micro pellet plant. This innovative approach to waste management and reuse of waste material benefited the environment, and created opportunities for economic growth and innovation.

Sewage Waste Management – JSW Hydro Energy Limited

Sewage Treatment Plants are installed at the BASPA II & Wangtoo power houses, main office, workshop and residential camps. Effluent discharged is checked on a regular basis by the Himachal Pradesh State Pollution Control Board and third-party to ensure it is within permissible limits and all the STPs are working as per the requirement

Effluent Treatment Plants installed:

- Sholtu (600 KLD)
- Wangtoo Power House (15 KLD)
- Baspa Power House (15 KLD)
- Kuppa Barrage Camp (36 KLD)
- Kilba Camp (45 KLD)
- Kakasthal workshop site (02 No.) (15 KLD and 30 KLD)

Solid Waste Management – JSW Hydro Energy Limited

Solid waste from the office premises, colonies and mess are segregated in non-biodegradable and biodegradable waste at the source. Fuel and manure is prepared from this biodegradable domestic waste. Each location is provided with composter of adequate capacity. A small Biogas plant is operated near the Sholtu main office and colony, which consumes the biomass. The non-biodegradable waste is stored adequately at the designated stores and subsequently sent to the vendors for further disposal and recycling.

A visionary Ash Management journey

Operating a state-of-the-art 1,200 MW thermal power plant in Jaigad -Ratnagiri, JSW Energy has been a cornerstone of the region's progress, providing vital energy sourced from imported coal from distant lands like Mozambique, Columbia, South Africa, and Indonesia. Amidst this vital energy generation, the Company faces a significant challenge of substantial production of staggering 1,800-2,000 metric tonnes of fly ash per day.

Traditionally, this fly ash has traversed to nearby cement units, RMC plants, and traders in bustling urban hubs like Mumbai, Pune and Kolhapur. However, our unwavering commitment to sustainability necessitated a re-evaluation of this process, particularly in light of periodic road movement restrictions. Disruptions in supply of fly ash from the newly-commissioned power plants of other organisations added layers of complexity to the situation.

Key Highlights:

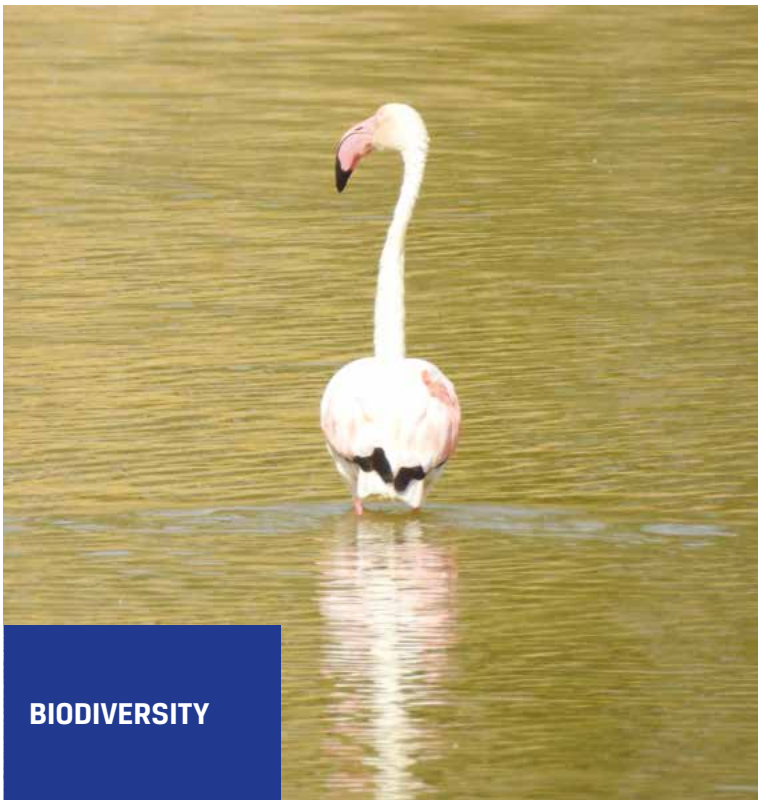
- **Strategic Ash Silo Construction:** Recognising the need for enhanced storage and transportation infrastructure, the Company embarked on construction of a cutting-edge ash silo with a colossal capacity of 45,000 metric tonnes. This strategic investment not only bolstered our bulk loading capabilities, it also ensured efficient ash management and minimised logistical challenges
- **Exploring Export Markets:** Leveraging its coastal location and proximity to a green field port, the Company embarked on an ambitious journey to explore export markets for fly ash. By tapping into coastal routes, it unlocked new avenues for sustainable ash disposal, reducing the environmental footprint, while expanding market reach
- **Triumphant Bulk Ash Shipments:** The culmination of our efforts was marked by successful loading of two bulk ash shipments destined for distant shores. These landmark achievements underscored our commitment to sustainability and innovation, setting new benchmarks for responsible ash management in the industry

The Company's visionary approach to ash management exemplifies its dedication to sustainability and environmental stewardship. By embracing innovative solutions and forging new pathways for sustainable ash disposal, we are not only mitigating environmental impact, but also driving positive change in the industry. As we continue to sail towards a greener future, the Company remains steadfast in its commitment to shaping a more sustainable world for generations to come.

Ash Export, Ratnagiri

47k MT
Quantity exported

THE COMPANY'S VISIONARY APPROACH TO ASH MANAGEMENT EXEMPLIFIES ITS DEDICATION TO SUSTAINABILITY AND ENVIRONMENTAL STEWARDSHIP. BY EMBRACING INNOVATIVE SOLUTIONS AND FORGING NEW PATHWAYS FOR SUSTAINABLE ASH DISPOSAL, WE ARE NOT ONLY MITIGATING ENVIRONMENTAL IMPACT, BUT ALSO DRIVING POSITIVE CHANGE IN THE INDUSTRY



BIODIVERSITY

PROPOSED DEVELOPMENT OF PONDS IN PLANT PREMISES AND SURROUNDING VILLAGES, ENSURING SUSTAINABLE WATER SUPPLY FOR THE ECOSYSTEM AND LOCAL COMMUNITIES

Ratnagiri

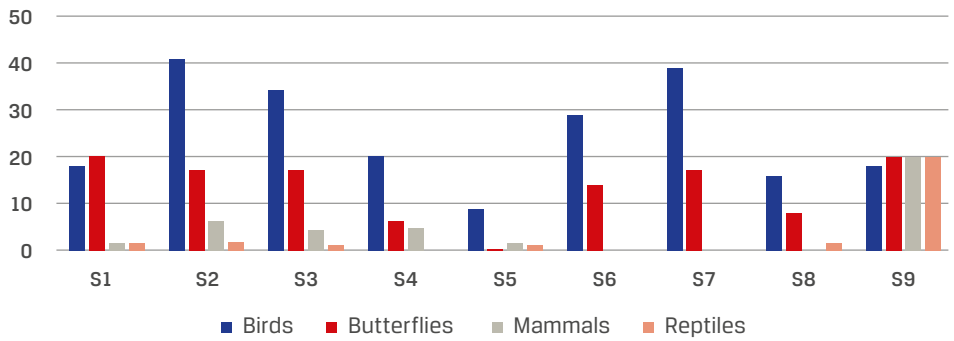
Quest for sustainability

The Company is inspired by a deep reverence for nature and fuelled by a desire to integrate sustainability into its industrial operations. Through its collective efforts, the Ratnagiri plant has been transformed into a beacon of sustainability, where industry and nature coexist in harmony. Its commitment to biodiversity conservation and environmental stewardship serves as a testament to the power of collective action in safeguarding the planet's future.

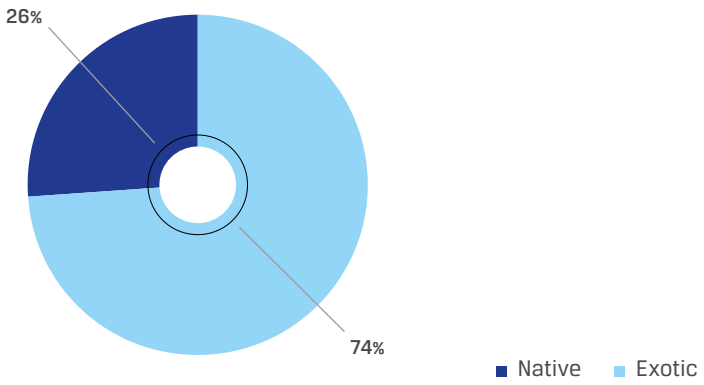
Key steps undertaken:

- Undertook a comprehensive biodiversity assessment to uncover hidden treasures of biodiversity surrounding the plant, where each species was catalogued meticulously, from towering Terminalia paniculata to the vibrant hues of Chromolaena odorata
- Proposed development of ponds in plant premises and surrounding villages, ensuring sustainable water supply for the ecosystem and local communities
- Understand the significance of preserving soil health, the team proposed topsoil management to minimise soil erosion and maintain soil fertility within the plant premises
- Pledged support for turtles, vowed to raise awareness and protect their nesting grounds around the coastline, engaging with Olive Ridley Turtle conservation and awareness programme
- Proposed introduction of a mixed type of plantation system, blending native species with exotic ones to enhance biodiversity and ecosystem resilience
- Envisioned development of a Herbal Garden under high-voltage AC transmission tower, showcasing the rich medicinal flora of the region
- Emphasised importance of selecting native forest tree species for afforestation programmes, promoting biodiversity conservation and ecosystem restoration
- Addressed plastic waste management practices, ensuring protection of natural habitats from pollution
- Collaborated with local authorities to develop snakebite prevention protocols, ensuring safety of employees and nearby communities

Site-wise faunal species recorded from JSW Energy Limited



Native/Exotic ratio of tree species



WATER STEWARDSHIP

500 m^3
Water saved

WE HAVE CONSTRUCTED A DAM NEAR VINAYAKWADI TOWNSHIP TO AUGMENT WATER STORAGE CAPACITY AND TO HARNESS NATURE'S BOUNTY TO SUPPLEMENT WATER SUPPLY

Ratnagiri

The Ratnagiri plant is a testament to sustainable development, with an ethos deeply rooted in responsible resource management, and a focus on conserving and safeguarding water. By embracing innovation, leveraging nature's abundance, and integrating cutting-edge technology, we are forging a path towards a more water-secure and resilient future.

Key Highlights:

Water Audit Mechanism

Central to our water conservation efforts is a robust water audit mechanism. Through quarterly walk-throughs and strategic installation of flow meters, we meticulously monitor and optimise water consumption across our operations. This proactive approach enables us to identify inefficiencies, detect leakages and implement targeted interventions to minimise water wastage, ensuring every drop of water is utilised judiciously.

Rainwater Harvesting

Understanding the paramount importance of rainwater as a renewable resource, the Company has invested in comprehensive rainwater harvesting infrastructure. We have constructed a dam near Vinayakwadi township to augment water storage capacity and to harness nature's bounty to supplement water supply. This sustainable practice reduces our reliance on external water sources and mitigates the impact of water scarcity on local communities, fostering resilience and self-sufficiency.

Reduction in Water Consumption

Through relentless innovation and efficiency optimisation, the Company has achieved significant reduction in water consumption. From implementing cutting-edge water-saving technologies to streamlining operational processes, the Company is focussed on maximising water efficiency, which has brought down our daily water consumption significantly.

Our transformative initiatives:

Installation of RO Plant

A state-of-the-art Reverse Osmosis plant will be deployed to convert sea water for process and service use. By harnessing the advanced RO technology, we are treating sea water to meet the daily requirement of water, thus reducing our reliance on freshwater. The advanced technology conserves fresh water, mitigates pollution and contributes to the overall ecological health of the region.

Development of Water Reservoir

We will undertake construction of a water reservoir to enhance water storage capacity. The reservoir will serve as a crucial resource during periods of low rainfall or drought, providing a buffer against fluctuating water availability and ensuring continuity of operations. By strategically managing water storage, we aim to optimise resource utilisation and maintain stable water supply for the facility and the surrounding communities.

28,479 m^3
Water Recycled in the plant

500 m^3
Water saved in the plant

Barmer

Improvement of RO to DM Plant line reliability

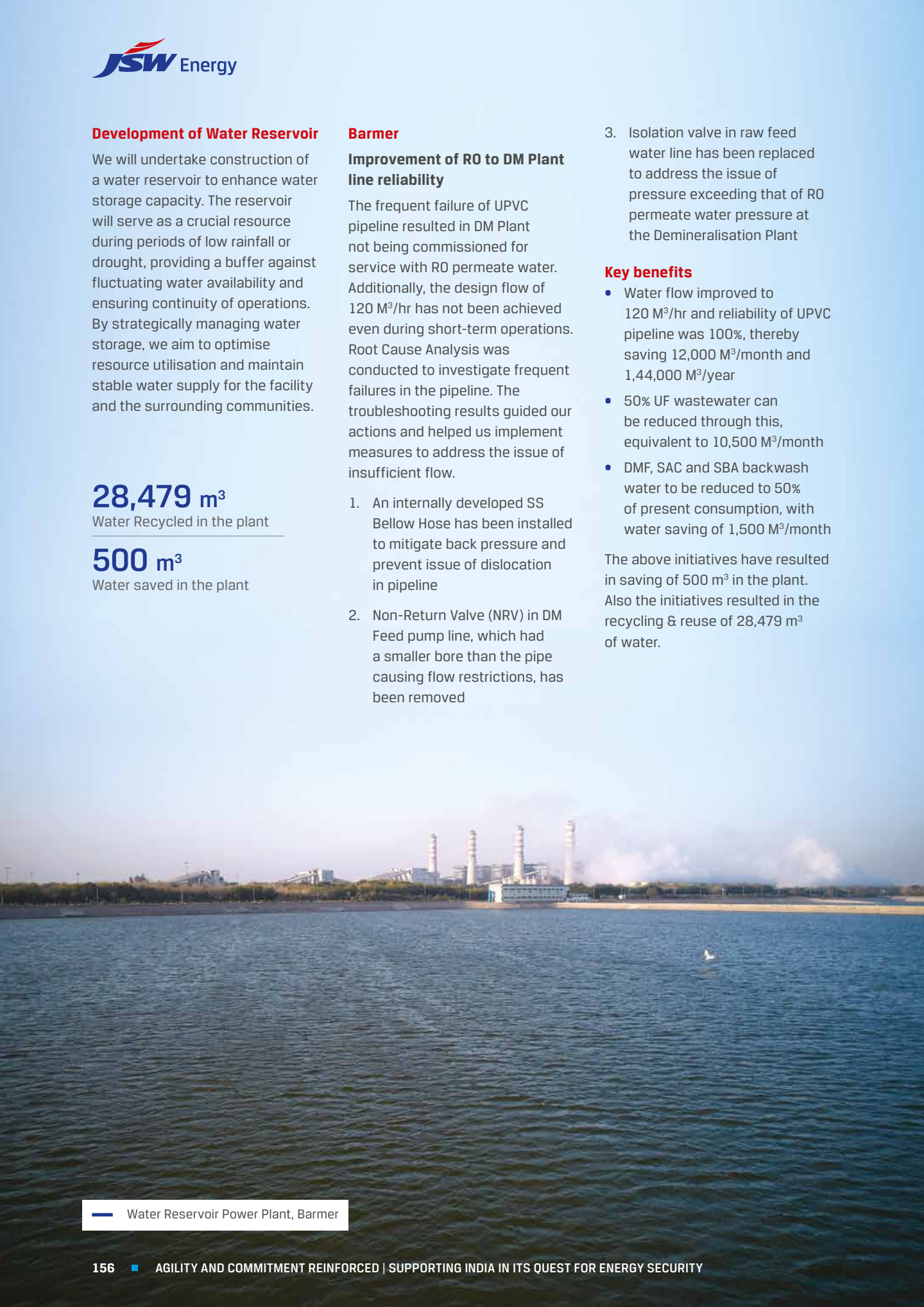
The frequent failure of UPVC pipeline resulted in DM Plant not being commissioned for service with RO permeate water. Additionally, the design flow of 120 M^3/hr has not been achieved even during short-term operations. Root Cause Analysis was conducted to investigate frequent failures in the pipeline. The troubleshooting results guided our actions and helped us implement measures to address the issue of insufficient flow.

1. An internally developed SS Bellow Hose has been installed to mitigate back pressure and prevent issue of dislocation in pipeline
2. Non-Return Valve (NRV) in DM Feed pump line, which had a smaller bore than the pipe causing flow restrictions, has been removed
3. Isolation valve in raw feed water line has been replaced to address the issue of pressure exceeding that of RO permeate water pressure at the Demineralisation Plant

Key benefits

- Water flow improved to 120 M^3/hr and reliability of UPVC pipeline was 100%, thereby saving 12,000 M^3/month and 1,44,000 M^3/year
- 50% UF wastewater can be reduced through this, equivalent to 10,500 M^3/month
- DMF, SAC and SBA backwash water to be reduced to 50% of present consumption, with water saving of 1,500 M^3/month

The above initiatives have resulted in saving of 500 m^3 in the plant. Also the initiatives resulted in the recycling & reuse of 28,479 m^3 of water.



Water Reservoir Power Plant, Barmer

ENERGY EFFICIENCY

287 KW
Power saved

THROUGH OUR TRANSFORMATIVE PROJECTS AND INNOVATIVE INITIATIVES, WE ARE SHAPING A FUTURE WHERE ENVIRONMENTAL SUSTAINABILITY IS ALIGNED FIRMLY WITH OPERATIONAL EXCELLENCE

Ratnagiri

Key Highlights

De-staging of Circulating Electric Pump

The destaging of our Circulating Electric Pump (CEP) exemplifies our dedication to efficiency and resource optimisation. Through comprehensive analysis and restructuring of the pumping system, we achieved significant reduction in energy consumption and operational cost, while minimising the environmental impact.

Improvement of Cooling Tower Availability

Recognising the critical role played by cooling towers in our operations, we embarked on a mission to enhance their efficiency and reliability. Through targeted upgrades and maintenance initiatives, we improved cooling tower availability, ensuring uninterrupted operations and maximising energy efficiency.

Overhauling of CW Pump with Energy-Efficient Coating

Our commitment to sustainability extends to our pumping systems too. Overhaul of the CW Pump with energy-efficient coatings is a testament to our commitment. By applying cutting-edge coatings to pump wetted surfaces, we optimised the performance and minimised energy consumption, paving way for a more sustainable future. Through our transformative projects and innovative initiatives, we are shaping a future where environmental sustainability is aligned firmly with operational excellence. By leveraging our strengths and embracing new opportunities, JSW Energy is driving positive change and leading the transition towards a more sustainable future for all.

Barmer

Reduction of PA fan and seal air fan power consumption in SBU-1 Unit-1

Being a part of an organisation, which deeply believes and finds every opportunity to conserve its resources for a better tomorrow, at SBU-1 Unit-1 we have identified an opportunity to reduce power consumption of seal air fan, and subsequently, reduce PA fan power consumption.

Auxiliary power consumption

Power consumed by the equipment within the power plant is a form of energy consumption. Reduction of auxiliary power consumption not only helps energy conservation, it also reduces its impact on the environment.

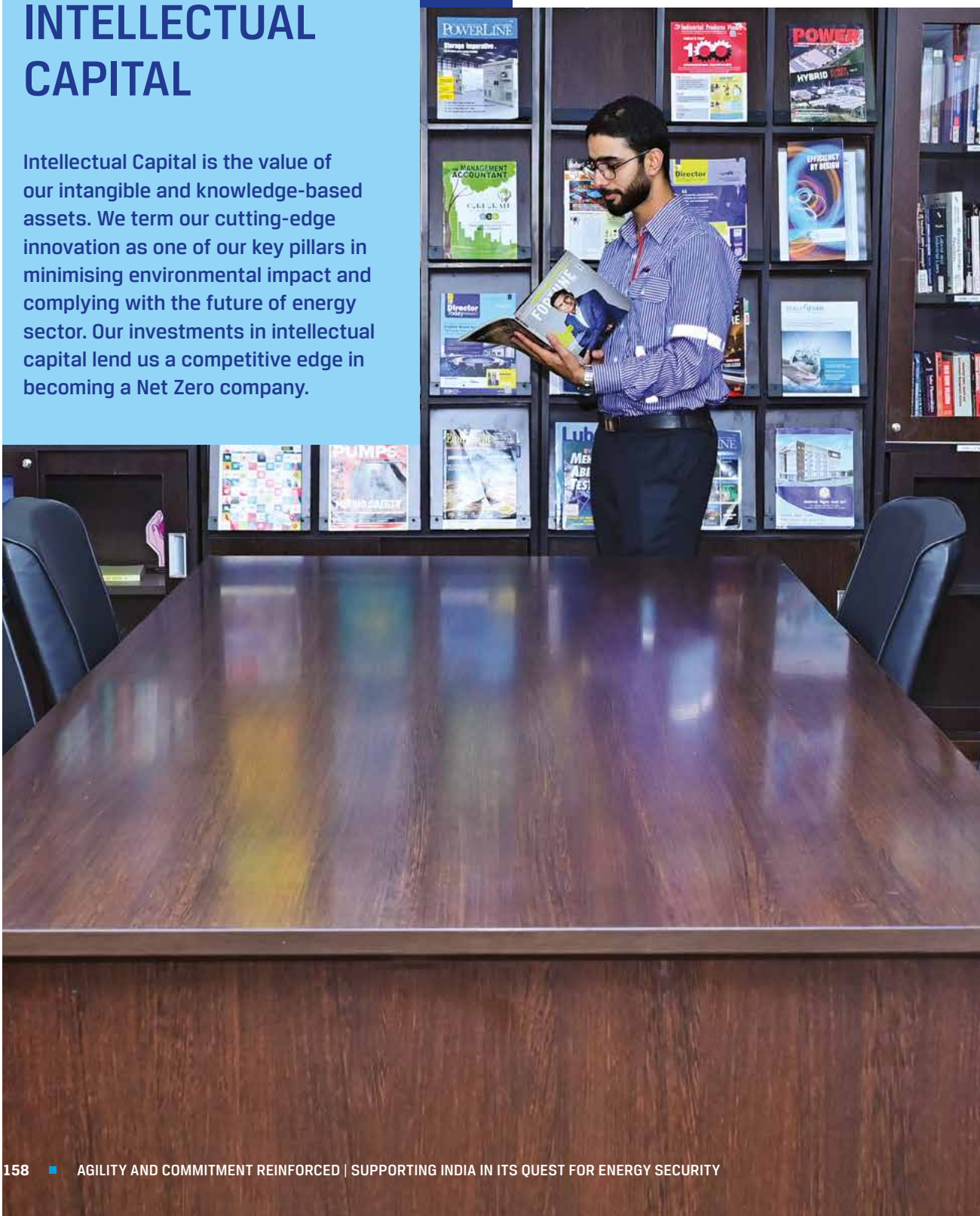
To increase the seal air pressure, the PA header pressure was increased from 800mmwc to 900mmwc, causing increase in PA fan power consumption. The reason for low seal air pressure was the choking of the suction filter.

Key outcome

After cleaning the seal air fan suction filter, the PA header pressure has been reduced to 780mmwc; PA fan speed has been reduced to 1210 rpm; and one seal air fan was stopped, which resulted in power saving of ~127.6 kWh. Several such initiatives are done each year to save power consumption within the plant.

INTELLECTUAL CAPITAL

Intellectual Capital is the value of our intangible and knowledge-based assets. We term our cutting-edge innovation as one of our key pillars in minimising environmental impact and complying with the future of energy sector. Our investments in intellectual capital lend us a competitive edge in becoming a Net Zero company.



Description

This capital is the basis for our innovation capability and sustained competitiveness. It represents our organisational, knowledge-based intangibles, including intellectual property. It also includes our organisational capital such as tacit knowledge, systems and procedures, and helps take a holistic view of all the aspects of our business.

Management Approach

Through strategic investment and rigorous IP management practices, we endeavour to safeguard our innovations and creations from unauthorized use or infringement. By fostering an environment of collaboration and knowledge-sharing, we enhance our competitive position and expand our digital capabilities.

Significant Aspect

We create intangible, knowledge-based assets, which includes disruptive technologies and business models that enable the Company to transition towards becoming a modern and innovative renewable power company.

Key Performance Indicators	Material Topics	Strategy Linkage
• R&D spend • Strength of IT Team • Revenue from emerging businesses	• Data security, privacy, cyber security • Business ethics • Brand management • Talent management • Project delivery • Governance	SO1 SO2 SO5 SO6

SDGs impacted

ISO 27001:2013
certified company in Information Technology and Operational Technology

₹ 48 crore
Investment in IT & Digital systems

Intellectual capital consists of how we adapt to newer technologies, explore digitalisation to promote energy efficiency and work towards developing new products and services. Our disruptive technologies facilitate us in becoming a tech-enabled company and in contributing towards electrification of the economy. In the current financial year, we have invested ₹ 48+ crore in IT & Digital platform system, and we expect this journey to continue for process automation.

We understand the critical importance of protecting our intellectual property assets in the digital realm. The portfolio of intellectual property assets forms the foundation of our digital and IT investments, enabling us to deliver value-added solutions and services to organisational growth. We actively engage in strategic partnerships and collaborations to leverage complementary intellectual property assets and drive innovation in the digital ecosystem.

Our IP Assets

- Proprietary software algorithms
- Digital platforms
- Patented technologies
- Critical information infrastructure assets
- Trademarked brand identities

Technology is also our key enabler in achieving our strategic goals of industry and cost leadership. It helps the Company in implementing innovative enhancements by way of process improvements, system updating and IT system and infrastructure upgradation, with deployment of eighteen digitalisation projects.

In collaboration with our technology and research partners, we strive to innovate and adapt to continuous change and cater to changing customer needs. We shall continue working on enhancing our production processes, cost competitiveness and environmental performance with the highest safety standards.

Risk Management and Compliance

We remain vigilant in managing the risks associated with intellectual property infringement and compliance. Through regular internal and external audits, monitoring and enforcement measures, we mitigate the risk of unauthorized use or misappropriation of our intellectual property assets, safeguarding our competitive advantage and market position.

We have collaborated with the CERT-IN empanelled external audit team in conducting the regular audits at the respective plant locations to augment the processes at all levels.

During the year, we were awarded as an ISO 27001:2013 certified company in the field of Information Technology and Operational Technology, which has been widely accepted as the universal standard practices to safeguard our IP at all levels.

Ongoing IT projects of FY 2024

Project	Features	Benefits
Integrated Digital Command Centre (IDCC) for Renewable Assets	Real-time data analytics, KPI monitoring and operational metrics	Improved operational efficiency, reduced downtime, and enhanced asset management
IoT for Predictive Maintenance and Equipment Health Monitoring	Real-time sensor data, machine learning for predictive maintenance	Reduced unplanned outages, extended equipment lifespan
Coal Inventory Optimisation Application	Integration with Indian Railway FOIS API, predictive algorithms	Improved operational efficiency and inventory management
Coal Value in Use ViU Application	Real-time tracking, data-driven procurement decisions, inventory level transparency, and loss analysis across the value chain	Improving operational performance and cost efficiency
Heat Rate Optimisation using Advanced Process Control (APC)	Real-time optimisation, machine learning-based predictive control, and seamless integration with existing control systems	Reducing environmental impact and enhancing operational efficiency
Thermal Power Plant Real-Time Visualisation and Operation Analytics using Aveva-PI	Real-time data integration, powerful visualisation tools, custom reports, anomaly detection	Enhanced data-driven decision-making, improved operational efficiency, robust data storage and security
Integrated Supply Chain Management (iSCM) System for Wind Projects	Component tracking, vendor management, logistics management	Improved supply chain efficiency, traceability, and stakeholder collaboration
Historical Data Processing and P-90 Generation Values Assessment	Data quality validation, machine learning for energy production assessment	Accurate energy generation forecasting, reduced dependency on external vendors
Generation Monitoring Center (GMC) Sustenance for Renewable Assets	Debugging, database schema validation, backup and disaster recovery	Risk mitigation, improved system reliability
Power Curve Automation for Wind Assets	Data collection, automated parameter calculation, site-specific reports	Significant time savings, improved accuracy and efficiency
Wind Daily Generation Report (DGR) Automation and Loss Analytics	Data collection and cleaning, event mapping for loss categorisation	Increased accuracy, expedited DGR activities, improved performance benchmarking
Optimisation Model for Green Hydrogen Generation	Data preprocessing, MILP technique for optimisation, financial feasibility assessment	Cost savings, improved decision-making, streamlined operations

IT Enabled Quality Assurance Monitoring System

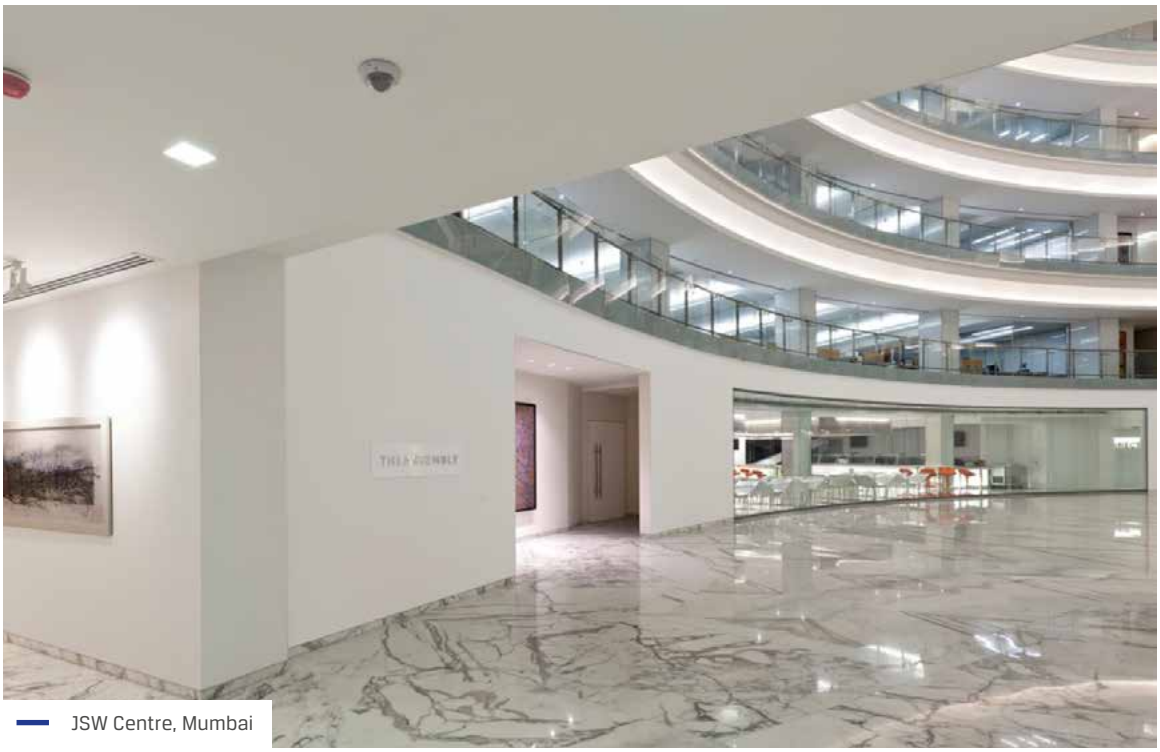
Project	Features	Benefits
Best Practices for Cloud Management	Cloud IaaS and PaaS models, robust data security, disaster recovery	Cost efficiency, scalability, enhanced performance and collaboration, business continuity
Strengthening IT Cybersecurity System	Access control, advanced threat detection, vulnerability assessment	Reduced vulnerability, improved risk management, ISO 27001 certification
Revamping Network Infrastructure	Upgrading obsolete IT network assets, enhancing infrastructure with improvised uptime availability	Enhanced performance, future-proofing operations, reducing downtime
OT & IT Convergence for renewable assets	Upgraded the OT Network for all renewable assets for seamless integration with the IT Infra	For virtual isolation, protection of data from external threat by enabling additional layer from the IT facing assets
Centralisation of OSI PI Platform for the thermal vertical	Bringing the entire thermal data on the central server with single instance for all locations	Enhance the application availability with more secured there by it allows single server for entire thermal for ease of maintenance with reduction in SRP / AMC
Revamping of Surveillance system	Upgradation of old obsolete system with the latest technology products with much advanced inbuilt cyber security compliance system	It helps business to monitor the critical assets deployed at various places in the premises and helps concerned team to monitor the activities happening from the central locations

Future Outlook

As we navigate the evolving digital landscape, we remain committed to investing in innovation and protecting our intellectual property assets. By staying abreast of emerging trends, technologies, and regulatory developments, we seek to capitalise on new opportunities and maintain our leadership position in the digital and IT domain.

IP is a cornerstone of our digital and IT investment strategy, underpinning our commitment to innovation, competitiveness, and value creation. By prioritising IP protection and management, we safeguard our investments, foster growth, and deliver sustainable long-term value to our stakeholders.

MANAGEMENT DISCUSSION & ANALYSIS



JSW Centre, Mumbai

Economic Review

World economic overview

In 2023, the global economy grew by 3.2%, exhibiting resilient growth with signs of an improved global outlook. The impact of tighter monetary conditions continues, especially in housing and credit markets, but global activity is proving relatively resilient, inflation is falling faster than initially projected, and private sector confidence is improving. Real incomes have begun to rise as inflation has slowed and trade growth has become positive. The concerted efforts of central banks across the globe to tame inflationary pressures, along with a broad base increase in labour force participation and the gradual expansion of global supplies, aided deceleration in inflation. Developments continue to differ among countries, with lacklustre outcomes in many advanced economies, particularly in Europe, counterbalanced by strong growth in the United States and many emerging markets.

As per the IMF, global growth in 2024 and 2025 is estimated to remain persistent at 3.2%, supported by robust government and private spending in several economies. A faster pace of disinflation and steady growth could lead to easing out of tight financial policies. Growth in advanced economies is expected to accelerate slightly to 1.7% and 1.8% in 2024 and 2025, respectively, from 1.6% in 2023. Economic growth in EDMEs is expected to be at similar levels of 4.3% in 2023 and 4.2% in both 2024 and 2025. In the near term, it is imperative for the central banks to manage monetary policy to ensure continued deceleration in inflation and rebuild budgetary capacity to deal with future shocks. Calibrated structural reforms remain the key to reinforcing enhanced productivity and debt sustainability and accelerating convergence towards higher income levels. Multilateral coordination has become more crucial for debt resolution, the mitigation of the effects of climate change, and facilitating the green energy transition in accordance with the 2023 Conference of the Parties to the UN Framework Convention on Climate Change (COP28).

Source: World Economic Outlook April 2024, IMF

Indian Economic Overview

Amidst a challenging global scenario, India has emerged as a significant economic and geopolitical power. 2023 was a landmark year for India, as it assumed the presidency of the G20. India remained the fastest-growing large economy in the world. According to the National Statistical Office (NSO), the real GDP growth is estimated at 8.2% for FY 2024, as compared to 7.0% in FY 2023. India has been a key growth engine for the world, contributing approximately 16% to global growth in 2023.

Real Gross Value-Added has grown by 7.2% in FY 2024 over 6.7% in 2022-23. This GVA growth has been mainly due to significant growth of 9.9% in Manufacturing sector in FY 2024 over -2.2% in FY 2023 and growth of 7.1% in FY 2024 over 1.9% in FY 2023 for Mining & Quarrying sector. The central bank, the Reserve Bank of India (RBI), continued to keep tight monetary controls with the aim of progressively aligning inflation with the 4% target.

According to the RBI, recovery in rabi sowing, sustained profitability in manufacturing, and the underlying resilience of services should support economic activity in FY 2025. It has pegged GDP growth at 7.0% in FY 2025. Consumer price inflation is expected to moderate to 4.5% as compared to the estimated 5.5% in FY 2024 and 6.7% recorded in FY 2023. While the outlook is positive, with a backdrop of risks posed by geopolitical uncertainty, climate change, global indebtedness, and technology disruptions, Inflation, although slightly down, continues to hover above the RBI's target. The ongoing geopolitical climate and potential global economic slowdown pose a threat to India's exports and foreign investments.

Continued broad-based policy initiatives and structural reforms encompassing inclusive growth, a revival in consumption, and fast-paced adoption of new and emerging technologies to enhance productivity signal a prosperous future for the Indian economy. India's economic fundamentals remain strong with the government's unwavering commitment to increase capital expenditure in the near term.

Source: NSO

RBI HAS PEGGED GDP GROWTH AT 7.0% IN FY 2025. CONSUMER PRICE INFLATION IS EXPECTED TO MODERATE TO 4.5% AS COMPARED TO THE ESTIMATED 5.5% IN FY 2024 AND 6.7% RECORDED IN FY 2023.

INDUSTRY REVIEW

On the right path to the emergence of new clean economy

Global energy consumption witnessed moderate growth, driven by the United States and Asian countries witnessing higher energy demand while demand in Europe continued to decline. The share of electricity in final energy consumption reached 20% in 2023, up from 18% in 2015. Energy markets, geopolitics, and the global economy continue to be fragile and face risks given the continued tension between Russia and Ukraine and new tensions in the Middle East.

Weather conditions globally are seen to be extreme, prompting heatwaves and a rise in greenhouse gas emissions. The condition may improve going forward with a continued focus on clean energy, experienced worldwide. Globally, CO2 emissions increased by 0.4 gigatons over the 2022 emission level of 36.8 gigatons, the highest level ever. In contrast, today, more than 8,000 companies and countries representing 90% of global GDP have made net-zero commitments and chalked out a path for decarbonisation. Legislation and policies related to climate change have grown more ambitious. Additionally, there are increasing efforts to prevent vulnerable groups and the developing world from being disproportionately affected by the transition.

The global electricity demand rose moderately in 2023 by 2.2% while reaching a record high. Global power demand is expected to grow by 3–4% per year due to growth in emerging market energy needs and global electrification. Although China, India, and North America are projected to represent more than half of the global power demand growth, economies in regions such as Africa and the Middle East are projected to see the fastest relative growth as per capita wealth grows.

It is anticipated that adoption of renewable energy will continue to increase over the coming decades, contributing 45–50% of generation by 2030 and 65–85% by 2050. This rise in renewables share is to be supported by the expansion of ever-cheaper solar PV and rising nuclear generation. This will aid in the decline in fossil-fired generation by 1.7% annually through 2026. Due to the growing share of intermittent renewable energy sources, supply and demand sides may require more flexible assets to maintain supply security. Long-term energy storage is anticipated to be crucial and is likely to reach a capacity of more than 2,000 gigawatts (GW) by 2050.

Source: EIU, IEA, Mckinsey

Tuticorin Windmill

Global Energy Outlook

The global energy system is undergoing significant shifts, with a phenomenal rise in clean energy technologies such as solar, wind, electric cars, and heat pumps. The use of energy in all aspects, including factories, vehicles, home appliances, and heating systems, is being fuelled by the increasing momentum behind clean energy technologies. Overall, energy consumption is expected to witness 1.8% growth in 2024, led by strong growth in Asia. Europe is likely to witness a third consecutive year of decline in energy demand due to high energy prices and low gas supply.

Global demand for oil, gas, and coal is expected to reach record levels in 2024, despite a rising focus on clean energy. There is a structural economic shift across the globe leading to major implications for fossil fuels. The global demand for coal, oil, and natural gas is expected to peak before 2030, with their share in global energy supply stepping down from ~80% to 73% by 2030, according to the International Energy Agency (IEA).

The global demand for electricity grew by 2.2% in 2023, underpinned by China, India, and the Southeast Asian region, which experienced robust growth in electricity demand in 2023. However, advanced economies posted declines due to a lacklustre macroeconomic environment and high inflation, which reduced manufacturing and industrial output. According to the IEA, global electricity demand is expected to rise at a faster rate over the next three years, growing by an average of 3.4% annually through 2026. A stronger economic outlook will fuel the expansion of power demand in both developed and emerging economies.

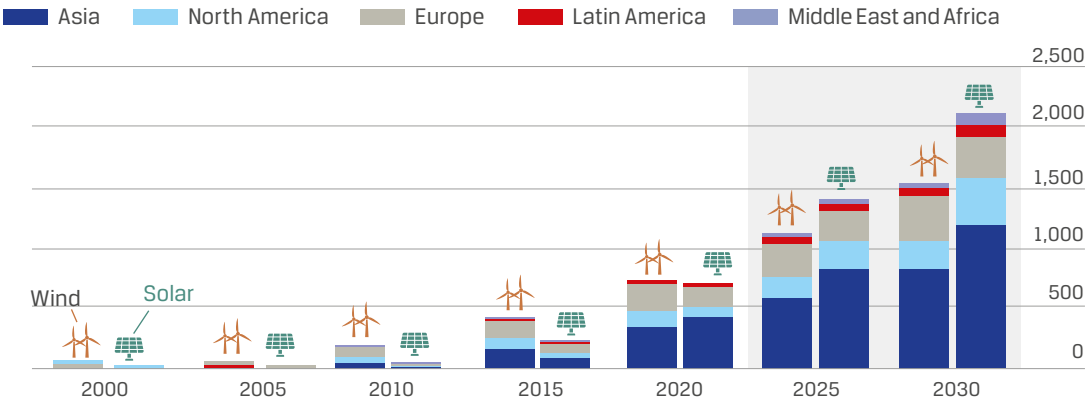
Particularly in advanced economies and Asian countries, electricity demand will be supported by the ongoing electrification of the residential and transport sectors, as well as a notable expansion of the data centre sector. It is projected that electricity will account for 20% of total energy consumption in 2023, up from 18% in 2015. In the IEA's Net Zero Emissions by 2050 Scenario, a pathway aligned with limiting global warming to 1.5 °C, electricity's share in final energy consumption will reach 30% in 2030. The worldwide additions of coal- and natural gas-fired power plants have halved from earlier peaks. Since 2020, the overall investment in clean energy has increased by 40%. Over USD 1 billion is being spent on solar deployment daily across the globe. Manufacturing capacity for key components of a clean energy system, including solar PV modules and EV batteries, is expanding at a fast pace.

Economies across the globe are working to ensure the availability of affordable, clean, and secure energy. The common strategy in this regard is decarbonisation coupled with the increasing use of renewable energy resources. In 2023, the addition of renewable capacity increased by ~50% to ~510 GW, registering the fastest growth in the past two decades. This expansion is expected to continue in 2024 and beyond to reach ~7300 GW by 2028 and 2.5x its current level by 2020. Solar PV and wind are expected to dominate the global renewable expansion

with ~95% share, benefiting from lower generation costs than both fossil and non-fossil fuel alternatives. In 2025, renewables are expected to surpass coal to become the largest source of electricity generation. Wind and solar PV are likely to surpass nuclear electricity generation in 2025 and 2026, respectively. In 2028, renewable energy sources are expected to account for over 42% of global electricity generation, with the share of wind and solar PV doubling to 25%.

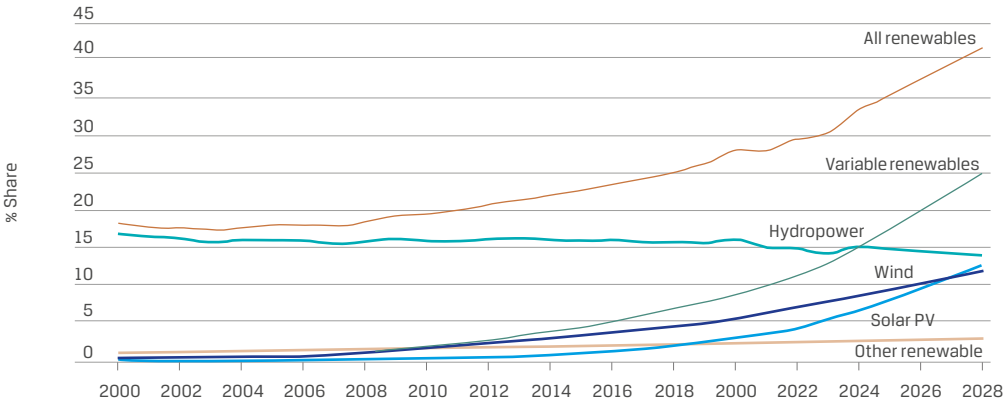
Wind Capacity continues to grow but at a slower pace than solar

(cumulative installed capacity; GW)



There has been substantial growth in renewable capacity, and China is likely to contribute ~60% of the new renewable capacity expected to become operational globally by 2028. The tremendous rise in deployment of onshore wind and solar PV in China is driven by the technologies' economic attractiveness and supportive policy environments that provide long-term contracts. China's role is critical in reaching the global goal of tripling renewables because the country is expected to install more than half of the new capacity required globally by 2030.

Share of renewable electricity generation by technology, 2000-28



In comparison with the last five years, solar PV and onshore wind additions through 2028 is expected to more than double in the United States, the European Union, India and Brazil.

Source: EIU, IEA

Ratnagiri

Climate Change Conference COP28

The 13-day-long United Nations Climate Change Conference, COP28, turned out to be the largest ever, with all parties agreeing to triple global renewable energy capacity and double the current annual rate of energy efficiency improvements by 2030. These steps are imperative if the temperature rise on the planet is to be restricted to 1.5 degrees Celsius. Twenty countries pledged to launch the 'Declaration to Triple Nuclear Energy by 2050'. 118 governments committed to tripling renewables and doubling the rate of energy efficiency improvements by 2030. Twenty-two countries committed to triple their nuclear energy capacity by 2050.

Though a complete fossil fuel phase-out was not agreed upon, all parties agreed to phase down and transition away from fossil fuels in a just, orderly, and equitable manner. This made it evident that parties realise the inevitability of the end of the fossil fuel era. This conference has gained popularity as the "beginning of an end" for fossil fuel usage across the globe.

Under the first global stocktake, parties agreed that despite efforts on mitigation, adaptation, and means of implantation and support, they were unable to achieve complete success in reaching milestones agreed upon in the Paris Agreement. A comprehensive roadmap has been created to aid the parties in getting back on track with their target of achieving net zero goals.

Progress was made in adaptation and finance, including the operationalisation of the Loss and Damage Fund, by the developed countries to help those countries suffering the worst impacts of climate change, such as flooding or drought, with little contribution to the cause of the calamity. The commitments to address loss and damage started coming in immediately after the decision was given, totalling more than USD 600 million to date.

A series of initiatives called the Global Decarbonisation Accelerator (GDA) designed to speed up the energy transition and reduce global emissions were also agreed upon. GDA is aimed at decarbonising the existing energy system and building the energy system of the future. It will enable the parties to tackle the 20–24 GtCO2 per annum greenhouse gas emissions reduction target needed by 2030 as high as the global stocktake. The O&G Decarbonisation Charter was signed by 50 companies comprising over 40% of global oil and gas production. The UAE Hydrogen Declaration of Intent was also signed to restrict emissions from cooling as usage of air conditioning is on the rise.

The Industrial Transition Accelerator (ITA) was launched at COP28. ITA is aimed at accelerating the delivery of Paris-aligned ambitions across heavy industries like cement, steel, and aluminium, transport (shipping and aviation), and energy—industries that are the major contributors to global emissions. ITA is expected

to motivate policymakers, experts, and financial institutions to collaborate to scale the implementation and delivery of decarbonisation projects. In all, the meeting motivated countries, governments, and all stakeholders to achieve their set energy goals. In addition, it emphasised the important role corporations will assume in achieving climate control targets.

The G20 Delhi Declaration: Nations with differences unite to address global climate change challenges

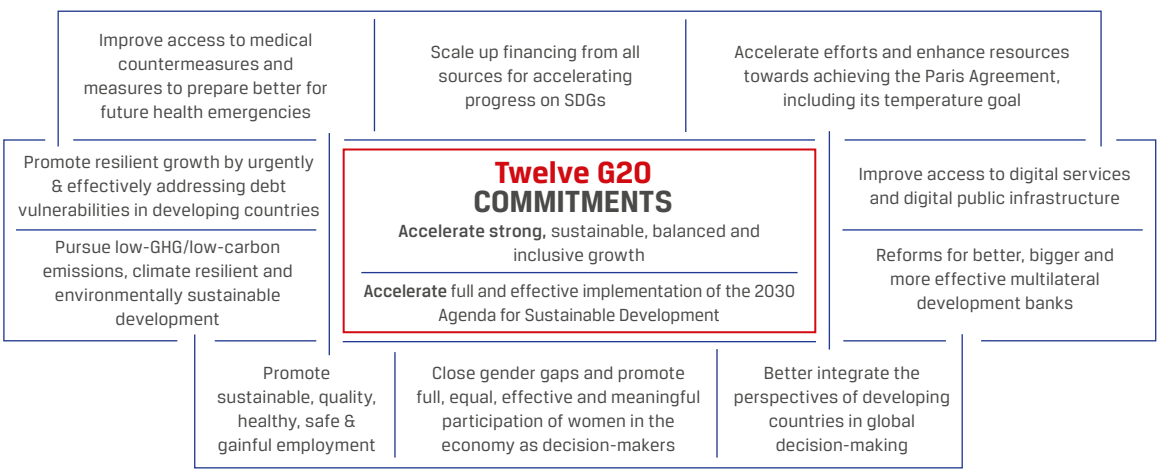
India has been a firm supporter of climate justice, climate finance, and green credit. It has been successful in achieving its emission intensity targets 11 years before the promised timeline. India is on track to generate 500 GW of renewable-based electricity generation capacity by 2030. The country has announced a Green Credit Initiative that emphasises creating more carbon sinks, which means that plants, oceans, and soil absorb more carbon from the atmosphere than they release.

In 2023, India have added 18.5 GW of renewable capacity, with solar contributing 15 GW. Indian Railways has resolved to reach net zero by 2030, thereby mitigating carbon emissions by 60 million tonnes annually. Having achieved 12% ethanol blending with petrol five months ahead of the estimated target, India is targeting 20% ethanol blending with petrol by 2025.

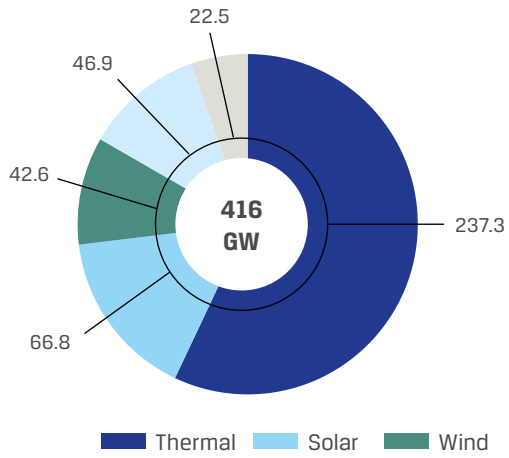
India's G20 presidency promoted multilateralism, setting the stage for COP28 and bringing together nations driven with differences. The G20 countries made a significant commitment to triple global renewable energy capacity by 2030 and expedite efforts to phase down coal power, taking into account national circumstances. The G20 Declaration comprises 12 commitments that address various global challenges, including climate change and debt vulnerability. The Declaration spelled out the pressing need of the developing nations for funding of USD 5.9 trillion until 2030 for nationally determined contributions and an additional USD 4 trillion annually for clean energy technologies to meet zero emission goals. The developed nations acknowledged this need and agreed to put the best foot forward towards raising such finances amidst the global financial crisis due to geopolitical tensions. There has been a definitive commitment to change the way of operations of multinational development banks, making available cheaper funds, providing currency exchange guarantees, and ensuring disaster clauses are included in debt repayment deals. In addition, India stressed the need for clean energy projects, research institutions working on clean energy, and global standards in the field of green hydrogen.

In COP28, India refrained from joining the group of countries backing the Global Renewables and Energy Efficiency Pledge. India has proposed to host COP33 in 2028, signifying the country's commitment to change its energy mix and increase the share of non-fossil fuels to 50% by 2030. India positioned itself as the voice for developing nations, emphasising the fact that developed countries need to play a larger role and meet the mutually agreed-upon climate goals. India currently operates nine projects with the support of the Green Climate Fund, amounting to a total financing of USD 542.3 million.

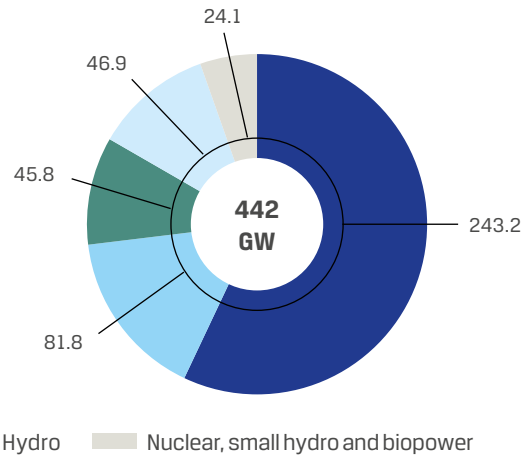
As on 31st March, 2024, India's renewable capacity stood at 143.64 GW and at 190.57 GW including large hydropower capacity.



Total installed capacity in GW (as on 31st March, 2023)



Total installed capacity in GW (as on 31st March, 2024)



Source: Ministry of Power, Central Electricity Authority (CEA)

India riding strong on the clean energy path

India is the third-largest energy-consuming country in the world. According to the IEA, India has emerged as fourth globally in renewable energy installed capacity, fourth in wind power capacity, and fifth in solar capacity. India is on a strong footing on its Panchamrit journey on climate action, targeting 50% non-fossil installed capacity by 2030, a reduction of total projected carbon emissions by one billion metric tonnes from 2022 to 2030, a reduction of the carbon intensity of the economy by 45% by 2030 (over 2005 levels), and achieving net zero emissions by 2070.

India remains committed to unprecedented levels of investment in the energy sector. India's renewable energy sector saw an infusion of USD 6.1 billion in foreign direct investment (FDI) from April 2020 to September 2023. With a view to encouraging domestic and foreign investment in the energy sector, several initiatives have been taken by the Indian government, which include establishing a Project Development Cell to facilitate investment, creating Ultra Mega Renewable Energy Parks, and implementing new transmission lines under the Green Energy Corridor Scheme.

India has exhibited a strong foothold as the world's largest expansion plan in renewable energy. India installed a non-fossil fuel capacity of 18.5 GW during FY 2024. During the year, India held the sixth session of the International Solar Alliance Assembly at Bharat Mandapam. Also, India assumed the presidency of the 13th assembly of the International Renewable Energy Agency (IRENA), the first international organisation to focus exclusively on renewable energy, in Abu Dhabi.

India is implementing the National Green Hydrogen Mission with an investment of ₹ 19,744 crore. With this, India is aiming to emerge as the global hub for the production, usage, and export of green hydrogen and its derivatives. India has become one of the few countries to define the Green Hydrogen Standard. This helps in outlining the emission thresholds to be met in order to be classified as 'Green' (well-to-gate emission of not more than 2 kg C02 equivalent per kg H2), encompassing both electrolysis-based and biomass-based hydrogen production methods.

During the year, India approved phase II of the Green Energy Corridor-IInter-State Transmission System (ISTS) for the 13 GW Renewable Energy Project in Ladakh to be set up by FY 2030 at ₹ 20,774 crore investment and Central Financial Assistance of ₹ 8,309 crore. This project will contribute to the 500 GW renewable capacity target by 2030. In addition, India has implemented the Production-Linked Incentive (PLI) Scheme for the National Programme on High Efficiency Solar PV Modules to achieve a manufacturing capacity of GW scale in high efficiency solar PV modules with an investment of ₹ 24,000 crore. India is also focussing on offshore wind energy across the vast coastline, the solar park scheme, the expansion of the PM Kusum scheme, the grid-connected rooftop solar programme, bioenergy projects, etc.

Press Information Bureau

Ratnagiri

Indian Power Sector

Power Demand & Generation

With fast-paced economic development and tremendous efforts by the Indian government to provide access to electricity and clean cooking in the remotest regions of the country, India continues to be among the largest producers and consumers of electricity worldwide. Total installed generation capacity in India stood at 442 GW as of March 2024. For FY 2024, against the target electricity generation of 1,750 BU, 1,738 BU were generated, up 7.1% over FY 2023. India has significantly enhanced its power-generating capacity over the years and successfully addressed the growing energy requirements.

India is the world's third-largest power producer but has a low per capita consumption rate of almost one-third of the world average, providing huge opportunity for growth. During FY 2024, power demand grew 7.5% to 1,627 BUs, led by a spike in economic activities. In 2023, India's electricity demand varied with weather conditions. Power consumption remained subdued in March, April, May, and June due to widespread rainfall, while in August, September, and October demand rose amidst humid weather conditions and growth in industrial activities for the approaching festive season. To ensure uninterrupted power supply, the government extended the mandate of blending a minimum of 6% imported coal with domestic coal until March 2024. The peak power demand in India increased from 136 GW in FY 2014 to 243 GW in September 2023. With continued economic growth momentum, peak demand is expected to rise to 260 GW in FY 2025.

While fundamental factors like increasing population, urbanisation, industrialisation, and an improved standard of living continue to boost power demand in the country, rapid economic growth coupled with the government's strong intention to provide electricity to the last mile is acting as a catalyst for surging demand.

According to the National Electricity Plan notified in May 2023, installed capacity is expected to be increased to 900 GW by FY 2032, out of which carbon-free capacity is expected to be 616 GW. In addition, a battery energy storage system (BESS) with a capacity of 47,244 MW / 2,36,220 MWh is also expected to be installed.

Renewable energy source	Target capacity in MW
Nuclear	19,680
Large Hydro	62,178
Solar	364,566
Wind	121,895
Small Hydro	5,450
Biomass	15,500
Pump Storage Power	26,686

Source: CEA and Press Information Bureau

As of the end of FY 2024, India has an installed capacity of 442 GW, of which 243 GW comes from fossil-fired power plants (coal, gas and oil), 52 GW from hydro, 139 GW from renewable energy plants such as solar PV and wind, and the rest from nuclear power plants.

Generation in Bus	FY 2024	FY 2023	FY 2022
Thermal	1,326	1,206	1,115
Hydro	134	162	152
Renewables	225	203	169
Others (Nuclear+Import)	53	53	55
All-India	1,738	1,624	1,490

(Source: Executive Summary on Power sector, March 2024, CEA)

Thermal Energy: Coal

India's net thermal capacity of 243 GW, as of 31st March, 2024, was comprised mainly of coal. The share of thermal energy has reduced by 2% YoY, though it continues to be the largest source, occupying 55% of the total installed capacity in the country. The growth in thermal capacity was 6 GW during FY 2024, notwithstanding the strong commitment to renewable energy sources to meet growing electricity demand.

Strong economic growth in India is leading to massive power requirements. While India remains committed to its net zero goals, it has to resort to thermal power in the short term to meet the rising power demand. In the next decade, it is estimated that about 80 GW of additional thermal capacity will be needed, according to the government. While thermal energy sources currently dominate power generation, it is expected that the share of coal-fired generation will decline from 74% of total electricity generation in 2023 to 68% in 2026.

Renewable Energy

As per the REN21 Renewables 2022 Global Status report, globally, India is ranked 4th in renewable energy installed capacity (including large hydro), in wind power capacity, and in solar power capacity. In 2023, after the successful hosting of the G20 Summit, India has positioned itself as an attractive destination for energy transition-related investments. While continuing to focus on energy security and affordability, in the coming years, India is expected to push harder on its implementation strategy for the energy transition. By 2030, the target is to achieve 500 GW of non-fossil fuel-based installed capacity, implying 50% of the installed capacity from the non-fossil mode of generation, a key pledge under Panchamrit. By the end of 2030, India aims to reduce the carbon intensity of the economy by less than 45%, achieve 50% cumulative electric power installed from renewables, and achieve net-zero carbon emissions by 2070. India aims to produce 5 MT of green hydrogen by 2030, supported by 125 GW of renewable energy capacity. In FY 2024, India's renewable energy sector witnessed an annual new capacity addition of 18.5 GW, with solar capacity additions constituting 15.0 GW.

Vijayanagar, Solar

1. Hydro Power

Hydroelectric power is a crucial energy source for India, given the abundance of rivers, good rainfall, and a vast coastline. With a view to leveraging this opportunity, projects with an aggregate capacity of 15 GW are under construction in the country. The hydroelectric capacity is aimed at being scaled up to 67 GW by FY 2032.

India's total hydroelectric installed generation capacity stood at 46.9 GW as of 31st March, 2024, constituting 10.6% of the total installed capacity. The government has set a target of 67 GW of hydropower generation capacity by FY 2032.

In FY 2024, hydropower generation declined 17% YoY due to lesser rainfall in India and natural disasters in the northern and northeastern parts of India. In FY 2025, high rainfall and snowmelt in the Himalayan region, led by a rise in temperature, are expected to aid hydropower generation.

2. Solar Power

India is the 4th largest player globally in terms of solar power capacity, having added solar capacity at a fast pace from 21,651 MW in FY 2018 to 81,813 MW in FY 2024. Led by a strong government push with policies like the Production-Linked Incentive (PLI) for domestic manufacturing of modules and panels.

India's total solar installed generation capacity as of 31st March, 2024 stood at 81.8 GW, compared to 66.8 GW as of 31st March, 2023. The contribution of solar energy increased to 18.5% of total installed generation capacity, up from 16% on 31st March, 2023.

According to the Union Ministry of New and Renewable Energy, in FY 2024, the solar power segment added a total new capacity of 15.3 GW, slightly higher than the 12.8 GW added in FY 2023. New solar capacity additions in FY 2024 made up 83% of the total renewable power capacity installed.

The government is encouraging solar production through various schemes and initiatives. The solar park scheme has been designed to establish 50 solar parks of 500 MW and above with a cumulative capacity of ~38 GW by FY 2026. These solar parks will aid in solar energy generation and achieve economies of scale, making solar energy more affordable and accessible. Under this scheme, 11 solar parks with an aggregate capacity of 8,521 MW have been completed, and 7 solar parks with an aggregate capacity of 3,985 MW have been partially completed. In these parks, solar projects of an aggregate capacity of 10,237 MW have been developed.

Other schemes include PM-KUSUM, aimed at achieving a solar power capacity addition of 30.8 GW by March 2026 in the agricultural sector to replace diesel pumps with solar agriculture water pumps and solarise existing grid-connected agriculture pumps. To make solar energy commonplace in rural areas, the rooftop solar programme for the residential sector and the off-grid solar PV applications programme are providing subsidies. India is working to become a solar powerhouse, making solar energy more sustainable and efficient.

3. Wind Power

India ranks fourth in wind power capacity globally. India has set a target to significantly increase its wind energy capacity, with a projected addition of 25 GW between FY 2025 and FY 2028 at a cost of ₹ 1.8–2 lakh crore.

In the wind sector, about 3.3 GW of new capacity was added in FY 2024, about 43% higher than the 2.2 GW capacity added in FY 2023.

India's Central Electricity Authority (CEA) has projected an increase in wind power capacity from 40 GW in FY 2022 to 73 GW by FY 2027 and further to 122 GW by FY 2032, amounting to ~8 GW of new installations per year till FY 2032. Central and state governments are working together to utilise the enormous potential of its 195 GW of offshore energy.

According to the revised strategy for the development of offshore wind energy projects issued in September 2023, a bidding trajectory for the installation of 37 GW of offshore wind energy is in place. The central transmission utility has completed the planning of the required transmission infrastructure for offshore wind projects for an initial 10 GW offshore capacity (5 GW each off Gujarat and Tamil Nadu coasts). The government has also notified the "Offshore Wind Energy Lease Rules, 2023" to regulate the allocation of offshore wind sea blocks to developers. With a vast coastline, India holds good potential for offshore wind energy generation.

4. Storage: Hydro Pumped Storage

Hydro Pumped Storage Projects have assumed significance in the ongoing energy transitions in the country, primarily as PSPs provide greater inertia and balance power to the grid. PSPs are also known as 'the Water Battery', an ideal complement to modern clean energy systems. Currently, PSPs with an aggregate capacity of 2.7 GW are under construction in the county, and another 50 GW is under various stages of development. It is projected that PSP capacity will increase from 4.7 GW to around 27 GW by FY 2032.

Source: National Electricity Plan, May 2023

5. Storage: Battery Energy Storage System (BESS)

As a part of the mega-energy transition movement, India is fast adopting technology to fortify its leadership. To enhance the share of renewable energy, it is crucial to encourage the adoption of battery storage. Energy storage plays a significant role in the integration of renewable energy and unlocking the benefits of local generation, especially at peak load durations. It is expected that by FY 2032, India will have 47.2 GW or 236.2 GWh of installed battery energy storage systems.

To efficiently harness the potential of renewable energy sources such as solar and wind power, the government approved the Scheme for Viability Gap Funding (VGF) for the development of Battery Energy Storage Systems (BESS) with an initial outlay of ₹ 9,400 crore, including a budgetary support of ₹ 3,760 crore. This scheme envisages the development of 4,000 MWh of BESS projects by FY 2031, with financial support of up to 40% of the capital cost as budgetary support in the form of VGF. By offering VGF support, the scheme targets achieving a levelised cost of storage ranging from ₹5.50 to 6.60 per kilowatt-hour. This will enable us to make stored renewable energy a viable option for managing peak power demand on a large scale.

Source: Cabinet approves the Scheme titled Viability Gap Funding for development of Battery Energy Storage Systems (BESS) | Prime Minister of India (pmindia.gov.in)

6. Advanced Solar Module

Solar energy has taken a central place in India's National Action Plan on Climate Change with initiatives such as the National Solar Mission, PLI for the National Programme on High-Efficiency Solar PV Modules, etc. According to an independent assessment by the National Institute of Solar Energy (NISE), the country's installed capacity for producing solar PV modules is approximately 50 GW. According to industry feedback, the country's installed capacity for solar cell manufacture is approximately 6 GW. Thus, the country has achieved self-sufficiency in the manufacturing of solar modules and panels, but it has yet to reach significant capacity in the production of solar cells.

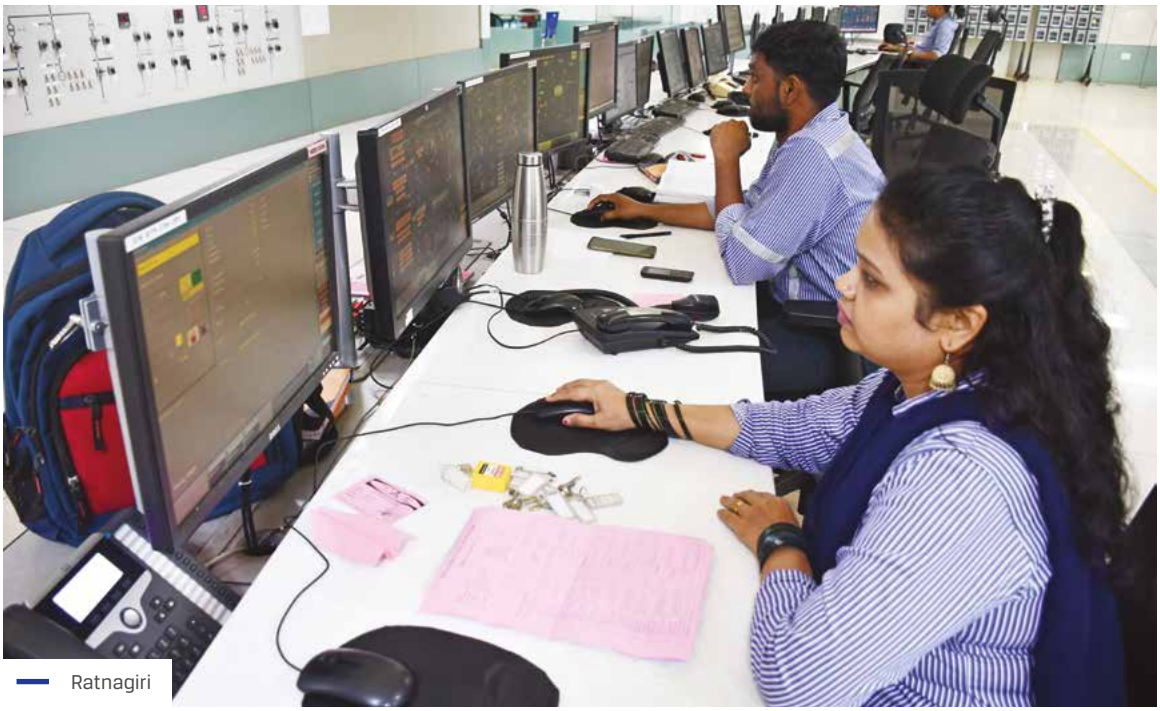
The government is striving to boost domestic manufacturing of solar PV modules and establish India as a solar powerhouse globally. Under the Solar PLI, work is underway to achieve a manufacturing capacity of Giga Watt scale in high-efficiency solar PV modules with an outlay of ₹ 24,000 crore. An integrated capacity of 8,737 MW has been added under the Solar PLI Tranche-I, while 39,600 MW of domestic solar PV module manufacturing capacity has been allocated to 11 companies under Tranche-II. These efforts have resulted in an investment of ₹ 93,041 crore and are generating over 1 lakh direct and indirect jobs.

7. Green Hydrogen

Green hydrogen, primarily produced through the electrolysis of water using renewable energy, is a crucial energy resource to address the decarbonising needs of the future. Green hydrogen is a much cleaner and more sustainable energy carrier as compared to the grey hydrogen produced from natural gas, which is currently in use. Green hydrogen has wide applications across industries like steel, cement, chemicals, decentralised power generation, aviation, and maritime transportation. Derivatives of green hydrogen, green ammonia, and green methanol find applications as green feedstocks or green transportation fuels. The Ministry of New and Renewable Energy defines green hydrogen as having a well-to-gate emission (i.e., including water treatment, electrolysis, gas purification, drying, and compression of hydrogen) of not more than 2 kg CO_2 equivalent per kg H_2.

Realising the importance of green hydrogen, the Indian government has embarked on the Green Hydrogen Mission with the aim of making India the global hub for the production, usage, and export of green hydrogen and its derivatives, serving as an inspiration for the global clean energy transition. The mission will lead to significant decarbonisation of the economy, reduce dependence on fossil fuel imports, and enable India to assume technology and market leadership in green hydrogen. The ministry of new and renewable energy is implementing this mission with an outlay of ₹ 19,744 crore. Though at an initial stage, the project has been adopted in India in various forms, like blending 2–8% of green hydrogen in gas distribution networks and using it in hydrogen fuel cell buses. Several entities have announced plans to set up production facilities for green hydrogen and its derivatives in India.

India is striving to promote green hydrogen production and usage with low-cost, made-in-India electrolysers. The green hydrogen production capacity is to be scaled up under the Green Hydrogen Mission to 5 million metric tonnes annually, contributing to a reduction in dependence on the import of fossil fuels worth ₹ 1 lakh crore cumulatively by 2030. This is likely to leverage over ₹ 8 lakh crore in total investments and create over 6 lakh jobs.



Ratnagiri

Company Overview

Since commercial operations in 2000, the energy arm of JSW Group, India's leading conglomerate, JSW Energy (hereafter referred to as the Company), has emerged as one of the largest and most diversified independent power producers in the country. Relentlessly striving to achieve efficient utilisation of all available resources, JSW Energy is playing a crucial role in India's clean energy transition. The company is strategically transforming itself from 'Pure Play' power generation to a 'Energy Products and Services' company. In addition to its superior power generation capacity dominated by renewables, the company has successfully forayed into new-age businesses of energy storage, both battery and hydro pumped, and energy products and services such as solar modules, wind turbine manufacturing, and green hydrogen and its derivatives. The company has established a strong foothold across the value chain of the power sector with diversified assets in power generation and transmission.

JSW Energy has grown steadily and strongly through the years with a strong balance sheet and robust business model. The company has a pan-India presence across 11 Indian states. It is well placed to achieve 10 GW of generation capacity in 2025 with a foray into new-age businesses. Under the government's PLI scheme, the company intends to create 1 GW manufacturing capacity of advanced solar modules. It has contracted India's largest commercial-scale green hydrogen project of 3,800 TPA for green steel manufacturing. The company has also entered into a technology licensing agreement for the manufacturing of 3.X MW WTGs in India for captive usage by the company. The energy generation capacity is a mix of thermal, hydro, wind, and solar power, with a total locked-in capacity of 13.2 GW and a healthy mix of renewables and thermal. In the energy storage space, the company has a locked-in capacity of 2.4 GWh of hydro pumped storage and 1.0 GWh of battery storage. The company has built a well-diversified portfolio focussed on maximising cash returns.

During the year, the company signed a MoU with JSW Steel for building 6.2 GW of renewable capacity, 2.7 GWh of storage capacity, and 85,000–90,000 tonnes of green hydrogen and associated RE solutions for manufacturing green steel by 2030.

With superior execution capabilities entailing set-up at the minimum possible cost and time in challenging locations, the company has established a strong footing in the power sector. This strength is well reflected in the capability of turning around underutilised assets like acquired RE assets of Mytrah. Operational transparency, a strong management team, perceptive decision-making, strategic capital allocation track record,

the ability to leverage technology and digitalisation, and a healthy balance sheet enable JSW Energy to deliver sustainable growth and create value for all its stakeholders. While focussing on growing a profitable business entity, the company distinguishes itself as a responsible corporate house with an unwavering focus on sustainability. This is reflected in the leadership band's 'A-' score in the 2023 CDP Climate Change rating. The company is placed among the highest-rated power generation companies in India by various independent ESG rating agencies.

Progress on Strategy 2.0

Enabling energy security has been the motive at JSW Energy. The company has clearly stated its objective to be carbon neutral by 2050. JSW Energy envisioned its expansion plans and commitment to reduce its carbon footprint. Hence, Strategy 2.0 was initiated in FY 2023 to accelerate and broaden its growth journey, with numerous targets set for 2030.

- 1 GW/annum of solar module manufacturing under the PLI scheme by 2025
- 20 GW of installed generation capacity by 2030. This can be backward integrated into PV modules and WTG manufacturing and forward integrated into energy products and services
- 40 GWh/5 GW of energy storage (hydro pumped energy storage and battery storage) by 2030
- ~3,800 TPA green hydrogen production plant to be set up by 2025 (India's largest commercial-scale green hydrogen project) for the purpose of producing green steel

With this, the company aims to further diversify its portfolio with forward and backward integration spanning across the power sector value chain. The company has emerged as a complete solution provider with a strong share in the renewables market. This is backed by a healthy balance sheet, which is expected to post accelerated growth of 22% CAGR from FY 2023 to FY 2030. The company is well positioned to leverage the huge growth opportunity in the power sector due to the demand-supply gap and a healthy bidding environment.

JSW Energy had a remarkable year. The company realised numerous accomplishments, establishing record financial and operational performance. The key achievements during the year are:

- **Strong Financial Performance:** EBITDA for the year increased by a robust 53% YoY to ₹ 5,837 crore resulting in PAT growth of 17% YoY to ₹ 1,723 crore.
- **Strengthens Project Pipeline:** Secured additional RE projects with cumulative capacity of 3.4 GW during the year, exhibiting a notable 35% surge in the locked-in capacity to 13.2 GW.
- **Capacity Growth:** Added capacity of 681 MW during the year. Achieved a significant milestone by sychronising Ind-Barath Unit 1 (350 MW), marking it one of the fastest revival of a stalled thermal power plant in India.
- **Forayed into Energy Products and Services:** Signed BESPA for India's largest BESS project and the preparatory site works have started.
- **ESG Stewardship:** Achieved 'Leadership Band (A-)' in CDP Climate Change for third consecutive year, the highest rating in the Indian power sector.

Business Segments

Power Generation

The Company is primarily engaged in the business of power generation through thermal and renewables. As of 31st March, 2024 the total locked-in generation capacity stands at 13.2 GW comprising total installed capacity of 7.2 GW, under-construction capacity of 2.6 GW and pipeline projects of 3.4 GW of capacity.

Installed Capacity: 7,245 MW

Thermal	Hydro
3,508 MW	1,391 MW
Solar	**Wind**
675 MW	1,671 MW

Under-construction: 2,550 MW

Thermal	Hydro
350 MW	240 MW
Wind	
1,960 MW	

Pipeline Capacity: 3,400 MW

Solar	Wind
2,400 MW	1,000 MW

Power Transmission

Stable electricity supply is made possible through an efficient power transmission system. Jaigad Power Transco Limited (JPTL) is a 74:26 joint venture between the Company and Maharashtra State Electricity Transmission Company Limited. Under JPTL, we have two operational 400 kV transmission lines.

Power Trading

Almost two decades ago, JSW Energy launched JSW Power Trading Company Limited (JSWPTC) as part of its vision to become a full-spectrum power company. Having established itself as a leading power trading company in India, JSWPTC has obtained a category "IV" licence issued by the Central Electricity Regulatory Commission to trade in power across India. It is a member of Indian Energy Exchange (IEX), Power Exchange of India Limited (PXIL) and Hindustan Power Exchange Limited (HPX).

Operational Review

The Company's net generation in FY 2024 stood at 27,862 MUs as compared to 21,866 MUs in FY 2023, a robust growth of 27% YoY. Long-term generation (tied under PPA) increased 22% YoY to 24,400 MUs as compared to 20,075 MUs in FY 2023. The Company reported a total income of ₹ 11,941 crore in FY 2024 as compared to ₹ 10,867 crore in FY 2023.

Thermal Power Plants

Vijayanagar

PLF: The plant comprises two Strategic Business Units (SBUs) – SBU 1 and SBU 2. In FY 2024, the plant achieved an average actual PLF of 58% as against 51% in FY 2023.

Total Gross Power Generated: 4,405 MUs

Net Power Generated: 4,067 MUs

Power Sales: Long-term sales to JSW Steel Limited, JSW Cement Limited, JSW Paints Private Limited, JSW Severfield Structures Limited, Epsilon Carbon Private Limited under power purchase agreements (PPA), and short-term / merchant sales to distribution companies and on power exchanges in India and Section 11.

Key Strengths of the Plant:

- Located in high power demand areas of South India
- Operationally strong plant leading to high fuel efficiency, lower O&M cost and higher PLF efficiency
- Provision to blend up to 50% of domestic coal with imported coal increases operational flexibility

Ratnagiri

PLF: In FY 2024, the plant operated at an average deemed PLF of 98% as against 84% in FY 2023

Total Gross Power Generated: 8,546 MUs

Net Power Generated: 7,850 MUs

Power Sales: Long-term sales to Group captive consumers, Maharashtra State Electricity Distribution Company Limited (MSEDCL) and other third-party industrial consumers under PPA. Short-term/merchant sales to distribution companies and on power exchanges in India

Key Strengths of the Plant

- Strategic location near the Jaigad port to help cost saving in coal transportation
- High recovery and robust ROE as 92% capacity is tied up under long-term PPAs
- Provision to blend up to 50% of domestic coal with imported coal increases operational flexibility

Barmer

PLF: In FY 2024, the plant achieved an average deemed PLF of 78% as against 80% achieved in FY 2023

Total Gross Power Generated: 7,084 MUs

Net Power Generated: 6,329 MUs

Power Sales: To Rajasthan DISCOMs

Key Strengths of the Plant:

- Assured fuel (lignite) availability sourced from pit-head captive lignite mines under a Fuel Supply Agreement
- Full recovery of fuel cost and fixed cost, including ROE ensured by the long-term PPA with DISCOMs for full capacity

Nandyal

PLF: In FY 2024, the plant achieved an average deemed PLF of 100% as against 98% achieved in FY 2023

Total Gross Power Generated: 94 MUs

Net Power Generated: 84 MUs

Power Sales: Long-term sales to group company under captive mechanism

Key Strengths of the Plant:

- 100% LT PPA under Group Captive scheme

Ind-Barath

PLF: In FY 2024, the plant achieved an average deemed PLF of 70% as the plant started operations in Q4 FY 2024

Total Gross Power Generated: 212 MUs

Net Power Generated: 196 MUs

Power Sales: Currently selling in short-term market

Key Strengths of the Plant:

- Low fixed cost and located near to key resources

Hydro Power Plants

Baspa-II

PLF: The plant achieved an average PLF of 44% for FY 2024 as against 51% in FY 2023

Total net power generated after auxillary consumption: 1,151 MUs

Power sales: To Himachal Pradesh State Electricity Board (HPSEB)

Key Strengths of the Plant:

- 100% LT PPA with HPSEB ensuring full recovery of fixed cost

Karcham Wangtoo

PLF: The plant achieved an average PLF of 41% for FY 2024 as against 47% in FY 2023

Total net power generated after auxillary consumption: 3,762 MUs

Power sales: Uttar Pradesh, Rajasthan, Haryana, and Punjab DISCOMs through long-term PPA with PTC India Limited

Key strengths of the plant:

- 100% LT PPA with PTC India Limited, which in turn has PSA with various discoms ensuring full recovery of fixed cost, including ROE under the Central Electricity Regulatory Commission (CERC) regulations

Kutehr Hydroelectric Project

JSW Energy (Kutehr) Limited, is a wholly-owned subsidiary of JSW Neo Energy.

Kutehr Hydroelectric Project (3x80 MW Kutehr HEP) with 240 MW capacity is located in the upper reaches of Ravi Basin in district Chamba of Himachal Pradesh. Signed 35-years PPA with Haryana Power Purchase Center. Commissioning of the plant is expected in FY 2025

Solar Power Plants

Operational Solar capacity 675 MW

Net Power Generated: 1,311 MUs

Power Sales: Captive tie-up within JSW Group and various state DISCOMs

225 MW Vijaynagar; 25-year PPA with JSW Steel

Commenced operations from April 2022

10 MW Solar Plant

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

18 MW Solar Plants

Long-term PPA with group company under captive mechanism commenced operations in FY 2024

Acquired Solar Assets 422 MW

Located in Punjab, Telangana and Karnataka

Status: Operational

Net Generation – 756 MUs

In addition, the Company has pipeline projects of 2.4 GW.

Wind Power

Operational Wind capacity 1,671 MW

Wind plants in Tamil Nadu;

SECI IX (810 MW); Signed 25-year PPA with SECI

Status: Under construction, 92 MW of SECI IX commissioned in FY 2024, Balance to be commissioned in CY 2024

SECI X (454 MW); Signed 25-year PPA with SECI

Status: Under construction, 248 MW of SECI X commissioned in FY 2024; Balance to be commissioned in CY 2024

Acquired RE Wind Plants (1,331 MW)

Located in Karnataka, Maharashtra, Tamil Nadu, Andhra Pradesh, Telangana, Madhya Pradesh, Gujarat and Rajasthan

Status: Operational

Net Generation: 2,581 MUs

Captive Wind Plant (737 MW)

Located in Karnataka, Maharashtra and Tamil Nadu; 25 year PPA with JSW Steel

Status: Under construction expected commissioning progressively from Q1 FY 2025

In addition, the Company is constructing 300 MW SECI XII and has pipeline wind projects of 1.0 GW of total capacity.

Financial review including financial ratios

Standalone Financial Performance

Revenue from operations

(₹ crore)

Parameters	FY 2023	FY 2024	% change
Sale of Power	4,343.86	3,780.03	-13%
Interest Income on Assets under Finance lease	19.62	59.91	205%
Sale of Goods	363.24	118.80	-67%
Sale of Services	1,002.21	1,151.41	15%
Other Operating Revenue	10.30	18.94	84%
Total	**5,739.23**	**5,129.09**	**-11%**

In FY 2024, revenue from operations stood at ₹ 5,129 crore as compared to ₹ 5,739 crore in the previous year. The fall in operating revenue is primarily due to lower fuel cost which is pass-through in nature and increased job work arrangements for power generation.

Other Income

(₹ crore)

Parameters	FY 2023	FY 2024	% change
Interest Income	48.69	93.22	91%
Dividend Income from Long-term Investments	121.52	74.69	-39%
Net Gain on Sale of Investments	44.38	15.46	-65%
Other Non-operating Income	65.26	27.03	-59%
Total	**279.85**	**210.40**	**-25%**

Other income decreased in the current fiscal, primarily on account of lower dividend income from JSW Steel Limited.

Cost of Fuel

(₹ crore)

Parameters	FY 2023	FY 2024	% change
Cost of Fuel	3,643.63	2,730.82	-25%

Some of the existing customers of the Company having long-term PPAs had entered into job work arrangements for generation of electricity. Under the agreement, the coal required is provided by the customer while the Company converts it into power and supplies to the customer. In addition, this year we witnessed declining trend in coal prices. During the year the Company incurred fuel cost of ₹ 2,730.82 crore, a decline of 25% YoY as compared to previous year.

Expenses

(₹ crore)

Parameters	FY 2023	FY 2024	% change
Employee Benefit Expense	134.73	153.23	14%
Finance Costs	259.80	477.87	84%
Depreciation and Amortisation Expense	317.42	269.54	-15%
Other Expenses	399.44	409.56	3%

Employee Benefit Expense is increased 14% YoY while finance cost increased 84% YoY due to increase in borrowings.

EBITDA and Profit After Tax (PAT)

(₹ crore)

Parameters	FY 2023	FY 2024	% change
EBITDA before Exceptional items	1,486.83	1,928.72	30%
Profit/(Loss) after tax	**711.02**	**950.22**	**34%**

The EBITDA increased to ₹ 1,928.72 crore in FY 2024 from ₹ 1,486.83 crore in the previous year majorly on account of increased generation. The Company's standalone PAT increased to ₹ 950.22 crore in FY 2024 as compared to ₹ 711.02 crore in FY 2023.

Ratio

Parameters	FY 2023	FY 2024	% change	Reason
Debtors Turnover (number of days)	41	49	20%	Increase was primarily on account of decrease in turnover.
Inventory Turnover (number of days)	71	78	10%	Increase was primarily on account of decrease in cost of goods sold.
Interest Service Coverage Ratio	11.73	6.22	-47%	Decrease is due to increase in interest expenses.
Current Ratio	0.53	0.58	9%	Increase was primarily on account of decrease in current liabilites (mainly decrease in current borrowings) and increase in current assets (mainly increase in cash and cash equivalents).
Debt Equity Ratio	0.46	0.46	1%	
Operating EBITDA Margin (%)	20.38	33.50	59%	Increase is due to decrease in turnover on account of lower fuel costs (mainly pass-through in revenue).
Net Profit Margin (%)	11.81	17.80	51%	

Consolidated Financial Performance

The Company's total Income increased by 10% to ₹11,941.34 crore from ₹10,867.05 crore in FY 2023 while EBITDA for the year grew by 53% YoY to ₹5,837.21 crore. The Company reported highest-ever EBITDA on the back of incremental contribution from RE portfolio, superior O&M practices, and gains from buoyancy in the short term / merchant markets.

Consolidated Profit after Tax increased by 17% YoY to ₹ 1,722.71 crore as compared to ₹ 1,477.76 crore in FY 2023.

The Consolidated Net Worth and Net Debt as on 31st March, 2024 were ₹20,831.74 crore and ₹26,635.57 crore respectively, resulting in Net Debt to Equity ratio of 1.3x. Net Debt to EBITDA[1] stood at 4.5x, with Net Debt to EBITDA[1] (excl. CWIP) at a healthy 2.9x.

[1] Proforma since two acquired RE entities were consolidated in Q1 FY 2024

Income & Expense (Consolidated)

(₹ crore)

Parameters	FY 2023	FY 2024	% change
Revenue from Operations	10,331.81	11,485.91	11%
Other Income	535.24	455.43	-15%
Fuel Cost	5,569.70	4,581.60	-18%
Purchase of Stock-in-trade	367.60	124.79	-66%
Employee Benefits Expense	307.60	364.47	18%
Finance Costs	844.30	2,053.40	143%
Depreciation and Amortisation Expense	1,169.23	1,633.41	40%
Other Expenses	805.07	1,032.64	28%

EBITDA and Profit after Tax (PAT)

(₹ crore)

Parameters	FY 2023	FY 2024	% change
EBITDA before Exceptional items	3,817.08	5,837.21	53%
Profit for the year	1,477.76	1,722.71	17%
Other Comprehensive Income	31.78	775.34	High
Total Comprehensive Income	1,509.54	2,498.05	65%

Risk Management and Mitigation

JSW Energy Limited follows the globally recognised 'COSO' framework of Enterprise Risk Management. ERM brings together the understanding of the potential upside and downside of all those factors which can affect the organisation with an objective to add maximum sustainable value to all the activities of the organisation & to various stakeholders.

The Company recognises that the emerging and identified risks need to be managed and mitigated to:

- Protect its shareholders and other stakeholder's interest,
- Achieve its business objective, and
- Enable sustainable growth.

Pursuant to the requirement of Regulation 21 of the Securities and Exchange Board of India (Listing Obligations and Disclosure Requirements) Regulations, 2015 and Companies Act, 2013, the company has Risk management framework in place. It has constituted a committee of Directors to oversee Enterprise Risk Management framework to ensure:

- Execution of decided strategies with focus on action and
- Monitoring risks arising out of unintended consequences of decisions or actions related to performance, operations, compliance, incidents, processes, systems and the same are managed appropriately.
- The Risk management process and structure is given below:
- **Department Heads at Plants:** Identification, assessment, response and tracking of risks is done by the Risk Owners (Department Heads) at respective locations.
- **Plant Heads:** Risk identified by the Risk Owners at the plant level is reviewed by the respective Plant Head. Plant level integration across the Plants is done to ensure consistency in risk identification and benchmarking.
- **Senior Management at Corporate:** Risks at all the plants, contingency planning and Organisational risks requiring review of macro environment, policies, processes are discussed at the corporate level.
- **Board of Directors:** Oversee the Risk strategy and Risk Management framework, reviews the key risks and mitigation plans.
- All these activities are coordinated by the Chief Risk Officer.

Business Continuity Plan

The Company has a Business Continuity Policy duly approved by the Board. All the major generation plants have formulated Business Continuity Plans (BCP). The main objective of BCP is to maintain business continuity during / post disruptive incidents with an aim to minimize impact on:

- Human life and other living beings
- Environment and related eco systems
- Economic losses
- All stakeholders (such as investors, employees, local communities)

The Company has been conducting awareness and training sessions and mock drills across the Plants on BCP.

Type of Risk / Opportunity	Risk Movement	Impact	Risk Response Strategies
Demand fluctuations - Offtake risk		Demand-supply dynamics impacting power demand & tariff rates	✓ The Company has already tied up 85% of its capacity through PPAs and long-term contracts. ✓ Power demand has grown at 7.5%, in FY 2024 creating a good opportunity in merchant power sector. ✓ The untied power is being sold on exchanges/short term contracts and under Section 11 ✓ Untied power of Vijayanagar and Ratnagiri would be tied up based on expansion plans of Group companies.
Raw material availability & cost		During the year thermal coal prices saw downward movement resulting in lower fuel cost.	✓ The imported coal prices have softened to ~USD 110 per ton in FY 2024 vs ~USD 250 per ton in FY 2023. Prices are expected remain in this range. The Company continues to manage this risk through ✓ Broadening sourcing options- different geographies, multiple vendors ✓ Buying cheaper coal irrespective to the geography ✓ Prudent hedging strategies to mitigate the foreign exchange fluctuations risk. Various contract options like long term contracts and monthly / quarterly / spot contracts for cost effectiveness
Regulatory changes		Ministry Of Environment and Forests (MOEF) notified regulations for 100% utilization of ash and legacy ash in an eco-friendly and time-bound manner. Any noncompliance would attract financial penalty.	✓ The Company's plants have been disposing most of their fly ash to cement manufacturers and brick manufacturers. ✓ The legacy ash is being used/would be used in highway expansion projects, land filling during Group companies' expansions; which are permissible eco-friendly ways defined in the MOEF notification. ✓ The legacy ash would fully be put to use much before the defined timeframe.
Recovery of dues from DISCOMs		Due to poor financial health, payments from the Discoms against our power supply are delayed. This impacts the working capital cash flow	✓ Regular follow-up for the overdue payments. ✓ The Company has availed bill discounting facility from bank for Discom bills. The interest cost would be borne by Discoms

Type of Risk / Opportunity	Risk Movement	Impact	Risk Response Strategies
Interest rates		The RBI has maintained the repo rate at 6.50% which was last changed in February 2023.	✓ Evaluation of growth projects are done on conservative basis over life of PPA. Hence, underline cash flows and return metrics over a long term have adequate protection from short term volatility. ✓ The Company has followed a balanced approach in structuring its finances by having mix of fixed and floating rate of interest and mix of INR and foreign currency loans. ✓ The Company has been renegotiating credit spreads and refinancing to arrest the impact of rate increase.
Cyber security		Cyber security risk could result in substantial reputation and financial loss arising from: 1. Theft of corporate information 2. Theft of financial information (e.g. Financial results, bank details etc.) 3. Ransom ware – cyber extortion. 4. Disruption to business.	✓ Implementation of multi factor authentication for remote VPN access. ✓ Alternate disaster Recovery secure VPN created for resiliency ✓ Strengthening Incident Response process ✓ On boarding of an Incident Response Retainer services ✓ Google Advanced phishing and malware protections features ✓ Periodic critical security updates of Operating System (OS) for all the remote endpoints ✓ Information security Awareness campaigns ✓ Controlling System vulnerability through Vulnerability Assessment and Penetration testing for all public facing assets. ✓ Implementation of Firewall hardening Rule Sets ✓ ISO 27001:2013 certified for IT and OT function ✓ Firewall remediation tool deployed and improvements done in identified areas ✓ Subscribed to cyber insurance policy
Forex risk		Recent geo political events have led to volatility in USD-INR rate.	✓ The Company's robust hedging policy is reviewed by the Board and hedging is done accordingly. ✓ The Company hedges outstanding liability on CAPEX. ✓ The Company has also hedged liability of green bonds as per scheduled payment dates
Poor monsoon - Due to subnormal rain fall in the Karnataka state this year, the reservoir levels are very low as compared to last year.	New	Water availability & the generation	✓ Developing adequate water storage facilities / water conservation (RO plant) ✓ Changing chemical regime to increase COC(Cycle of concentration) ✓ Promoting and enforcing strict water conservation measures across the plant . ✓ Exploring the feasibility to convert existing water cooled condenser to air cooled condenser to conserve water as a long term measure

HR Management

JSW Energy considers human capital critical for strategic business growth. In order to achieve the Organisational Objectives of growth, agility and increased productivity, HR policies play a crucial role. During the year under review, several new HR initiatives were conducted to enhance business efficiency and keep employee morale high. CARE (Communication, Agility, Responsibility and Elevation) continued to be at the centre stage of HR policies enabling the Company to provide a holistic growth environment and a superior employee experience. CARE has been an important aspect of JSW Energy being an engaging workplace.

The Care Model of JSW Energy

CARE is a unique model implemented at JSW Energy which works on the principle that "a well-Communicated employee who is Agile, becomes Responsible and is Elevated". The implementation of this model has resulted in grander employee engagement.

- **Communication:** A multi-level communication structure with multiple channels enables employee engagement at various levels. In addition to employee engagement, the structure also enables grievance redressal mechanisms. Knowledge management enables to plough back organisational learning in solving business problems. Quarterly townhall named as Samwaad, Business Review Meetings, Candid Conversations, Skip Level Meetings, Peer Group Meetings, Family Get-together etc. enable dissemination of information and transparency in communication.
- **Agile:** To create analytical problem-solving facilitators and experts, the Company has adopted a 3-tier analytics training programme. Enhanced capability building practices thus results in better employee engagement. Agility enables the Company to stay competitive in the fast-paced business environment.
- **Responsible:** With a view to create engagement within the organisation, multiple problem-solving practices have been designed. Problem-solving experts enable the Company strive to cascade the policies to the last level of employees. Other activities like the Kaizen culture, the QC activities were also introduced in the shop-floor.
- **Elevated:** All improvements in the organisation are evaluated and duly rewarded. Multi-level R&R system for Kaizens, employee of the month, IGNITE, Safety hero, Special Contribution Awards, and LAMHE Long Service Awards were instituted to engage contributing employees.

Employee Safety

At JSW Energy, all stakeholders have to mandatorily comply with "10 JSW Critical Safety Rules". This helps to cover critical safety practices and control injuries and illnesses. Employees are encouraged to anticipate, report, address and mitigate any hazards at the workplace which helps to avoid injuries and serious accidents.

Dharapuram

Kutehr, Hydro

The details of the safety measures undertaken during the year include:

Strengthening the safety systems at all JSW Energy plants, especially at the renewable energy locations

Occupational health and safety training including GWO training at wind turbine locations

- Digitisation - Initiated software-based incident reporting at wind and solar plants

TQM

Total Quality Management, "TQM", is an integral part of JSW Energy's sustainable journey enabling accomplishment of stated objectives. TQM is a part of the business culture DNA and it promotes the "Better Every day" culture. The Company was able to successfully clear the management diagnosis conducted by Japanese Union of Scientists and Engineers (JUSE) during the Deming challenge journey, which helped to strengthen the TQM practices at all locations and businesses. With a zest to achieve their best, various teams adopted rigorous training of analytical quality measures, such as "J2 refresher". The "Q-star program", is another similar initiative which has enabled the Company to create several competence level experts.

TQM strengthens the capabilities of front line employees, thereby encouraging them to participate in several regional, national and international quality competitions. The Company has been able to adopt a culture of continuous improvement with the help of TQM, furthering sustainable growth for the Company.

Across all plants, "Daily-Sunrise Meeting", a layered communication structure for daily work management, has helped in increasing employee engagement and involvement in the business improvement process.

TQM includes several new practices like:

- organising business plans
- conduction of performance assessments
- reviewing in the TQM way
- benchmarking peer industries
- visiting quality benchmark industries
- inter-plant quality cross learning, and
- implementing quality management tools for the business

CSR

Our agenda of inclusive social and economic growth is carried out through JSW Foundation, the social development arm of the JSW Group. We strive to provide equal opportunities to communities at large and engage with local communities to carry out social development activities. We aim to create a value-based empowered society through continuous and purposeful engagement with the local communities. The different social issues addressed through the Foundation include hunger and poverty eradication, tackling malnutrition, promoting social development, women empowerment, addressing social inequalities by empowering the vulnerable sections of the society, various environmental issues, preservation of national heritage and promotion of sports training.

CSR Framework

JSW Foundation supports, plans and executes our CSR interventions. The Board appoints a CSR Committee which approves and administers all the initiatives and conducts periodic reviews, as per the CSR policy. Reviews are conducted at different levels throughout the organisation, depending on the importance of synergy and interdependence. Various intervention strategies are adopted to promote sustainable growth of both community and individuals. The strategies adopted in this regard are as follows:

- Direct Influence Zone (DIZ): These are the villages in the immediate vicinity of the plant locations and given utmost priority. Each plant has the autonomy to define their own DIZ as per the policy. Plants also have the provision to expand the scope as per the scale of operations. In addition, certain programmes are allowed to be expanded to Indirect Influence Zone (IIZ), areas beyond the geographical purview of DIZ
- Programmes are designed based on specific measurable impacts assessed through different quantitative and qualitative methods. Either the Foundation directly or in partnership with the government and civil society groups at various levels, implements these programmes
- In each sector, interventions are designed to cover social mobilisation, advocacy at various levels, and/or appropriate policy changes
- For details of the CSR initiatives undertaken by the Company during FY 2024, please also refer to Annexure B to the Board's Report for the Annual Report on the CSR activities, starting on Page 259
- Our Sustainability Report's Chapter on Social Development starting on Page 132
- Our Business Responsibility and Sustainability Report starting on Page 185

Internal Control

In keeping with the size and nature of its business and complexity of its operations, the Company has in place a well-designed strong internal control system with unique features like:

- Preparation of annual budget with regular monitoring
- Integrated ERP system deployment to manage smooth transaction processing and to ensure integrity of accounting system
- Well documented authorisation matrix, policies, procedures and guidelines covering all important operations of the Company
- Deployment of compliance tool to ensure compliance with laws, regulations and standards
- Testing of internal financial controls over reporting by internal auditors and statutory auditors to ensuring reliability of financial information
- Protection of the Company's assets / resources against any loss through adequate insurance
- A comprehensive Information Security Policy and continuous updating of IT systems
- Review by the Board-appointed Audit Committee comprising Independent Directors who are experts in their field

All audit plans are regularly monitored by the Audit Committee which is responsible for ensuring adequate internal control measures are in place. It reviews significant audit findings and ensures audit recommendations are effectively implemented.

Internal Audit

JSW Energy's vital Internal Audit function encompasses best global standards and practices of international majors into its operations. The Internal Audit Department reports to the Audit Committee comprising Independent Directors who are experts in their respective fields. COSO framework is an integral part of the audit process. This enables the Company to further improvise the quality of its financial reporting compatible with business ethics, effective controls and governance. With a view to create effective checks and balances within the system, the Company has adopted delegation of authority across its teams. This enables to identify and correct all possible gaps in a timely manner. The Internal Audit team has access to all information in the organisation facilitated by the ERP implementation across the organisation.

Based on the risk ratings of the respective areas/functions, the Internal Audit Department prepares risk-based audit plans. The Audit Committee approves the audit plan which is then executed by the Internal Audit team. To ensure the robustness of the plan in keeping with the emerging industry trends, it is periodically reviewed. Internal customer feedback and other external events also help to increase the robustness of the audit plan in addition to the regular review of the Internal Audit findings by the Audit Committee.

Internal Financial Control

As per Section 134(5)(e) of the Companies Act 2013, the Directors have overall responsibility for ensuring that the Company has implemented a robust system and framework of Internal Financial Controls. The Company

had already developed and implemented a framework for ensuring Internal Controls over Financial Reporting. This framework includes entity-level policies, processes controls, IT General Controls and Standard Operating Procedures (SOP).

The entity-level policies include anti-fraud policies (such as code of conduct, conflict of interest, confidentiality and whistleblower policy) and other policies (such as Organisation structure, Insider Trading policy, HR policy, IT security policy, Treasury policy and Business continuity and disaster recovery plan). The Company has also prepared a risk control matrix for each of its processes such as procure to pay, order to cash, hire to retire, treasury, fixed assets, inventory and manufacturing operations. These Internal Financial Controls are reviewed by the Internal and Statutory Auditors every year.

BUSINESS RESPONSIBILITY AND SUSTAINABILITY REPORT

SECTION A – GENERAL DISCLOSURES

I. Details of the listed entity:

1. **Corporate Identity Number (CIN) of the Listed Entity -** L74999MH1994PLC077041
2. **Name of the Listed Entity -** JSW Energy Limited
3. **Year of incorporation -**1994
4. **Registered office address -** JSW Centre, Bandra Kurla Complex, Bandra (East), Mumbai - 400 051
5. **Corporate address -** JSW Centre, Bandra Kurla Complex, Bandra (East), Mumbai - 400 051
6. **E-mail -** jswel.investor@jsw.in
7. **Telephone -** +91 22 42861000
8. **Website -** www.jsw.in
9. **Financial year for which reporting is being done -** 2023-2024
10. **Name of the Stock Exchange(s) where shares are listed -**

    1. BSE Limited

    2. National Stock Exchange of India Limited
11. **Paid-up Capital -** ₹ 16,44,67,56,680
12. **Name of contact details (telephone, email address) of the person who may be contacted in case of any queries on the BRSR Report**

    a) **Director responsible for BRSR:** Mr. Sharad Mahendra
    Joint Managing Director & CEO
    DIN: 02100401
    Email: jswel.investor@jsw.in
    Phone: 022-42861000

    b) **BRSR Head:** Mr. Aditya Agarwal
    Head-Renewable
    Email: jswel.investor@jsw.in
    Phone: 022-42861000

    c) **Supported By:** Mr. Prabodha Acharya
    Group Chief Sustainability Officer
    E-mail: prabodha.acharya@jsw.in
    Phone: 022-42861000
13. **Reporting boundary -** Consolidated Basis
14. **Name of assurance provider -** Bureau Veritas (India) Pvt. Ltd.
15. **Type of assurance obtained -** Reasonable Assurance

II. Products and Services

16. Details of business activities (accounting for 90% of the turnover):

S. No	Description of Main Activity	Description of Business Activity	% of Turnover of the entity
1	Generation Transmission and Trading of Renewable and Thermal Power	Production of Power / Electricity	100.00%

17. Products/Services sold by the entity (accounting for 90% of the entity's Turnover):

S. No.	Product / Service	NIC Code	% of total Turnover contributed
1	Electricity / Power	351	100.00%

III. Operations

18. Number of locations where plants and/or operations/offices of the entity are situated:

Location	Number of plants	Number of offices	Total
National	52	15	67
International	0	1	1

19. Markets served by the entity:

a. Number of locations

Locations	Number
National (No. of States)	14
International (No. of Countries)	1

b. What is the contribution of exports as a percentage of the total turnover of the entity? NA

c. A brief on types of customer - The Company is a leading provider of energy solutions, catering to a diverse portfolio of business clients, with a primary focus on state distribution companies. As a dynamic player in the energy sector, the company specializes in delivering tailored energy services to a range of B2B customers, including numerous distribution utilities, disignated nodal agencies, Commercial & Industrial enterprises.

IV. Employees

20. Details as at the end of Financial Year:

a. Employees and workers (including differently abled):

S. No.	Particulars	Total (A)	Male		Female	
			No. (B)	% (B / A)	No. (C)	% (C / A)
	EMPLOYEES					
1.	Permanent (D)	2,500	2,376	95.04%	124	4.96%
2.	Other than Permanent (E)	NIL	NIL	NIL	NIL	NIL
3.	**Total employees (D + E)**	2,500	2,376	95.04%	124	4.96%
	WORKERS					
4.	Permanent (F)	NIL	NIL	NIL	NIL	NIL
5.	Other than Permanent (G)	5,471	5,299	96.86%	172	3.14%
6.	**Total workers (F + G)**	5,471	5,299	96.86%	172	3.14%

b. Differently abled Employees and workers:

S. No	Particulars	Total (A)	Male		Female	
			No. (B)	% (B / A)	No. (C)	% (C / A)
	DIFFERENTLY ABLED EMPLOYEES					
1.	Permanent (D)	6	6	100%	0	0
2.	Other than Permanent (E)	0	0	0%	0	0
3.	**Total differently abled employees (D + E)**	6	6	100%	0	0
	DIFFERENTLY ABLED WORKERS					
4.	Permanent (F)	NIL	NIL	NIL	NIL	NIL
5.	Other than permanent (G)	NIL	NIL	NIL	NIL	NIL
6.	**Total differently abled workers (F + G)**	NIL	NIL	NIL	NIL	NIL

21. Participation / Inclusion / Representation of women

	Total (A)	No. and percentage of Females	
		No. (B)	% (B / A)
Board of Directors	11	1	9.09%
Key Management Personnel	4	1	25%

22. Turnover rate for permanent employees and workers

(Disclose trends for the past 3 years)

	FY 2023-24 Current Financial Year			FY 2022-23 Previous Financial Year			FY 2021-22 Prior to the previous FY		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Permanent Employees	6.12%	0.36%	6.48%	4.79%	0.49%	5.28%	4.44%	0.32%	4.76%
Permanent Workers	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL

V. Holding, subsidiary and associate companies (including joint ventures)

23. (a) Names of holding / subsidiary / associate companies / joint ventures

S. No.	Name of the holding / subsidiary / associate companies / joint ventures (A)	Indicate whether holding / Subsidiary / Associate / Joint Venture	% of shares held by listed entity	Does the entity indicated at column A, participate in the Business Responsibility initiatives of the listed entity (Yes / No)
1.	JSW Energy (Barmer) Limited	Subsidiary	100%	Yes
2.	JSW Power Trading Company Limited	Subsidiary	100%	Yes
3.	JSW Energy (Raigarh) Limited	Subsidiary	100%	No
4.	JSW Neo Energy Limited	Subsidiary	100%	Yes
5.	Jaigad PowerTransco Limited	Subsidiary	74%	Yes
6.	Ind-Barath Energy (Utkal) Limited	Subsidiary	95%	Yes
7.	JSW Hydro Energy Limited	Subsidiary	100%	Yes
8.	JSW Energy (Kutehr) Limited	Subsidiary	100%	Yes
9.	JSW Renewable Energy (Vijayanagar) Limited	Subsidiary	74%	Yes
10.	JSW Renewable Energy (Amba River) Limited	Subsidiary	100%	No
11.	JSW Renewable Energy (Cement) Limited	Subsidiary	74%	Yes
12.	JSW Renewable Technologies Limited	Subsidiary	100%	No
13.	JSW Renewable Energy (Dolvi) Limited	Subsidiary	100%	No
14.	JSW Renewable Energy (Coated) Limited	Subsidiary	100%	No
15.	JSW Renew Energy (Raj) Limited	Subsidiary	100%	No
16.	JSW Renew Energy (Kar) Limited	Subsidiary	100%	No
17.	JSW Renew Energy Limited	Subsidiary	100%	Yes
18.	JSW Renew Energy Two Limited	Subsidiary	100%	Yes
19.	JSW Renew Energy Three Limited	Subsidiary	100%	No
20.	JSW Renew Energy Four Limited	Subsidiary	100%	No
21.	JSW Renew Energy Five Limited	Subsidiary	100%	No
22.	JSW Renew Energy Six Limited	Subsidiary	100%	No
23.	JSW Renewable Energy (Salem) Limited	Subsidiary	100%	No
24.	JSW Energy PSP One Limited	Subsidiary	100%	No
25.	JSW Energy PSP Two Limited	Subsidiary	100%	No
26.	JSW Energy PSP Three Limited	Subsidiary	100%	No
27.	JSW Energy PSP Six Limited	Subsidiary	100%	No
28.	JSW Energy PSP Seven Limited	Subsidiary	100%	No
29.	JSW Green Hydrogen Limited	Subsidiary	100%	No
30.	JSW Energy PSP Eight Limited	Subsidiary	100%	No
31.	JSW Energy PSP Nine Limited	Subsidiary	100%	No
32.	JSW Energy PSP Ten Limited	Subsidiary	100%	No
33.	JSW Energy PSP Eleven Limited	Subsidiary	100%	No
34.	JSW Renewable Energy (Anjar) Limited	Subsidiary	100%	No

S. No.	Name of the holding / subsidiary / associate companies / joint ventures (A)	Indicate whether holding / Subsidiary / Associate / Joint Venture	% of shares held by listed entity	Does the entity indicated at column A, participate in the Business Responsibility initiatives of the listed entity (Yes / No)
35.	JSW Renew Energy Materials Trading Limited	Subsidiary	100%	No
36.	JSW Renew C&I One Limited (w.e.f. 31.01.2024)	Subsidiary	100%	No
37.	JSW Renew C&I Two Limited (w.e.f. 14.02.2024)	Subsidiary	100%	No
38.	JSW Renew Energy Eight Limited (w.e.f. 09.02.2024)	Subsidiary	100%	No
39.	JSW Renew Energy Nine Limited (w.e.f. 07.02.2024)	Subsidiary	100%	No
40.	JSW Renew Energy Ten Limited (w.e.f. 09.02.2024)	Subsidiary	100%	No
41.	JSW Renew Energy Eleven Limited (w.e.f. 24.02.2024)	Subsidiary	100%	No
42.	JSW Renewable Energy (Salav) Limited (w.e.f. 17.01.2024)	Subsidiary	100%	No
43.	JSW Renewable Energy Dolvi Three Limited (w.e.f. 05.02.2024)	Subsidiary	100%	No
44.	Mytrah Vayu (Pennar) Private Limited	Subsidiary	100%	Yes
45.	Bindu Vayu Urja Private Limited	Subsidiary	100%	Yes
46.	Mytrah Vayu (Krishna) Private Limited	Subsidiary	100%	Yes
47.	Mytrah Vayu (Manjira) Private Limited	Subsidiary	72.62%	Yes
48.	Mytrah Vayu Urja Private Limited	Subsidiary	100%	Yes
49.	Mytrah Vayu (Godavari) Private Limited	Subsidiary	100%	Yes
50.	Mytrah Vayu (Som) Private Limited	Subsidiary	100%	Yes
51.	Mytrah Vayu (Sabarmati) Private Limited	Subsidiary	100%	Yes
52.	Mytrah Aadhya Power Private Limited	Subsidiary	100%	Yes
53.	Mytrah Aakash Power Private Limited	Subsidiary	100%	Yes
54.	Mytrah Abhinav Power Private Limited	Subsidiary	100%	Yes
55.	Mytrah Adarsh Power Private Limited	Subsidiary	100%	Yes
56.	Mytrah Agriya Power Private Limited	Subsidiary	100%	Yes
57.	JSW Advaith Power Private Limited	Subsidiary	100%	Yes
58.	Mytrah Akshaya Energy Private Limited	Subsidiary	100%	Yes
59.	Nidhi Wind Farms Private Limited	Subsidiary	100%	Yes
60.	Mytrah Ainesh Power Private Limited	Subsidiary	100%	Yes
61.	Mytrah Vayu (Bhavani) Private Limited	Subsidiary	100%	Yes
62.	Mytrah Vayu (Chitravati) Private Limited	Subsidiary	100%	Yes
63.	Mytrah Vayu (Hemavati) Private Limited	Subsidiary	100%	Yes
64.	Mytrah Vayu (Kaveri) Private Limited	Subsidiary	100%	Yes
65.	Mytrah Vayu (Maansi) Private Limited	Subsidiary	100%	Yes
66.	Mytrah Vayu (Palar) Private Limited	Subsidiary	100%	Yes
67.	Mytrah Vayu (Parbati) Private Limited	Subsidiary	100%	Yes
68.	Mytrah Vayu (Sharavati) Private Limited	Subsidiary	100%	Yes
69.	Mytrah Vayu (Tapti) Private Limited	Subsidiary	100%	Yes
70.	Mytrah Tejas Power Private Limited	Subsidiary	100%	Yes
71.	Mytrah Vayu (Indravati) Private Limited	Subsidiary	100%	Yes
72.	Mytrah Vayu (Tungabhadra) Private Limited	Subsidiary	100%	Yes
73.	Mytrah Vayu (Adyar) Private Limited	Subsidiary	100%	Yes
74.	JSW Energy Natural Resources Mauritius Limited	Subsidiary	100%	No
75.	JSW Energy Natural Resources South Africa Limited	Subsidiary	100%	No
76.	Royal Bafokeng Capital (PTY) Limited	Subsidiary	100%	No
77.	Mainsail Trading 55 Proprietary Limited	Subsidiary	100%	No
78.	South African Coal Mining Holdings Limited	Subsidiary	69.44%	No
79.	SACM (Breyten) Proprietary Limited	Subsidiary	69.44%	No
80.	South African Coal Mining Operations (Pty) Limited	Subsidiary	69.44%	No
81.	Umlabu Colliery Proprietary Limited	Subsidiary	69.44%	No
82.	Toshiba JSW Power Systems Private Limited	Associate	4.64%	No
83.	Barmer Lignite Mining Company Limited	Joint Venture	49%	No

VI. CSR

24. (i) Whether CSR is applicable as per section 135 of Companies Act, 2013: (Yes / No) Yes

(ii) Turnover (in ₹) - ₹ 11,941.34 crore

(iii) Net worth (in ₹) - ₹ 20,831.74 crore

VII. Transparency and Disclosure Compliances

25. Complaints / Grievances on any of the principles (Principles 1 to 9) under the National Guidelines on Responsible Business Conduct:

Stakeholder group from whom complaint is received	Grievance Redressal Mechanism in Place (Yes / No) (If yes, then provide web-link for grievance redress policy)	FY 2023-24 Current Financial Year			FY 2022-23 Previous Financial Year		
		Number of complaints filed during the year	Number of complaints pending resolution at close of the year	Remarks	Number of complaints filed during the year	Number of complaints pending resolution at close of the year	Remarks
Communities	https://www.jsw.in/sites/default/files/assets/downloads/energy/Corporate%20Governance%20and%20Regulatory%20Information/Policies/Whistle%20Blower%20Policy%20and%20Vigil%20Mechanism.pdf	0	0	NA	0	0	NA
Investors (other than Shareholders)		0	0	NA	0	0	NA
Shareholders		1	0	NA	0	0	NA
Employees and workers		0	0	NA	0	0	NA
Customers		0	0	NA	0	0	NA
Value Chain Partners		0	0	NA	0	0	NA
Other (please specify)		0	0	NA	0	0	NA

26. Overview of the entity's material responsible business conduct issues

Please indicate material responsible business conduct and sustainability issues pertaining to environmental and social matters that present a risk or an opportunity to your business, rationale for identifying the same, approach to adapt or mitigate the risk along-with its financial implications, as per the following format

S. No.	Material issue identified	Indicate whether risk or opportunity (R/O)	Rationale for identifying the risk / opportunity	In case of risk, approach to adapt or mitigate	Financial implications of the risk or opportunity (Indicate positive or negative implications)
1	Climate Strategy	Opportunity	In view of changing climate scenario, Climate strategy is focussed on identification of the risks associated with climate change and their management. It also focussed on harnessing opportunities such as renewable energy to meet India's 2070 Net Zero commitments	NA	Positive
2	Greenhouse Gas Emissions & Energy Resource Planning	Risk	Refers to the usage of fossil fuels (lignite and others) in power generation, which contributes to GHG emissions. GHG emissions contribute to climate change and global warming.	Supply Chain Decarbonisation Programme, Carbon Capture and Storage (CCS) technologies	Negative
3	Resource Use & Management	Opportunity	JSW Energy being the power producing company use large amounts of natural capital inputs (fossil fuel) such as lignite and others in the power production process. Enhancing the resource efficiency and increasing the usage of materials with recycled and reclaimed content across business operations	NA	Positive

S. No.	Material issue identified	Indicate whether risk or opportunity (R/O)	Rationale for identifying the risk / opportunity	In case of risk, approach to adapt or mitigate	Financial implications of the risk or opportunity (Indicate positive or negative implications)
4	Life Cycle Management of Assets	Opportunity	Long-term management of assets and power plants for enhancing the reliability, product quality and operational eco-efficiency of assets. Ascertaining second life/end of life options for the assets	NA	Positive
5	Air Quality	Risk	Air quality and environment are affected due to discharge of Greenhouse gases, Ozone depleting substances (ODS), NOx and SOx into the environment. Air Quality Management refers to the organisation's strategy for reducing the emissions and increasing the operational eco-efficiency which can enhance the organisation's competitiveness through effective cost management and reduced environmental liabilities as it may have localized impacts on human health and the environment.	Installation of Flue Gas desulphurisations (FGD) units, ESP's to reduce Ash & particulate matter in flue gases, Supply Chain Decarbonisation Programme, Carbon Capture and Storage (CCS) technologies	Negative
6	Waste Management	Risk	Power plants includes the aspects on waste generation, waste disposal and the associated impacts. It also extends to enhancing the circularity measures across business operations.	Recycling, Reuse and disposal as per applicable norms	Negative
7	Water Management	Risk	Power generation is highly water-intensive, particularly for thermoelectric plants that use large quantities for cooling. Improper effluent management can harm ecosystems, freshwater quality, and community well-being. Effective water management involves careful planning, efficient distribution, optimal use, wastewater recycling, and minimizing freshwater consumption, which is crucial in water-scarce regions due to potential constraints and price volatility.	Monitoring system to assess eco-efficiency. Optimize water usage by techniques like rain water harvesting etc.	Negative
8	Biodiversity	Risk	Management and monitoring of business activities resulting in significant impacts in the protected areas or areas with high biodiversity value around the operating locations. It also entails the strategies used by an organisation for the prevention and remediation of activities leading to biodiversity loss	Biodiversity Risk Assessment and Mitigation Plans to be adopted for moving towards No Net Loss of Biodiversity	Negative
9	Labour Relations	Risk	Labor relations management involves engaging with laborers and unions, ensuring compliance with human rights, and preventing forced and child labor. It also includes addressing any severe safety and environmental violations by the company or its suppliers.	focused governance structure to oversee practices and concerns pertaining to this aspect. Third party human rights assessment, Whistle-blower Committee and compliance training covering human rights	Negative
10	Occupational Health and Safety	Risk	Power generation operations can present significant health and safety risks such as risk associated with operating heavy machinery, electrocution risk, etc. to employees and workers working at power plants.	Zero tolerance policy for safety breaches and risk awareness programmes	Negative

S. No.	Material issue identified	Indicate whether risk or opportunity (R/O)	Rationale for identifying the risk / opportunity	In case of risk, approach to adapt or mitigate	Financial implications of the risk or opportunity (Indicate positive or negative implications)
11	Economic Performance	Opportunity	The company's economic performance includes the economic value generated and distributed (EVG&D), defined benefit plan obligations, government financial assistance, and the financial implications of climate change. This performance reflects the company's economic health, management effectiveness, and offers insights into future outlook and growth prospects.	NA	Positive
12	Business Model Resilience	Opportunity	Business model resilience measures an organization's ability to swiftly respond and adapt to disruptions or unplanned changes that could threaten its operations, people, assets, brand, or reputation. Given the multitude of risks businesses face today, it is crucial to analyze potential threats and prepare mitigation strategies in advance to minimize their impact.	NA	Positive
13	Technology, Product and Process innovation	Opportunity	Technology, product, and process innovation are crucial for companies to sustain growth in changing times, offering a competitive edge. These innovations enhance resource efficiency, reduce environmental impact, ensure safer working conditions, and create new market opportunities.	NA	Positive
14	Responsible Investment	Opportunity	Responsible investment involves integrating Environmental, Social, and Governance (ESG) considerations into investment decisions. This approach benefits the environment and society while offering attractive returns for investors. ESG-focused investments are increasingly appealing to those seeking to make a positive impact and achieve financial gains.	NA	Positive
15	Opportunities in Renewable Energy	Opportunity	With renewables projected to constitute 30% of global electricity by 2024 and India targeting a 50% non fossil based energy share by 2030, transitioning to renewables is crucial for energy companies to align with sustainability goals and capitalize on the growing green energy market.	NA	Positive
16	Digitalisation and Automation	opportunity	Digitalisation and automation help companies to digitize routine processes, streamline workflows, operate faster, reduce costs, and improve productivity and efficiency. It may also help in providing transparent, faster, and timely services to customers.	NA	Positive
17	ESG-based ERM	Opportunity	ESG issues matter more than ever to investors, customers, stakeholders, employees, communities, and regulators. Strong ESG performance can lead to greater access to capital, talent, and business opportunities.	NA	Positive
18	End use efficiency and demand	Opportunity	Promoting energy efficiency reduces greenhouse gas emissions and operating costs for utilities, making it a cost-effective strategy for sustainability and financial savings. By offering incentives, education, and technology, utilities can empower consumers to save energy and reduce peak demand.	NA	Positive

SECTION B – MANAGEMENT AND PROCESS DISCLOSURES

This section is aimed at helping businesses demonstrate the structures, policies and processes put in place towards adopting the NGRBC Principles and Core Elements. At the company, we have a robust management framework in place which enables us to align with the NGRBC Principles with respect to structure and policies to ensure we continue to deliver our best in an ethical, and responsible way. This encompasses transparent and principled business practices that hold us accountable, as well as protect the interests of our stakeholders, including customers and employees.

Principle 1	Businesses should conduct and govern themselves with integrity and in a manner that is ethical, transparent, and accountable
Principle 2	Businesses should provide goods and services in a manner that is sustainable and safe
Principle 3	Businesses should respect and promote the well-being of all employees, including those in their value chains
Principle 4	Businesses should respect the interests of and be responsive to all its stakeholders
Principle 5	Businesses should respect and promote human rights
Principle 6	Businesses should respect and make efforts to protect and restore the environment
Principle 7	Businesses, when engaging in influencing public and regulatory policy, should do so in a manner that is responsible and transparent
Principle 8	Businesses should promote inclusive growth and equitable development
Principle 9	Businesses should engage with and provide value to their consumers in a responsible manner

Disclosure Questions			P 1	P 2	P 3	P 4	P 5	P 6	P 7	P 8	P 9
Policy and Management Processes											
1.	**a)**	**Whether your entity's policy / policies cover each principle and its core elements of the NGRBCs. (Yes / No)**	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	b)	**Has the policy been approved by the Board? (Yes / No)**	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	c)	**Web Link of the Policies, if available**	https://www.jsw.in/investors/energy/jsw-energy-sustainability-policies								
2.		**Whether the entity has translated the policy into procedures. (Yes / No)**	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3.		**Do the enlisted policies extend to your value chain partners? (Yes / No)**	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4.		**Name of the national and international codes /certifications / labels / standards (e.g. Forest Stewardship Council, Fairtrade, Rainforest Alliance, Trustea) standards (e.g. SA 8000, OHSAS, ISO, BIS) adopted by your entity and mapped to each principle.**	• ISO 9001, ISO 14001, ISO45001, ISO 50001, ISO26000 • IFC Performance Standards • OECD Guidelines • UNGC, guidelines • ILO Principles, ILO Convention on Human Rights • Report on Affirmative Action by CII • National Action Plan on Climate Change • National Environmental Policy • UN Sustainable Development Goals • Global Reporting Initiative • Carbon Disclosure Project (CDP) • Dow Jones Sustainability Index (DJSI) • TCFD (Task Force on Climate Disclosure related Financial Disclosures)								
5.		**Specific commitments, goals and targets set by the entity with defined timelines, if any.**	The Company is committed to achieving net-zero emissions by 2050, leveraging cutting-edge carbon-free technologies in renewable energy, energy storage, and green hydrogen. As part of its ambitious vision, the Company aims to reach 20 GW of operational capacity by 2030. This goal will be met by strategically expanding its presence in the renewable energy sector through a balanced mix of organic growth and strategic acquisitions. By adopting a methodical and innovative approach, the Company is poised to lead the transition to a sustainable energy future.								
6.		**Performance of the entity against the specific commitments, goals and targets along-with reasons in case the same are not met.**	In order to become Net Zero by 2050, the organization has set Targets for Environment Sustainability through its 'TEN Commitments' which is available on the website. More specific and quantified targets for the Environment Sustainability are provided in the Annual Integrated Report of the Organisation under the Sustainability reporting. The FY 2020 baseline and FY 2024 performance can be seen in the table provided in the Integrated Report Sustainability report section.								

Disclosure Questions	P 1	P 2	P 3	P 4	P 5	P 6	P 7	P 8	P 9
Governance Leadership and Oversight									
7. Statement by director responsible for the business responsibility report, highlighting ESG related challenges, targets and achievements (listed entity has flexibility regarding the placement of this disclosure)	Refer to Message from Chairman and Managing Director on Page number 32								
8. Details of the highest authority responsible for implementation and oversight of the Business Responsibility policy (ies).	The Sustainability Committee of the Board is responsible for implementation and oversight of the BR policies.								
9. Does the entity have a specified Committee of the Board / Director responsible for decision making on sustainability related issues? (Yes / No). If yes, provide details.	Yes. The Board Sustainability Committee is responsible for implementation of the Policies. The Committee comprises of three Directors out of which two are Independent Directors and one Executive Director along with four Permanent Invitees. The broad terms of reference of the Sustainability Committee are the adoption of National Guidelines on Responsible Business Conduct (NGRBC) relating to Social Environmental and Economic Responsibilities of Business in business practices of the Company review the progress of initiatives under the purview of business responsibility (sustainability) and to periodically assess the ESG performance of the Company.								

Note 1

Principle-Wise Policies^

P1	P2	P3	P4	P5	P6	P7	P8	P9
Policy on Business Conduct	Policy on Business Conduct	People Policy	Policy on Business Conduct	Human Rights policy	Climate change Policy	Policy on Business Conduct	Policy to Make our World a Better Place	Policy on Business Conduct
Code of conduct for Board & Senior Management	Climate change Policy	Health & Safety Policy	Grievance Redressal Mechanism	Indigenous People and Resettlement Policy	Energy Policy	Policy to Make our World a Better Place	Policy on Social Development	Quality Policy
Code of Practice and Fair Disclosure of unpublished sensitive information	Energy Policy	Policy on Labour Practice & Employment	Policy to Make our World a Better Place	Policy to Make our World a Better Place	Raw Material Conservation Policy		Indigenous People and Resettlement Policy	
Determination of materiality of an Event & Information & Authorized KMP	Raw Material Conservation Policy	Policy on Board Diversity		Policy on DEI (Diversity, Equality & Inclusivity)	Water Resource Management Policy		Cultural Heritage Policy	
Dividend Distribution Policy	Water Resource Management Policy	Remuneration Policy			Waste Water management Policy		Corporate Social responsibility Policy	
Policy for determining material subsidiaries	Waste Water management Policy	Policy to Make our World a Better Place			Waste management Policy			
Archival Policy for preservation of documents	Waste management Policy				Air Emissions management Policy			
Policy on related party transactions	Air Emissions management Policy				Biodiversity Policy			
Remuneration Policy	Biodiversity Policy				Local Considerations Policy			
Whistle-blower Policy & Vigil mechanism	Local Considerations Policy				Policy to Make our World a Better Place			
Terms & Conditions for the appointment of Independent Director	Policy to Make our World a Better Place							
Policy to Make our World a Better Place								

Disclosure Questions	P 1	P 2	P 3	P 4	P 5	P 6	P 7	P 8	P 9
Policy and management processes									
10. Details of Review of NGRBCs by the Company:									

Subject for Review	Indicate whether review was undertaken by Director / Committee of the Board / Any other Committee									Frequency (Annually / Half - yearly / Quarterly / Any other – please specify)								
	P 1	P 2	P 3	P 4	P 5	P 6	P 7	P 8	P 9	P 1	P 2	P 3	P 4	P 5	P 6	P 7	P 8	P 9
Performance against above policies and follow up action	The board level sustainability committee meets twice in a year to discuss the progress against sustainability parameters of the Company and review the polices. During this assessment, the efficacy of the policies is reviewed and necessary changes to policies and procedures are implemented. The board guide actions to be taken and reviews the progress against each parameter in the next meeting.									Half yearly								
Compliance with statutory requirements of relevance to the principles, and, rectification of any non-compliances	The company complies with all statutory requirements of relevance to the principles periodically																	

11. Has the entity carried out independent assessment / evaluation of the working of its policies by an external agency? (Yes / No). If yes, provide the name of the agency.	P 1	P 2	P 3	P 4	P 5	P 6	P 7	P 8	P 9
	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	The processes and compliances are subject to scrutiny by internal auditors and regulatory bodies, as applicable. From both best practices and risk management perspectives, policies are periodically evaluated and updated by various department heads and business leaders, and subsequently approved by the management board. An internal assessment of the implementation of the Business Responsibility (BR) policies has also been conducted.								

12. If answer to question (1) above is "No" i.e. not all Principles are covered by a policy, reasons to be stated:

Questions	P 1	P 2	P 3	P 4	P 5	P 6	P 7	P 8	P 9
The entity does not consider the principles material to its business (Yes / No)	Not Applicable								
The entity is not at a stage where it is in a position to formulate and implement the policies on specified principles (Yes / No)									
The entity does not have the financial or / human and technical resources available for the task (Yes / No)									
It is planned to be done in the next financial year (Yes / No)									
Any other reason (please specify)									

SECTION C – PRINCIPLE WISE PERFORMANCE DISCLOSURE

This section is aimed at helping entities demonstrate their performance in integrating the Principles and Core Elements with key processes and decisions. The information sought is categorized as "Essential" and "Leadership". While the essential indicators are expected to be disclosed by every entity that is mandated to file this report, the leadership indicators may be voluntarily disclosed by entities which aspire to progress to a higher level in their quest to be socially, environmentally and ethically responsible

Principle 1 – Businesses should conduct and govern themselves with integrity, and in a manner that is ethical, transparent, and accountable.

Essential Indicators

1. Percentage coverage by training and awareness programmes on any of the principles during the financial year:

Segment	Total number of training and awareness programmes held	Topics/principles covered under the training and its impact	% of persons in respective category covered by the awareness programmes
Board of directors	2	The Committee Meetings address a range of topics including all BRSR principles: climate change, biodiversity, water management, sustainability KPIs, global sustainability trends, industry best practices, external ratings and disclosures, stakeholder engagement, materiality, and climate change risks and opportunities.	100%
Key managerial personnel	4	1. JSW VALUES E-Learning Module - Mandatory Module 2. Connecting the Human Chain to Solve Problems 3. Expert Insights on Problem Solving 4. Expertise: The Enemy of Innovation 5. Formulating Problems Effectively to Get Organizational Buy-In 6. Innovation: Spend More Time Defining the Problem (and Much Less on the Solution) 7. Managing Problems Using the Optimal Challenge 8. Problem-led Leadership 9. Situations vs. Problems 10. Strategic Thinker Traits **Impact:** Established a common understanding of values and their significance to both the business and its employees, clarifying the meaning and implications of each value. Highlighted behaviour's that exemplify each value in practice and emphasized the importance of each value to the organization and its staff. Increased awareness on critical thinking and better decision making through innovations and thinking out of the box.	100%
Employees other than BoD and KMPs	2496	Business Communication Project Management Productivity Tools Business Acumen Innovation & Creativity Performance Appraisals and feedback Training on Crucial Conversation – Conducted training on crucial conversation as per the Inputs from the GPTW 2022 Survey across 7 locations for 182 people managers. Project management Kuther Excel & Financial modelling for Corporate employees Self-excellence workshop at AJL in coordination with Group Pre-retirement workshop Sholtu & Virtual session. SAP 3 Sessions on Ariba, FICO, Dataguru Automate Power Systems via etap. Training on Bio Gas & CNG: a business Case Battery and Battery Energy Storage Systems. Introduction to Glass Fiber Composites and Wind turbine blades Financial Literacy Session by Be.Artsy Be your Own Lakshmi Session by Be.Artsy	94.8%
Workers	2,013	Safety Trainings Topics Covered Stop the Pandemic Work Environment Electrical Safety Conveyor Safety Confined Space Entry PPE Fire Fighting training Road Safety Lifting tools & tackles **Impact:** Fire and Safety Workplace safety training provided workers with the skills and knowledge they need to do their jobs safely. It informed them of the risks and hazards associated with different work activities. It also taught them how to detect, report, and tackle workplace safety incidents.	100%

2. **Details of fines / penalties / punishment / award / compounding fees / settlement amount paid in proceedings (by the entity or by directors / KMPs) with regulators / law enforcement agencies / judicial institutions, in the financial year, in the following format (Note: the entity shall make disclosures on the basis of materiality as specified in Regulation 30 of SEBI (Listing Obligations and Disclosure Obligations) Regulations, 2015 and as disclosed on the entity's website):**

Monetary					
	NGRBC Principle	Name of the regulatory / enforcement agency / judicial institutions	Amount (In INR)	Brief of the Case	Has an appeal been preferred? (Yes/No)
Penalty/ Fine	Principle 1 to 9	NA	0	NA	NA
Settlement	Principle 1 to 9	NA	0	NA	NA
Compounding fee	Principle 1 to 9	NA	0	NA	NA

Non-Monetary				
	NGRBC Principle	Name of the regulatory / enforcement agency / judicial institutions	Brief of the Case	Has an appeal been preferred? (Yes/No)
Imprisonment	Principle 1 to 9	NA	NA	NA
Punishment	Principle 1 to 9	NA	NA	NA

3. **Of the instances disclosed in Question 2 above, details of the Appeal / Revision are preferred in cases where monetary or non-monetary action has been appealed.**

Case Details	Name of the regulatory/ enforcement agencies / judicial institutions
Not Applicable	Not Applicable

4. **Does the entity have an anti-corruption or anti-bribery policy? If yes, provide details in brief and if available, provide a web link to the policy.**

Yes, JSW Energy has a board-approved Policy on Business Conduct that includes anti-corruption and anti-bribery practices. The Company mandates that all employees adhere to the policy's principles, fulfilling their responsibilities with good faith, discretion, and care, and upholding the highest standards of honesty, integrity, and fairness. This policy aims to establish the highest standards of business ethics.

As part of this commitment, JSW Energy implements stringent anti-corruption measures to monitor and prevent unethical behavior. To ensure ethical practices across the value chain, the Company has also established a Code of Conduct for suppliers and business partners, outlining the fundamental standards for ethical corporate behavior. The Policy strictly prohibits the use of bribery or any other unfair advantages, directly or indirectly, to secure or offer benefits, and forbids any promises to engage in such practices.

The policy is available on: https://www.jsw.in/sites/default/files/assets/downloads/energy/Corporate%20Governance%20and%20Regulatory%20Information/Sustainability_Policies/JSWEL_Policy_on_Business_Conduct-v2.pdf (Refer Page no.6 of the Policy)

5. **Number of Directors / KMPs / employees / workers against whom disciplinary action was taken by any law enforcement agency for the charges of bribery / corruption.**

	FY 2023-24 Current Financial Year	FY 2022-23 Previous Financial Year
Directors	0	0
KMPs	0	0
Employees	0	0
Workers	0	0

6. Details of complaints with regard to conflict of interest:

	FY 2023-24 Current Financial Year		FY 2022-23 Previous Financial Year	
	Number	Remarks	Number	Remarks
Number of complaints received in relation to issues of Conflict of Interest of the Directors	0	NA	0	NA
Number of complaints received in relation to issues of Conflict of Interest of the KMPs	0	NA	0	NA

7. Provide details of any corrective action taken or underway on issues related to fines / penalties / action taken by regulators / law enforcement agencies / judicial institutions, on cases of corruption and conflicts of interest.

Not Applicable

8. Number of days of accounts payables ((Accounts payable *365) / Cost of goods/services procured) in the following format:

	FY 2023-24 Current Financial Year	FY 2022-23 Previous Financial Year
Number of days of accounts payables	94	74

9. Openness of business

Provide details of concentration of purchases and sales with trading houses, dealers, and related parties along-with loans and advances & investments, with related parties, in the following format:

Parameter	Metrics	FY 2023-24 Current Financial Year	FY 2022-23 Previous Financial Year
Concentration of Purchases			
a.	Purchases from trading houses as % of total purchases	90% (For Coal Purchase)	100% (For Coal Purchase)
		7.5% (for other material)	7.8% (for other material)
b.	Number of trading houses where purchases are made from	330	310
c.	Purchases from top 10 trading houses as % of total purchases from trading houses*	100%	94.14%
Concentration of Sales			
a.	Sales to dealers / distributors as % of total sales	NA	NA
b.	Number of dealers / distributors to whom sales are made	NA	NA
c.	Sales to top 10 dealers / distributors as % of total sales to dealers / distributors	NA	NA
Share of RPTs in			
a.	Purchases (Purchases with related parties / Total Purchases)	17% (for coal Purchase)	20% (for Coal Purchase)
b.	Sales (Sales to related parties / Total Sales)	15%	35%
c.	Loans & advances (Loans & advances given to related parties / Total loans & advances)	100%	100%
d.	Investments (Investments in related parties / Total Investments made)	84%	81%

* Purchases from 10 trading houses as a Percentage of purchases of all coal trading houses.

Leadership Indicators

1. Awareness programmes conducted for value chain partners on any of the Principles during the financial year:

Total number of awareness programmes held	Topics / principles covered under the training	%age of value chain partners covered (by value of business done with such partners) under the awareness programmes
8	**Topic 1: Environment Awareness** **Impact:** To ensure our customer is aware & sensitive to the environment sustainability opportunities & Risks arising because of the climate change scenarios and is able to understand and support the climate change initiatives. **Topic 2: Plastic Pollution** **Impact:** Created awareness about harmful effect of plastic pollution on environment and emphasis on single use plastic / No Plastic. **Topic 3: Worker Safety** **Impact:** To ensure that the value chain partners are aware of the Risks & Hazards that arise due to the various business activities and they are able to identify and employ adequate safety measures for their workers **Topic 4: Human Rights Training** **Impact:** Training imparted to communities, associates, contractors to create awareness about their inherent rights like right to life, the right to a fair trial, freedom from torture and other cruel and inhuman treatment, freedom of speech, freedom of religion, and the rights to health, education and an adequate standard of living. **Topic 5: Critical People policies Impact** **Impact:** Builds a team that is effective efficient and well motivating thereby enhancing the confidence and self-esteem of employees **Topic 6: Nature based solution training** **Impact:** Training like Honeybee keeping, Organic farming, Integrated farming created awareness amongst communities on how to manage the natural resources sustainably and also created source of income for vulnerable and marginalized group. **Topic 7: Water conservation Awareness Programme** **Impact:** The programme created awareness about various technique to use water optimally and how to conserve water during water stress situation. **Topic 8: Road Safety Awarness Programme** **Impact:** Awarness prograame on Road Safety held for Communites, created awareness on taking Safety measures and preventive actions to be taken care .	72.00%

2. Does the entity have processes in place to avoid / manage conflict of interests involving members of the Board? (Yes / No) If Yes, provide details of the same.

Yes. JSW Energy has a robust Policy on Business Conduct in place. The Policy covers Code of Conduct, conflict of Interest, Amendments, Affirmationa and No Rights created. The Company ensures that all its board members and senior management adhere to the code of conduct to avoid situations of conflict of interest. The Company also periodically carries out assessments to map potential instances of conflicts of interests. It consults with both internal and external stakeholder groups to make sure this assessment process is robust.

Based on the results of this assessment process, the company will:

- Designed to boost its business practises to remove any perceived threat of a possible conflict of interest occurring.
- Monitor And evaluate and reaffirm the eficacy of both its external redressal system and accompanying internal systems, which can be used to highlight, investigate, and address any potential or actual conflicts of interest.
- Provide the Board and employees with the necessary training regarding how to handle conflicts of interest.

The company has a policy of Code of conduct for the Board Members & senior Management which caters to the above requirement of avoiding / managing the conflict of interests involving the Board members. Please refer Page no. 3 of policy https://www.jsw.in/sites/default/files/assets//downloads/energy/Corporate%20Governance%20and%20Regulatory%20Information/Policies/2.%20Code%20of%20Conduct%20for%20Board%20&%20Senior%20Management.pdf

Principle 2 – Businesses should provide goods and services in a manner that is sustainable and safe.

Essential Indicators

1. **Percentage of R&D and capital expenditure (CAPEX) investments in specific technologies to improve product and processes' environmental and social impacts to total R&D and capex investments made by the entity, respectively.**

	FY 2023-24 Current Financial Year	FY 2022-23 Previous Financial Year	Details of improvements in environmental and social impacts
R&D	0%	0%	Not Applicable
Capex	15.51%	26.55%	Lower GHG, Lower PM, Health and Safety, Creating more livelihood Opportunities. Majority of the Capex in FY 2024 has been used for the procurement and construction of the Renewable projects (wind, solar, hydro). The renewable projects shall result in clean power without any GHG and PM pollution. It also creates a lot of livelihood for locals

2. a. **Does the entity have procedures in place for sustainable sourcing? (Yes / No) -** Yes

   b. **If yes, what percentage of inputs were sourced sustainably?**

   100% (All our registered vendors and suppliers adhere to the Supplier Code of Conduct)

3. **Describe the processes in place to safely reclaim your products for reusing, recycling, and disposing at the end of life, for (a) Plastics (including packaging) (b) E-waste (c) Hazardous waste and (d) other waste.**

   Not Applicable owing to the nature of business.

4. **Whether Extended Producer Responsibility (EPR) is applicable to the entity's activities (Yes / No). If yes, whether the waste collection plan is in line with the EPR plan submitted to Pollution Control Boards?**

   Not Applicable owing to the nature of business.

Leadership Indicators

1. **Has the entity conducted Life Cycle Perspective / Assessments (LCA) for any of its products (for manufacturing industry) or for its services (for service industry)? If yes, provide details in the following format?**

NIC Code	Name of Product / Service	% of total Turnover contributed	Boundary for which the Life Cycle Perspective / Assessment was conducted	Whether conducted by independent external agency (Yes / No)	Results communicated in public domain (Yes / No) If yes, provide the web-link
351	Electricity Generation*	-	-	-	-

* No LCA was carried out in the FY 2024

2. **If there are any significant social or environmental concerns and/or risks arising from production or disposal of your products / services, as identified in the Life Cycle Perspective / Assessments (LCA) or through any other means, briefly describe the same along-with action taken to mitigate the same.**

Name of Product / Service	Description of the risk / concern	Action Taken
Not Applicable		

3. **Percentage of recycled or reused input material to total material (by value) used in production (for manufacturing industry) or providing services (for service industry).**

Indicate input material	FY 2023-24 Current Financial Year	FY 2022-23 Previous Financial Year
Water	19.69%	23.46%
Fly Ash	100.00%	100.00%
Waste Gases	8.81%	7.00%

4. **Of the products and packaging reclaimed at end of life of products, amount (in metric tonnes) reused, recycled, and safely disposed, as per the following format:**

   Not Applicable owing to the nature of business.

5. **Reclaimed products and their packaging materials (as percentage of products sold) for each product category.**

Indicate product category	Reclaimed products and their packaging materials as % of total products sold in respective category
Not Applicable owing to the nature of business	

Principle 3: Businesses should respect and promote the well-being of all employees, including those in their value chains

Essential Indicators

1. a. **Details of measures for the well-being of employees.**

Category	% of employees covered by										
	Total (A)	Health insurance		Accident insurance		Maternity benefits		Paternity benefits		Day care facilities	
		Number (B)	% (B / A)	Number (C)	% (C / A)	Number (D)	% (D / A)	Number (E)	% (E / A)	Number (F)	% (F / A)
Permanent employees											
Male	2,376	2,376	100%	2,376	100%	NA	NA	2,376	100%	2,376	100%
Female	124	124	100%	124	100%	124	100%	-	-	124	100%
Total	**2,500**	**2,500**	**100%**	**2,500**	**100%**	**124**	**100%**	**2,376**	**100%**	**2,500**	**100%**
Other than Permanent employees											
Male	-	-	-	-	-	-	-	-	-	-	-
Female	-	-	-	-	-	-	-	-	-	-	-
Total	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

b. **Details of measures for the well-being of workers:**

Category	% of workers covered by										
	Total (A)	Health insurance		Accident insurance		Maternity benefits		Paternity benefits		Day care facilities	
		Number (B)	% (B / A)	Number (C)	% (C / A)	Number (D)	% (D / A)	Number (E)	% (E / A)	Number (F)	% (F / A)
Permanent workers											
Male	-	-	-	-	-	-	-	-	-	-	-
Female	-	-	-	-	-	-	-	-	-	-	-
Total	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Other than Permanent workers											
Male	5,299	5,299	100%	5,299	100%	-	-	5,299	100%	5,299	100%
Female	172	172	100%	172	100%	172	100%	-	-	172	100%
Total	**5,471**	**5,471**	**100%**	**5,471**	**100%**	**172**	**3.14%**	**5,299**	**96.85%**	**5,471**	**100%**

c. **Spending on measures towards well-being of employees and workers (including permanent and other than permanent) in the following format –**

	FY 2023-24 Current Financial Year	FY 2022-23 Previous Financial Year
Cost incurred on well-being measures as a % of total revenue of the company	0.1%	0.07%

2. **Details of retirement benefits.**

Benefits	FY 2023-24 Current Financial Year			FY 2022-23 Previous Financial Year		
	No. of employees covered as a % of total employees	No. of workers covered as a % of total workers	Deducted and deposited with the authority (Y/N/N.A.)	No. of employees covered as a % of total employees	No. of workers covered as a % of total workers	Deducted and deposited with the authority (Y/N/N.A.)
PF	100%	100%	Y	100%	100%	Y
Gratuity	100%	100%	Y	100%	100%	Y
ESI	NA	NA	NA	NA	NA	NA
Others – please specify	- One time relocation allowance at the time of retirement - Post retirement Medical Insurance coverage for employee & spouse up to the age of 75 years at a concessional rate					

3. Accessibility of workplaces

Are the premises / offices of the entity accessible to differently abled employees and workers, as per the requirements of the Rights of Persons with Disabilities Act, 2016? If not, whether any steps are being taken by the entity in this regard.

Yes, All premises / offices are accessible to differently abled employees and workers.

4. Does the entity have an equal opportunity policy as per the Rights of Persons with Disabilities Act, 2016? If so, provide a web link to the policy.

Yes, JSW Energy is dedicated to upholding human rights and fostering an inclusive culture that embraces diversity. The Company's commitment to non-discrimination is reflected in its policy that ensures equal opportunities for everyone, regardless of religion, gender, caste, or disabilities. Through its Human Rights Policy, JSW Energy aims to safeguard human rights and strengthen a culture of inclusivity and equality within the organization. The policy can be viewed at:

https://www.jsw.in/sites/default/files/assets//downloads/energy/Corporate%20Governance%20and%20Regulatory%20Information/Sustainability_Policies/JSWEL-DEI-Policy-v2.pdf

The Company also upholds a Policy on Labour Practices and Employment Rights, affirming its commitment to being an equal opportunity employer. This policy ensures that all employees are treated with respect and dignity, and are evaluated solely on their performance, regardless of race, religion, caste, gender, age, disability, or any other characteristic. The policy is available at:

https://www.jsw.in/sites/default/files/assets//downloads/energy/Corporate%20Governance%20and%20Regulatory%20Information/Sustainability_Policies/JSWEL_Policy_on_Labour_Practices_and_Employment_Rights.pdf

5. Return to work and Retention rates of permanent employees and workers that took parental leave.

Gender	Permanent employees		Permanent workers	
	Return to work rate	Retention rate	Return to work rate	Retention rate
Male	100%	100%	NA	NA
Female	100%	100%	NA	NA
Total	**100%**	**100%**	**NA**	**NA**

6. Is there a mechanism available to receive and redress grievances for the following categories of employees and workers? If yes, give details of the mechanism in brief.

	(Yes/No)	(If Yes, then give details of the mechanism in brief)
Permanent workers	-	NA
Other than permanent workers	Yes	All HR & Business Leads have set grievance handling mechanism
Permanent employees	Yes	All HR & Business Leads have set grievance handling mechanism
Other than permanent employees	-	NA

7. Membership of employees and workers in association(s) or Unions recognized by the listed entity:

Category	FY 2023-24 Current Financial Year			FY 2022-23 Previous Financial Year		
	Total employees / workers in respective category (A)	No. of employees / workers in the respective category, who are part of the association(s) or Union (B)	% (B / A)	Total employees / workers in the respective category (C)	No. of employees / workers in the respective category, who are part of the association(s) or Union (D)	% (D / C)
Total permanent employees	2,500	957	38.28%	2,340	983	42.01%
Male	2,376	921	38.76%	2,220	947	42.66%
Female	124	36	29.03%	120	36	30.00%
Total permanent workers	-	-	-	-	-	-
Male	-	-	-	-	-	-
Female	-	-	-	-	-	-

8. **Details of training given to employees and workers:**

Category	FY 2023-24 Current Financial Year					FY 2022-23 Previous Financial Year				
	Total (A)	On health and safety measures		On skill upgradation		Total (D)	On health and safety measures		On skill upgradation	
		No. (B)	% (B / A)	No. (C)	% (C / A)		No. (E)	% (E / D)	No.(F)	% (F / D)
Employees										
Male	2,376	2,376	100%	1,859	78.24%	2,206	2,206	100%	1,299	58.88%
Female	124	124	100%	124	100.0%	104	104	100%	74	71.15%
Total	**2,500**	**2,500**	**100%**	**1,983**	**79.32%**	**2,310**	**2,310**	**100%**	**1,373**	**59.44%**
Workers										
Male	5,299	5,299	100%	383	7.22%	2,220	2,220	100%	-	-
Female	172	172	100%	15	8.7%	120	120	100%	-	-
Total	**5,471**	**5,471**	100%	**398**	**7.27%**	**2,340**	**2,340**	**100%**	**-**	**-**

9. **Details of performance and career development reviews of employees and workers:**

Category	FY 2023-24 Current Financial Year			FY 2022-23 Previous Financial Year		
	Total (A)	No. (B)	% (B / A)	Total (C)	No. (D)	% (D / C)
Employees						
Male	2,376	2,376	100%	**2,206**	**2,206**	**100%**
Female	124	124	100%	**104**	**104**	**100%**
Total	**2,500**	**2,500**	**100%**	**2,310**	**2,310**	**100%**
Workers						
Male	-		-	-	-	-
Female	-		-	-	-	-
Total	**-**		**-**	**-**	**-**	**-**

10. **Health and safety management system:**

a. **Whether an occupational health and safety management system has been implemented by the entity? (Yes / No). If yes, what is the coverage of such a system?**

Yes, the JSW Group's occupational health and safety management system is aligned with ISO 45001:2018 standards applicable to all the operations of the Company. Committed to prevent all injuries and work-related illnesses, the Group integrates health and safety as a core aspect of its operations, promoting a "Zero Harm" culture. Aspiring to exceed statutory health and safety requirements, the Group sets the highest standards and provides comprehensive training to employees, associates, contractors, and suppliers for safe working practices.

The system facilitates risk assessment and implements controls for health and safety hazards in operations and activities. Regular assurance programs are conducted, with timely actions taken to address identified issues. The system ensures prompt incident reporting, thorough root cause investigations, and the dissemination of lessons learned across all Group companies.

b. **What are the processes used to identify work-related hazards and assess risks on a routine and non-routine basis by the entity?**

A well-defined safety observation system, hazard Identification and risk assessment procedures are in place. Some of them are enlisted below:

1) Hazard Identification & Risk Assessment. (HIRA)
2) Barrier Health Management (BHM)
3) Quantitative Risk Assessment (QRA)
4) ob Safety Analysis (JSA)
5) HAZOP
6) Safety Inspections
7) Safety Audits – Internal & External
8) Safety Observation System

Safety is reviewed by the Board as an important part of the Operations review every quarter. The safety performance with all locations is reviewed on a monthly basis by the Corporate Safety team.

c. Whether you have processes for workers to report the work-related hazards and to remove themselves from such risks.

Yes, As part of its safety initiative, JSW requires all employees, business associates, and contractors to follow the "10 JSW CRITICAL SAFETY RULES" to reduce injuries and illnesses. These rules encourage safety discussions and improvements.

The company employs a software system for logging safety observations, where employees report unsafe acts, conditions, near-misses, hazards, injuries, and accidents monthly. These reports trigger alerts for mitigation, monitored weekly by the safety team and reviewed in monthly safety meetings. JSW expects all management levels and employees to proactively address hazards and halt unsafe work. The Safety Observation (SO) program engages the workforce, with leadership mandated to conduct shop floor walkthroughs. High-risk operations are improved using Risk Rating methods, brainstorming teams, new technologies, safety barriers, and administrative controls. Each major plant has enhanced at least 20 high-risk systems through the Barrier Health Management system.

d. Do the employees/ workers of the entity have access to non-occupational medical and healthcare services?

Yes, Jindal Sanjivani hospital (JSH) is available at most of the locations where the worker has access to all available medical healthcare services. In locations where JSH is not there, the organization usually has tie-ups with local hospitals for healthcare.

11. Details of safety related incidents, in the following format:

Safety incident/number (All operational plants)	Category	FY 2023-24 Current Financial Year	FY 2022-23 Previous Financial Year
Lost Time Injury Frequency Rate (LTIFR) (per one-million-person hour worked)*	Employees	0	0
	Workers	0.15	0
Total recordable work-related injuries	Employees	0	0
	Workers	22	0
No. of fatalities	Employees	0	0
	Workers	1	0
High consequence work-related injury or ill-health (excluding fatalities)	Employees	0	0
	Workers	1	0

12. Describe the measures taken by the entity to ensure a safe and healthy workplace.

The company prioritizes a safe and healthy workplace for all employees, workers, and third-party stakeholders. In FY 2024, major plants identified 21 to 25 high-risk scenarios through the Barrier Health Management tool, mitigating these risks with new safety systems to reduce their rating to below 5.

Across all plants, employees reported and corrected over 98,000 unsafe acts and conditions, preventing potential injuries and accidents. For wind turbine projects, GWO and BBS training were completed for 116 employees and 211 workers. Additionally, 60 JSW Mytrah team members received safety training in Telangana, Rajasthan, AP, Maharashtra, and Karnataka.

The JSW CARES program evaluated 63 contractors, with 32 (51%) achieving a 5-star rating and 54 (85%) achieving at least a 3-star rating.

Some of the other measures taken at the plants are as below:
OHS Policy OHS Induction & OHS Trainings

- Motivational Programs
- Standard Operating Procedure
- OHS Committees
- Mass Safety Tool Box Talks
- Permit to Work
- LOTO (Lock out Tag out)
- Confined Space Entry
- QRA (Quantitative Risk Assessment)
- Manual Material Handling Assessment
- Industrial Hygiene Survey
- OHS Inspections
- Barrier Health Management
- Safety Kaizen
- Hazardous Area Classification
- Gas Monitoring
- Near Miss Reporting System
- Incident Investigation System
- Contract Safety Management
- Road Safety
- Visual Display Management
- Electrical Safety
- Tools, tackles & equipment's inspection
- Portable tools inspection

13. Number of complaints on the following made by employees and workers

	FY 2023-24 Current Financial Year			FY 2022-23 Previous Financial Year		
	Filed during the year	Pending resolution at the end of year	Remarks	Filed during the year	Pending resolution at the end of year	Remarks
Working conditions	0	0	NA	0	0	NA
Health & safety	0	0	NA	0	0	NA

14. Assessments for the year

	% of your plants and offices that were assessed (by entity or statutory authorities or third parties)
Health and safety practices	100% of plants and offices were assessed by entity through third parties.
Working conditions	

15. Provide details of any corrective action taken or underway to address safety-related incidents (if any) and on significant risks / concerns arising from assessments of health & safety practices and working conditions.

Based on the incident reports and Root Cause Analysis (RCA) at various operational plants and under-construction projects of JSW Energy Ltd, the following major Corrective and Preventive Actions (CAPA) have been implemented across all plants & project locations -

- Alongwith the Safety induction training, all workers in solar plants shall be given an additional electrical Safety training including the do's & dont's before they can work inside the plant.
- Refresher PTW training to be provided to JSW Energy and Contractor teams, explaining the critical skill of Risk Identification and mitigation strategies
- Risk Assessment of lightening arrestors (LA) in the Solar plants to be done and based on the assessments the CAPA shall be completed.

- No worker to be deployed inside the plant without a competency & skill assessment.
- At all solar plants, no PTW to be authorised without additional approval by JSW Site incharge / Authorised JSW team member apart from the C Licence Holder.
- Pre-Startup Risk Assessment and Checklist to be completed before use of all critical equipments & machinery
- Regular TBT before start of jobs
- Monthly Mock drills for high risk situations
- Utilising LOTO safety system for all Electrical related jobs
- Safety Observation system being followed at all locations
- Special trainings like GWO (Global Wind Organisation) trainings at all WTG locations
- Emergency Response training & mock drills
- BHM High Risk mitigation initiatives
- Contractor Safety Management (CSM) through PQA improvement and JSW CARES assessment

The safety department at all locations continuously monitors the implementations of the safety systems & procedures by different project departments and every month conducts a Reward and Recognition program for employees and associates for reporting the safety observations, nearmiss and potential hazards. The leadership team gives away the awards and urges & motivates all to continue working safely and reporting the unsafe leading to 'Zero Harm'.

Leadership Indicators

1. **Does the entity extend any life insurance or any compensatory package in the event of death of:**

   (A) Employees (Y / N): Yes

   (B) Workers (Y / N): Yes

2. **Provide the measures undertaken by the entity to ensure that statutory dues have been deducted and deposited by the value chain partners.**

   The Company is compliant to statutory dues of employees towards income tax, provident fund, professional tax, ESIC etc. as applicable from time to time The other value chain partners (vendors) are equally responsible to comply as per the contract.

3. **Provide the number of employees / workers having suffered high consequence work- related injury / ill-health / fatalities (as reported in Q11 of Essential Indicators above), who have been rehabilitated and placed in suitable employment or whose family members have been placed in suitable employment:**

	Total no. of affected employees / workers		No. of employees / workers that are rehabilitated and placed in suitable employment or whose family members have been placed in suitable employment	
	FY 2023-24 Current Financial Year	FY 2022-23 Previous Financial Year	FY 2023-24 Current Financial Year	FY 2022-23 Previous Financial Year
Employees	0	0	0	0
Workers	1	0	1	0

4. **Does the entity provide transition assistance programs to facilitate continued employability and the management of career endings resulting from retirement or termination of employment? (Yes / No)**

   Yes. The Company's people management philosophy is to empower employees through holistic growth initiatives. It emphasizes continuous learning and staying updated with the latest technologies and processes. The JSW Learning Academy provides an online platform for diverse training and education, helping employees develop soft skills and acquire specialized skills for job rotation, enhancing employability and cross-functional work. JSW Energy ensures employees stay informed about the latest tools and technologies, boosting productivity. Additionally, separated employees receive employment counselling, while retired employees can seek guidance on new roles, leveraging their experience along with monetary benefits.

5. **Details on assessment of value chain partner:**

Details on assessment of value chain partners:	% of value chain partners (by value of business done with such partners) that were assessed
Health and safety practices	10% (based on the value of business done with them)
Working Conditions	

6. **Provide details of any corrective actions taken or underway to address significant risks / concerns arising from assessments of health and safety practices and working conditions of value chain partners.**

Safety Improvements opportunities were listed and given to value chain partner for implementation at their manufacturing unit. Additionally periodic safety assessments are done with our Fabricators, at various other locations eg. Baramati, Chakan and Ingole in Maharshtra, Nellore in AP and Trichy in TN. Here the JSW Team does regular Safety Pep Talks, Tool Box Talks (TBT) with vendor teams.

All contractors & value chain partners, working in the premises of JSW Energy are sufficiently trained on safety practices and systems, inline with JSW Energy safety systems, so that there are no safety violations from their end. This practice enables the value-chain partner to enhance his safety systems, practices and training parameters. Also, JSW Contractor Assessment and Rating for Excellence in Safety (CARES) assessment for contractors working within the plant premises helps to identify gaps in their safety systems and guides them to improve safety. This further improves their Star ranking amongst all the contractors, highest being 5 STAR. The 5 STAR rated contractor becomes a preferred contractor across JSW Group.

Principle 4: Businesses should respect the interests of and be responsive to all its stakeholders

Essential Indicators

1. **Describe the processes for identifying key stakeholder groups of the entity.**

Key stakeholders form an important group and play an important role to maintain sustainable operations of the organization. JSW Energy maintains a dynamic and strategic stakeholder engagement process where it identifies key stakeholder groups from the larger universe of all possible stakeholders. This is done after considering the material influence each group has on the Company's ability to create value (and vice-versa). Through this mechanism, the Company has currently identified seven internal and external stakeholder groups: Employees, Government and Regulatory Authorities, Customers, Communities and Civil Society / NGOs, Suppliers, Institutions, Investors.

2. **List stakeholder groups identified as key for your entity and the frequency of engagement with each stakeholder group.**

Stakeholder Group	Whether identified as Vulnerable & Marginalized Group (Yes / No)	Channels of communication (Email, SMS, Newspaper, Pamphlets, Advertisement, Community Meetings, Notice Board, Website), Other	Frequency of engagement (Annually/ Half yearly/ Quarterly / others – please specify)	Purpose and scope of engagement including key topics and concerns raised during such engagement
Customer	No	Customer meets, Official communication channels: Advertisements, publications, website and social media, Conferences events, Phone calls, emails and meetings.	Frequent and as and when required	To acquire new customers and service the existing ones
Employees	No	JSW World – Intranet portal, Newsletters, Employee satisfaction surveys – JSW Voice Pulse Survey, Emails and meetings, Training programs like Springboard, Employee engagement initiatives like WeCare and Samvedna, Performance appraisal, Grievance redressal mechanisms, Notice boards	Intranet – Daily Newsletter – Quarterly Emails – As and when required	To keep employees abreast of key developments happening in the company and also addressing their grievances
Suppliers	No	Vendor assessment and review, Training workshops and seminars, Supplier audits, Official communication channels: Advertisements, publications, website and social media	As and when required	Service existing business

Stakeholder Group	Whether identified as Vulnerable & Marginalized Group (Yes / No)	Channels of communication (Email, SMS, Newspaper, Pamphlets, Advertisement, Community Meetings, Notice Board, Website), Other	Frequency of engagement (Annually/ Half yearly/ Quarterly / others – please specify)	Purpose and scope of engagement including key topics and concerns raised during such engagement
Investors/ Shareholders	No	Analyst meets and conference calls, Annual General Meeting, Official communication channels: Advertisements, publications, website and social media, Investor meetings and roadshows	Quarterly	To inform on how the company is currently doing and what it plans to do in near term future
Institutions & Industry Bodies	No	Networking through meetings, brainstorming sessions, discussions, etc.	As and when required	Networking so as to be abreast of new opportunities in sector and drive change
Governments & Regulatory Authorities	No	Advertisements, publications, website and social media, Phone calls, emails and meetings, Regulatory audits/ inspections	As and when required	Discussions with regard to various regulations, amendments, inspections, approvals and assessments.
Communities & Civil Society/NGOs	No	Need assessment, Meetings and briefings, Partnerships in community development projects, Training and workshops, Impact assessment surveys, Official communication channels: Advertisements, publications, website and social media, Complaints and grievance mechanism	Frequent and as when required	Support CSR projects

Leadership Indicators

1. **Provide the processes for consultation between stakeholders and the board on economic, environmental, and social topics or if consultation is delegated, how is feedback from such consultations provided to the board.**

   JSW Energy's stakeholder engagement strategy involving interactions, which is integrated into the company's medium- and long-term planning. This approach promotes shared growth and a prosperous future for society. Formal mechanisms are in place to engage key stakeholders constructively and gather valuable feedback, including areas covered by the NGRBC Principles. In FY 2024 the company has conducted a double materiality survey by taking the feedback from the various stakeholders to identify material issues across the ESG, which will be one of the drivers to align the sustainability actions of the organisation to the expectation of the stakeholders.

2. **Whether stakeholder consultation is used to support the identification and management of environmental, and social topics (Yes / No). If so, provide details of instances as to how the inputs received from stakeholders on these topics were incorporated into the policies and activities of the entity.**

   Yes, JSW Energy engages with stakeholders to ensure their expectations are heard and integrated. Through the JSW Foundation, the company drives social development, focusing on poverty eradication, malnutrition, social equality, environmental issues, heritage preservation, and sports training. Collaborations with ESG experts and rating agencies help JSW benchmark best practices and address stakeholder expectations. The Foundation also partners with communities and the government to tackle livelihood challenges, provide skill development, and offer educational support. Continuous stakeholder engagement is vital as JSW navigates the evolving ESG landscape, aiming to build a value-based, empowered society.

3. **Provide details of instances of engagement with, and actions are taken to, address the concerns of vulnerable / marginalised stakeholder groups.**

   The Company is committed to building constructive relationships with all its stakeholders. Engagements with stakeholders are done on diverse issues. Proactive engagement with stakeholders provides the Company us with insights that help to gain information on material issues, shape business strategy and operations, and minimise the risk of reputation. For details, please refer to pages 54 and 55 of the Sustainability Report within the Integrated Annual Report.

Principle 5: Businesses should respect and promote human rights

Essential Indicators

1. Employees and workers who have been provided training on human rights issues and policy(ies) of the entity, in the following format:

Category	FY 2023-24 Current Financial Year			FY 2022-23 Previous Financial Year		
	Total (A)	No. of employees / workers covered (B)	% (B / A)	Total (C)	No. of employees / workers covered (D)	% (D / C)
Permanent	2,500	1,750	70%	2,310	2,310	100.00%
Other than permanent	-		-	-	-	-
Total employees	**2,500**	**1,750**	**70%**	**2,310**	**2,310**	**100.00%**
Workers						
Permanent	-	-	-	-	-	-
Other than permanent	5,471	3,830	70%	2,340	2,340	100.00%
Total workers	**5,471**	**3,830**	**70%**	**2,340**	**2,340**	**100.00%**

2. Details of minimum wages paid to employees and workers, in the following format:

Category	FY 2023-24 Current Financial Year					FY 2022-23 Previous Financial Year				
	Total (A)	Equal to minimum wage		More than minimum wage		Total (D)	Equal to minimum wage		More than minimum wage	
		No. (B)	% (B / A)	No. (C)	% (C / A)		No. (E)	% (E / D)	No. (F)	% (F / D)
Employees										
Permanent	2,500	-	-	2,500	100%	2,310	-	-	2,310	100%
Male	2,376	-	-	2,376	100%	2,206	-	-	2,206	100%
Female	124	-	-	124	100%	104	-	-	104	100%
Other than permanent	-	-	-	-	-	-	-	-	-	-
Male	-	-	-	-	-	-	-	-	-	-
Female	-	-	-	-	-	-	-	-	-	-
Workers										
Permanent	-	-	-	-	-	-	-	-	-	-
Male	-	-	-	-	-	-	-	-	-	-
Female	-	-	-	-	-	-	-	-	-	-
Other than permanent	5,471	-	-	5,471	100%	2,340	-	-	2,340	100%
Male	5,299	-	-	5,299	100%	2,220	-	-	2,220	100%
Female	172	-	-	172	100%	120	-	-	120	100%

3. Details of remuneration/salary/wages*

a. Median remuneration / wages:

	Male		Female	
	Number	Median remuneration / salary / wages of respective category	Number	Median remuneration / salary / wages of respective category
Board of Directors (BoD)	10	36,17,500	1	35,05,000
Key managerial personnel	0	0	1	1,25,89,284
Employees other than BoD and KMP	2,372	8,01,660	123	6,95,796
Workers	0	0	0	0

*Please refer Annexure D of the Board's Report for details on Remuneration

b. Gross wages paid to females as % of total wages paid by the entity, in the following format:

	FY 2023-24 Current Financial Year	FY 2022-23 Previous Financial Year
Gross wages paid to females as % of total wages	4.11%	3.77%

4. **Do you have a focal point (individual / committee) responsible for addressing human rights impacts or issues caused or contributed to by the business? (Yes / No)**

Yes, Human rights is a sensitive issue and JSW Energy has zero tolerance to Human Rights violation. Human Rights is one of the 17 Key Focus areas for the Organisation. For any Human Rights violation, whenever reported, shall be investigated by a special committee nominated for the purpose by the Senior leadership / CEO.

5. **Describe the internal mechanisms in place to redress grievances related to human rights issues.**

The Company prioritizes a robust Grievance Redressal process to address employee concerns swiftly and fairly. It upholds a clear Code of Conduct & Employee Service Rules, defining employee responsibilities and conduct standards. Employees can easily register grievances online via a dedicated portal link or through HR departments. A dedicated High-Level Committee ensures prompt resolution of registered issues. These mechanisms form the bedrock of fostering a diverse and inclusive workplace culture.

6. **Number of complaints on the following made by employees and workers:**

	FY 2023-24 Current Financial Year			FY 2022-23 Previous Financial Year		
	Filed during the year	Pending resolution at the end of year	Remarks	Filed During the year	Pending resolution at the end of year	Remarks
Sexual harassment	NIL	NIL	NA	NIL	NIL	NA
Discrimination at workplace	NIL	NIL	NA	NIL	NIL	NA
Child labour	NIL	NIL	NA	NIL	NIL	NA
Forced labour/Involuntary labour	NIL	NIL	NA	NIL	NIL	NA
Wages	NIL	NIL	NA	NIL	NIL	NA
Other human rights-related issues	NIL	NIL	NA	NIL	NIL	NA

7. **Complaints filed under the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013, in the following format:**

	FY 2023-24 Current Financial Year	FY 2022-23 Previous Financial Year
Total Complaints reported under Sexual Harassment on of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 (POSH)	0	0
Complaints on POSH as a % of female employees / workers	0%	0%
Complaints on POSH upheld	0	0

8. **Mechanisms to prevent adverse consequences to the complainant in discrimination and harassment cases.**

The Company is dedicated to fostering a culture of diversity and inclusion, encouraging employees to bring their authentic selves to work. It promotes equal opportunity for all, regardless of gender, religion, caste, race, age, community, physical ability, or gender orientation, through a non-discriminatory policy framework. Prioritizing a safe and congenial work environment, the Company ensures employees can perform at their best. With a robust Grievance Redressal process and clear Code of Conduct & Employee Service Rules in place, the Company establishes the foundation for a diverse and inclusive workplace culture.

9. **Do human rights requirements form part of your business agreements and contracts? (Yes / No)**

Yes. The business agreements and contracts do include Company's expectations to promote sustainability, fair competition and respect for human rights and all our registered suppliers adhere to our Supplier Code of Conduct which is mentioned in all our contracts wherein Human Rights is one of the key principles of our Supplier Code of Conduct.

10. **Assessments of the year**

	% of your plants and offices that were assessed (by the entity or statutory authorities or third parties)
Child labour	100%
Forced / involuntary labour	100%
Sexual harassment	100%
Discrimination at workplace	100%
Wages	100%
Work hours	100%

11. **Provide details of any corrective actions taken or underway to address significant risks / concerns arising from the assessments at Question 10 above.**

There were no significant risks or concerns immediately raised by the entity (considering Q10). However, a detailed report on the plants assessed is awaited as the draft report is under discussion and finalisation

Leadership Indicators

1. **Details of a business process being modified / introduced as a result of addressing human rights grievances / complaints.**

As the entity has not raised any significant Human Rights issues in the FY 2024 assessment, no business process was modified / introduced due to this. However, Final report is awaited based on which the company shall take a call whether any business process needs modification or not.

2. **Details of the scope and coverage of any Human rights due diligence conducted. -**

The Human Rights due diligence covered the various stakeholders eg. Employees, contractor workers, Senior leadership, nearby community and families of the workers living in near the plant location. The scope of work covered the Policy Commitment, Identification of HR impacts, Preventive and mitigative measures, Tracking & monitoring of HR mitigative actions, Reporting & communication and Remedy & grievance mechanism.

3. **Is the premise / office of the entity accessible to differently abled visitors, as per the requirements of the Rights of Persons with Disabilities Act, 2016?**

Yes, all premises & offices are accessible to differently abled visitors

4. **Details on assessment of value chain partners:**

	% of value chain partners (by value of business done with such partners) that were assessed
Sexual Harassment	100%
Discrimination at workplace	100%
Child Labour	100%
Forced Labour / Involuntary Labour	100%
Wages	100%

5 **Provide details of any corrective actions taken or underway to address significant risks / concerns arising from the assessments at Question 4 above.**

The Corrective Action management plan & its implementation shall follow once the above mentioned value chain assessment is completed.

Principle 6: Businesses should respect and make efforts to protect and restore the environment

Essential Indicators

1. Details of total energy consumption (in Joules or multiples) and energy intensity, in the following format

Parameter	FY 2023-24 Current Financial Year	FY 2022-23 Previous Financial Year
From renewable sources		
Total electricity consumption (A)	179,555.31 GJ	124,444 GJ
Total fuel consumption (B)	249.54 GJ	0 GJ
Energy consumption through other sources (C)	0 GJ	0 GJ
Total energy consumed from renewable sources (A+B+C)	179,804.85 GJ	124,444 GJ
From non-renewable sources		
Total electricity consumption (D)	107,196.56 GJ	5,670,779.08 GJ
Total fuel consumption (E)	127,806,141.69 GJ	88,629,496.61 GJ
Energy consumption through other sources (F)	0 GJ	0 GJ
Total energy consumption (D+E+F)	127,913,338.25 GJ	94,300,275.69 GJ
Total energy consumption (A+B+C+D+E+F)	128,093,143.09 GJ	94,424,719.69 GJ
Energy intensity per rupee of turnover (Total energy consumed / Revenue from operations)	0.001	0.0009
Energy intensity per rupee of turnover adjusted for Purchasing Power Parity (PPP)* (Total energy consumed / Revenue from operations adjusted for PPP)	0.02	0.019
Energy intensity in terms of physical output	4.30 GJ/MWh	4.02 GJ/MWh
Energy intensity (optional) – the relevant metric may be selected by the entity	-	-

* PPP Conversion rate = 22.4 (to be used wherever applicable)

(Source: https://www.imf.org/external/datamapper/PPPEX@WEO/OEMDC/IND)

Note: Indicate if any independent assessment / evaluation/assurance has been carried out by an external agency? (Y / N) If yes, name of the external agency.
Yes, Bureau Veritas (India) Pvt Ltd.

2. Does the entity have any sites/facilities identified as designated consumers (DCs) under the performance, achieve, and trade (PAT) Scheme of the Government of India? (Y/N) If yes, disclose whether targets set under the PAT scheme have been achieved. In case targets have not been achieved, provide the remedial action taken if any.

Yes. JSW Energy (Barmer) Ltd (JSWBL) is a designated consumer (DC) under the PAT scheme of the Government of India. The Company has been successful in achieving PAT cycle 1& 2 targets. Below are the details of PAT Cycle Net Heat Rate (Kcal/Kwh) target & actuals:

Barmer Plant

PAT Cycle	Target	Actual
PAT Cycle-1	3,559	2,986.56
PAT Cycle-2	2,917.4	2,883.69
PAT Cycle-7	2,877.11	Under progress

Vijayanagar Plant

SBU1

PAT Cycle	Target	Actual
PAT Cycle-1	2,503	2,422.74
PAT Cycle-2	2,420	2,417

SBU 2

PAT Cycle	Target	Actual
PAT Cycle-1	2,424	2,413
PAT Cycle-2	2,414.6	2,411.11

Ratnagiri Plant

PAT Cycle	Target	Actual
PAT Cycle-2	2,555	2,539
PAT Cycle-7	2,534	To be audited in FY 2025

3. Provide details of the following disclosures related to water, in the following format:

Parameter	FY 2023-24 Current Financial Year	FY 2022-23 Previous Financial Year
Water withdrawal by source (in kilolitres)		
(i) Surface water	28,178,602.14 Kl	28,827,036 Kl
(ii) Groundwater	*614,920.19 Kl	28,017 Kl
(iii) Third-party water	**43,059.57 Kl	0 Kl
(iv) Seawater / desalinated water	80,971,172 Kl	58,411,696 Kl
(v) Others	0 Kl	0 Kl
Total volume of water withdrawal (in kilolitres) (i + ii + iii + iv + v)	109,807,753.90 Kl	87,266,749 Kl
Total volume of water consumption (in kilolitres)	28,221,446.90 Kl	26,209,609 Kl
Water intensity per rupee of turnover (Total water consumption / Revenue from operations)	0.00024 Kl/₹	0.00024 Kl/₹
Water intensity per rupee of turnover adjusted for Purchasing Power Parity (PPP) (Total water consumption / Revenue from operations adjusted for PPP)	0.0053	0.0054
Water intensity in terms of physical output	0.95 m^3/MWh	1.11 m^3/MWh
Water intensity (optional) – the relevant metric may be selected by the entity	-	-

*Ground water withdrawal increases as number of renewable operations have increased for FY 2024
** Third Party water used in our Renewable plants of JSW Energy acquired RE

Note: Indicate if any independent assessment/ evaluation/assurance has been carried out by an external agency? (Y / N) If yes, name of the external agency.

Yes, Bureau Veritas (India) Pvt Ltd.

4. Provide the following details related to water discharged:

Parameter	FY 2023-24 Current Financial Year	FY 2022-23 Previous Financial Year
Water discharge by destination and level of treatment (in kilolitres)		
(i) To Surface water	481,847 Kl	653,137 Kl
No treatment		
With treatment – please specify level of treatment	Domestic waste water treated in STP and discharged back into the river complying with stipulated environmental standard.	
(ii) To Groundwater	NIL	NIL
No treatment		
With treatment – please specify level of treatment		
(iii) To Seawater	80,995,927 Kl	58,411,696 Kl
No treatment		
With treatment – please specify level of treatment	Seawater is used for cooling purpose and it is brought back to ambient level before it is discharged back	
(iv) Sent to third parties	0 Kl	0 Kl
No treatment		
With treatment – please specify level of treatment		
(v) Others	0 Kl	445,137 Kl
No treatment	0 Kl	0 Kl
With treatment – please specify level of treatment		
Total water discharged (in kilolitres)	**81,477,774.00 Kl**	**59,509,970 Kl**

Note: Indicate if any independent assessment/ evaluation/assurance has been carried out by an external agency? (Y / N) If yes, name of the external agency.

Yes, Bureau Veritas (India) Pvt Ltd.

5. Has the entity implemented a mechanism for zero liquid discharge? If yes, provide details of its coverage and implementation.

Yes. JSW Energy is committed to the efficient management of water resources, both within its operations and in surrounding communities. The company prioritizes water use efficiency and ensures its availability for all stakeholders. All JSW Energy thermal plants adhere to a 'ZERO LIQUID DISCHARGE' policy, where wastewater is treated and recycled back into the system or used for horticulture. Additionally, domestic wastewater is processed in Sewage Treatment Plants (STPs) and repurposed for horticultural development, reflecting the company's dedication to sustainable water management practices. All other new and acquired RE plants are also following the above mechanism.

6. Please provide details of air emissions (other than GHG emissions) by the entity, in the following format:

Parameter	Please specify unit	FY 2023-24 Current Financial Year	FY 2022-23 Previous Financial Year
NOx	MT	19,213.76	16,484.89
SOx	MT	35,043.84	29,233.46
Particulate matter (PM)	MT	3,173.16	2,863.24
Persistent organic pollutants (POP)	NA	0	0
Volatile organic compounds (VOC)	NA	0	0
Hazardous air pollutants (HAP)	NA	0	0
Others – please specify – *ODS (KG of CFC e11)	MT	22	28.39
Mercury	MT	BDL	BDL
SF6	MT	0	0

*ODS generated is also reported in Scope 1 emission.

Note: Indicate if any independent assessment / evaluation/assurance has been carried out by an external agency? (Y / N) If yes, name of the external agency.

Yes, Bureau Veritas (India) Pvt Ltd.

7. Provide details of greenhouse gas emissions (Scope 1 and Scope 2 emissions) and its intensity, in the following format:

Parameter	Unit	FY 2023-24 Current Financial Year	FY 2022-23 Previous Financial Year
Total Scope 1 emissions (Break-up of the GHG into CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, NF_3, if available)	Metric tonnes of CO_2e equivalent	18,524,363.70	16,062,495.59
Total Scope 2 emissions (Break-up of the GHG into CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, NF_3, if available)	Metric tonnes of CO_2e equivalent	36,577.71	26,401.42
Total Scope 1 and Scope 2 emissions per rupee of turnover (Total Scope 1 and Scope 2 GHG emissions / Revenue from operations)		0.00015 Ton CO_2e/₹	0.00015 Ton CO_2e/₹
Total Scope 1 and Scope 2 emissions intensity per rupee of turnover adjusted for Purchasing Power Parity (PPP) (Total Scope 1 and Scope 2 GHG emissions / Revenue from operations adjusted for PPP)		0.0035	0.0033
Total Scope 1 and Scope 2 emissions intensity in terms of physical output		0.62 Ton CO_2e/MWh	0.68 Ton CO_2e/MWh
Total Scope 1 and Scope 2 emissions intensity (optional) – the relevant metric may be selected by the entity		-	-

Note: Indicate if any independent assessment / evaluation/assurance has been carried out by an external agency? (Y / N) If yes, name of the external agency.

Yes, Bureau Veritas (India) Pvt Ltd.

8. Does the entity have any project related to reducing greenhouse gas emission? If Yes, then provide details.

Apart from the plantations each location has specific energy reducing modification projects which in turn contribute to reduce the GHG emissions all throughout their effective life-time operation. These energy use reduction initiatives have resulted in the saving 79,100.3 TCO_2e in FY 2024. Details of these initiatives are available in the Annual report on page number 148

9. Provide details related to waste management by the entity, in the following format:

Parameter	FY 2023-24 Current Financial Year	FY 2022-23 Previous Financial Year
Total waste generated (in metric tonnes)		
Plastic waste (A)	26.51	2.43
E-waste (B)	0	6.02
Bio-medical waste (C)	0.699	0.62
Construction and demolition waste (D)	0	0
Battery waste (E)	89.28	104.54
Radioactive waste (F)	0	0
Other Hazardous waste. Please specify, if any. (G)	90.1975 (used oil + Oil Soaked cotton – 87.3027, E waste – 2.885, Incinerator Ash – 0.008)	30.95
Other Non-hazardous waste generated (H). Please specify, if any. (Break-up by composition i.e. by materials relevant to the sector)	1,358,541.73 (Fly Ash+ bottom Ash – 1,354,685.27, MS Scrap+ Other scrap – 1,400.29, Primary sludge -459.017, Food Waste -1997.156)	1,344,423.44 (Fly ash + bottom Ash: 1,341,737; Primary sludge: 1,156.224; MS Scrap & Other Scrap: 1,528.70; Food waste: 1.515)
Total (A+B + C + D + E + F + G + H)	**1,358,748.42**	**1,344,567.10**
Waste intensity per rupee of turnover (Total waste generated / Revenue from operations)	0.00001	0.00001
Waste intensity per rupee of turnover adjusted for Purchasing Power Parity (PPP) (Total waste generated / Revenue from operations adjusted for PPP)	0.00025	0.00028
Waste intensity in terms of physical output	0.046	0.057
Waste intensity (optional) – the relevant metric may be selected by the entity	-	-
For each category of waste generated, total waste recovered through recycling, re-using or other recovery operations (in metric tonnes)		
Category of waste: **Non Hazardous Waste**		
(i) Recycled	1,213.76	142.52
(ii) Re-used	1,365,192.70	1,378,753.48
(iii) Other recovery operations	1,997.156	1,511.39
Total	**1,368,403.62**	**1,380,407.39**
For each category of waste generated, total waste disposed of by nature of disposal method (in metric tonnes)		
Category of waste: **Hazardous Waste**		
(i) Incineration	0.13496	0.612
(ii) Landfilling	0.56436	0
(iii) Other disposal operations	165.422 (recycle: Battery, E waste, used oil+ Oil soaked cotton)	0.00434
Total	**166.12132**	**0.62**

Note: Indicate if any independent assessment/ evaluation/assurance has been carried out by an external agency? (Y / N) If yes, name of the external agency.

Yes, Bureau Veritas (India) Pvt Ltd.

10. Briefly describe the waste management practices adopted in your establishments. Describe the strategy adopted by your company to reduce the usage of hazardous and toxic chemicals in your products and processes and the practices adopted to manage such wastes.

JSW Energy is dedicated to sustainable waste management practices across its thermal, hydropower, and renewable energy projects. Despite the nature of its business, which focuses on electricity generation, the company takes proactive measures to manage and minimize waste.

The primary hazardous waste generated during operations and maintenance activities is waste oil. This waste oil, though produced in minimal quantities, is responsibly recycled through authorized recycling agencies at all locations, ensuring environmental compliance and resource efficiency. Beyond waste oil, the electricity generation process at JSW Energy does not involve any toxic chemicals, reflecting the company's commitment to minimizing environmental impact.

Furthermore, JSW Energy emphasizes continuous improvement in its waste management practices. The company engages in regular audits and monitoring to ensure compliance with environmental regulations and strives to adopt best practices in waste reduction and recycling. By prioritizing eco-friendly operations, JSW Energy not only reduces its environmental footprint but also sets a benchmark for sustainable practices in the energy sector.

11. If the entity has operations / offices in / around ecologically sensitive areas (such as national parks, wildlife sanctuaries, biosphere reserves, wetlands, biodiversity hotspots, forests, coastal regulation zones, etc.) where environmental approvals/clearances are required, please specify details in the following format:

S. No.	Location of operations/offices	Type of operations	Whether the conditions of environmental approval / clearance are being complied with? (Y/N) If no, the reasons thereof and corrective action taken, if any.
The Company does not have any facilities in and around ecologically sensitive areas. However, for the existing thermal power plants, environmental clearances are already in place in line with requirements of MoEF			

12. Details of Environmental Impact Assessments of projects undertaken by the entity based on applicable laws, in the current financial year:

	Name and brief details of project	EIA Notification No.	Date*	Whether conducted by independent external agency (Yes / No)	Results communicated in public domain (Yes / No)	Relevant Web link
1	890 MW - SECI IX & X Wind Project Tuticorin, Tamil Nadu	-	09.10.2022	YES EQMS Global Pvt. Ltd. N Delhi	Final Draft along with Stakeholder consultation at sites received from the consultant. It is in active process for finalization of the report by the consultant and JSW relevant Team and shortly it will be communicated to relevant stakeholders as a part of the ESIA study and SMP.	Not applicable at present
2	420 MW- SECI IX & X Wind Project Dharapuram, Tamilnadu	-	09.10.2022	YES EQMS Global Pvt. Ltd. N Delhi	Final Draft along with Stakeholder consultation at sites received from the consultant. It is in active process for finalization of the report by the consultant and JSW relevant Team and shortly it will be communicated to relevant stakeholders as a part of the ESIA study and SMP.	Not applicable at present
3	600 MW CPP Wind Project Sandur, Karnataka	-	09.10.2022	YES EQMS Global Pvt. Ltd. N Delhi	Final Draft along with Stakeholder consultation at sites received from the consultant. It is in active process for finalization of the report by the consultant and JSW relevant Team and shortly it will be communicated to relevant stakeholders as a part of the ESIA study and SMP.	Not applicable at present

* We have done ESIA as a proactive measures for our renewable Projects.

13. **Is the entity compliant with the applicable environmental law / regulations / guidelines in India; such as the Water (prevention and control of pollution) Act, Air (prevention and control of pollution) Act, Environment Protection Act, and rules there under (Y/N). If not, provide details of all such non-compliances:**

S. No.	Specify the law / regulation / guidelines which was not complied with	Provide details of the non-compliance	Any fines / penalties / action taken by regulatory agencies such as pollution control boards or by courts	Corrective action taken, if any
Yes all plants of JSW Energy are as on date compliant with applicable environmental laws/ regulations and guidelines. Proper clearances from the MOEF are in place for all the plants.				

Leadership Indicators

1. **Water withdrawal, consumption and discharge in areas of water stress (in kilolitres):**

For each facility / plant located in areas of water stress, provide the following information:

(i) Name of the area: Barmer, Ratnagiri, Vijayanagar & Hydro

(ii) Nature of operations: Production of Power / Electricity

(iii) Water withdrawal, consumption and discharge in the following format:

JSW Energy Limited (consolidated) *	FY 2023-24 Current Financial Year	FY 2022-23 Previous Financial Year
Water withdrawal by source (in kilolitres)		
(i) Surface water	28,178,602.14	28,827,036.55
(ii) Groundwater	614,920.19	0
(iii) Third party water	43,059.57	0
(iv) Seawater / desalinated water	80,971,172.00	58,411,696.18
(v) Others	0	0
Total volume of water withdrawal (in kilolitres)	109,807,753.90	87,238,732.73
Total volume of water consumption (in kilolitres)	28,221,446.90	26,851,886.55
Water intensity per rupee of turnover (Water consumed / turnover)	0.00024 Kl/₹	0.00024 Kl/₹
Water intensity (optional) – the relevant metric may be selected by the entity	0.095 m3/MWh	0.11 m3/MWh
Water discharge by destination and level of treatment (in kilolitres)		
(i) Into Surface water		
No treatment	0	0
With treatment – please specify level of treatment	481,847	653,137
	Domestic waste water treated in STP and discharged back into the river complying with stipulated environmental standard in the Hydro Power Plant	
(ii) Into Groundwater		
No treatment	0	0
With treatment – please specify level of treatment	0	0
(iii) Into Seawater		
No treatment	0	0
With treatment	80,995,927	58,411,696.18
(iv) Sent to third parties		-
No treatment	0	0
With treatment – please specify level of treatment	0	0
(v) Others	Seawater is used for cooling purpose and it is brought back to ambient level before it is discharged back	
No treatment	0	445,137
With treatment – please specify level of treatment	0	0
Total water discharged (in kilolitres)	**81,477,774**	**59,509,970**

Disclosing overall Water withdrawal, consumption and discharge on consolidated basis (JSW Energy).

Barmer: 8X135 MW (High Risk)	FY 2023-24 Current Financial Year	FY 2022-23 Previous Financial Year
Water withdrawal by source (in kilolitres)		
(i) Surface water	17,434,464	18,899,181
(ii) Groundwater	0	0
(iii) Third party water	0	0
(iv) Seawater / desalinated water	0	0
(v) Others	0	0
Total volume of water withdrawal (in kilolitres)	17,434,464	18,899,181
Total volume of water consumption (in kilolitres)	17,325,971	18,021,676
Water intensity per rupee of turnover (Water consumed / turnover)	0.00060 Kl/₹-	0.00059 Kl/₹
Water intensity (optional) – the relevant metric may be selected by the entity	-	-
Water discharge by destination and level of treatment (in kilolitres)		
(i) Into Surface water		
No treatment	NIL	NIL
With treatment – please specify level of treatment		
(ii) Into Groundwater		
No treatment	NIL	NIL
With treatment – please specify level of treatment		
(iii) Into Seawater		
No treatment		
With treatment – please specify level of treatment	NIL	NIL
(iv) Sent to third parties		
No treatment	NIL	NIL
With treatment – please specify level of treatment		
(v) Others		
No treatment	NIL	NIL
With treatment – please specify level of treatment		
Total water discharged (in kilolitres)		

Ratnagiri (4X300 MW) (Medium Risk)	FY 2023-24 Current Financial Year	FY 2022-23 Previous Financial Year
Water withdrawal by source (in kilolitres)		
(i) Surface water	563,733	699,472
(ii) Groundwater	0	0
(iii) Third party water	0	0
(iv) Seawater / desalinated water	80,971,172	58,411,696.18
(v) Others	0	0
Total volume of water withdrawal (in kilolitres)	81,534,905	59,111,168.18
Total volume of water consumption (in kilolitres)	538,978	699,472
Water intensity per rupee of turnover (Water consumed / turnover)	0.00002 Kl/₹	0.00004 Kl/₹
Water intensity (optional) – the relevant metric may be selected by the entity		-
Water discharge by destination and level of treatment (in kilolitres)		
(i) Into Surface water		
No treatment	NIL	NIL
With treatment – please specify level of treatment		
(ii) Into Groundwater		
No treatment	NIL	NIL
With treatment – please specify level of treatment		
(iii) Into Seawater		
No treatment		
With treatment	80,995,927.00*	58,411,696.18*
(iv) Sent to third parties		
No treatment	-	
With treatment – please specify level of treatment	-	
(v) Others		
No treatment	-	
With treatment – please specify level of treatment	-	
Total water discharged (in kilolitres)	**80,995,927.00**	**58,411,696.18**

* In Ratnagiri Plant, sea water used in a closed loop for cooling purpose and is not used in processes.

Vijayanagar (860 MW) (High Risk)	FY 2023-24 Current Financial Year	FY 2022-23 Previous Financial Year
Water withdrawal by source (in kilolitres)		
(i) Surface water	10,151,524.14	8,575,246.55
(ii) Groundwater	NIL	NIL
(iii) Third party water	NIL	NIL
(iv) Seawater / desalinated water	NIL	NIL
(v) Others	NIL	NIL
Total volume of water withdrawal (in kilolitres)	10,151,524.14	8,575,246.55
Total volume of water consumption (in kilolitres)	10,151,524.14	8,130,738.55
Water intensity per rupee of turnover (Water consumed / turnover)	0.00043 Kl/₹	0.00021 Kl/₹
Water intensity (optional) – the relevant metric may be selected by the entity	-	-
Water discharge by destination and level of treatment (in kilolitres)		
(i) Into Surface water		
No treatment	Nil	Nil
With treatment – please specify level of treatment		
(ii) Into Groundwater		
No treatment	Nil	Nil
With treatment – please specify level of treatment		
(iii) Into Seawater		
No treatment	Nil	Nil
With treatment – please specify level of treatment		
(iv) Sent to third parties		
No treatment	Nil	Nil
With treatment – please specify level of treatment		
(v) Others		
No treatment	Nil	Nil
With treatment – please specify level of treatment		
Total water discharged (in kilolitres)		

Hydro Power Plant (1,391 MW) (Medium Risk)	FY 2023-24 Current Financial Year	FY 2022-23 Previous Financial Year
Water withdrawal by source (in kilolitres)		
(i) Surface water	Nil	Nil
(ii) Groundwater	4,81,847	6,53,137
(iii) Third party water	Nil	Nil
(iv) Seawater / desalinated water	Nil	Nil
(v) Others	Nil	Nil
Total volume of water withdrawal (in kilolitres)	4,81,847	6,53,137
Total volume of water consumption (in kilolitres)	0	0
Water intensity per rupee of turnover (Water consumed / turnover)	0.00 Kl/₹	0.00 Kl/₹
Water intensity (optional) – the relevant metric may be selected by the entity	-	-
Water discharge by destination and level of treatment (in kilolitres)		
(i) Into Surface water		
No treatment		
With treatment – water is routed through STP before discharge	4,81,847	6,53,137
(ii) Into Groundwater		
No treatment		
With treatment – please specify level of treatment		
(iii) Into Seawater		
No treatment		
With treatment – please specify level of treatment		
(iv) Sent to third parties		
No treatment		
With treatment – please specify level of treatment		
(v) Others		
No treatment		
With treatment – please specify level of treatment		
Total water discharged (in kilolitres)	**4,81,847**	**6,53,137**

Note: Indicate if any independent assessment / evaluation / assurance has been carried out by an external agency? (Y / N) If yes, name of the external agency.

Yes, Bureau Veritas (India) Pvt Ltd.

2. **Please provide details of total Scope 3 emissions & their intensity:**

Parameter	FY 2023-24 Current Financial Year	FY 2022-23 Previous Financial Year
Total Scope 3 emissions (Break-up of the GHG into CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, NF_3, if available)	17,88,821.65 tCO_2e	1,634,696.75 tCO_2e
Total Scope 3 emissions per rupee of turnover	0.000015 tCO_2e/₹	0.000015 tCO_2e/₹
Total Scope 3 emission intensity (optional) – the relevant metric may be selected by the entity	0.060	0.069

Note: Indicate if any independent assessment / evaluation / assurance has been carried out by an external agency? (Y / N) If yes, name of the external agency.

Yes, Bureau Veritas (India) Pvt Ltd.

3. **With respect to the ecologically sensitive areas reported at Question 11 of Essential Indicators above, provide details of significant direct & indirect impact of the entity on biodiversity in such areas along-with prevention and remediation activities.**

Not Applicable.

4. **If the entity has undertaken any specific initiatives or used innovative technology or solutions to improve resource efficiency, or reduce impact due to emissions / effluent discharge / waste generated, please provide details of the same as well as the outcome of such initiatives:**

Sr. No.	Initiative undertaken	Details of the initiative (Web-link, if any, may be provided along-with summary)	Outcome of the initiative
1	Solar & Wind Plants	The organization has commissioned renewable assets	GHG Emission reduction
2	APH tube replacement done in Unit # 2, 5 and 8	At Barmer Plant - Energy consumption was increasing progressively due to APH leakage. Solution - Unit shutdown was taken and APH tube replacement was done.	GHG Emission reduction
3	Power Plant Operation	At Ratnagiri Plant, by implementing Sequential Valve Mode of Turbine Governing Valve Operation and Improvement in turbine cylinder efficiency of unit-3 by overhauling	Saving of Coal leading to GHG Emission reduction
4	Tree Plantations	Tree Plantation is a regular activity in all plants of JSW Energy every year. Total no of tree planted 18,611	Reduce impact of emission
5	Power Plant operation	At Vijayanagar plant - SBU2 U1 GHR Improvement After TG Overhaul -Heat rate improvement by APH Baskets replacement to reduce the leaving air temperature by 22° C from 162° C to 140° C	Saving of Energy consumption leading to reduced GHG emissions

5. **Does the entity have a business continuity and disaster management plan? Give details in 100 words / web link.**

JSW Energy has established a comprehensive Business Continuity Policy, approved by the Board, and implemented Business Continuity Plans (BCP) for its major generation plants at Barmer, Ratnagiri, Vijayanagar, and Hydro-Sholtu. These plants have undergone rigorous audits for the Business Continuity Management System (BCMS) and successfully achieved certification under ISO 22301.

The primary goal of the BCP is to ensure business continuity during disruptive incidents, aiming to minimize the impact on human life and other living beings, the environment and related ecosystems, economic losses, and all stakeholders, including investors and employees.

To strengthen the BCP, JSW Energy conducts regular training and awareness sessions across plant locations. In addition to training, the company performs periodic BCP testing to assess its effectiveness and identify areas for improvement based on observed gaps. Through these efforts, JSW Energy ensures a resilient and prepared response to any potential disruptions.

6. **Disclose any significant adverse impact to the environment, arising from the value chain of the entity. What mitigation or adaptation measures have been taken by the entity in this regard.**

None of the value chain entity have reported & neither it has come to our notice about any environmental impact caused by any value chain partner.

7. **Percentage of value chain partners (by value of business done with such partners) that were assessed for environmental impacts.**

The study is under progress

Principle 7: Businesses, when engaging in influencing public and regulatory policy, should do so in a manner that is responsible and transparent

Essential Indicators

1. a. Number of affiliations with trade and industry chambers / associations. - 10

   b. List the top 10 trade and industry chambers / associations (determined based on the total members of such a body) the entity is a member of / affiliated to.

S. No.	Name of the trade and industry chambers / associations	Reach of trade and industry chambers / associations (State / National)
1	Confederation of Indian Industry (CII)	National
2	Federation of Indian Chambers of Commerce & Industry (FICCI)	National
3	The Associated Chambers of Commerce & Industry of India (ASSOCHAM)	National
4	Global Reporting Initiative (GRI)	International
5	Carbon Discloser Project (CDP) India	International
6	Indian Chamber of Commerce	National
7	National Safety Council of India	National
8	Quality Circle Forum of India (QCFI)	National
9	Southern Regional Power Committee (SRPC)	National
10	Bangalore Chamber of Industry and Commerce	National

2. **Provide details of corrective action taken or underway on any issues related to anti-competitive conduct by the entity, based on adverse orders from regulatory authorities.**

Name of authority	Brief of the case	Corrective action taken
No adverse orders received from regulatory authorities for anti-competitive conduct.		

Leadership Indicators

1. **Details of public policy positions advocated by the entity:**

   JSW Energy works closely with trade / industry associations in evolving policies that govern the functioning and regulations of Power Sector. The company participates in stakeholder consultation with Industry players and support the Government in framing policies in the following areas:

   - Governance and administration
   - Economic reforms
   - Sustainable business principles
   - Energy, water, and other natural resources
   - Social and community development
   - Transparency in public disclosure
   - Non-conventional energy
   - Green Hydrogen Mission

   JSW Energy, directly as well as through JSW Group teams, engages with the following associations and organizations: CII, FICCI, ASSOCHAM, GRI, CDP, Indian Chamber of Commerce

PRINCIPLE 8: Businesses should promote inclusive growth and equitable development

Essential Indicators

1. Details of Social Impact Assessments (SIA) of projects undertaken by the entity based on applicable laws, in the current financial year.

Name and brief details of project	SIA Notification No.	Date of notification	Whether conducted by independent external agency (Yes / No)	Results communicated in public domain (Yes / No)	Relevant Web link
* for more details refer Principle 6-Essential Indicator Q-12					

* SIA is a part of ESIA conducted during the financial year.

2. Provide information on the project(s) for which ongoing Rehabilitation and Resettlement (R&R) is being undertaken by your entity:

S. No.	Name of Project for which R&R is ongoing	State	District	No. of Project Affected Families (PAFs)	% of PAFs covered by R&R	Amounts paid to PAFs in the FY (In INR)
Not Applicable						

3. Describe the mechanisms to receive and redress grievances of the community.

The communities can report their grievances at jswel.investor@jsw.in.

4. Percentage of input material (inputs to total inputs by value) sourced from suppliers:

	FY 2023-24 Current Financial Year	FY 2022-23 Previous Financial Year
Directly sourced from MSMEs/ small producers	51.33%	21.71%
Directly from within India	98.21%	32.98%

5. Job creation in smaller towns – Disclose wages paid to persons employed (including employees or workers employed on a permanent or non-permanent / on contract basis) in the following locations, as % of total wage cost

Location	FY 2023-24 Current Financial Year	FY 2022-23 Previous Financial Year
Rural	0.21%	0.54%
Semi-urban	8.20%	6.74%
Urban	24.54%	22.77%
Metropolitan	67.05%	69.95%

Leadership Indicators

1. Provide details of actions taken to mitigate any negative social impacts identified in the Social Impact Assessments (Reference: Question 1 of Essential Indicators above):

Details of negative social impact identified	Corrective action taken
No negative social impacts due to our operations were identified in the study	

2. Provide the following information on CSR projects undertaken by your entity in designated aspirational districts as identified by government bodies:

S. No.	State	Aspirational District	Amount spent (In INR)
1.	Himachal Pradesh	Chamba	18,611,412.00

3 (a) Do you have a preferential procurement policy where you give preference to purchase from suppliers comprising marginalized / vulnerable groups? (Yes / No)

No, we do not have a policy on this as yet.

(b) From which marginalized / vulnerable groups do you procure?

NA

(c) What percentage of total procurement (by value) does it constitute?

NA

4. **Details of the benefits derived and shared from the intellectual properties owned or acquired by your entity (in the current financial year), based on traditional knowledge:**

S. No.	Intellectual Property based on traditional knowledge	Owned / Acquired (Yes/No)	Benefit shared (Yes / No)	Basis of calculating benefit share
		Nil		

5. **Details of corrective actions taken or underway, based on any adverse order in intellectual property related disputes wherein usage of traditional knowledge is involved.**

Name of authority	Brief of the Case	Corrective action Not Applicableaken
	-	

6. **Details of beneficiaries of CSR projects:**

CSR Project	No. of persons benefitted from CSR Projects	% of beneficiaries from vulnerable and marginalized groups
Health & Nutrition	88,627	75
Education	10,294	75
Livelihood Enablement	13,535	75
Water, Environment & Sanitation	76,308	75
Waste Management	14,597	75
Promoting of Sports	4,995	75
Community Development	36,142	75

PRINCIPLE 9: Businesses should engage with and provide value to their consumers in a responsible manner

Essential Indicators

1. **Describe the mechanisms in place to receive and respond to consumer complaints and feedback.**

JSW Energy places huge importance on customer feedback and satisfaction. The Company continuously engages with its customers (distribution utilities, disignated nodal agencies, Commercial & Industrial enterprises) through various channels and strives to obtain feedback in order to identify areas of concern. The Company has a holistic approach to understand the behaviours, needs, and expectations of its customers and develops appropriate course actions to provide highest quality of service to all.

2. **Turnover of products and / or services as a percentage of turnover from all products / services that carry information about:**

	As a % to total turnover
Environmental and social parameters relevant to the product	Not applicable as JSW Energy is in the business of producing electricity, there are no shelf goods or services that may carry information
Safe and responsible usage	
Recycling and / or safe disposal	

3. **Number of consumer complaints in respect of the following:**

	FY 2023-24 Current Financial Year			FY 2022-23 Previous Financial Year		
	Received during the year	Pending resolution at end of year	Remarks	Received during the year	Pending resolution at end of year	Remarks
Data privacy	Nil			Nil		
Advertising						
Cyber-security						
Delivery of essential services						
Restrictive trade practices						
Unfair trade practices						
Other						

4. **Details of instances of product recalls on account of safety issues.**

	Number	Reasons for Recall
Voluntary Recalls	Not Applicable due to the peculiar nature of business and product.	
Forced Recalls		

5. **Does the entity have a framework / policy on cyber security and risks related to data privacy? If available, provide a web link to the policy.**
Yes. JSW Energy has a well-defined policy on cyber-security as the company considers cybersecurity as a prioritized material topic. The company follows the ISO 27001:2013 framework and is certified for Information Technology compliance. Additionally, the company maintains a board-level committee on "Risk management" who periodically reviews and addresses any cybersecurity risks. Refer link: https://www.jsw.in/sites/default/files/assets//downloads/energy/Corporate%20Governance%20and%20Regulatory%20Information/Sustainability_Policies/Cyber-Security-Policy-v2.pdf

6. **Provide details of any corrective actions taken or underway on issues relating to advertising, and delivery of essential services; cyber security and data privacy of customers; re-occurrence of instances of product recalls; penalty / action taken by regulatory authorities on the safety of products / services.**
Not Applicable.

7. **Provide the following information relating to data breaches:**

a.	Number of instances of data breaches	None
b.	Percentage of data breaches involving personally identifiable information of customers	0%
c.	Impact, if any, of the data breaches	Not Applicable

Leadership Indicators

1. **Channels/platforms where information on products and services of the entity can be accessed.**
All information regarding business of JSW Energy can be accessed through the Company's website www.jsw.in/energy and in its periodic disclosures such as the annual report and the integrated report. Link - https://www.jsw.in/energy

2. **Steps taken to inform and educate consumers about safe and responsible usage of products and/or services.**
Not Applicable owing to the nature of business.

3. **Mechanisms in place to inform consumers of any risk of disruption / discontinuation of essential services.**
Not Applicable owing to the nature of business. –

4. **Does the entity display product information on the product over and above what is mandated as per local laws? (Yes / No / Not Applicable) If yes, provide details in brief. Did your entity carry out any survey with regard to consumer satisfaction relating to the major products / services of the entity, significant locations of operation of the entity or the entity as a whole? (Yes / No)**
Not Applicable owing to the nature of business.