MANAGEMENT DISCUSSION & ANALYSIS

ECONOMIC REVIEW

World Economic Overview

The global economy grew 3.4% in 2022 with nascent signs of recovery seen in the second half of the year. A gradual recovery post the pandemic was beginning to take shape with unwinding of supply chain disruptions, however, the Russia-Ukraine conflict resulted in inflationary pressure and slowed the pace of recovery. In view of pent-up demand spike, lingering supply disruptions, and commodity price spikes, monetary action was taken by various central banks.

Central banks across the globe have resorted to raising policy rates to tackle inflationary pressure. With strong policy action from various central banks, food and energy prices have come down, but underlying price pressures are proving sticky, with labour markets tight in a number of economies.

In 2023, global growth is estimated to slow down to 2.8% and improve slightly to 3.0% in 2024. The global economic recovery is showing signs of uncertainty with persistent high debt levels, ongoing geopolitical conflict and financial sector turmoil - unexpected failures of two specialised regional banks in the United States in mid-March 2023 and the collapse of confidence in a major European bank. Growth in advanced economies is expected to slow down from 2.7% in 2022 to 1.3% and 1.4% in 2023 and 2024 respectively. However, the performance of emerging markets is expected to be slightly better with growth being maintained from 4.0% in 2022 to 3.9% in 2023 and slight improvement to 4.2% in 2024. In the medium term, it is imperative to focus on structural factors impeding supply and take appropriate steps to strengthen multilateral cooperation. This will help in creating a more resilient world economy.

Source: IMF World Economic Outlook April 2023

Indian Economic Overview

Despite sluggish global economy, India is poised to become the world's fastest-growing economy. India has set an ambitious target of becoming a USD 5 trillion economy by 2025 and more than double its annual exports to USD 2 trillion by 2030 aided by rise in value-added manufactured products and services exports. The Indian government is undertaking a slew of measures towards achieving these targets, including promotion of Make in India, Production Linked Incentives (PLI) scheme, Housing for All, rural electrification, refurbishing foreign trade policy, extended Emergency Credit Linked Guarantee Scheme, etc. China plus one strategy coupled with more liberal trade policy like new export hubs, ease of doing business and online approvals is poised to aid manufacturing sector growth in India.

According to the estimates by National Statistics Office (NSO), India's GDP growth is estimated at 7.2% for FY 2023. Despite GDP growth came in slightly lower than the last year, India remains one of the fastest-growing economies among the major economies. Growth in FY 2023 is primarily attributable to rise in private consumption and capital formation which have helped in generating employment, reflected in the declining urban unemployment rate.

FY 2023 has witnessed a strong rebound of private consumption and higher capital expenditure, which in turn resulted in providing boost to production activity. World's largest vaccination drive involving over 2 billion doses served to lift consumer sentiments and enabled people to spend on contact-based services, such as restaurants, hotels, shopping malls, and cinemas gave boost to consumption. Well-capitalised public sector banks led to increase in the credit supply and the credit growth to MSMEs. Robust government capital expenditure coupled with sustained increase in private capital expenditure is expected to continue with strengthening of corporate balance sheets. Measures taken by the Government and RBI, along with the easing of global commodity prices, aided in controlling retail inflation level below the RBI's upper tolerance target of 6%, in March 2023.

The Union Budget 2023-24 aimed at strengthening India's economic status in the 75th year of India's independence. The Vision for 'Amrit Kaal' was articulated in the Budget which centred around opportunities for citizens with focus on youth, growth & job creation and strong & stable macro-economic environment. Seven priorities, termed Saptarishi, were adopted to guide the country towards 'Amrit Kaal', thus providing a blueprint for an empowered and inclusive economy. The priorities being, inclusive development, reaching the last mile, infrastructure & investment, unleashing the potential, green growth, youth power and financial sector.

Indian GDP growth is expected to be brisk in FY2024 at 6.5%, led by strong credit disbursal, higher Rabi crop output and intensive capital investment cycle. The expansion of public digital platforms and several measures like PM GatiShakti, the National Logistics Policy, and PLI schemes are expected to provide the needed boost to manufacturing output.

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Source: NSO, Press Information Bureau (pib.gov.in)

INDUSTRY REVIEW

Climate Change mitigation – progress or stagnant?

The year witnessed global energy crisis, triggered by Russia-Ukraine conflict. It has sparked unprecedented momentum for renewables globally with a focus on energy security. Fossil fuel supply disruptions have underlined the energy security benefits of domestically generated renewable electricity, leading many countries to strengthen policies supporting renewables. The year has seen higher fossil fuel prices worldwide and has resulted in improved competitiveness of solar PV and wind generation against other fuels.

The global emission growth in 2022 was lower than the global GDP growth. This was due to record growth in wind and solar, which reached a 12% share in the global electricity mix, up from 10% in 2021. As per IEA, renewables are set to account for over 90% of global electricity capacity expansion over the next five years. The major capacity expansions will be driven by China, India, the European Union, and the United States, which are all implementing and introducing favourable policies, regulatory and market reforms in reaction to the energy crisis. Renewable source of energy is set to become the largest source of global electricity generation by 2025, surpassing coal. It is expected that renewable power share will increase to 38% in total global mix by 2027.

India's ambitious target of 500 GW of non-fossil capacity by 2030 is supported through favourable policy framework. The new installations are expected to be led by solar PV capacity underpinned by strengthening of domestic supply chain through production linked incentives (PLI) for manufacturing advance solar PV modules. This will be complimented by the wind capacity additions over the period.

Global Energy Outlook

In 2022, total energy consumption grew by meagre 0.9% due to high prices and a contraction in gas and oil supplies from Russia. As per the Economist Intelligence Unit, moderate global economic growth coupled

with high energy prices is expected to cause a 1.3% increase in total energy consumption in 2023. With OPEC+ members looking to cut production to prevent sharp drop in oil prices a reduction in energy supplies is likely. The EU sanctions on oil will completely come into force in 2023, leading to fall in oil and gas output from Russia.

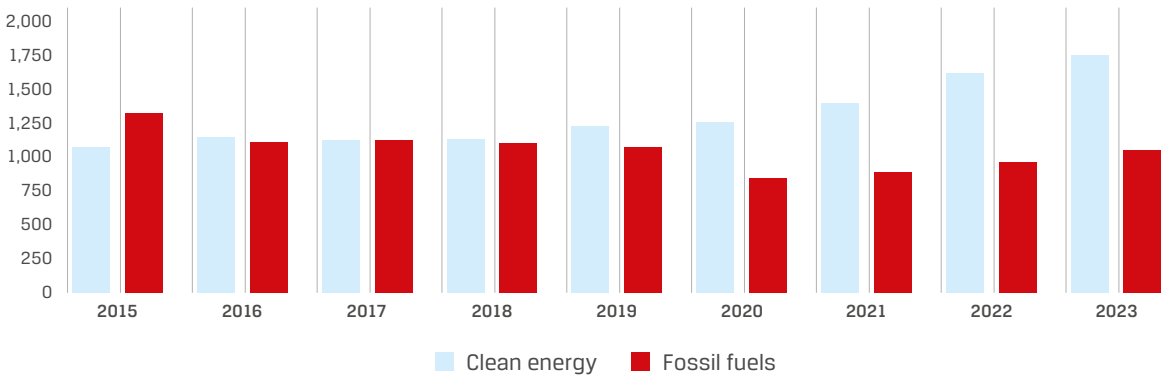
World electricity demand remained resilient in 2022 as the demand grew by 2% YoY. The electrification of the transport and heating sector continue to accelerate globally. In 2022 Electricity demand rose in India and The United States while demand in China was affected by Covid-19 restrictions. IEA projects global electricity demand to grow at 3% over 2023-2025 while India's electricity demand to grow at annual growth of 5.6%. Till 2025, over 70% of the growth in global electricity demand is most likely to come from China, India and Southeast Asia combined as these economies expand.

Global energy discussions have been focussed on decarbonising the energy systems and transition to net zero. In the year gone by, the importance of two other aspects of security and affordability of energy came to the forefront. Government support has stepped up significantly in the recent past in most economies. But given the vast scale of the decarbonisation challenge, greater support is required, both in terms of policy and finance, on a global level.

The share of renewables in the global power generation mix is expected to increase to 38% in 2027 from 29% in 2022. This will result in substantial decrease in the shares of coal- and gas-fired generation resulting in curtailment of emissions of global power generation. These are likely to plateau by 2025 and thereon C02 intensity will continue to decline. Global energy investment is estimated around USD 2.8 trillion in 2023, more than USD 1.7 trillion would be towards clean energy.

Renewables and nuclear energy will dominate the growth of global electricity supply over the next three years, together meeting on average more than 90% of the additional demand.

Global energy investment in clean energy and in fossil fuels
(billion USD (2022))



Sources: EIU, IEA

In 2023, solar and wind energy consumption is expected to rise 11% as more projects come online. Renewable energy consumption is forecasted to grow at 10% CAGR during the coming decade. Asia is expected to continue to be the world's biggest market for renewable energy investment. China, India, Japan and South Korea will dominate Asian growth. However, commodity price boom is expected to divert some investment towards fossil-fuel projects, along with higher interest rates may lead to an increase in the cost of financing renewable energy projects.

Climate Change Conference COP27

The United Nations Climate Change Conference COP27 witnessed a significant agreement to provide "loss and damage" funding for vulnerable countries impacted by climate disasters. The members worked on chalking out the way forward for the communities whose lives and livelihoods were impacted by the very worst impacts of climate change. COP27 resulted in countries delivering multiple decisions to reaffirm their commitment to limit global temperature rise to 1.5 degrees Celsius above pre-industrial levels, to cut greenhouse gas emissions and adapt to the inevitable impacts of climate change. The countries committed to enhancing financial, technological and capacity building support needed by developing countries.

With an aim to help the vulnerable communities adapt to climate change through concrete adaptation solutions, new pledges, worth USD 230+ million, were made to the Adaptation Fund. COP27 significantly advanced the work on mitigation by setting up a mitigation work programme, aimed at urgently scaling up mitigation ambition and implementation. The Sharm el-Sheikh Implementation Plan, the cover decision highlighting a global transformation to a low-carbon economy, is projected to need investments of USD 4-6 trillion on an annual basis.

The progress of developed country parties to mobilise jointly USD 100 billion per year by 2020 was discussed at length. Developed countries were urged to meet the promised funding and multilateral development banks and international financial institutions were called on to mobilise climate finance. Considering the needs and priorities of developing countries, deliberations continued on setting a 'new collective quantified goal on climate finance' in 2024.

Multiple decisions aimed to re-emphasise the critical importance of empowering all stakeholders to engage in climate action were taken. Countries also launched a package of 25 new collaborative actions in five key areas: power, road transport, steel, hydrogen and agriculture. To protect life on the planet by early warning systems within the next five years, a USD 3.1 billion plan was announced. The Global Shield against Climate Risks was launched by the G7 and the V20 (Vulnerable Twenty), with new commitments of over USD 200 million as initial funding.

Delegates at COP27 wrapped up the second technical dialogue of the first global stocktake, a mechanism to raise ambition under the Paris Agreement.

India optimistic about 'One earth, One family, One future'

With a hope that the fight against climate change will unite the world as one family, India is moving strongly on its path of climate action for global good. At COP27, India invited the global community to be a part of Mission LiFE for individual, family and community-based actions. India assumed the Presidency of the G20 in December 2022 with the motto of 'One earth, One family, One future'. The journey towards a planet safe for humanity, is a collective effort to be undertaken with equity and climate justice as our guiding principles. Within one year of announcing its intent to achieve net zero emissions by 2070 at Glasgow, India submitted its Long-Term Low Emissions Growth Strategy indicating low carbon transition pathways in key economic sectors of Energy and Electricity, Transport, Urban Design, Industries and Forestry. Responding to the call for increased ambition in 2030 climate targets, our country has embarked on far-reaching new initiatives in renewable energy, e-mobility, ethanol-blended fuels, and green hydrogen as an alternate energy source.

In August 2022, we updated our Nationally Determined Contribution (NDC) according to which our country has an enhanced target to reduce emissions intensity of its GDP by 45% by 2030 from 2005 level, and achieve about 50% cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030.

Government of India is implementing several programmes and schemes including the National Action Plan on Climate Change (NAPCC) which comprises missions in specific areas of solar energy, energy efficiency, water, sustainable agriculture, Himalayan ecosystem, sustainable habitat, green India, and strategic knowledge for climate change.

India is positively seeking to foster strong international cooperation through action and solutions-oriented coalitions like International Solar Alliance and Coalition of Disaster Resilience Infrastructure, both of which were launched and nurtured by India. Despite very low contribution to the world's cumulative emissions at less than 4% and annual per capita emissions are about one-third of the global average, India is committed to contribute to zero emission mission significantly.

However, the decarbonisation strategy of India is laid upon the commitment made by the developed countries to provide adequate climate finance, technology transfer and capacity building support to the developing countries.

India's Clean Energy Transition

Investment in renewable energy hit record levels in India in FY 2022, according to a new report from the Institute for Energy Economics and Financial Analysis. A total of USD 14.5 billion was invested in renewable energy, up by

125% compared to FY 2021 and 72% higher than in the pre-pandemic period of FY 2020. The investment done in renewable energy in FY 2023 is expected to further surpass FY 2022. In 2023 USD 20 billion is expected to be invested in the sector. The government is taking actions to accelerate the deployment of renewable energy capacity, in line with the target of 50% installed capacity from non-fossil source by 2030 announced in the updated Nationally Determined Contributions.

The government established a plan for the integration of this additional capacity within the transmission grid that includes grid expansions and additional storage capacity. Measures to hasten renewable capacity additions are, to increase renewable purchase obligations with a greater focus on wind, hydro power and energy storage to facilitate round-the-clock power from renewable energy sources. The green open access electricity rules are expected to boost renewable energy procurement.

The Energy Conservation (Amendment) Bill 2022 promoting energy efficiency and conservation mandates the use of non-fossil sources for designated industrial and commercial consumers, and establishes carbon markets. The Energy Conservation Code for buildings will apply to office and residential buildings with a connected load of 100 kilowatt or above. India also encourages the production of green hydrogen/ ammonia through waivers of inter-state transmission charges for a period of 25 years under the green hydrogen policy.

Indian Power Sector

Power Demand & Generation

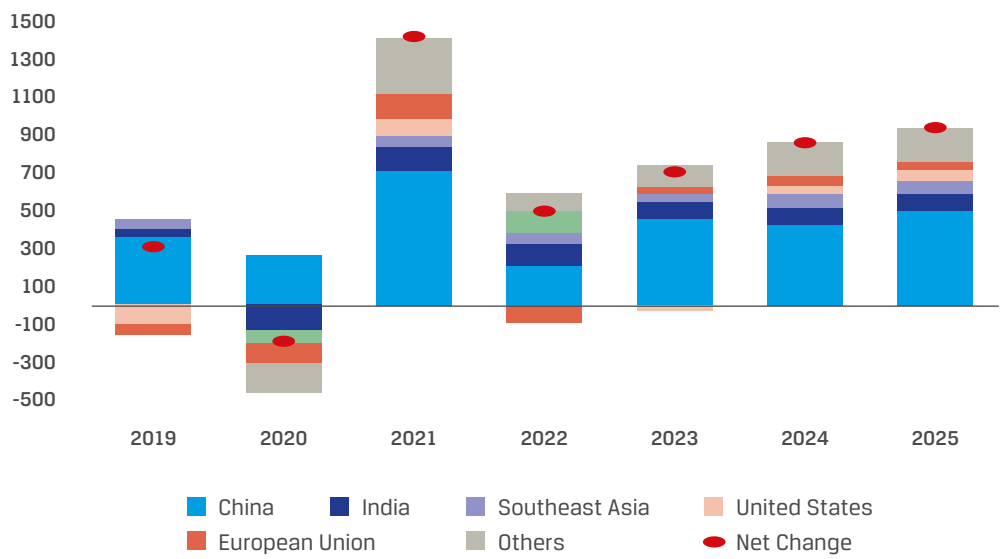
India is among the largest producer and consumer of electricity worldwide with a total installed electricity capacity of over 416 GW at the end of FY 2023. The growth in electricity demand is underpinned by population growth, urbanisation, industrialisation, improved standard of living with gain in access to electricity. India is among the leading producer of renewable energy, with 41% of the total installed capacity comprises renewable sources. At the end of FY 2023 India has installed capacity of 172 GW of renewable including Hydro which generates 22.5% of total energy produced in the country.

Energy demand in our country is rapidly growing as the country continues to urbanise and the manufacturing sector witnesses high pace growth. The growing energy demand is met through various energy sources, with coal being the largest supply source.

Source: CEA

In FY 2023, total power demand increased by 9.6% to reach 1,512 BUs which was substantially higher than the average annual growth rate of 5.3% seen during 2015-2019. The growth is mainly attributable to a combination of robust post-pandemic economic recovery and exceptionally high summer temperatures. According to International Energy Agency (IEA), power demand in India is likely to grow at an annual rate of 5.6% between 2023 and 2025.

Year-on-year change in electricity demand by region, 2019-2025 (TWh)



As of the end of FY 2023, India had an installed capacity of 416 GW, of which 237 GW comes from fossil-fired power plants (coal, gas and oil), 47 GW from hydro, 125 GW from renewable energy plants such as solar and wind, and the rest from nuclear power plants. Currently, total renewable capacity under construction is more than 68 GW and MNRE is expected to tender 50 GW in FY 2024.

Demand in BUs	FY 2023	FY 2022	YoY %
North	463	418	10.8%
West	476	429	10.9%
South	371	351	5.9%
East	183	164	11.4%
North-East	19	18	4.2%
All-India	**1,512**	**1,380**	**9.6%**

Generation in BUs	FY 2023	FY 2022	YoY %
Thermal	1,206	1,115	8.2%
Hydro	162	152	6.9%
Renewables	204	169	20.2%
Wind	72	69	4.7%
Solar	102	73	40.1%
Others (Nuclear+Import)	53	55	-3.7%
All-India	**1,624**	**1,490**	**9.0%**

(Source: Electricity Market Report, March 2023, IEA)

Thermal Energy

India has installed thermal capacity of 237 GW, as on 31st March, 2023, comprised mainly of coal. Thermal energy continues to be the largest source occupying 57% share of the total installed capacity in the country. The growth in thermal capacity was mere 1.2 GW during FY 2023 signifying India's strong commitment to renewable energy sources.

With renewable capacity additions picking pace, thermal power continues to remain crucial power source to meet growing base and peak demand. In April 2022, the Ministry of Power had directed state generating companies and independent power producers to meet a 10% blending requirement, mandating 10% of coal demand to be met by imported coal. This was required to ensure adequate coal stocks before the onset of monsoons. In August 2022, the government withdrew these blending requirements when adequate stock levels at power plants were reached. Since coal power plants are important to meet base load requirements, they have been instructed to run at full capacity in accordance with section 11 of the Electricity Act, 2003. In February 2023, the power ministry has already mandated all coal-based power generators to blend 6% of imported coal keeping in view the growing requirements.

Renewable Energy

The Indian government aims 50% cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030. With this in view, there has been a strong and continuous focus on renewable energy capacity addition. In FY 2023, India's renewable energy sector witnessed annual new capacity addition of 15.3 GW with Solar capacity additions constituting 12.8 GW.

1. Hydro

Hydro power is systemically important from the grid perspective so as to meet the flexibility requirements and peaking power supply. To promote hydro power, the government has outlined policy measures to promote investments in the segment by notifying Hydro Power Purchase Obligation (HPO) norms, long-term trajectory for HPO as well as tariff rationalisation measures. Hydro power provides significant help in reducing carbon emissions and achieve last-mile connectivity of electricity.

India's total hydro installed generation capacity stood at 46.9 GW, as on 31st March, 2023, constituting 11% of the total installed capacity. The government has set a target of 68 GW hydro power generation capacity by 2031-32.

2. Solar

India's total solar installed generation capacity as on 31st March, 2023 stood at 66.8 GW as compared to 54.0 GW as on 31st March, 2022. The contribution of solar energy increased to 16% of total installed generation capacity, from 14% on 31st March, 2022.

According to the Union Ministry of New & Renewable Energy, in FY 2023, the solar power segment added a total new capacity of 12.8 GW similar to FY 2022. New solar capacity additions in FY 2023 made up for 84% of the total renewable power capacity installed.

India is expected to add 298 GW of new utility-scale solar capacity by 2031-32. Solar energy generation has become central to the National Action Plan on Climate Change. The National Solar Mission is one of the key initiatives to promote solar power expansion/ generation. In addition, Government of India has allotted a total of ~48 GW under production linked scheme via two tranches, for domestic manufacturing of advance solar modules, with a cumulative support of more than ₹18,500 crore.

3. Wind

India ranks fourth in the wind power capacity globally. The Government of India has been taking several steps to increase the installation of wind energy capacity in the country by promoting wind power projects through private sector investment.

In the wind sector, about 2.3 GW of new capacity was added in FY 2023, about 105% higher than the 1.1 GW capacity added in FY 2022.

India's Central Electricity Authority (CEA) has projected an increase in wind power capacity of 42.6 GW from in FY 2023 to 122 GW by 2031-32, amounting to more than 8 GW of new installations per year in next 7 years. In addition, Central and State Governments are working together in utilising the enormous potential of its 195 GW of offshore energy.

Energy Storage

1. Hydro Pumped Storage (PSP)

As the share of renewable energy increases in overall generation, energy storage is emerging as key solution to address the intermittency of renewable power thereby leading to reliable grid integration of renewable power. Pumped storage project (PSP), a hydroelectric energy storage, is proven technology which enables load balancing through energy storage. It is a configuration of two water reservoirs at different elevations that can generate power as water moves down from one to the other (discharge), passing through a turbine. Pumped storage hydro plants provide several benefits, such as peak shaving, frequency regulation, load balancing, backup reserve, black start capability, etc. Additionally, they offer very fast ramping up/down and peak/off-peak balancing support on account of their inherent flexibility. PSP is thus widely recognised as an ideal supplier of regulation and contingency reserve ancillary services, thereby helping in managing renewable energy grid integration.

Due to growing concerns regarding energy security, the increasing requirement for load management of grid networks during peak hours and the escalating need for efficient energy storage, Indian PSP market is witnessing robust growth. The Indian government is encouraging pumped hydro storage establishments by providing budgetary support for infrastructure enabling, separate environment clearance by treating them differently from traditional hydro plants, waiver of ISTS charges for PSP and introducing Energy storage obligation. Closed-loop pumped hydro storage systems are witnessing good growth on account of their minimal environmental impact across natural habitats. The Central Electricity Authority predicts that India will need 175.2 GWh / 26.7 GW pumped storage projects by 2031-32.

2. Battery Energy Storage System (BESS)

As renewable energy share increases in the Indian power sector, the need for battery storage is becoming increasingly important as they offer a flexible grid integration opportunity. Energy storage helps in the integration of renewable energy and unlocking the benefits of local generation and a clean, resilient energy supply. Renewable sources tend to flood the grid with

power at the same time, creating pressure to curtail extra power giving rise to the need for battery energy storage systems. Such systems prove extremely useful at peak load durations. As per Central Electricity Authority (CEA), India would likely need a BESS capacity of 236.2 GWh / 47.2 GW by 2031-32.

The current power supply tenders have evolved to include energy storage system (ESS) to ensure round-the-clock and peak power requirement through renewable power. In FY 2023, SECI floated largest ever single location BESS tender for 1 GWh / 500 MW where JSW Energy emerged as a successful bidder for entire capacity.

Source: Optimal Generation Mix, CEA

Advanced Solar Module

Government of India has allocated Production Linked Incentives (PLI) aimed at promoting domestic manufacturing in strategic sectors. The scheme offers financial incentives to companies that establish or expand manufacturing facilities in specific industries.

Under the Solar PLI Tranche-II, the Government of India has introduced incentives for setting up Solar Photovoltaic (PV) Module manufacturing facilities in the country with an outlay of ₹19,500 crore. Solar PV modules are essential components in solar power generation, and by encouraging their local production, the government aims to reduce reliance on imports and boost the domestic manufacturing ecosystem. The import of solar modules is discouraged by the Government of India by import duties. Currently, the domestic manufacturing capacity is limited and technology-wise still evolving.

Green Hydrogen

A sustainable future is imperiled by climate change. Finding sources of energy alternative to Thermal energy is crucial as Energy sector is one of the major sectors contributing to global warming. In addition to replacing fossil fuels in industry, Green Hydrogen is expected to play crucial role in creating cleaner future, it can also be used for clean transportation, decentralised power generation, aviation, and maritime transportation.

Green hydrogen is produced through electrolysis of water using renewable energy, which results in a clean and sustainable energy carrier.

For industries, like steel, cement, and the chemical industry, Green Hydrogen is the solution for decarbonising needs. Derivatives of Green hydrogen, such as Green Ammonia and Green Methanol, are long-term energy carriers and can used as Green feedstock or Green transportation fuel. Almost all hydrogen produced today is 'grey', which means it comes from natural gas production. Grey hydrogen is comparably less expensive than green hydrogen in the absence of a price on carbon emissions, but continuing its use will make it more difficult to maintain environmental sustainability. The majority of current Green hydrogen projects are in the pre-commercial stage, and those that have already been erected have lesser capacities.

Since it is predicted that hydrogen costs would drop dramatically by 2030, there will be a five-fold rise in demand for hydrogen, reaching ~30 MT by 2050, with 80% of that demand projected to be green in nature. The 'National Hydrogen Mission' launched in August 2021 has made an effort to scale up the production of Green Hydrogen and harmonise its energy transformation initiatives with international best practices in technology, with support in policies and regulatory. By 2030, India's target is to reach 5 million tonnes per year of Green Hydrogen. The Ministry of Power (MoP) announced the 'Green Hydrogen Policy' in February 2022 as the first piece in a set of policy instruments to support ongoing efforts in this direction. The Green Hydrogen policy plans to create 35–40 GW of Electrolyzer capacity for uses such as cement, fertiliser, steel, heavy-duty transportation, and refining. India's potential for green hydrogen will be realised with the aid of domestically built, less expensive electrolysers, low cost renewable energy, and policy support.

Company Overview

One of India's leading independent power producers, JSW Energy (the Company), is the energy arm of India's leading conglomerate, JSW Group. The Company is an integral part of the energy transition journey that India is embarking, further supported by its foray into energy products and services through energy storage solution, green hydrogen and its derivatives. The Company is efficiently embracing a greener future by leveraging its robust business model and healthy balance sheet position. Its success is further strengthened by judicious capital allocation, astute management, focussed socio-economic initiatives, new-age innovation and a strong workforce.

Starting small with one power plant in Karnataka over two decades ago, we have built our way out to have a widespread presence across 10 India states. With focus on business continuity, in addition to geographical distribution, we strive to de-risk our business through multiple fuel sources and power off-take arrangements. Our energy generation capacity is a mix of thermal, hydel, wind and solar power with a

total capacity of 9.8 GW out of which 6.6 GW is installed and 3.2 GW is under construction and is expected to be commissioned by calendar year 2024. Our total renewable capacity of 5.9 GW constitutes 61% of total capacity. In the energy storage space, the Company has a locked-in capacity of 3.4 GWh of projects across both pumped storage (2.4 GWh) and Battery Energy Storage (1 GWh). The Company is establishing its presence in the energy products and services space by creating 1 GW manufacturing capacity of advance solar modules under PLI scheme and contracted 3.8 KTPA of Green Hydrogen production facility to be used for green steel manufacturing.

During the year, JSW Energy has completed the acquisition of renewable assets of Mytrah Energy (India) Private Limited (MEIPL) of 1,753 MW comprising of 1,331 MW of wind capacity and 422 MW of solar capacity operating primarily in the southern, western and central parts of India. The enterprise value of the transaction is ₹10,150 crore adjusted for net working capital. The assets have a proven operational track record and long-term PPA with an average remaining life of ~17 years. In FY 2023, the Company also completed acquisition of Ind-Barath pursuant to NCLT order through IBC at an attractive purchase consideration of ₹1,048 crore. Ind-Barath has 700 MW under-construction thermal capacity located near the coal rich belt of IB valley of Mahanadi Coalfields with ease of water access.

The Company is well known in the power sector for executing projects with a quick turnaround time and at least possible costs. With transparency in operations, strong corporate governance, astute business decisions and judicious capital allocation strategies, JSW Energy continues to deliver sustainable growth, and create value for all its stakeholders. This year embarks our journey towards an integrated and sustainable growth and our transition from 'Pure Play' power generating company to 'Energy Products and Services' company.

Strategy 2.0

The Company has an ambitious target of reaching 20 GW of installed generation capacity and 40 GWh / 5 GW of energy storage by 2030 along with 1 GW of solar module manufacturing by April 2025. This growth will result in balance sheet size to grow at 22% CAGR from FY 2023-30. These targets are in line with our mission to become carbon neutral by 2050. The Company is well on track to achieve its capacity growth target of 10 GW much ahead of the stated timeline of FY 2025 and being future-ready with increased share of renewables and new energy solutions.

JSW Energy is currently constructing 2,266 MW of Wind projects, 240 MW of Hydro project and 700 MW of Thermal project. The company has secured 3.4GWh of energy storage capacity via hydro pumped storage plant (PSP) and battery energy storage system (BESS). The Company has already established tie-ups for 72 GWh of PSP in various states. All these new age projects are driving the Company towards a new age power company having presence across supply chain of renewable power.

Business Segments

Power Generation

The Company is primarily engaged in business of power generation through thermal and renewables. Total installed power generation capacity of 6.6 GW and an under-construction capacity of 3.2 GW results in total portfolio of 9.8 GW. (Renewable: 61%, Thermal: 39%)

Installed Capacity: 6,564 MW

Thermal	Wind
3,158 MW	1,358 MW
Hydro	**Solar**
1,391 MW	657 MW

Under-Construction Capacity: 3,206 MW

Wind	Thermal
2,266 MW	700 MW
Hydro	
240 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 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 2023 stood at 21,866 MUs as compared to 20,787 MUs in FY 2022. It generated a total income of ₹10,867 crore in FY 2023 as compared to ₹8,736 crore in FY 2022. The deemed PLF was 64% for FY 2023 as against 62% for FY 2022.

Thermal Power Plants

Vijayanagar

Capacity: 860 MW

PLF: The plant comprises two Strategic Business Units (SBUs) – SBU 1 and SBU 2. In FY 2023, the plant achieved an average actual PLF of 51% as against 45% in FY 2022.

Total Gross Power Generated: 3,854 MUs

Net Power Generated: 3,550 MUs

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

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

Capacity: 1,200 MW

PLF: In FY 2023, the plant operated at an average deemed PLF of 84% as against 73% in FY 2022

Total Gross Power Generated: 6,243 MUs

Net Power Generated: 5,714 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 91% capacity tied up under long-term PPAs
- Provision to blend up to 50% of domestic coal with imported coal increases operational flexibility

Barmer

Capacity: 1,080 MW

PLF: In FY 2023, the plant achieved an average deemed PLF of 80% as against 81% achieved in FY 2022

Total Gross Power Generated: 7,286 MUs

Net Power Generated: 6,544 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

Capacity: 18 MW

PLF: In FY 2023, the plant achieved an average deemed PLF of 98% as against 99% achieved in FY 2022

Key Strengths of the Plant:

- 100% LT PPA under Group Captive scheme (18 MW)

Ind-Barath

Capacity: 700 MW

Status: Under construction

Expected commissioning: FY 2024

Hydro Power Plants

Baspa-II

Capacity: 300 MW

PLF: The plant achieved an average PLF of 51% for FY 2023 as against 50% in FY 2022

Total net power generated after auxiliary consumption: 1,338 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

Capacity: 1,091 MW

PLF: The plant achieved an average PLF of 47% for FY 2023 as against 47% in FY 2022

Total net power generated after auxiliary consumption: 4,257 MUs

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

Key strengths of the plant:

- LT PPA with PTC India Limited for 1,000 MW, 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

Capacity: 240 MW

Expected commissioning: September 2024

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-year PPA with Haryana Power Purchase Center.

Solar Power Plants

225 MW Vijaynagar; 25-year PPA with JSW Steel

Status: Completed

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

422 MW Mytrah Solar plants

Punjab, Telangana and Karnataka

Status: Operational

Asset optimisation and performance improvement plan under progress

Wind Power

733 MW Wind Plant; Signed 25-year PPA with JSW Steel

Karnataka, Maharashtra and Tamil Nadu

Status: Under construction

Expected commissioning: Progressively during FY 2024

1,260 MW Wind plants in Tamil Nadu; SECI IX (810 MW); Signed 25-year PPA with SECI

Status: Under construction

Progressive commissioning from Q1 FY 2024

SECI X (450 MW); Signed 25-year PPA with SECI

Status: Under construction

Progressive commissioning started in Q3 FY 2023. 27 MW capacity was part-commissioned In FY 2023; Balance to be commissioned in a phased manner

SECI XII (300 MW); Signed 25-year PPA with SECI

Status: Under construction

Expected commissioning: March 2025

1,331 MW Mytrah Wind Plants

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

Status: Operational

Asset optimisation and performance improvement plan under progress

Storage Projects:

Battery Energy Storage System: 1.0 GWh / 500 MW

Status: Received LoA from SECI

Expected commissioning by Calendar year 2024

Pumped Hydro Storage: 2.4 GWh / (300 MW x 8hrs)

Status: Received LoIs from Power Company of Karnataka Ltd

Expected commissioning: 36 months from signing of PPA

Electrons to Molecules

Solar PV Module Manufacturing: 1GW/annum

Status: Allotted capacity under PLI scheme for Wafer-Cell–Module manufacturing

Expected commissioning: April 2025

Strategic Intent to use solar modules for captive consumption

Green Hydrogen

Status: Contracted 3.8 KTPA of capacity for production of green hydrogen to be used for production of green steel

Expected commissioning: FY 2025 (18-24 months)

Financial review including financial ratios

Table of standalone financial performance -

Revenue from Operations

(₹ crore)

Parameters	FY 2022	FY 2023	% change
Sale of Power	2,624.72	4,343.86	65%
Interest Income on Assets under Finance Lease	48.58	19.62	-60%
Sale of Goods	26.11	363.24	1291%
Sale of Services	934.89	1,002.21	7%
Other Operating Revenue	8.45	10.30	22%
Total	**3,642.74**	**5,739.23**	**58%**

In FY 2023, the sale of power increased 65% from ₹2,625 crore to ₹4,344 crore, primarily due to higher long term and merchant sales. Revenue from the sale of services increased 7% to ₹1,002 crore from ₹935 crore in FY 2022, due to additional job work arrangements tie up and higher mining income.

Other Income

(₹ crore)

Parameters	FY 2022	FY 2023	% change
Interest Income	148.47	48.69	-67%
Dividend Income from Long-term Investments	45.52	121.52	167%
Net Gain on Sale of Investments	9.82	44.38	352%
Other Non-operating Income	24.45	65.26	167%
Total	**228.26**	**279.85**	**23%**

Other income increased in the current financial year primarily due to increase in dividend income which is offset by decrease in interest income as late payment surcharge collected in FY 2022 amounted to ₹126 crore.

Cost of Fuel

(₹ crore)

Parameters	FY 2022	FY 2023	% change
Cost of Fuel	2,041.09	3,643.63	79%

Expenses

(₹ crore)

Parameters	FY 2022	FY 2023	% change
Employee Benefit Expense	124.10	134.73	9%
Finance Costs	127.00	259.80	105%
Depreciation and Amortisation Expense	327.69	317.42	-3%
Other Expenses	406.93	399.44	-2%

The finance cost increased 105% to ₹260 crore due to increase in borrowings and one time fair value adjustment for investment in Optionally Convertible Debentures of subsidiary. The employee cost in FY 2023 increased 9% YoY to ₹135 crore. Other expenses decreased 2% YoY.

EBITDA and Profit after Tax (PAT)

(₹ crore)

Parameters	FY 2022	FY 2023	% change
EBITDA	1,272.77	1,486.83	17%
Profit/(Loss) after tax	**569.82**	**711.02**	**25%**

The EBITDA increased to ₹1,487 crore in FY 2023 from ₹1,273 crore in the previous year majorly on account of higher generation and higher other income. The Company's standalone PAT increased 25% YoY to ₹711 crore in FY 2023 vis-à-vis a PAT of ₹570 crore in FY 2022 flowing from the higher EBITDA and exceptional income of ₹120 crore in FY 2023.

Ratio

Parameters	FY 2022	FY 2023	% change	Reason
Debtors Turnover (number of days)	42	41	-2%	Decrease was primarily on account of increase in turnover.
Inventory Turnover (number of days)	88	71	-19%	Decrease was due to increase in cost of goods sold.
Interest Coverage Ratio	13.76	11.73	-15%	Decrease is due to increase in interest expenses.
Current Ratio	2.92	0.53	-81%	Decrease was primarily on account of increase in current liabilities (mainly increase in current borrowings) & decrease in current assets (mainly decrease in other financial assets).
Debt Equity Ratio	0.09	0.46	389%	Increase was primarily on account of increase in borrowings.
Operating Profit Margin (%)	25.94	20.38	-21%	Decrease is due to increase in turnover on account of higher fuel costs (mainly pass through in revenue).
Net Profit Margin (%)	14.72	11.81	-20%	

Consolidated Financial Performance

The Company's total income from operations increased by 24% YoY to ₹10,867 crore from ₹8,736 crore YoY, due to higher realisation (as higher fuel costs are pass through in nature for LT PPAs) and increase in renewable capacity. EBITDA at ₹3,817 crore was 8% higher YoY vis-à-vis ₹3,542 crore in FY 2022 after adjusting for the impact of Karcham Wangtoo tariff order in last year. The Company continues to deliver strong EBITDA which was 2nd highest ever on the back of stable cashflows from long-term portfolio, superior O&M practices, and gains from buoyancy in the short term / merchant markets.

Consolidated adjusted PAT was 2nd highest ever at ₹1,358 crore up 15% YoY vis-à-vis ₹1,180 crore in FY 2022. The reported PAT for FY 2023 stood at ₹1,478 crore vs ₹1,729 crore in FY 2022 which includes the impact of Karcham Wangtoo tariff order. The Consolidated Net Worth and Proforma* Consolidated Net Debt as on 31st March, 2023 were ₹18,629 crore and ₹22,180 crore respectively, resulting in a Proforma* Net Debt to Equity ratio of 1.2x and Proforma* Net Debt/EBITDA of 4.4x.

* Proforma includes 30 SPVs of Mytrah Portfolio comprising of 1,753 MW

Income & Expense (Consolidated)

(₹ crore)

Parameters	FY 2022	FY 2023	% change
Revenue from Operations	8,167.15	10,331.81	27%
Other Income	568.69	535.24	-6%
Fuel Cost	3,493.95	5,569.70	59%
Purchase of Stock-in-trade	80.21	367.60	358%
Employee Benefits Expense	264.15	307.60	16%
Finance Costs	776.91	844.30	9%
Depreciation and Amortisation Expense	1,131.05	1,169.23	3%
Other Expenses	759.84	805.07	6%

EBITDA and Profit after Tax (PAT)

(₹ crore)

Parameters	FY 2022	FY 2023	% change
EBITDA	4,137.69	3,817.08	-8%
Profit for the year	1,728.62	1,477.76	-15%
Other Comprehensive Income	1,576.99	31.78	-98%
Total Comprehensive Income	3,305.61	1,509.54	-54%

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 recognizes 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 sub-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 minimise 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 is growing at approximately 5-6%, creating a good opportunity in merchant power sector ✓ The untied power is being sold on exchanges/short term contracts ✓ Untied power of Vijayanagar would be tied up after proposed expansion of JSW Steel plant at Vijayanagar
Raw material availability & cost		During the year, there was high volatility in coal prices due to Russia-Ukraine conflict and other geopolitical reasons. This has also resulted in higher coal demand from gas-based power plants in Europe due to scarcity of gas supply from Russia. Prices peaked to USD 327 per tonne in June 2022.	✓ The imported coal prices have softened to USD 213 per tonne in December 2022 The Company continues to manage this risk through - ✓ Broadening sourcing options - different geographies, multiple vendors ✓ Buying cheaper Indonesian coal ✓ 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% utilisation of ash and legacy ash in an eco-friendly and time-bound manner. Any non-compliance 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
Increasing interest rates		The RBI has increased repo rate 6 times during FY 2023. Globally, central banks have increased interest rates to control inflation. Central banks are likely to continue this trend in near future to control inflation.	✓ 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

Type of Risk / Opportunity	Risk Movement	Impact	Risk Response Strategies
Cyber security		Cyber security risk could result in substantial reputation and financial loss arising from: Theft of corporate information Theft of financial information (e.g. Financial results, bank details etc.) Ransom ware – Cyber extortion 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 protection 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
Forex risk		Recent geopolitical 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 has already hedged outstanding liability on CAPEX ✓ The Company has also hedged liability of green bonds as per scheduled payment dates
Environment and climate Change		We face significant regulatory and reputational risks related to environment protection and climate change. To mitigate these risks, the Company must adapt, invest in renewables, reduce carbon footprints, and embrace sustainable practices.	✓ Increasing Renewable Energy portfolio ✓ Use of better quality raw materials ✓ Increased use of wastewater & maintaining ZLD status

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. While the Company continued to undertake the various employee engagement activities it conducted in FY 2022, 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, address and mitigate any hazards at the workplace if deemed to be unsafe.

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

- Building a safe work environment
- Occupational health and safety training
- Digitisation in safety management

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. In FY 2023, JSW Energy QC teams participated and won 35 awards in CCQC (regional), 35 awards in NCQC (national) and 9 awards in ICQCC (International) competition and doubled the total medal tally to 79 quality awards. 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 programs are allowed to be expanded to Indirect Influence Zone (IIZ), areas beyond the geographical purview of DIZ.
- Programs 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 programs.
- 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 2022, please also refer to:

- Annexure B to the Board's Report for the Annual Report on the CSR activities, starting on Page 248
- Our Sustainability Report's Chapter on Social Development starting on Page 76
- Our Business Responsibility Report starting on Page 162.

Internal Control

The Company has designed a robust internal control system in accordance with the size and nature of its business and complexity of its operations. A few significant features include:

- Annual budget preparation along 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 of Independent Directors who are experts in their field

The Audit Committee periodically reviews all audit plans to ensure adequacy of internal controls. It reviews significant audit findings and ensures audit recommendations are effectively implemented.

Internal Audit

JSW Energy has an integral Internal Audit function that inculcates best global standards and practices of international majors into its operations. The Company has a strong Internal Audit Department that reports to the Audit Committee comprising Independent Directors who are experts in their respective fields. The Company successfully integrated the COSO framework with its audit process to enhance the quality of its financial reporting compatible with business ethics, effective controls and governance. The Company extensively practices delegation of authority across its team, which creates effective checks and balances within the system to identify and correct all possible gaps. The Internal Audit team has access to all information in the organisation facilitated by the ERP implementation across the organisation.

The Internal Audit Department prepares risk-based audit plans whereby the frequency of audit is decided based on the risk ratings of the respective areas/ functions. The audit plan is approved by the Audit Committee and executed by the Internal Audit team. It is reviewed periodically to include areas that have assumed significance in line with emerging industry trends and growth of the Company. In addition, the Audit Committee also places reliance on internal customer feedback and other external events for the inclusion of additional areas into the audit plan besides regularly reviewing significant Internal Audit findings.

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.