

## RISK MANAGEMENT GUARDING AGAINST UNCERTAINTY

#### **OUR APPROACH**

JSW Cement is cognisant of the pivotal role of risk management in the cement sector. We leverage the industry-standard COSO Enterprise Risk Management (ERM) framework, ensuring a comprehensive approach to identifying and mitigating potential threats. A clearly defined, Boardsanctioned policy empowers our management team to identify risks, assess their impact on the Company and develop effective mitigation strategies. This safeguards the value we create for our stakeholders while also positioning us to capitalise on emerging business opportunities. We continuously evaluate the effectiveness of these strategies, ensuring we remain prepared to navigate the evolving business landscape and address potential risks with agility. The risk management function is structurally independent of the other business functions. Further to this, to strengthen our internal processes and the create awareness, we conduct regular risk management training and awareness sessions for nonexecutive directors and the business functions throughout the organisation on risk management principles and the trends.

We also incorporate risk criteria during development of products such as considering supply chain risks, raw material risks and others. Risk management excercise is undertaken twice a year.

#### **Oversight by Risk Management Committee:**

A dedicated Risk Management Committee, a sub-committee of the Board, oversees the ERM framework. This committee ensures:

- Effective execution of risk management strategies with a focus on taking concrete actions
- Proactive monitoring of risks arising from various aspects of the business, including performance, operations, compliance, incidents, processes and systems. This ensures these risks are appropriately managed

#### We recognise the importance of effectively managing and mitigating identified risks. This allows us to:

- Safeguard the interests of our shareholders and other stakeholders
- Ensure we achieve our set business goals and objectives
- Foster a foundation for sustainable growth within the company

#### MEMBERS OF THE RISK MANAGEMENT COMMITTEE

Mr. Seshaqiri Rao MVS (Chairman)

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KEY RISKS, OPP	anaged DRTUNITIES AND RESPONSE STRATEGIES	Risk ( (y-o-)	decrease /)	Risk und (y-o-y)	changed	Risk increase (y-o-y)
Key Risks	Mitigation Strategies	Key Trends	Increase/ in magnit	Decrease ude of risk	Strategy Linkage	Capitals Impacted



#### **R1** The demand and supply dynamics

Demand-supply risks can affect consumer spending.

#### Increased production

Proactively scaling up capacity to meet anticipated rise in demand

#### Market expansion

- Widening market base and diversifying customer segments
- Enhancing customer recall by delivering high quality products with exceptional service focussed at customer needs
- Introducing new products to cater to evolving market trends

#### Market intelligence

Utilising market intelligence and insights from our marketing team to make informed decisions regarding production, market expansion and new product development

#### Cost control

- Maintaining a focus on cost reduction by
- Utilising alternative fuels as a costeffective and sustainable replacement for traditional fuels
- Expanding WHRS to capture waste heat and reduce energy consumption, thereby lowering production costs

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Key Risks	Mitigation Strategies	Key Trends	Increase/Decrease in magnitude of risk	Strategy Linkage	Capitals Impacted
Financial					
R2 Finance Potential risks associated with financing, transactions, credit and liquidity among other factors. The lack of liquidity may impact our targeted operational capacity/ financial obligations. Inflation and interest rate fluctuations may affect financial results.	Debt management Repaying or refinancing high-interest loans to reduce interest rate burden Hedging Utilising interest rate swaps for a portion of foreign loans, converting variable interest (SOFR) to fixed interest, providing stability Financial monitoring Proactively tracking and monitoring external events that could impact financial performance, allowing for early course correction, if necessary	The US Fed left interest rates unchanged for the 5 <sup>th</sup> meeting in a row. Three rate cuts are projected in 2024, hinting at a potential policy shift towards easing.	÷	S1 S2 S3 S4 S5	
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#### Infrastructure & Logistics

**OPERATIONAL** 

Any form of disruption in transportation of goods and supplies, electricity grid, communication systems or any other public facility has the potential to impact normal business activities, in turn impacting financial conditions of the business. Such disruptions may also result in increased costs to the company.

#### Logistics management

- A centralised logistics cell streamlines transportation by selecting the most economical mode for each situation
- A 24x7 centralised control tower monitors fleet movement across all plants, ensuring efficient dispatch and delivery
- Industry-recognised digital tools optimise yard operations and manage truck movement within and outside the plant, minimising delays and maximising resource utilisation

#### Strategic budget allocation

Ensures our infrastructure keeps pace with current and anticipated production demands

#### **Multi-modal transportation**

Leveraging combining road and rail options, to optimise delivery times and minimise costs

Focus on improving the logistics and reduce transportation costs

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Adoptions of green logistics to reduce environmental footprint



Key Risks	Mitigation Strategies	Key Trends	Increase/Decrease in magnitude of risk	Strategy Linkage	Capitals Impacted
R4 Raw fuels and material The price and availability of raw fuels and materials may be adversely affected by factors beyond our	Track commodity markets Actively monitoring price fluctuations and trends in the raw material market to make informed purchasing decisions <b>Develop captive capacities</b> Expanding own facilities for key raw materials like slag and clinker to ensure a reliable and	A shift towards a recycling- based society, heavily reliant on alternative/ recycled materials and	$\leftrightarrow$	S3 S5	% En
control, with issues such as increased demand for raw materials, interruption in production by suppliers, change in supplier allocation, price and currency fluctuations	cost-effective supply Broaden sourcing Reducing dependence on a single supplier by continuously exploring and sourcing for a diverse supplier base Strengthen supplier relationships	lueis			
policy changes, transport costs, etc.	Fostering strong partnerships with our suppliers through open communication and collaboration, securing reliable supply and access to future market insights.				
	Monitor government policies Closely monitoring policy changes in sourcing countries that can impact raw material availability, allowing us to proactively adapt our strategies				
	Use of alternate fuel Exploring and implementing the use of alternative fuels to lower blended fuel costs, reducing dependence on traditional fuel sources				
R5 Attract and retain desired talent/manpower Attracting and retaining employees with the requisite skillset and experience is critical to maintain current operations and future plans of expansions. Although our labour relations are strong, we cannot discount future disruptions due to disputes or other	Strong HR policies Implementing fair and transparent hiring and talent management practices, ensuring a positive recruitment experience and fostering trust with potential employees Competitive compensation Offering attractive salaries and comprehensive benefits packages to attract and retain top talent Performance management system Recognising and rewarding top performers, valuable contributions and initiatives, motivating employees and promoting a culture of excellence Succession planning	Adoption of digital technology, analytics and automation in human resource management		S4 S5	
disputes or other unforeseen issues.	Identifying and cultivating future leaders within the company for senior and middle management positions, ensuring a smooth transition and continued success				
	<b>Employee engagement</b> Project Unnati: This initiative addresses employee concerns and prevents attrition through targeted action plans, fostering a positive work environment				

Employee stock ownership plans (ESOPs) Offering ESOPs to provide employees with a

stake in the company's success, aligning their interests with the company's growth

#### Leadership development

Future-Fit programmes: We collaborate with prestigious institutions to offer leadership development programmes that equip employees with the skills and knowledge needed for future roles within JSW Cement

#### **Skill development**

Online learning courses: We provide a wide range of online learning opportunities, allowing employees to continuously enhance their skillsets

Key Risks	Mitigation Strategies	Key Trends	Increase/Decrease in magnitude of risk	Strategy Linkage	Capitals Impacted
SUSTAINABI	LITY				
R6 Climate and Sustainability Cement manufacturing operations are associated with significant CO <sub>2</sub> emissions, dust, SOx, and NOx pollutants, posing environmental risks. Ensuring robust health and safety measures is critical to mitigate risks to life, destruction of property, and the impact on environment. With new and more stringent environmental obligations pertaining to these aspects, it becomes pertinent for the company to ensure compliance. This may require additional capital expenditure or modifications in operating practices. And may also necessitate additional reporting obligations. There are also a few potential emerging risks pertaining to climate risks and water availability, not only to our current operations but to our proposed expansion projects as well. Thus, capacity expansion projects require adherence to new legal requirements.	<ul> <li>Leadership commitment</li> <li>Demonstrating strong commitment to safety and environmental stewardship through active participation and resource allocation for EHS initiatives. Conducting regular department-wide safety meetings to review safety protocols, discuss recent accidents and near misses and encourage continuous improvement</li> <li>Safety as a Key Result Area (KRA) Integrating safety performance as a key factor in evaluating employee and departmental performance, ensuring everyone prioritises safe work practices</li> <li>Regulatory compliance</li> <li>Monitoring and ensuring compliance with all applicable environmental and safety regulations. We are preparing ourselves to comply with new requirements such as carbon credit and trading scheme (CCTS).</li> <li>TCFD Assessment</li> <li>Conducting TCFD assessments to evaluate and address emerging climate-related risks and opportunities associated with our operations and also estimate financial impact (Details are given on page 49).</li> <li>Continuous improvement</li> <li>Actively tracking evolving safety technologies and regulations to ensure our practices remain up-to-date</li> <li>Conducting safety ruaining programmes, mock drills, and safety audits to equip employees to identify and address potential hazards</li> <li>Utilising camera systems in key areas to monitor operations and identify potential safety concerns</li> <li>Employee well-being</li> <li>Offering regular medical check-ups, on-site medical facilities and medical insurance coverage for employee health</li> <li>Conducting employee health</li> </ul>	Increasing demand for environmentally sound products with low GHG emissions The evolution of sustainability reporting with new guidelines/ frameworks enhancing transparency and trust		S1 S2 S4 S5	
	Conducting pre-qualification processes and technical assessments to ensure contractors meet our safety standards <b>Project safety</b> Regular safety audits at project sites are conducted to ensure adherence to safety				
	protocols and identify areas for improvement Sustainable products Focussed on producing environmentally safe and sustainable products for our customers				

minimising our environmental footprint

### Transparent disclosure and reporting

Improved disclosure of information across various platforms such as CDP–Climate, CDP Water, ESG Profile on our website, alongside public disclosures in the annual integrated report



**BUILDING A BETTER TOMORROW** WITH PASSION, PEOPLE AND PURPOSE.

#### **KEY EMERGING RISKS**

Key Risks	Mitigation Strategies	Key Trends	Strategy Linkage	Capitals Impacted
ER1 Geopolitical tensions Demand-supply risks can affect consumer spending.	<ul> <li>Developing captive capacities for raw materials like slag and clinker</li> <li>Continuously diversifying our supplier base and monitoring policy changes in sourcing countries</li> <li>Exploring the usage of alternate fuel in our operations</li> </ul>	A shift towards a society high economic uncertainty, trade restriction and protectionism and energy security and regulatory risks	53	
ER2 Disruptive technology and cybersecurity risks New automation and Al/ ML-driven technologies are disrupting how businesses operate. Our inability to implement	<ul> <li>Progressing on the digital transformation journey across all aspects of business</li> <li>Implementing digital technologies focussed on enhancing customer experience, driving excellence in logistics service and cost, adopting industry 4.0/ APC in manufacturing and transforming key finance processes</li> </ul>	Digitalisation is emerging as a key differentiator to cost-effectively address market demand, connect with consumers and ensure data-driven, intelligent operations to stay ahead of evolving trends and innovate.	\$1 \$3 \$4 \$5	

New automation and Al/ ML-driven technologies are disrupting how businesses operate. Our inability to implement them may create cost pressures and lead to a decline in operational and supply chain efficiency, impacting our market competitiveness. Additionally, lack of adequate security measures can make our operations vulnerable to cyberattacks and lead to production halts.

• Focus on ramping up information and cybersecurity standards



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# CLIMATE RISK AND OPPORTUNITY ASSESSMENT REPORT ALIGNING WITH TCFD RECOMMENDATION

At JSW Cement, climate-related risks and opportunities are well integrated into our overall risk management process. Our multi-disciplinary, company-wide risk management process enables identification, assessment, and management of several aspects of climate change, including fuel availability & cost, energy optimisation, and emerging regulations, etc. However, a separate exercise of climate risk/opportunity assessment was undertaken in 2023 aligning with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) for which we had engaged a third party '**AXA Climate**'. A scenario-based climate change risk assessment exercise was undertaken to evaluate the potential implications of climate risks on our business and operations in the short term, medium term, and long term. This assessment identified both physical and transition climate risks, analysing two key scenarios: Business-as-usual and Optimistic.

#### **PHYSICAL RISK ASSESSMENT**

Our climate risk assessment covered all seven of our operational sites, along with four key value chain assets, including two raw material suppliers and one major market. The assessment focussed on both acute and chronic physical climaterelated risks.

#### **Shared Socioeconomic Pathways**

(SSPs) are climate change scenarios of projected socioeconomic global changes up to 2100 as defined in the IPCC Sixth Assessment Report on climate change in 2021. These are used to derive greenhouse gas emissions scenarios with different climate policies. There are five scenarios as depicted in the figure. Among these five, we have focussed on two future scenarios -SSP2-4.5 and SSP5-8.5.



#### Socio-economic challenges for adaptation

Physical Risks	SSP2-4.5	SSP5-8.5
Acute climate risks refer to hazards	This is a "middle of the road" scenario.	This is a future to avoid at all costs.
that are event-driven, including extreme	$CO_2$ emissions remain around current	$CO_2$ emissions roughly double by 2050,
weather events, such as cyclones,	levels before declining in the middle of	driven by rapid global economic growth
droughts, earthquakes, or floods.	the century, though they do not reach	fuelled by fossil fuels and energy-
<b>Chronic climate risks</b> refer to long-term shifts in climate patterns that may cause continuous evolution in climate variables like sea level rise, water stress, etc.	net-zero by 2100. Socio-economic factors follow their historical trends, with no notable shifts. Progress toward sustainability is slow, with uneven growth in development and income. Under this scenario, temperatures rise 2.7C by the end of the century, aligning with the RCP 4.5 scenario.	intensive lifestyles. By 2100, the average global temperature will increase by 4.4C. This is equivalent to the RCP 8.5 scenario.

Seven climate perils (as per IPCC classifications) were primarily considered for the risk assessment. Multiperil risk score was calculated for each asset based on its **exposition** to perils and on the vulnerability depending on the type of building and industry.



#### Below is the summarised analysis of physical risk assessment

Risk	Acute Climate Risks	Chronic Physical Risks
Risk Description	Acute physical risks in terms of floods, rainfall can potentially impact production or sales volumes led by disruption of business operations due to interruption in supply chain, rise in logistics costs, power outage, infrastructure damages, manpower shortage, among other aspects. Sometimes, disruption in supply and logististics may also occur due to these acute physical risks.	Though Cement manufacturing is not water intensive process, water is critical for our operations. Today, none of our operations are exposed to water stress or heat waves. However, in the long term, further rise in temperatures leading to heat stress or water stress could impact our employees and communities around and also impact our operations.
Impact	Our Dolvi plant will be exposed to flood and extreme precipitation risk of medium to long term in both scenarios. Some of value chain assets may also been exposed to extreme weather events such as floods and cyclones	Our plants such as Nandyal, Salem and Vijayanagar may face heat stress and water stress problem in medium to long term scenarios.
Mitigation Measures	With the help of digitalisation, we are optimising our logistics and warehouse/inventory management systems. We have got disaster management plan at all our sites. Our insurance policy helps protect our plants against damages to business assets or loss of materials in warehouses or transit. With our groups efforts, we are also increasing our natural coastal protection efforts through mangrove plantation	We are implementing rainwater harvesting across all sites within our premises as well as in communities at watershed level. We also take efforts in reducing our freshwater consumption through reuse, recycle and process optimisation. All our sites are Zero Liquid Discharge (ZLD). We have taken a target of becoming 5 times water positive. For our few locations, we are exploring use of treated waste water instead of fresh water for operational use.

#### **Transition Risk Assessment**

For assessing climate-related transition risks and opportunities, we utilised the Network for Greening the Financial System (NGFS) scenarios. The NGFS scenarios framework explores a set of possible transition pathways, based on varying levels of ambition and coordination in climate policies.

We considered the Net Zero (NZ 2050) Scenario (Optimistic) and Nationally Determined Contributions Scenario (NDC) by NGFS.



The NGFS scenario framework in Phase IV

Transition Risks	NZ 2050 Scenario	NGFS NDCs Scenario
	This scenario assumes that climate policies are introduced early and gradually become more stringent. Both physical and transition risks are relatively subdued.	This scenario assumes that some climate policies are implemented in some jurisdictions, but global efforts are insufficient to halt significant global warming Critical temperature thresholds have exceeded, leading to severe physical risks and irreversible impacts like sea-level rise.

Below is the	summarised analysis of transition risk/opportunity a	ssessment

Risk/	Dick/Opportunity Deceription	Risk/opportunity Evolution per NGFS NDC Scenario			Risk/opportunity Evolution per NGFS NZ Scenario		
Туре	Risk/opportunity Description		Medium 2030	Long 2035	Short 2025	Medium 2030	Long 2035
Transition Ris							
	Emerging regulations around PAT and carbon market mechanism in India						
Policy and Regulatory Risks	Increasing compliance related to renewable purchase obligation						
	Emerging regulations on use of blended cement in Ready mix concrete						
Market and Technology	Increase in CAPEX or early retirement of assets due to new technology and equipment						
	Scarcity and high cost of specific raw materials						
Reputation	Inability to meet stakeholder expectations and attract talent						
	Transition Opportun	ities					
Market	Increasing demand for low carbon products						
Opportunity 1	Increase use of alternate fuels and raw materials (AFR) including plastic waste disposal						
Reputational	Attracting investors and securing capital						
Opportunity 1	Improved perception due to use of low carbon technologies and production of green products						

Transition Risks: — Low — Moderate — High — Very High Transition Opportunities: — Low — Moderate — High — Extensive

Risk Type	Policy and Legal	Market and Technology	Reputation
Impact	Policy and legal frameworks are increasingly becoming stricter and will continue for years to come. This may include Carbon Credit Trading scheme and Carbon pricing which will lead to financial impact due to increased operation cost or compliance cost. Few policy decisions (as Green procurement, AFR utilisation can also create opportunities for business.	Markets could be affected due to increased demand for energy- efficient and low carbon products. This could lead to reduced access or increased cost of supplementary cementitious materials (SCMs). There can also be increased CAPEX costs for transitioning to new and I ow emissions technologies such as CCUS.	There are growing expectations for responsible conduct from stakeholders, including investors, lenders and customers. If not met, these expectation may impact the companies reputation, brand value and trust in management.
Mitigation Measures	JSW Cement is committed to net zero concrete by 2050 through GCCA Roadmap. With lowest emission intensity in the world, we are at reduced risk level anticipated due to CCTS as compared to our peers. However, we are taking action for other levers - increase AFR or Clean Energy to mitigate emerging risks. Due to higher low carbon product portfolio, we also anticipate getting benefited from green procurement policy and AFR-related policies.	We are foussing on primary levers of decarbonisation. ~90% of our current portfolio is low carbon products and our efforts are aggressive to develop low carbon products using other SCMs such as clay. On technology front, we are adopting best availability technologies for AFR systems, WHRS, Renewable energy etc., in our current and new plants. We are also exploring to undertake CCUS feasibility study or a pilot.	We are continuously focussing on our efforts to maintain the leadership position in our decarbonisaton journey. We engage continuously with all our key stakeholders including customers and suppliers. We have raised Sustainability Linked Loan which is linked to our CO <sub>2</sub> intensity reduction targets.



1 - Governance	Key Findings/Current Status
a) Governance of risks and opportunities related to climate change by the Board of Directors	<ul> <li>Governance at JSW Cement is structured across three levels - Board of Directors, Board-level Management Committees &amp; Executive Management</li> <li>Climate-related aspects including risks and opportunities are reviewed at Risk Management Committee and Sustainability Committee at the Board level, twice a year.</li> <li>Topics related to ESG and Climate are covered in Climate Change Policy, Corporate</li> </ul>
	Water Resource Management Policy and Biodiversity Policy.
<ul> <li>b) Management's role in assessing and managing risks and opportunities related to climate change</li> </ul>	• The Chief Sustainability and Innovation officer is responsible for setting up the climate strategy, ambitions, metrics, and targets for the business. This is carried out in consultation with the Chief Manufacturing Officer who is accountable for the execution and implementation of the initiatives.
	<ul> <li>Climate-related risks and opportunities are assessed at the unit level and functional level and then are reviewed and validated before consolidation at the corporate level. Mitigation actions are also prepared and reviewed periodically.</li> </ul>
	• The management decided to undertake a separate climate risk and opportunities assessment for the business aligned with TCFD recommendations in FY 2022-23.
2 - Strategy	Key Findings/Current Status
a) Risks and opportunities associated with climate change identified	• The business undertook a climate risk and opportunities assessment aligned with TCFD recommendations and industry best practices.
	<ul> <li>In the assessment, key physical and transition risks to the business have been identified under different scenarios over different timeframes.</li> </ul>
b) Impacts of risks and opportunities identified for the organisation	• The business has identified the potential impacts of climate change on its assets, supply chain and key markets. It has also undertaken a detailed assessment of the impact of top climate risk on the business until 2030-2035 timeframes for transition risks.
	• The business has identified the potential relative financial impact of climate-related physical risks across its asset and key supplier portfolios.
c) Resilience strategy of the organisation, taking into consideration different climate-related scenarios	<ul> <li>The business has identified key development areas based on the risks and opportunities identified.</li> </ul>
	<ul> <li>As part of the current assessment, a resilience strategy has been developed based on scenario analysis, with the most aggressive scenarios taking precedence (e.g. SSP5-8.5 scenario for physical climate risks and Net Zero scenario for transition risks). However, this is yet to be integrated into the existing framework and implemented.</li> </ul>

3 - Risk Management	Key Findings/Current Status
<ul> <li>a) Processes in place within the Company to assess risks and opportunities associated with climate change</li> <li>b) Processes in place to manage these risks and opportunities</li> <li>c) Integrating these processes into the Company's risk management processes</li> </ul>	<ul> <li>The business adheres to the internationally recognised 'COSO' model for Enterprise Risk Management (ERM).</li> <li>JSW Cement has a dedicated risk management function at the group level. The risk management framework involves a 3-step process viz. identification of risks, assessment of risks, and responding to these risks.</li> <li>Climate-related risks and opportunities are assessed at the unit level and functional level and are reviewed and validated before consolidation at the corporate level. Mitigation actions are also prepared and reviewed in a timely manner.</li> <li>With the present climate assessment aligned with the TCFD recommendations, the business has also integrated climate risks and opportunities into its ERM.</li> </ul>
4 - Metrics and Targets	Key Findings/Current Status
a) Indicators used to assess risks and opportunities related to climate change	<ul> <li>The business currently uses key metrics such as emissions intensity per tonne of cementitious materials produced to assess its performance towards climate mitigation.</li> <li>Apart from this, it has also used metrics such as energy intensity, fresh water intensity, water positive index, Thermal Substitution Rate (TSR), green and clean energy portfolio, waste-derived resources, etc. We have set targets as well for all these indicators against which we continuously monitor our progress.</li> </ul>
<ul> <li>b) Publication of Scope 1, Scope 2, and, if applicable, Scope 3 greenhouse gas (GHG) emissions</li> </ul>	<ul> <li>The business has been reporting and disclosing its Scope 1 and Scope 2 emissions and partial Scope 3 emissions since 2019 in its CDP Climate and Integrated/ Sustainability reports.</li> </ul>
c) Targets used to assess the risks and opportunities linked to climate change	<ul> <li>The Company primarily uses carbon emissions related to absolute emissions and emissions intensity per tonne of cementitious materials for Scope 1 and Scope 2 produced as the key target for evaluation of its performance.</li> <li>Apart from this, the Company has set targets in the areas of electric vehicles, renewable energy, energy efficiency, and AFR.</li> </ul>
Based on the assessment conducted; we have a	also developed a context-specific physical climate risk adaptation plan. The plan covers

Based on the assessment conducted; we have also developed a context-specific physical climate risk adaptation plan. The plan covers 100% of our existing operations as well as some of our upcoming operations. We have identified relevant adaptation measures based on the severity of each identified risk. The adaptation measures will be implemented over a 5-10 year period.

For each of the identified risks and opportunities, financial implications on our business were also identified using assumptions and estimations. This has helped us identify the timeframe to materialise these risks as well as the cost of actions required to mitigate the risks or capitalise on the opportunities. This approach enables us to make informed decisions for the future.

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