



Building  
Trust with  
**Climate  
Action**

Report  
FY2024-25

# CONTENTS

|                                                                                        |           |                                                                                      |           |                                                                         |           |                                                                                             |           |
|----------------------------------------------------------------------------------------|-----------|--------------------------------------------------------------------------------------|-----------|-------------------------------------------------------------------------|-----------|---------------------------------------------------------------------------------------------|-----------|
| <b>EXECUTIVE SUMMARY &amp; AT-A-GLANCE</b>                                             | <b>2</b>  | <b>DECARBONISATION STRATEGY &amp; LEVERS</b>                                         | <b>18</b> | <b>STRENGTHENING CLIMATE RISK MANAGEMENT</b>                            | <b>38</b> | <b>BEYOND STEEL</b>                                                                         | <b>56</b> |
| FORWARD-LOOKING STATEMENT                                                              | 3         | FORGING A GREENER FUTURE: OUR DECARBONIZATION ROADMAP                                | 20        | Processes for Identifying and Assessing Climate-Related Risks           | 38        | CIRCULARITY: REDUCING EMISSIONS THROUGH MATERIAL REUSE                                      | 57        |
| KEY FY25 HIGHLIGHTS                                                                    | 4         | TRANSFORMATIVE DECARBONIZATION INITIATIVES: SCALING CLIMATE ACTION ACROSS OPERATIONS | 22        | Processes for Managing Climate-Related Risks                            | 39        | CLIMATE-DRIVEN SUPPLY CHAIN MANAGEMENT                                                      | 58        |
| <b>INTRODUCTION</b>                                                                    | <b>6</b>  | <b>CLIMATE RISK &amp; OPPORTUNITY MANAGEMENT</b>                                     | <b>26</b> | Integration into Risk Management Framework                              | 39        | DIGITALIZATION FOR CLIMATE PERFORMANCE                                                      | 59        |
| MESSAGE FROM MD - FY24 RECAP & FY25 AMBITION                                           | 6         | STRENGTHENING FOUNDATIONS: OUR CLIMATE RISK ASSESSMENT FRAMEWORK                     | 28        | <b>GOVERNANCE, POLICY &amp; STAKEHOLDERS</b>                            | <b>40</b> | <b>ANNEXURE 1: PHYSICAL AND TRANSITION RISKS – BUSINESS IMPACTS AND MITIGATION MEASURES</b> | <b>60</b> |
| MESSAGE FROM CSO - FROM COMMITMENT TO QUANTIFICATION: DEEPENING CLIMATE ACCOUNTABILITY | 8         | Understanding Physical Climate Hazards: Foundation from FY24                         | 28        | BOARD AND ESG COMMITTEES                                                | 43        | PHYSICAL RISKS SCENARIOS – BUSINESS IMPACTS AND MITIGATION MEASURES                         | 61        |
| EMBEDDING CLIMATE IMPERATIVES AT THE HEART OF JSL'S STRATEGIC VISION                   | 9         | Transition Risk & Opportunity Framework: Insights from FY24                          | 33        | STAKEHOLDER ENGAGEMENT                                                  | 45        | TRANSITION RISK AND OPPORTUNITY SCENARIOS – BUSINESS IMPACTS AND MITIGATION MEASURES        | 65        |
| REPORTING PERIOD AND BOUNDARY                                                          | 11        | <b>ADVANCING RISK INTELLIGENCE: FINANCIAL QUANTIFICATION OF CLIMATE RISKS</b>        | <b>35</b> | ADVOCATING FOR GLOBAL CLIMATE ACTION                                    | 46        | <b>ANNEXURE 2: ACRONYMS AND ABBREVIATIONS</b>                                               | <b>68</b> |
| <b>ADVANCING CLIMATE ACTION: OUR PROGRESS AND VISION</b>                               | <b>12</b> | Financial Impact Assessment of Physical Risks - Heat-Related Production Loss         | 35        | AWARDS AND ACCOLADES                                                    | 47        | <b>ANNEXURE 3: COMBINED INDEX: TCFD &amp; IFRS S2</b>                                       | <b>70</b> |
| CATALYZING CLIMATE LEADERSHIP: JSL'S PLEDGE TO A SUSTAINABLE FUTURE                    | 12        | Financial Impact Assessment of Transition Risks                                      | 36        | <b>PERFORMANCE METRICS: TRACKING OUR CLIMATE AND RESOURCE FOOTPRINT</b> | <b>48</b> |                                                                                             |           |
| DEFINING OUR CLIMATE AMBITION: JSL'S EMISSIONS & RESOURCE TARGETS                      | 14        | Financial Impact Assessment of Transition Opportunities                              | 37        | GHG Emissions and Intensity at Business Unit level                      | 51        |                                                                                             |           |
| LEARNINGS AND EVOLUTION                                                                | 16        |                                                                                      |           |                                                                         |           |                                                                                             |           |



# EXECUTIVE SUMMARY & AT-A-GLANCE

## FORWARD-LOOKING STATEMENT

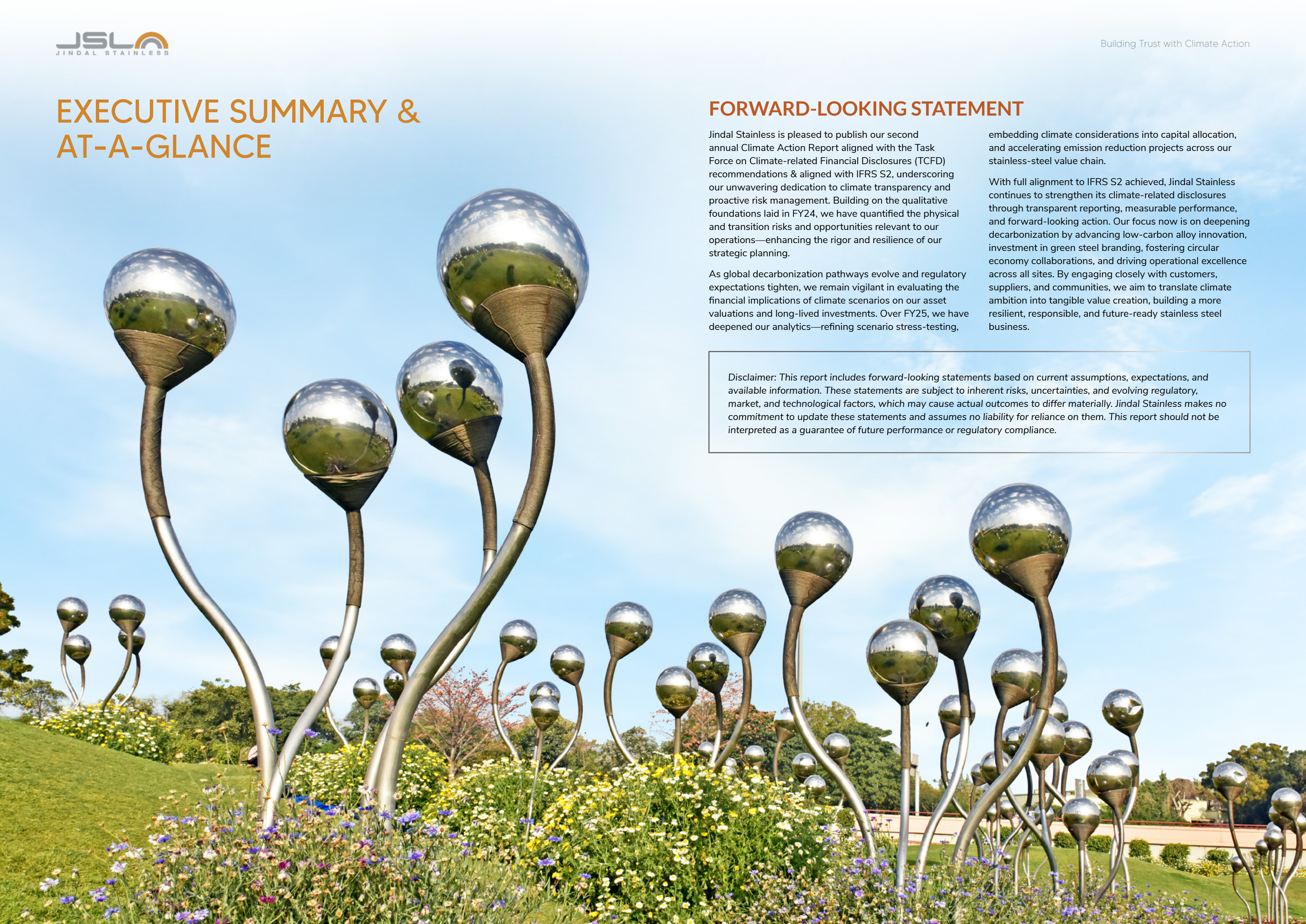
Jindal Stainless is pleased to publish our second annual Climate Action Report aligned with the Task Force on Climate-related Financial Disclosures (TCFD) recommendations & aligned with IFRS S2, underscoring our unwavering dedication to climate transparency and proactive risk management. Building on the qualitative foundations laid in FY24, we have quantified the physical and transition risks and opportunities relevant to our operations—enhancing the rigor and resilience of our strategic planning.

As global decarbonization pathways evolve and regulatory expectations tighten, we remain vigilant in evaluating the financial implications of climate scenarios on our asset valuations and long-lived investments. Over FY25, we have deepened our analytics—refining scenario stress-testing,

embedding climate considerations into capital allocation, and accelerating emission reduction projects across our stainless-steel value chain.

With full alignment to IFRS S2 achieved, Jindal Stainless continues to strengthen its climate-related disclosures through transparent reporting, measurable performance, and forward-looking action. Our focus now is on deepening decarbonization by advancing low-carbon alloy innovation, investment in green steel branding, fostering circular economy collaborations, and driving operational excellence across all sites. By engaging closely with customers, suppliers, and communities, we aim to translate climate ambition into tangible value creation, building a more resilient, responsible, and future-ready stainless steel business.

*Disclaimer: This report includes forward-looking statements based on current assumptions, expectations, and available information. These statements are subject to inherent risks, uncertainties, and evolving regulatory, market, and technological factors, which may cause actual outcomes to differ materially. Jindal Stainless makes no commitment to update these statements and assumes no liability for reliance on them. This report should not be interpreted as a guarantee of future performance or regulatory compliance.*



## KEY HIGHLIGHTS FY25



### Where we are

#### Our GHG Emissions

**2,995.799 thousand tCO<sub>2</sub>e**  
Scope 1

**622.511 thousand tCO<sub>2</sub>e**  
Scope 2

**3,216.693 thousand tCO<sub>2</sub>e**  
Scope 3

**1.85 tCO<sub>2</sub>e/tcs**  
Total Scope 1 and Scope 2 emission intensity



### What we achieved

JSL's emission reduction efforts led to the avoidance of **3,18,248 tonnes of CO<sub>2</sub>** equivalent emissions, reinforcing its long-term climate ambition to **achieve Net Zero by 2050**

- 3,63,297 MWh**  
Renewable energy used across our operations
- 4.2 MWp**  
Rooftop Solar Installed
- 28 MWp**  
Rooftop Solar Commissioned
- 7.3 MWp**  
Floating Solar Plant installed
- 89,095**  
Trees Planted Inside the Boundary
- 72.11 %**  
scrap reused as input raw material
- 7.36 m3/TCS**  
Water Intensity
- 1.85 TCO<sub>2</sub>e/TCS**  
Emissions Intensity
- ~ 1 GW**  
Wind-Solar Hybrid RE Project
- 100%**  
water recycling undertaken at all plants
- Developed eco-friendly product technology** for clad plates used in petrochemical, thermal power and oil and gas sectors
- Set up India's first Green Hydrogen Plant in the stainless-steel sector at our Hisar unit, with a carbon abatement potential of **2800 tCO<sub>2</sub>e/ annum**

### Our targets ahead

#### Achieve net-zero carbon emission by 2050

50% reduction in carbon emission intensity by 2035 compared to the baseline levels of 1.98 tonnes CO<sub>2</sub>/tonnes of crude steel in FY 2022

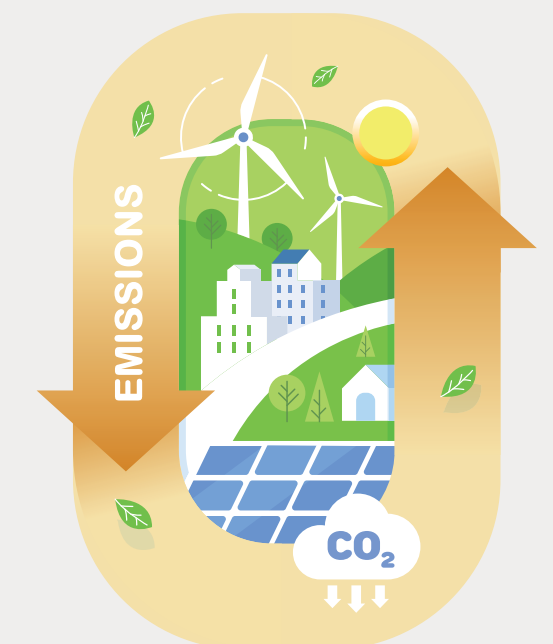
Energy reduction targets for – PAT Cycle II

Target for Jajpur: **1.5148 TOE/ton**

Target for Hisar: **0.0640 TOE/ton**

#### SBTi Target alignment

In April 2024, the Company announced its official commitment to the near-term science-based emissions reduction and Net Zero targets outlined by global climate action body Science Based Targets initiative (SBTi), in a significant step towards achieving carbon neutrality. The Company remains on track to submit and validate its science-based Net Zero targets through the Science Based Targets initiative (SBTi) by reinforcing its long-term commitment to a low-carbon future.



PAT cycle II targets are achieved and positive ecerts has been awarded to both sites. In FY 2024-25 both the united complied with PAT cycle VII MRV.

# INTRODUCTION

## MESSAGE FROM MD - FY24 RECAP & FY25 AMBITION

Dear Stakeholders,

As I reflect on the past year, I take great pride in how Jindal Stainless has continued to strengthen its climate ambition with purpose, precision, and accountability. FY24 marked a defining year in our climate journey — one that moved from intent to impact. Through our first Climate Action Report, we established a robust foundation by mapping physical and transition risks across our value chain and embedding climate considerations into our risk management and strategic planning frameworks.

In FY25, we built on that foundation with even greater rigor and transparency. Our second Climate Action Report — fully aligned with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and guided by IFRS S2 — deepens our commitment to climate accountability by quantifying the financial implications of physical and transition risks, and by integrating scenario-based climate resilience into business decisions. This evolution reflects our belief that climate performance is now synonymous with business performance.

### Advancing Decarbonisation and Energy Transition

Our decarbonisation roadmap is anchored in scientific, time-bound commitments. In FY25, Jindal Stainless

“

*We also commissioned India's first green hydrogen plant in the stainless-steel sector at our Hisar unit, with a carbon abatement potential of 2,800 tCO<sub>2</sub>e annually. Alongside, we commissioned 7.3 MWp of floating solar, expanded rooftop solar to 32.2 MWp, and undertook multiple energy-efficiency interventions*

”

formally aligned with the Science Based Targets initiative (SBTi), reinforcing our ambition to halve emissions by 2035 and achieve net zero by 2050. During the year, we commissioned Odisha's largest captive solar facility (30 MWp) and signed long-term renewable Power Purchase Agreements (PPAs), expanding our renewable share to over 26% of total power consumption..

We also commissioned India's first green hydrogen plant in the stainless-steel sector at our Hisar unit, with a carbon abatement potential of 2,800 tCO<sub>2</sub>e annually. Alongside, we commissioned 7.3 MWp of floating solar, expanded rooftop solar to 32.2 MWp, and undertook multiple energy-efficiency interventions — from liquid chrome optimisation in electric arc furnaces to heat recovery in rolling divisions — collectively avoiding over 3.18 lakh tCO<sub>2</sub>e in FY25.

These milestones reaffirm our conviction that decarbonisation is not just a climate imperative but a strategic differentiator that enhances operational resilience, reduces cost volatility, and strengthens our market leadership in low-carbon stainless steel.

### Embedding Climate Resilience Across the Value Chain

Building on the groundwork of FY24, this year we advanced from qualitative to quantitative climate risk assessments, modelling the financial impact of extreme heat across our Jajpur, Hisar, and Sukinda Mines operations, and evaluating the transition costs associated with carbon pricing.

These insights now inform our risk management and capital allocation decisions, ensuring that investments are future-proofed against climate uncertainties. The Board-level ESG Committee continues to oversee climate risks related progress, reinforcing a culture of accountability and foresight at the highest levels of governance.

### Turning Climate Ambition into Business Value

Our climate strategy extends beyond compliance it is integral to our value creation model. By embedding sustainability into R&D, we are developing low-carbon alloys and clad products that meet the performance expectations of high-growth sectors such as clean energy, petrochemicals, and infrastructure. Our scrap-intensive circular production model with over 72% recycled content not only reduces lifecycle emissions but also mitigates resource dependency.

Through digital transformation and AI-enabled performance monitoring, we continue to drive efficiency, predictive maintenance, and traceability — key enablers in achieving our long-term emission reduction goals. This convergence of climate strategy, innovation, and technology is positioning Jindal Stainless at the forefront of the global green steel transition.

### Our FY26 Ambition: From Disclosure to Transformation

With full IFRS S2 alignment now achieved, the coming year marks a decisive shift from disclosure to implementation. Jindal Stainless will continue to translate its climate strategy into measurable action through the following priorities:

**Finalize the Decarbonization Roadmap and Initiatives:** Complete and operationalize the company's near- and long-term decarbonization roadmap currently under development, establishing a clear pathway toward Net Zero by 2050.

**Internal Carbon Pricing:** Finalize the internal carbon price (ICP) currently under evaluation to integrate climate costs into business decisions and capital planning.

**Strengthen Scenario Modelling and Stress Testing:** Expand climate scenario analysis across geographies and value chain segments to better assess and manage transition and physical risks.

**Accelerate Renewable Energy Integration:** Advance ~1 GW of wind-solar hybrid projects under development to further decarbonize energy use.

**Deepen Supplier Engagement:** Collaborate with suppliers to drive upstream emission reductions and strengthen value-chain resilience.

**Enhance Product-Level Transparency:** Scale Product Carbon Footprint (PCF) disclosures and Environmental Product Declarations (EPDs) across major stainless-steel grades.

**Integrate Climate Metrics into Performance Management:** Embed climate-linked KPIs into management and functional scorecards to drive accountability.

Our ambition remains both bold and pragmatic to lead India's transition to green stainless steel while creating enduring value for stakeholders and strengthening the resilience of our business.

### A Shared Commitment to a Sustainable Future

None of this progress would be possible without the dedication of our employees, partners, and communities who share our vision of building a resilient, low-carbon future. Together, we are redefining what it means to create stainless value — value that is resilient by design, responsible in practice, and regenerative in impact.

I extend my gratitude to all our stakeholders for their continued trust and collaboration. As we enter the next phase of our climate journey, we remain steadfast in our purpose: to forge a stainless tomorrow — one that is greener, stronger, and built to last.

**Abhyuday Jindal**  
Managing Director  
Jindal Stainless Limited

## MESSAGE FROM CSO - FROM COMMITMENT TO QUANTIFICATION: DEEPENING CLIMATE ACCOUNTABILITY



“  
Our goal is clear — to ensure that Jindal Stainless’ climate performance is traceable in numbers, auditable in process, and transparent in disclosure. By moving from commitment to quantification, we are embedding accountability at the heart of our sustainability strategy  
”

FY25 marks a defining milestone in Jindal Stainless’ climate journey — a year where commitment evolved into quantification. Having established a strong foundation of climate ambition, our focus now lies in ensuring that every action is measurable, verifiable, and decision-relevant.

### Embedding climate intelligence into business systems

Building on the progress of our inaugural Climate Action Report, this year we have advanced from qualitative disclosure to quantified assessment of physical and transition risks, translating climate science into financial insights that inform strategic and capital-allocation decisions.

Our alignment with the Task Force on Climate-related Financial Disclosures (TCFD) and IFRS S2 frameworks has strengthened the integration of climate data within risk management framework. By evaluating exposure to extreme heat, flooding, and cyclone hazards alongside evolving carbon-pricing and policy scenarios, we now have a clearer view of how climate factors influence asset resilience and business continuity.

### Science-based targets and measurable progress

Building on the groundwork laid in April 2024, JSL continued to advance its science-based target development process in FY25. The company is currently defining its near-term (2035) and long-term (2050) emission reduction targets in alignment with the Science Based Targets initiative (SBTi). Each abatement lever — renewable integration, process optimisation, circular material use,

and energy efficiency — is being mapped through defined performance indicators to enable transparent measurement and disclosure once the targets are finalized and validated.

This data-driven approach ensures that progress is transparent and comparable, laying the groundwork for third-party validation in future IFRS S2-compliant reporting cycles.

### Strengthening transparency and forward readiness

We are strengthening our digital systems to enable real-time tracking of climate performance metrics, planning to expand scenario analysis to cover supplier and logistics networks, and evaluating the feasibility of third-party assurance for future climate data. These initiatives will further enhance the precision and credibility of our disclosures.

### Looking ahead

Our goal is clear — to ensure that Jindal Stainless’ climate performance is traceable in numbers, auditable in process, and transparent in disclosure. By moving from commitment to quantification, we are embedding accountability at the heart of our sustainability strategy — reinforcing investor confidence, regulatory preparedness, and stakeholder trust.

Together, we are shaping a stainless future that is not only resilient and responsible but also measurable and verifiable in every sense.

**Kalyan Kumar Bhattacharjee**  
Chief Sustainability Officer  
Jindal Stainless Limited

## EMBEDDING CLIMATE IMPERATIVES AT THE HEART OF JSL’S STRATEGIC VISION

Climate change stands as a cornerstone of Jindal Stainless Limited’s long term strategy. We conducted Double Materiality Assessment (DMA) aligned with JSL’s Enterprise Risk Management (ERM) framework to ensure that sustainability considerations are deeply embedded in core business decision-making. Climate Change was recognized as an area of focus under the broader material topic theme of energy and emissions. As regulatory frameworks tighten and the global pivot to a low carbon economy accelerates, understanding and acting on climate related risks and opportunities is vital to safeguarding JSL’s competitiveness and resilience.

### A Dynamic Global Regulatory and Market Environment

Across the globe, policymakers are accelerating the transition to a low carbon economy. New emissions caps, carbon pricing mechanisms, and mandatory climate disclosures (including IFRS S2 and Europe’s Corporate Sustainability Reporting Directive) are setting higher benchmarks for corporate performance. Simultaneously, financial markets are integrating climate metrics into credit ratings and investment decisions, while customers and end users increasingly favor environmentally responsible products.

In India, the Green Steel Taxonomy was recently published to define low-carbon benchmarks for the steel industry, setting a framework for sustainable steel production. As steel is both a key sector for economic development and one of the largest industrial sources of greenhouse gas emissions, India’s commitment to net-zero emissions by 2070 places additional focus on promoting green steel production, energy efficiency measures, and circular economy principles within the industry.

At JSL, we continually monitor global and Indian regulatory developments—from evolving Nationally Determined Contributions (NDCs) to emerging green steel frameworks and international climate accords—to ensure our strategic initiatives remain compliant, forward looking, and aligned with stakeholder expectations.



## Stainless Steel Industry Context: Emissions Intensive Yet Transformative

Stainless steel manufacturing is inherently more circular and energy-efficient compared to primary carbon steel production, primarily due to its high usage of recycled scrap and reliance on Electric Arc Furnace (EAF) technology. Nevertheless, it remains an energy and resource intensive process, contributing significantly to greenhouse gas emissions within the industrial sector.. This intensity is inherent to the production process but also unveils considerable opportunities for decarbonization and sustainable innovation:

- » **Process Electrification:** Shifting from fossil fuel based furnaces to electric arc technologies, which primarily use recycled scrap, significantly lowers the carbon intensity of stainless steel production.
- » **Energy Recovery:** Capturing waste heat from hot rolling mills, cold rolling mills, and Ferro Alloy production through Waste Heat Recovery Boilers (WHRBs), and reusing it in captive power generation helps optimize energy use and reduce fossil fuel dependency.
- » **Water Stewardship:** Implementing closed loop cooling systems and advanced treatment to minimize freshwater withdrawal and effluent discharge.
- » **Circularity & Product Stewardship:** Approximately 70-80% of raw material input comprises high-quality recycled scrap, reducing reliance on virgin resources and lowering carbon emissions. Product Carbon Footprint (PCF) assessments and Environmental Product Declarations (EPDs) are systematically developed to provide transparency on the environmental impact of stainless-steel grades, supporting responsible decision-making by customers and downstream users.

Policies like the European Union's Carbon Border Adjustment Mechanism (CBAM) and India's proposed domestic carbon credit framework are reshaping competitive dynamics—rewarding early adopters of low carbon solutions and potentially penalizing laggards. JSL's proactive investments in advanced technologies, circular practices, and comprehensive environmental stewardship position us to meet these challenges and capitalize on emerging opportunities in the green steel transition.

## JSL's Proactive Climate Response

For JSL, climate action transcends compliance—it is woven into our core operations and growth agenda. From optimizing furnace efficiency and transitioning to renewable power, to deploying advanced water management systems, we are systematically reducing our carbon and water footprints. In FY25, building on our inaugural TCFD disclosures, this year we have quantified both physical and transition risks across our operations:

- » **Physical Risks:** Assessing exposure to extreme weather events to evaluate both acute and chronic risks at key manufacturing sites and modelling potential impacts on production continuity and capital assets.
- » **Transition Risks:** Evaluating regulatory costs, carbon pricing scenarios, and supply chain shifts associated with low carbon steel demand.

Guided by these insights, we have steered capital toward resilience enhancing projects: solar arrays (rooftop solar totaling 32.2 MW and 7.3MWp of floating solar), maximum use of liquid chrome in electric arc furnace resulting in 6,766,928 kWh electricity saving & 6,000 tCO<sub>2</sub>e emission abatement in FY 2024-25 and multiple energy conservation and decarbonization initiatives at Hisar's Hot Rolling & Cold Rolling division which have cumulatively abated 1,87,341 tCO<sub>2</sub>e Emissions. Our Board level ESG Committee now integrates these metrics into quarterly performance reviews, ensuring agility in decision making and transparent accountability.

## Turning Climate Action into Business Value

For JSL, tackling climate change is far more than a compliance exercise—it is a catalyst for innovation and value creation. By embedding sustainability into R&D, we are developing advanced low carbon Nickel clad alloys that command premium pricing in global markets. Collaborations with customers on circular economy models are unlocking new revenue streams, while partnerships with technology providers accelerate our deployment of digital performance tracking and predictive maintenance. These initiatives foster greater operational efficiency, enhance brand reputation, and deepen stakeholder trust—ultimately driving profitable growth in a world that demands responsible resource stewardship.

## REPORTING PERIOD AND BOUNDARY

This report provides a detailed account of the climate-related dependencies, impacts, risks, opportunities, and mitigation strategies of Jindal Stainless Limited (JSL) for the period from 1st April 2024 to 31st March 2025. The reporting boundaries for the TCFD report have been defined distinctly for physical risk analysis, transition risk analysis, and GHG emissions calculations, ensuring a comprehensive assessment across all critical areas.



## Physical Risk Analysis

JSL conducted a Climate Change Physical Risk Assessment (CCRA) for its operations across three strategically significant locations. This analysis focuses on identifying physical risks posed by climate change to JSL's operations including manufacturing sites at Jajpur and Hisar and mining site at Sukinda.

The CCRA aims to assess the vulnerability of these sites to physical climate risks such as extreme weather events, temperature changes, and other environmental factors.

## Transition Risk Analysis

In evaluating transition risks, JSL extends its scope to include its value chain and the key manufacturing sites located in Jajpur and Hisar and mining site at Sukinda.

Additionally, this analysis covers JSL's global markets across multiple regions globally.

The transition risk analysis examines the financial and strategic implications of the global shift towards a low-carbon economy, considering regulatory changes, market dynamics, and technological advancements.

## GHG Emissions

The GHG emissions disclosures in this report are focused on JSL's operations that account for over 95% of its annual turnover. The scope includes:

- » **Jindal Stainless Limited (JSL): 2 Manufacturing Plants-JSL Jajpur, JSL Hisar**
- » **Sukinda Mines**
- » **Jindal Stainless Centre Gurgaon Office**
- » **Corporate Office, Jindal Centre, Delhi**
- » **JSL Stockyards (Pathredi, Chennai, Vadodara & Mumbai)**

This section of the report also outlines JSL's proactive approach to integrating newly acquired entities and strategic collaborations within its GHG emissions reporting in subsequent years. These efforts are part of JSL's commitment to diversifying its product offerings while mitigating the environmental and social impacts of its operations.

JSL is dedicated to aligning its operations with global best practices and sustainability commitments, ensuring comprehensive reporting and transparency across all dimensions of climate-related risks and opportunities.

# ADVANCING CLIMATE ACTION: OUR PROGRESS AND VISION

## CATALYZING CLIMATE LEADERSHIP: JSL'S PLEDGE TO A SUSTAINABLE FUTURE

As a global stainless steel leader—ranked fifth worldwide outside China and India's foremost producer—Jindal Stainless is steadfastly advancing the decarbonization of steelmaking. We are in the process of allocating ₹700 crore toward sustainability and low carbon technologies, targeting annual reductions of 1.5 million tonnes of CO<sub>2</sub> and setting the stage to halve our carbon intensity by 2035 and reach Net Zero by 2050.

Our approach is anchored in a circular economy business model: leveraging over 72.11 percent recycled scrap in Electric Arc Furnaces, reclaiming valuable metals from slag, mill scale, and baghouse dust, and minimizing reliance on virgin inputs. Complementing this, we have deployed 7.3 MWp floating solar installations, 28MWp Rooftop solar, 1GW hybrid project and established India's first green hydrogen facility for stainless steel production—each initiative reinforcing our commitment to both environmental stewardship and operational excellence.

### Strategic Decarbonization Roadmap

JSL is building a decarbonisation strategy anchored in a site-specific analysis that identifies mitigation opportunities with the potential to profoundly transform its environmental footprint. This strategy is structured around a three-pillar framework designed to systematically address key emission sources and translate ambition into action:

#### 1. Operational & Energy Efficiency

A few initiatives estimated to carry negative abatement costs:

- » Organic Rankine Cycle waste heat recovery to convert furnace exhaust heat into electricity
- » Advanced thermal insulation for ladles and tundishes to reduce reheating demands
- » High efficiency motor upgrades across production lines
- » Oxy fuel and co jet furnace burners for cleaner, more efficient combustion

#### 2. Transition to Cleaner Energy

- » Biochar blending and biomass co firing trials to substitute metallurgical coke
- » Phased ramp up of bio LPG and natural gas use, leading to full electrification of heat processes under Renewable Energy PPAs
- » Exploration of green hydrogen scale up, small modular nuclear options, and CCUS feasibility for hard to abate streams

#### 3. Value Chain Decarbonization

- » Embedding ESG criteria into (e.g., green ferrochrome sourcing)
- » Shifting long haul freight to rail and electrifying on site logistics
- » Co innovating with customers on low carbon stainless steel solutions, amplifying decarbonization across end use markets

### Governance & Collaboration

Our board level ESG Committee oversees the climate change risks and embeds these initiatives into quarterly reviews, ensuring transparent progress tracking. We're aligning our pathway with the Science Based Targets initiative and preparing for evolving frameworks such as IFRS S2, ESRS, and the EU's CBAM. Through active engagement with industry bodies and policymakers—shaping India's Green Steel Taxonomy and national corrosion management policy—we advocate for the climate action policy, finance, and market enablers critical to a just, large scale transition.

### Measuring Progress & Next Steps

JSL advanced its decarbonization agenda on multiple fronts. The company conducted Life Cycle Assessments (LCA) to calculate the Product Carbon Footprint (PCF, cradle-to-gate) for twelve stainless-steel grades as per ISO 14067:2018 and prepared Environmental Product Declarations (EPDs) for four products under the same standard. These initiatives establish a strong baseline for identifying emission hotspots and enhancing product transparency. Alongside, JSL continued investments in renewable energy, energy efficiency, and waste heat recovery, and scaled up circularity initiatives such as high scrap utilization, metal recovery, and by-product reuse.

Building on this foundation, the next steps include finalizing technology partners, refining investment timelines, and initiating pilot projects at key facilities to test and scale decarbonization solutions. These measures will help accelerate progress toward achieving long-term climate targets while ensuring products remain competitive in global low-carbon markets.

By relentlessly executing this multi pronged strategy, Jindal Stainless will not only meet its Net Zero ambition but also strengthen its competitive edge, operational resilience, and stakeholder value—catalyzing climate leadership today for a cleaner steel industry tomorrow.



## DEFINING OUR CLIMATE AMBITION: JSL'S EMISSIONS & RESOURCE TARGETS

At Jindal Stainless, our climate ambition is guided by data-driven targets that reflect both our commitment to sustainability and the operational realities of the stainless-steel sector. We have built a comprehensive set of key performance indicators (KPIs) across four focus areas—GHG emissions, energy management, water, and waste & circularity, each aligned with global standards and national priorities. These metrics not only guide our decision-making and investments but also ensure transparency and accountability in tracking progress.



### 1. GHG Emissions Intensity

We measure our carbon intensity as tonnes of CO<sub>2</sub> equivalent (tCO<sub>2</sub>e) per tonne of stainless steel produced (TCS), capturing Scope 1 and 2 emissions across all operations.

- » **Target:** 50% reduction in emissions intensity by FY2035, from an FY22 baseline

| Fiscal Years                                                          | FY 2022 (Baseline) | FY 2023 | FY 2024 | FY 2025 |
|-----------------------------------------------------------------------|--------------------|---------|---------|---------|
| Total Scope 1 and Scope 2 emission intensity (TCO <sub>2</sub> e/TCS) | 1.98               | 2.08    | 2.15    | 1.85    |

- » **Coverage:** All manufacturing sites, offices, and stockyards

We remain committed to refining this metric as we work toward validation of our near-term and long-term targets through the **Science Based Targets initiative (SBTi)**.

### 2. Energy Management

Jindal Stainless follows a structured and systematic approach to improving energy performance across all operations under its Energy Management Policy. Aligned with ISO 50001 standards, the policy drives continuous improvement through the adoption of efficient technologies, process innovation, and clean energy integration. It applies to all employees, contractors, suppliers, and value chain partners, fostering collaboration to achieve energy reduction targets and enhance operational efficiency.

Increasing the share of clean energy in overall consumption forms a cornerstone of JSL's decarbonization strategy. The company continues to make tangible progress in expanding renewable energy adoption particularly through the integration of solar power and green hydrogen further strengthening its transition toward a low-carbon energy mix.

- » **Target:** JSL is committed to achieving year-on-year improvements in energy performance through measurable targets, periodic internal audits, and strategic investments in renewable energy and fuel-switching programs. Dedicated resources and budgets are earmarked for deploying energy-efficient technologies and expanding renewable energy capacity across operations. Regular training and awareness programs further strengthen employee participation in energy conservation, reinforcing the company's commitment to responsible energy use and sustained emissions reduction.
- » In alignment with its long-term decarbonization roadmap, JSL has undertaken Specific Energy Consumption target for its Jajpur and Hisar facility in alignment with the PAT scheme:

| Facility | Specific Energy Consumption Target PAT II | Achieved SEC PAT II |
|----------|-------------------------------------------|---------------------|
| Hisar    | 0.0640 Toe/ton                            | 0.0638 Toe/ton      |
| Jajpur   | 1.5148 Toe/ton                            | 1.3369 Toe/ton      |

Only the Jajpur and Hisar manufacturing facilities of Jindal Stainless Limited are classified as Designated Consumers (DCs) under the Perform, Achieve and Trade (PAT) Scheme of the Bureau of Energy Efficiency (BEE), Government of India.

- » JSL is in process of defining a target at a group level while for Hisar manufacturing location, the company aims to meet 100% of incremental power demand through renewable sources by FY2030.

| Fiscal Years                                | FY 2022 (Baseline) | FY 2023    | FY 2024    | FY 2025    |
|---------------------------------------------|--------------------|------------|------------|------------|
| Total Renewable Energy Consumption (GJ)     | 2,920              | 121,060    | 200,194    | 1,307,231  |
| Total Non-Renewable Energy Consumption (GJ) | 32,568,196         | 30,181,623 | 34,943,515 | 30,739,746 |
| Overall Energy Consumption (GJ)             | 32,571,115         | 30,302,683 | 35,143,709 | 32,046,977 |

- » **Coverage:** All operating sites

We are also exploring battery storage and energy banking mechanisms to enhance the reliability of renewable supply.



### 3. Water Intensity

Water is a shared and finite resource. At JSL, we are improving water circularity through zero-liquid discharge systems, treated water reuse, and rainwater harvesting.

- **Goal:** Achieve water neutrality by 2033. JSL prioritises minimising reliance on freshwater sources by embracing eco-friendly water conservation methods, adopting advanced water efficient practices, and implementing zero-liquid discharge solutions to ensure sustainable water management.
- **Progress (FY25):** 7.36 m<sup>3</sup>/TCS
- **Coverage:** All plants, especially those in water-stressed areas

We continue to assess local water risk and adapt our site-level water stewardship programs accordingly.



### 4. Waste Management & Circularity

JSL's waste management strategy is built on the principles of circularity and resource efficiency, focusing on recovering and repurposing operational by-products to reduce environmental impact. A comprehensive baseline waste assessment is undertaken to map current waste generation patterns and identify key sources. Building on these insights, a structured waste reduction programme has been implemented to minimise waste at its origin, while recycling initiatives continue to expand—maximising material recovery and diversion from landfills.

Guided by the "5R" ethos—Reduce, Reuse, Recycle, Recover, and Repurpose—JSL is advancing toward a 'Zero-Waste-to-Landfill' certification by 2030 from an accredited third party, reaffirming its commitment to sustainable resource management. Through metal recovery from slag and ETP sludge, reuse of mill scale and bag filter dust, fly ash recycling, and plastic waste disposal via EPR, JSL significantly reduces dependence on virgin raw materials and keeps valuable resources within the production loop.

Progress (FY25): 72.11% reuse rate

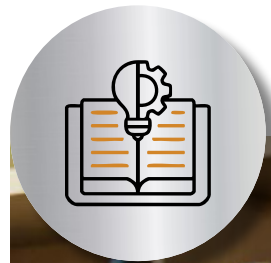
Coverage: All manufacturing units

By embedding waste minimization into its operational practices, JSL not only strengthens material circularity but also contributes to its broader decarbonization goals through reduced resource extraction, lower embodied emissions, and improved process efficiency.

As we mature our sustainability strategy, these KPIs will evolve and with ongoing digital integration will allow us to track these indicators in real time, improve decision-making, and reinforce our position as a climate-forward stainless steel producer.

## LEARNINGS AND EVOLUTION

Building on our inaugural FY24 TCFD disclosures where we established our strategic pillars, adopted technology related mitigation strategies, and defined our governance cadence, FY25 focused on operationalizing those commitments and translating learnings into structured improvements. The five pillars below summarize how each pilot, data upgrade, and governance tweak has evolved JSL's climate action from concept to best practice.



### 1. From Proof of Concept to Standardization: Technology Deployment

JSL successfully carried out proof of concepts of Organic Rankine Cycle (ORC) waste heat recovery units and oxy fuel burners, which have now been technically evaluated and formalized into standardized specifications.

These learnings are guiding the design, vendor selection, and integration strategies for future decarbonization technologies—ensuring smoother implementation across sites and reducing engineering complexity.

### 2. ESG Digitization

To further enhance ESG data management, Jindal Stainless integrated the Updapt ESG platform into its sustainability framework. This digital platform:

- » Automates data capture for emissions, energy, and material usage
- » Eliminates manual processing errors
- » Standardizes reporting workflows across departments
- » Improves traceability and assurance in disclosures

This digital transformation positions JSL to monitor progress against its emissions intensity targets and Net Zero goals with greater accuracy and transparency.

### 3. Accelerated Governance Integration

JSL has strengthened its climate governance by increasing site level participation in ESG performance tracking and aligning operational teams with strategic sustainability objectives. Feedback loops between plant teams and the central sustainability function have helped refine implementation timelines and investment prioritization for decarbonization projects ranging from feasibility checks to infrastructure readiness assessments—ensuring ownership and alignment of climate strategies at the ground level. This bottom-up involvement has enhanced the credibility and practicality of mitigation plans.

### 4. Strengthening Feedstock Strategy & Regulatory Readiness

Since the disclosure of its decarbonization intent in FY24, JSL has advanced its understanding of feedstock decarbonization options—including biochar blending, biomass co-firing, and sustainable ferroalloy sourcing. Feasibility dialogues with operations teams have helped clarify infrastructure needs and operational limitations, informing the phasing of fuel-switching pilots in the roadmap.

On the regulatory front, JSL has evolved from passive alignment to proactive engagement in national and international frameworks such as the Green Steel Taxonomy, CCTS and Carbon Border Adjustment Mechanism (CBAM) readiness dialogues. These interactions are helping shape internal strategies that anticipate future compliance requirements and position the company for early-mover advantages in low-carbon steel certification and exports.

### 5. Translating Climate Investment into Action

Building on the ₹700 crore investment commitment announced in FY24, JSL has moved from ambition to structured planning. In FY25, the company is in process of building a technically validated decarbonization roadmap, through close collaboration with site teams. This roadmap will guide the phased allocation of climate investments across priority areas such as energy efficiency, renewable integration, green hydrogen readiness, and fuel transition.

The roadmap breaks down initiatives across short, medium, and long term horizons, anchoring capital deployment in technical feasibility, site readiness, and abatement potential—marking a clear evolution from strategy design to execution planning.

By capturing and institutionalizing these lessons, JSL's climate program continually evolves—transforming insights into sharper execution, catalyzing our journey toward a low carbon future.



# DECARBONISATION STRATEGY & LEVERS

Building on our FY24 framework—which defined eight strategic decarbonization levers from sustainable procurement and feedstock optimization, through process reconfiguration, energy substitution, circular-steel approaches, logistics decarbonization, CCUS, and digitization—FY25 marked the transition from strategy to execution. Over the year, we collaborated with site

teams, technology partners, and external experts to translate those high-level levers into a detailed, site-driven decarbonization roadmap. This roadmap prioritizes each initiative ensuring that our ambitious emissions-reduction strategies become actionable projects that drive measurable progress toward Net Zero.



## FORGING A GREENER FUTURE: OUR DECARBONIZATION ROADMAP

At Jindal Stainless, our decarbonization journey is anchored in a clear long-term ambition: achieving Net Zero greenhouse gas emissions by 2050. To realize this vision, we are in process of developing a comprehensive, site-specific decarbonization roadmap that integrates circular economy principles, leverages recycled inputs, and outlines

targeted interventions across our operations and value chain.

This roadmap is structured around **three strategic pillars** designed to address key emission sources and drive a sustainable transformation in our production systems.

### Pillar 1: Driving Operational and Energy Efficiency

Our first focus area targets process optimization and enhanced energy performance to deliver measurable emission reductions. Key initiatives include:

**Waste Heat Recovery** using Organic Rankine Cycle (ORC) technology to convert high-temperature exhaust into electricity.

**Thermal Management Upgrades** like advanced insulation materials and cold-setting tundish linings to reduce heat loss during molten metal transfer.

**Motor Efficiency Enhancements**, where we are replacing motors with higher-efficiency alternatives across operations.

**Furnace Optimization** through the adoption of advanced combustion technologies such as oxyfuel burners and Co-jet firing to improve heat transfer and lower fuel usage.

### Pillar 2: Transitioning to Cleaner Energy

Our transition plan includes a phased shift from fossil fuels to cleaner, low-carbon energy sources, alongside an expansion of renewable energy integration:

**Biochar Blending** is being explored as a partial replacement for metallurgical coke in the melting process.

**Biomass Co-firing** is planned to substitute part of the coal usage in boilers with renewable biomass such as agri-residue.

**Fuel Substitution** involves scaling up the use of bio-LPG and bio-propane, with plans to transition to natural gas and eventually to electric heating technologies.

**Renewable Energy Integration** is being advanced through Power Purchase Agreements and plans to incorporate Battery Energy Storage Systems (BESS).

**On-site Green Hydrogen Production** is being ramped up to eventually replace ammonia-based hydrogen and support long-term technology shifts.

**Nuclear Power Options** such as Bharat Small Reactors are being monitored as potential long-term solutions for decarbonizing captive energy usage.

**Carbon Capture, Utilization, and Storage (CCUS)** is under evaluation for hard-to-abate emissions.

### Pillar 3: Greening the Value Chain & Enabling Customers

JSL's decarbonization approach extends beyond its factory boundaries to cover upstream suppliers and downstream product applications:

**Sustainable Procurement** strategies are being developed to prioritize low-carbon raw materials such as green ferrochrome and ferronickel.

**Low-Carbon Logistics** measures include modal shifts from road to rail and electrification of on-site logistics fleets.

**Customer Enablement** is a key focus, with JSL aiming to supply stainless steel with a lower embedded carbon footprint, aiding customers in meeting their own climate goals.

**Nature-Based Solutions** such as reforestation and land rehabilitation are being considered to address residual emissions.

## Alignment with Global Standards

Our decarbonization roadmap is being developed to be robust, credible, and anchored in globally recognized frameworks. As part of this process, we are defining near-term and long-term targets with the aim of committing to the Science Based Targets initiative (SBTi). In parallel, we are mapping our roadmap to emerging international disclosure standards, including the European Sustainability Reporting Standards (ESRS) and the Corporate Sustainability Reporting Directive (CSRD). This approach ensures that key elements—such as product-level carbon footprints (PCFs), Environmental Product Declarations (EPDs), and quantification of climate-related financial impacts—are aligned with global expectations, strengthening transparency and value for our stakeholders.

## Looking Ahead

Our immediate next steps involve vendor evaluations, detailed investment planning, and setting phased implementation timelines. Recognizing that this transformation cannot occur in isolation, JSL continues to advocate for policy support, concessional green finance, and technology infrastructure—essential enablers for long-term decarbonization in the Indian steel sector.

Through strategic partnerships and coordinated efforts with government bodies, research institutions, and industry peers, we aim to build a robust ecosystem that supports innovation and ensures a just and inclusive low-carbon transition for all stakeholders.



# TRANSFORMATIVE DECARBONIZATION INITIATIVES: SCALING CLIMATE ACTION ACROSS OPERATIONS

As part of our ongoing commitment to climate action, Jindal Stainless has continued to expand its decarbonization efforts across core facilities, deploying a mix of clean energy, process optimization, alternative fuels, and green mobility. These interventions directly support our ambition to significantly reduce emissions intensity while improving operational efficiency and long-term resilience.

## Clean Energy Transition

### Renewable Power Partnerships

JSL has taken major strides in expanding access to clean energy by partnering with ReNew Power and Oyster Renewable. Through these collaborations:



A separate **100 MW round-the-clock (RTC) renewable power** agreement is in place for the Hisar unit.



A **100 MW renewable power agreement** has been executed for the Jajpur plant.

Together, these strategic procurements represent an estimated lifetime carbon abatement potential of 870,744 tCO<sub>2</sub>e, strengthening our energy security while driving decarbonization.

### Solar Energy Expansion

At Jajpur and Hisar, a 28 MWp rooftop solar installation has been commissioned to harness on-site solar energy, replacing grid-based fossil electricity and reducing Scope 2 emissions.

## Steelmaking Process Transformation

### Green Hydrogen Integration

JSL became the first in India's stainless-steel sector to commission a green hydrogen plant at its Hisar facility. Developed in partnership with Hygenco India Private Ltd., the plant:



Produces **90 NM<sup>3</sup>/hour** of green hydrogen.



Substitutes fossil fuels in **Bell Annealing and Bright Annealing** processes.



Targets a reduction of **2,800 tonnes of CO<sub>2</sub> annually** and avoids the use of **390 MT of ammonia per year**, through the use of electrically operated ammonia crackers.

At Jajpur, JSL has planned a hydrogen plant with a capacity of 1,500 Nm<sup>3</sup>/hr. Under Phase 1 of this initiative, a 600 Nm<sup>3</sup>/hr unit has been ordered from Greenzo Energy India Limited. The ordering process has been completed, and installation is scheduled to commence shortly.

### Chrome Pelletisation

At Jajpur, JSL commissioned India's first chrome pelletisation plant in the stainless steel sector, replacing the earlier briquetting process. This transition delivers significant operational and environmental advantages by addressing the inherent limitations of briquettes.

The briquetting process resulted in approximately 20% fine generation, leading to material loss and indirect energy loss in recycling and collection. Briquettes also contained 2.5% inherent moisture, resulting in nearly 2% additional heat loss, and their fines generated around 9 kg/MT of dust, increasing power consumption in the bag house ID fan system. Overall, the specific energy consumption in briquetting was 16.12% higher than the best-in-class benchmark of 3,100 kWh/MT.

In contrast, chrome pellets provide higher metallic content (Cr and Fe), lower gangue content, and uniform shapes, delivering superior process efficiency. The switch to pelletisation has reduced furnace-specific power consumption by 265 kWh/MT, translating into annual energy savings of 136.7 million kWh. This operational efficiency also results in abatement of approximately 1.21 lakh tCO<sub>2</sub>e annually.

### Alternative Fuel Substitution & Combustion Enhancements:



**Biochar trials** were initiated at Hisar to explore substitution of metallurgical coke.



**Bio-LDO fuel trials** have been conducted in the Steckel Mill.



**Oxygen enrichment** was introduced in the **Working Blast Furnace (WBF)** to enhance combustion efficiency and reduce direct emissions.

## Operational Efficiency & Energy Optimization

Jindal Stainless continued to strengthen its operational efficiency through targeted energy optimization initiatives designed to reduce carbon intensity, enhance process performance, and support the company's long-term decarbonization roadmap. In FY 2024–25, multiple high-impact projects were implemented across facilities, focusing on process optimization, waste heat recovery, and technological upgrades.

### Energy Efficiency Projects at Jajpur

Three major energy efficiency projects contributed to significant emissions reductions during the year:

**ENCON Project:** Achieved emission savings of 33,794.72 tCO<sub>2</sub>e through focused energy conservation initiatives.

**Waste Heat Recovery Boiler (WHRB):** Abated 30,449.64 tCO<sub>2</sub>e of emission by utilizing waste heat not generated.

**Annealing Bypass:** Delivered an additional 3,746.04 tCO<sub>2</sub>e savings by optimizing the annealing process to reduce fuel consumption.

### Enterprise-wide Energy Optimization Initiatives

JSL also advanced energy efficiency across other manufacturing facilities through a series of projects that optimized process energy use, modernized equipment, and improved system-level performance.

Key initiatives and their estimated annual CO<sub>2</sub>e savings include:

Fuel saving through Waste Heat Recovery Boiler – **1,444 tCO<sub>2</sub>e** saved annually.

Fuel saving through Heaterless Vaporizer – **108 tCO<sub>2</sub>e** saved annually.

Hot Charging of Slabs (Furnace 1 and 2) – Combined savings of **2,076 tCO<sub>2</sub>e**, achieved through reduced thermal losses.

Electrical Energy Savings through Equipment Upgrades – **2,146 tCO<sub>2</sub>e** savings through machine and system replacement.

Thermal Energy Optimization Projects – **131 tCO<sub>2</sub>e** savings achieved via process improvements.

The company continues to monitor and scale such efficiency initiatives, reinforcing its commitment to integrating energy performance improvement within its decarbonization pathway.

## Biofuels and Fossil Fuel Substitution

To reduce reliance on fossil-based liquid fuels, JSL has initiated fuel transitions:

JSL's decarbonization roadmap incorporates a structured fuel-switching strategy focused on heat generation (boilers and furnaces) and mobility/freight. In the short term, the company is increasing the use of sustainable biofuels to progressively replace liquid fossil fuels.

In the medium term, JSL plans to substitute propane with lower-emission alternatives such as natural gas and recovery gases from industrial processes, including those from coke oven batteries, blast furnaces, and basic oxygen furnaces. Over the medium to long term, the transition will extend to advanced electric heating technologies and electric-driven vehicles, aligning operations with global low-carbon pathways.

These measures will be complemented by the expansion of Renewable Energy Power Purchase Agreements (RE PPAs), ensuring that electricity requirements are increasingly met through low-carbon sources.

## Low-Carbon Mobility Solutions

As part of the low-carbon transition, JSL is electrifying intra-site logistics and building renewable-powered infrastructure:



### Employee Commuting

- » Deployed 40 CNG buses, abating 1,642 tCO<sub>2</sub>e emissions.
- » Exploring additional green commuting options to further reduce the footprint.



### Internal Material Movement

- » Integrated three electric forklifts, abating 36 tCO<sub>2</sub>e emissions.
- » Added one electric sweeper to improve energy efficiency in operations.



### Facility-Level Initiatives (Hisar)

- » Deployed four electric vehicles, abating 47 tCO<sub>2</sub>e emissions.

These measures collectively reduce dependence on fossil fuels, improve energy efficiency, and reinforce JSL's transition toward a cleaner, more sustainable future.

## Internal Carbon Pricing

Jindal Stainless is in the process of developing an Internal Carbon Pricing (ICP) framework to integrate the cost of carbon into business and investment decisions. The proposed shadow price mechanism aims to guide low-carbon investments, enhance energy efficiency, and embed climate considerations in strategic and financial planning across operations, procurement, and capital expenditure.

The ICP is being designed to cover Scope 1, Scope 2, and key Scope 3 categories (Purchased Goods and Services, Capital Goods), representing nearly 80% of total emissions. It follows a hybrid approach, referencing international benchmarks such as the High-Level Commission on Carbon Prices and IEA scenarios, alongside peer benchmarking. A uniform but evolving price trajectory is under evaluation.

### Implications of ICP for JSL

#### Existing Facilities

- » Encourages the adoption of energy-efficient technologies, waste-heat recovery systems and other low carbon areas which may not immediately reap monetary benefits.
- » Incentivizes a gradual shift from high-emission fuels (e.g., diesel, coal-based power) toward cleaner alternatives such as natural gas, biogas and renewable electricity.

#### New Investments

- » Enables carbon-inclusive project valuation and technology selection for upcoming facilities.
- » Enhances the financial attractiveness of low-emission projects such as scrap-based steelmaking and renewable-powered production.
- » Strengthens preparedness for future carbon pricing frameworks and border adjustment mechanisms in export markets.

#### Cross-cutting Benefits

- » Allows reinvestment of potential carbon revenue into renewable installations, waste-heat recovery, and carbon-capture initiatives.
- » Promotes a culture where emissions are treated as a measurable business cost, fostering cross-functional ownership of decarbonization.

Once finalized, the ICP will be embedded in JSL's decision-making framework to assess the financial impact of emissions and support low-carbon transition planning.

Aligned with the TCFD Metrics & Targets pillar, this mechanism will serve as a key financial tool to evaluate transition risks and enable data-driven, climate-aligned capital allocation across the organization.

# CLIMATE RISK & OPPORTUNITY MANAGEMENT

At Jindal Stainless (JSL), climate resilience is not just a sustainability commitment—it is a business imperative. Anchored in our long-term ambition to achieve Net Zero emissions by 2050 and to reduce carbon intensity by 50% by FY 2034–35, we continue to embed climate considerations across strategic and operational decision-making.

FY25 marked a significant evolution in our approach to climate risk management. Building upon our foundational climate scenario analysis in FY24, we advanced our methodology to quantify the potential financial impacts of key physical and transition risks. This enhanced assessment provides a more detailed and decision-useful

understanding of how different climate futures could influence our assets, operations, and value chain.

These insights have been integrated into our risk management framework, ensuring that climate risks are monitored, reviewed, and addressed at both the operational and board levels. By aligning our governance structure with the principles of the TCFD and IFRS S2, we are enhancing transparency, responsiveness, and accountability.

Through this robust risk governance process, we are not only safeguarding business continuity and asset resilience but also laying the groundwork for climate-smart innovation and long-term stakeholder value.

## STRENGTHENING FOUNDATIONS: OUR CLIMATE RISK ASSESSMENT FRAMEWORK

### UNDERSTANDING PHYSICAL CLIMATE HAZARDS: FOUNDATION FROM FY24

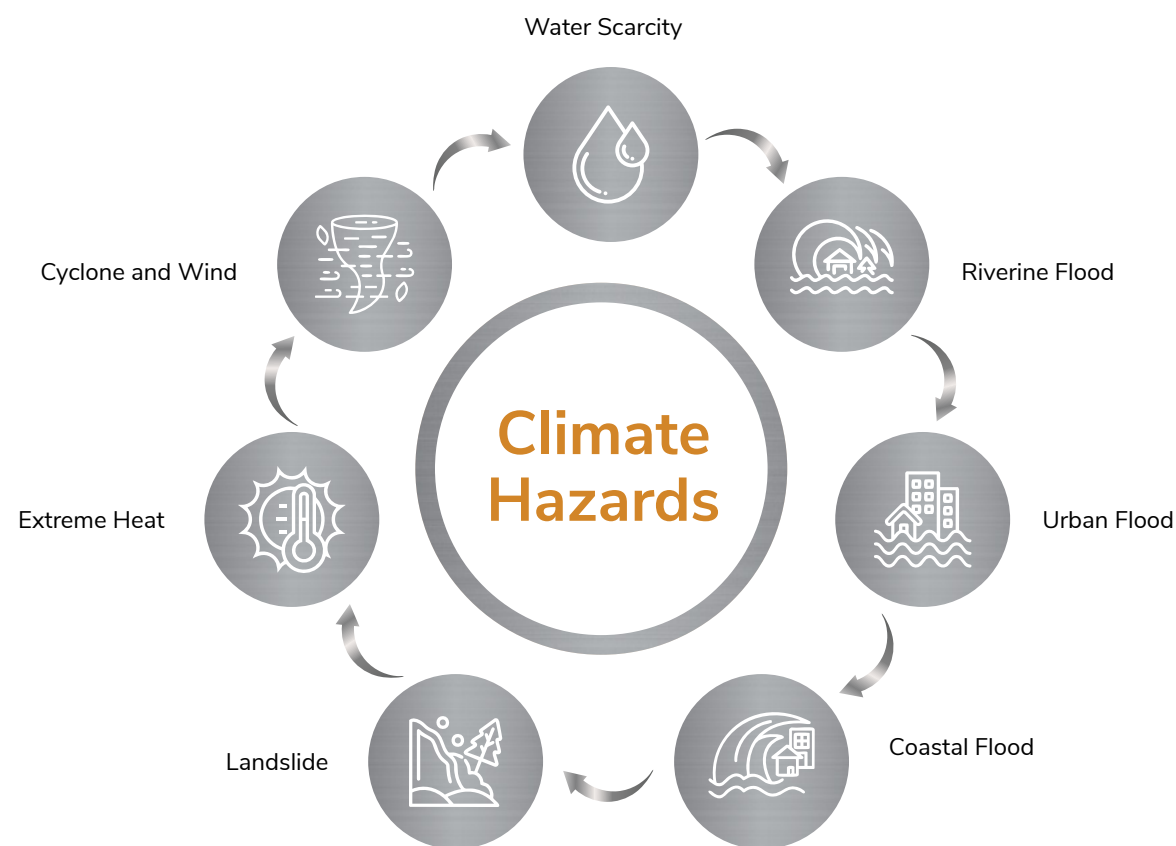
Climate change continues to reshape the global risk landscape—bringing with it escalating hazards that threaten both infrastructure and business continuity. At Jindal Stainless, we recognize that long-term shifts in temperature, precipitation patterns, and extreme weather events could impact critical operations, disrupt raw material availability, drive input cost volatility, and strain supply chains across our facilities.

To proactively manage these risks, we undertook a comprehensive physical climate risk assessment in FY24, including both chronic and acute climate hazards, which laid the foundation for our climate resilience planning. This

initiative enabled us to identify site-level exposures and mitigation needs, ensuring our preparedness in the face of climate uncertainty.

Climate-related hazards such as water scarcity, extreme heat, floods, cyclones, and high winds were evaluated across all operational sites. These risks can impact critical infrastructure, disrupt raw material supplies, reduce workforce productivity, and affect downstream value chains. Furthermore, inaction on these issues may increase stakeholder scrutiny and pose reputational, operational, and regulatory risks.

#### CLIMATE HAZARDS CONSIDERED



This foundational assessment acknowledged not only the operational impacts of extreme weather—such as reduced workforce productivity, infrastructure strain, and disrupted logistics—but also the broader reputational, community, and compliance challenges that may emerge from inaction. As climate-linked disclosure requirements continue to tighten globally, our goal was to build a science-based understanding of our exposure, thereby aligning with stakeholder expectations and international frameworks.

### Climate Scenarios and Time Horizons Considered

To evaluate the potential impact of future climate hazards, we employed global climate modelling tools anchored in the Intergovernmental Panel on Climate Change's (IPCC) Sixth Assessment Report (AR6). Specifically, we used the IPCC WGI Interactive Atlas to analyze physical risks under the following internationally recognized Representative Concentration Pathways (RCPs) and Shared Socio-Economic Pathways (SSPs):



**SSP1-2.6 (Low Emissions Scenario):** Global warming limited to 1.5°C–2°C by 2100; CO<sub>2</sub> emissions peak early and decline to net-zero by ~2070.



**SSP2-4.5 (Intermediate Scenario):** Moderate emissions growth, resulting in global temperatures rising 2°C–3°C by 2100.



**SSP5-8.5 (High Emissions Scenario):** Continued rise in emissions throughout the century, potentially leading to >4°C warming by 2100.

These scenarios were applied to three key time horizons, in line with both asset lifecycles and international disclosure guidance:

**2030** (Short/Medium-Term)

**2050** (Long-Term)

#### Structured Five-Step Assessment Approach

The physical risk assessment followed a structured, five-step methodology to ensure both rigor and site-specific relevance:



##### Primary Data Collection

Collected geo-spatial data on all sites including coordinates, facility type, and operational context.



##### Baseline Hazard Risk Assessment

Analyzed historical trends and exposure to hazards such as droughts, heatwaves, floods, and cyclones using tools like the World Bank's Climate Change Knowledge Portal, WRI, IPCC Risk Atlas, and NOAA IBTrACS.



##### Future Hazard Risk Assessment

Projected future climate variables—such as precipitation, temperature, and wind patterns—under different scenarios and timelines to anticipate emerging risks.



##### Hazard Potential Categorization

Each hazard was categorized as Low, Medium, or High based on intensity, frequency, and local vulnerability, to prioritize risk response.



##### Trends & Recommendations

Identified directional shifts in climate parameters and recommended actionable steps for mitigation and resilience building.

This structured analysis provided a clear picture of JSL's exposure to physical climate hazards under a range of plausible climate futures. In FY25, we have expanded on this foundation by quantifying the financial implications of the identified physical risks, thereby enhancing our ability to integrate climate data into investment decisions, capital planning, and resilience measures.

#### PHYSICAL RISKS SCENARIO ANALYSIS OUTPUT

The output shown below across different hazards in the baseline period and the future projections is based on the legend provided below.

#### LEGEND FOR HAZARD CLASSIFICATION

| Baseline Hazard Classification          |              |
|-----------------------------------------|--------------|
| No Hazard                               | Blue         |
| Low                                     | Green        |
| Medium                                  | Yellow       |
| High                                    | Red          |
| Projected Climate Change Classification |              |
| Significant Increase                    | Brown        |
| Moderate Increase                       | Orange       |
| Minimal Increase                        | Light Orange |
| No Change                               | Light Blue   |
| Minimal Decrease                        | Light Green  |
| Moderate Decrease                       | Green        |
| Significant Decrease                    | Dark Green   |
| Not Applicable                          | Grey         |

## Water stress

As per climate model projections, the baseline hazard level for water stress at JSL sites is assessed as High and is expected to remain unchanged across all future climate scenarios (SSP1-2.6, SSP2-4.5, SSP5-8.5) and time horizons (2030 and 2050).

Jajpur and Hisar sites: Climate projections indicate sustained high stress levels in the short- and long-term. This could translate into increased competition for freshwater resources, higher operational costs for water procurement and treatment, and heightened regulatory

scrutiny. For Hisar in particular, being in a water-scarce zone, long-term business continuity could depend on continued efficiency improvements, recycling, and alternate sourcing.

Sukinda Mines: Also reflects high stress, with implications for process water availability in mining operations and potential for community-level conflicts over scarce resources. The overall physical climate risk summary for Water Stress at all the JSL Sites for future climate scenarios is shown in table below

### SUMMARY OF WATER STRESS UNDER BASELINE AND CLIMATE CHANGE SCENARIOS

| Site Name                | Location | Water Stress          |                                  |      |                 |      |                 |      |
|--------------------------|----------|-----------------------|----------------------------------|------|-----------------|------|-----------------|------|
|                          |          | Baseline Hazard Level | Future Trends in Climatic Hazard |      |                 |      |                 |      |
|                          |          |                       | SSP1-2.6/RCP2.6                  |      | SSP2-4.5/RCP4.5 |      | SSP5-8.5/RCP8.5 |      |
|                          |          |                       | 2030                             | 2050 | 2030            | 2050 | 2030            | 2050 |
| Jindal Stainless Limited | Jajpur   | High                  | Same as baseline                 |      |                 |      |                 |      |
| JSL Sukinda Mines        |          |                       |                                  |      |                 |      |                 |      |
| Jindal Stainless Limited | Hisar    | High                  | Same as baseline                 |      |                 |      |                 |      |

## Urban Flooding

As per climate model projections, the baseline hazard level for urban flooding at JSL sites ranges from Medium to High. Future climate scenarios indicate a potential increase in the intensity of one-day maximum rainfall events across all sites by 2030 and 2050, with variations depending on the scenario pathway.

At the Jajpur site, the baseline hazard level is High. Projections show only minimal increases across scenarios in the short term (2030), but a moderate rise is expected by 2050. This could affect site access, disrupt logistics, and impact storage yards and utility infrastructure during monsoon surges.

At the Hisar site, the baseline hazard level is Medium. show moderate increases (~5–10% by 2030) rising to significant increases (~11–14% by 2050). This may result in higher exposure to flooding of plant facilities, power supply interruptions, and workforce absenteeism during severe rain events.

Sukinda Mines: Risks are lower, but increases of ~5–11% in rainfall extremes by 2050 could impact pit operations, ore handling, and mine safety protocols.

The overall summary of urban flooding risks at JSL sites is presented in the table below.

### SUMMARY OF URBAN FLOODING RISK UNDER BASELINE AND CLIMATE CHANGE SCENARIOS

| Site Name                | Location | Urban Flooding (based on one-day max rainfall) |                                  |                 |                 |                 |                 |                 |
|--------------------------|----------|------------------------------------------------|----------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                          |          | Baseline Hazard Level                          | Future Trends in Climatic Hazard |                 |                 |                 |                 |                 |
|                          |          |                                                | SSP1-2.6/RCP2.6                  |                 | SSP2-4.5/RCP4.5 |                 | SSP5-8.5/RCP8.5 |                 |
|                          |          |                                                | 2030                             | 2050            | 2030            | 2050            | 2030            | 2050            |
| Jindal Stainless Limited | Jajpur   | High                                           | 1%<br>increase                   | 10%<br>increase | 2%<br>increase  | 7%<br>increase  | 1%<br>increase  | 6%<br>increase  |
| JSL Sukinda Mines        |          |                                                | 1%<br>increase                   | 11%<br>increase | 1%<br>increase  | 5%<br>increase  | 1%<br>increase  | 5%<br>increase  |
| Jindal Stainless Limited | Hisar    | Medium                                         | 8%<br>increase                   | 11%<br>increase | 5%<br>increase  | 11%<br>increase | 10%<br>increase | 14%<br>increase |

## Riverine Flooding

According to climate model projections, the baseline hazard level for riverine flooding varies significantly across JSL sites.

At the Jajpur and Sukinda Mines, the baseline level indicates no hazard, and no material change is projected across climate scenarios, making this risk category not applicable for the location.

At the Hisar site, the baseline hazard level is assessed as High, with projections indicating ~7–13% increases by

2030 and ~11–15% increases by 2050 across scenarios. This could lead to flooding of low-lying plant areas, disruption to raw material storage, and potential damage to electrical and mechanical infrastructure.

The overall summary of riverine flooding risks at JSL sites is presented in the table below.

### SUMMARY OF RIVERINE FLOODING RISK UNDER BASELINE AND CLIMATE CHANGE SCENARIOS

| Site Name                | Location | Riverine Flooding     |                                  |              |                 |              |                 |              |
|--------------------------|----------|-----------------------|----------------------------------|--------------|-----------------|--------------|-----------------|--------------|
|                          |          | Baseline Hazard Level | Future Trends in Climatic Hazard |              |                 |              |                 |              |
|                          |          |                       | SSP1-2.6/RCP2.6                  |              | SSP2-4.5/RCP4.5 |              | SSP5-8.5/RCP8.5 |              |
|                          |          |                       | 2030                             | 2050         | 2030            | 2050         | 2030            | 2050         |
| Jindal Stainless Limited | Jajpur   | No Hazard             | Not Applicable                   |              |                 |              |                 |              |
| JSL Sukinda Mines        |          |                       |                                  |              |                 |              |                 |              |
| Jindal Stainless Limited | Hisar    | High                  | 10% increase                     | 11% increase | 7% increase     | 14% increase | 13% increase    | 15% increase |

## Coastal Flooding

None of the sites covered under this assessment are exposed to risks from climate change driven coastal flooding.

## Landslide

None of the sites covered under this assessment are exposed to risks from climate change driven landslides.



## Extreme Heat

As per climate model projections, extreme heat is assessed as a high baseline hazard across JSL's major operating sites, with anticipated escalation across all climate scenarios.

At the Jajpur site, the baseline hazard is High, with projected temperature increases of ~0.3–0.4°C by 2030 and rising to ~1.0–1.4°C by 2050. These upward shifts in temperature may place additional pressure on cooling requirements in energy-intensive processes and elevate health and safety risks for workers.

At the Hisar site, extreme heat is also a High baseline hazard, with stronger projections compared to Jajpur:

~0.6°C by 2030, increasing to ~1.2–1.7°C by 2050. This trend could intensify operational challenges such as higher electricity demand for cooling, increased water usage for temperature regulation, and reduced workforce productivity during peak summer months.

At the Sukinda Mines, warming trends mirror those at Jajpur, with ~0.4–0.5°C by 2030 and ~1.0–1.4°C by 2050. Rising heat levels may impact equipment efficiency, logistics, and working conditions in mining areas.

The overall summary of extreme heat risks across JSL sites is shown in the table below.

### SUMMARY OF EXTREME HEAT RISK UNDER BASELINE AND CLIMATE CHANGE SCENARIOS

| Site Name                | Location | Extreme Heat          |                                  |                  |                  |                  |                  |                  |
|--------------------------|----------|-----------------------|----------------------------------|------------------|------------------|------------------|------------------|------------------|
|                          |          | Baseline Hazard Level | Future Trends in Climatic Hazard |                  |                  |                  |                  |                  |
|                          |          |                       | SSP1-2.6/RCP2.6                  |                  | SSP2-4.5/RCP4.5  |                  | SSP5-8.5/RCP8.5  |                  |
|                          |          |                       | 2030                             | 2050             | 2030             | 2050             | 2030             | 2050             |
| Jindal Stainless Limited | Jajpur   | High                  | 0.44oC increase                  | 0.94 oC increase | 0.42 oC increase | 1.06 oC increase | 0.34 oC increase | 1.39 oC increase |
| JSL Sukinda Mines        |          |                       | 0.46oC increase                  | 0.99 oC increase | 0.48 oC increase | 1.11 oC increase | 0.35 oC increase | 1.45 oC increase |
| Jindal Stainless Limited | Hisar    | High                  | 0.64 oC increase                 | 1.22 oC increase | 0.62 oC increase | 1.32 oC increase | 0.61 oC increase | 1.7 oC increase  |

## Cyclone and Wind

As per climate projections, cyclone and wind hazards are assessed as a high baseline risk in the Jajpur region, where both the Jajpur plant and the Sukinda Mines are located. Across all IPCC scenarios, hazard intensity is projected to increase by 6–9% by 2050. These increases could heighten risks of infrastructure damage, production downtime, and logistics disruptions, given the coastal influence and exposure of operations in this region.

For the Hisar site, no reliable cyclone or wind hazard data was available, and projections were therefore not applicable.

The overall summary for risk of cyclone and wind at all the JSL Sites for future climate scenarios is shown in the table below

### SUMMARY OF CYCLONE AND WIND RISK UNDER BASELINE AND CLIMATE CHANGE SCENARIOS

| Site Name                | Location | Cyclone and Wind      |                                  |             |                 |             |                 |             |
|--------------------------|----------|-----------------------|----------------------------------|-------------|-----------------|-------------|-----------------|-------------|
|                          |          | Baseline Hazard Level | Future Trends in Climatic Hazard |             |                 |             |                 |             |
|                          |          |                       | SSP1-2.6/RCP2.6                  |             | SSP2-4.5/RCP4.5 |             | SSP5-8.5/RCP8.5 |             |
|                          |          |                       | 2030                             | 2050        | 2030            | 2050        | 2030            | 2050        |
| Jindal Stainless Limited | Jajpur   | High                  | 6% increase                      | 7% increase | 6% increase     | 8% increase | 6% increase     | 9% increase |
| JSL Sukinda Mines        |          |                       |                                  |             |                 |             |                 |             |
| Jindal Stainless Limited | Hisar    | No Data               | Not Applicable                   |             |                 |             |                 |             |

## TRANSITION RISK & OPPORTUNITY FRAMEWORK: INSIGHTS FROM FY24

The global shift towards a low-carbon economy is accelerating, driven by evolving policy mandates, technological transformation, changing market dynamics, and rising stakeholder expectations. For Jindal Stainless (JSL), this transition presents both risks and opportunities that could materially influence its operations, value chain, and future competitiveness.

JSL conducted its first comprehensive transition risk and opportunity assessment in FY24, aligned with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). This assessment marked a critical step in embedding transition-related considerations into the company's strategic risk management and long-term planning processes.

### Structured Identification Approach

JSL adopted a value chain-wide lens to identify relevant transition risks and opportunities, covering upstream suppliers, direct operations, and downstream customers. The risks and opportunities were categorized under the core TCFD dimensions:

**Risks:** Policy and legal, market, technology, and reputation

**Opportunities:** Energy source, resource efficiency, products and services, markets, and resilience



In alignment with its operational life cycle and regulatory guidance, JSL considered two-time horizons:

**FY2030** Short/Medium-term

**FY2050** Long-term

Based on this structured evaluation, eight material transition risks and four key opportunities were identified as most relevant to JSL's business context.

### Scenario-Based Evaluation

To assess the potential impact of these risks and opportunities, JSL used two distinct climate transition scenarios from the Network for Greening the Financial System (NGFS):

#### Stated Policies Scenario (STEPS)

- » Represents a business-as-usual pathway with limited additional policy intervention.
- » Aligns with a global warming trajectory of over 3°C by 2100.

#### Net Zero 2050 Scenario

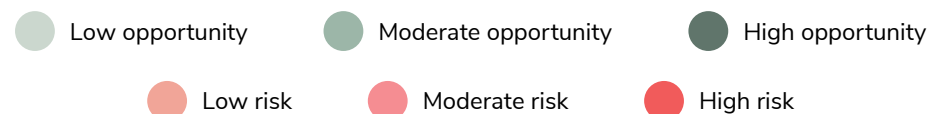
- » Reflects an aggressive global transition strategy aimed at limiting warming to 1.5°C.
- » Assumes stringent climate policies, rapid innovation, and full net-zero CO<sub>2</sub> emissions around 2050.

These scenarios were selected for their alignment with India-specific economic and policy contexts, as well as their extended data horizon up to 2050.

## TRANSITION RISKS SCENARIO ANALYSIS OUTPUT

### OVERVIEW OF JSL'S IDENTIFIED TRANSITION RISKS AND OPPORTUNITIES

| TCFD Category        | Transition drive name                                                                                        | Value chain impact                      | Financial Driver | 2030 | 2050 |
|----------------------|--------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------------|------|------|
| <b>Opportunities</b> |                                                                                                              |                                         |                  |      |      |
| Energy source        | Use of supportive government decarbonization policy incentives                                               | Direct Operations                       | CAPEX            |      |      |
| Markets              | Increased demand for stainless steel                                                                         | Downstream                              | Revenue          |      |      |
| Products & services  | Investment into and development of green stainless steel                                                     | Direct Operations                       | Revenue          |      |      |
| Resilience           | Improved supply chain transparency and demonstration of industry leadership leading to reputational benefits | Downstream                              | Revenue          |      |      |
| <b>Risks</b>         |                                                                                                              |                                         |                  |      |      |
| Market               | Changing consumer preferences                                                                                | Downstream                              | Revenue          |      |      |
| Market               | Increased raw material costs due to increased stainless-steel demand                                         | Upstream                                | OPEX             |      |      |
| Market               | Increased fossil fuel prices and reduced supply, affecting energy- and transport-related costs               | Upstream, Direct Operations, Downstream | OPEX             |      |      |
| Market               | Devaluation or stranding of assets                                                                           | Direct Operations                       | CAPEX            |      |      |
| Policy & legal       | Exposure to emerging GHG- and climate-related regulations                                                    | Downstream                              | OPEX             |      |      |
| Policy & legal       | Emerging mandates on stainless steel industry                                                                | Direct Operations                       | OPEX             |      |      |
| Reputation           | Reputational impacts from stigmatization of sector                                                           | Downstream                              | Revenue          |      |      |
| Technology           | Investment into lower emissions technology and/or electrification of operations                              | Direct Operations                       | CAPEX            |      |      |



In FY25, JSL builds on this foundational analysis by undertaking quantification of the potential financial impacts associated with the transition risks and opportunities identified in FY24. This next step provides a deeper understanding of how future policy and market scenarios could shape JSL's strategic and financial outlook—and ensures proactive risk mitigation and opportunity alignment across the business.

## ADVANCING RISK INTELLIGENCE: FINANCIAL QUANTIFICATION OF CLIMATE RISKS

### FINANCIAL IMPACT ASSESSMENT OF PHYSICAL RISKS - HEAT-RELATED PRODUCTION LOSS

Under projected climate scenarios (SSP2-4.5 and SSP5-8.5), our manufacturing facilities in Hisar and Jajpur are expected to face heightened extreme temperatures in the 2030s, with further intensification in the 2050s. For the steel industry, such changes are likely to affect labour productivity through higher incidence of heat stress, fatigue, and reduced working hours, particularly in high-intensity operational areas. Lower workforce efficiency and increased absenteeism may result in slower production cycles adversely affecting the operational efficiency and leading to production losses.

Historical survey suggests that annual plant output may decline by around ~2% for every 1°C rise above design thresholds, with the impact being more pronounced in facilities lacking advanced automation and climate-control systems.

#### Quantified Financial Exposure

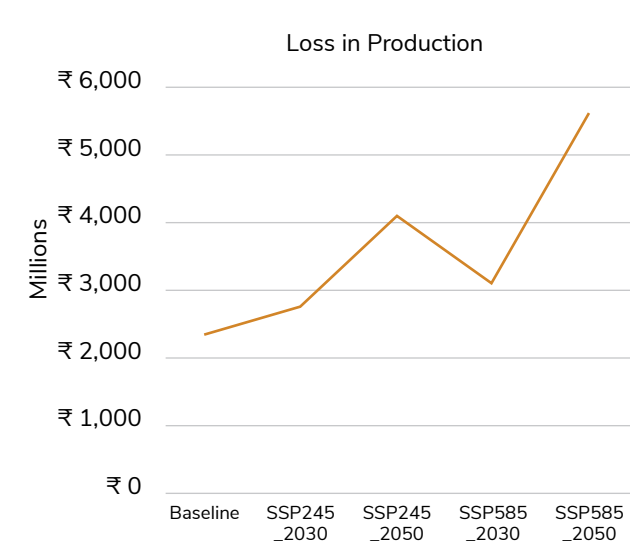
The table below summarizes the estimated annual financial effect of these physical risks across medium- and long-term horizons under the two climate scenarios:

| Time Horizon              | Scenario            | Estimated Financial Impact (INR crores) | Primary Impact Driver                                                                                                  |
|---------------------------|---------------------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Medium Term (2030s/2040s) | SSP2-4.5 / SSP5-8.5 | 275.1 – 309.7                           | Loss of production efficiency and reduced working hours due to increased extreme heat and cyclone disruptions.         |
| Long Term (2050s)         | SSP2-4.5 / SSP5-8.5 | 406.9 – 558.5                           | Intensified heat stress, higher ambient temperature impacts on equipment, and prolonged weather-related interruptions. |

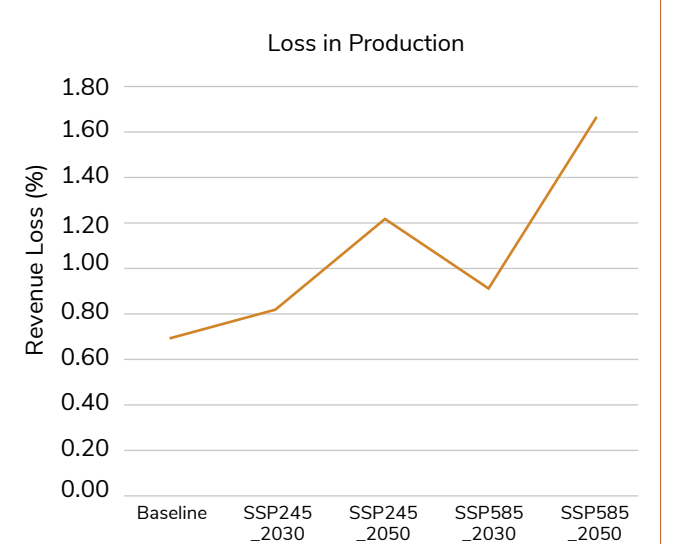
Estimates are based on climate model projections for JSL's Hisar and Jajpur facilities and historical industry correlations indicating a ~2% annual output loss per 1 °C rise above design thresholds.

In relative terms, these impacts translate to 0.82–0.92% of total revenue by the 2030s and 1.21–1.66% of total revenue by the 2050s, underscoring a moderate but growing exposure to climate-induced operational disruptions.

#### LOSS IN PRODUCTION DUE TO EXTREME HEAT



#### LOSS IN PRODUCTION DUE TO EXTREME HEAT



## Primary Financial Effect



### Impact Type

Decreased revenues due to reduced production capacity and operational interruptions.



### Likelihood

Very likely within the assessment horizon.



### Magnitude

Low to moderate, depending on severity and frequency of extreme events.



### Geographical Scope

Direct operations in India (Hisar and Jajpur).

## Strategic and Financial Response

To mitigate the anticipated financial impacts, JSL is developing a roadmap to implement a combination of infrastructure resilience, technological enhancement, and workforce protection measures. The estimated adaptation investment is ₹100 crore, with recurring annual costs of ₹10–15 crore for maintenance and employee health programs.



## FINANCIAL IMPACT ASSESSMENT OF TRANSITION RISKS

As India advances toward a carbon-regulated economy, Jindal Stainless faces potential financial implications arising from emerging policy mechanisms. The Government of India's Carbon Credit Trading Scheme (CCTS) expected to replace the Perform, Achieve, and Trade (PAT) mechanism by 2026 will introduce mandatory emission intensity targets and a rate-based carbon market for energy-intensive sectors such as steel.

Under the scheme, JSL will be required to either maintain emissions within prescribed thresholds or purchase carbon credits for excess emissions. Failure to comply may result

in penalties and higher operating costs. Consequently, the policy transition is expected to influence the company's financial performance, cash flows, and capital allocation decisions across short-, medium-, and long-term horizons.

### Quantified Financial Exposure

The table below summarizes the estimated annual financial effect of the CCTS on JSL across two climate scenarios — STEPS (Business-as-Usual) and Net Zero 2050 (NZE) derived through a structured methodology that multiplies projected GHG emissions by expected carbon cost per tonne of CO<sub>2</sub>e.

| Time Horizon       | Scenario  | Estimated Financial Effect (INR Crores) | Primary Impact Driver                                                                                                          |
|--------------------|-----------|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Short Term (2030)  | STEPS/NZE | 120 - 123                               | Increased indirect operating costs to comply with emission intensity targets and purchase of carbon credits.                   |
| Medium Term (2040) | STEPS/NZE | 212 - 507                               | Higher compliance and carbon credit costs driven by tightening regulatory thresholds and carbon market expansion.              |
| Long Term (2050)   | STEPS/NZE | 320 – 984                               | Escalating costs under advanced decarbonization pathways requiring significant capital investments in low-carbon technologies. |

Estimates are based on forecasted operational emissions (Scope 1 & 2) and scenario-based carbon pricing projections under CCTS.

However, in proportional terms, the projected annual financial impact of carbon pricing is estimated at 0.29%–0.3% of total revenue by the 2030s, increasing to 0.8%–2.4% by the 2050s, depending on the carbon cost scenario.

### Key Financial Insights

**Magnitude and Likelihood:** The transition risk associated with CCTS is assessed as Medium–High in magnitude and very likely to materialize across all timeframes (2030–2050).

**Primary Financial Effect:** The anticipated impact will primarily result in increased indirect operating costs, particularly through the purchase of carbon credits and investments in abatement technologies.

**Methodology:** The quantification considers two carbon cost trajectories:

- » STEPS Scenario – reflects moderate regulatory tightening under business-as-usual conditions.
- » NZE Scenario – represents accelerated policy action aligned with global net-zero pathways



## Strategic and Financial Response

To mitigate exposure and maintain long-term competitiveness, JSL is actively developing a Climate Transition Plan with a total response cost of INR 905 crores, covering technology upgrades, process decarbonization, renewable energy expansion, and carbon abatement initiatives.

Through these measures, JSL aims to anticipate regulatory shifts, minimize future compliance costs, and align its financial strategy with India's evolving carbon market architecture.

## FINANCIAL IMPACT ASSESSMENT OF TRANSITION OPPORTUNITIES

As Jindal Stainless (JSL) advances its decarbonization journey, the transition toward renewable energy, green fuels, and efficiency-led innovation presents material opportunities for cost reduction, operational resilience, and competitive differentiation. These initiatives also strengthen JSL's alignment with India's clean energy transition goals and the Paris Agreement.

### Opportunity Overview

| Opportunity Type    | Primary Driver                                                | Value Chain Stage | Geography |
|---------------------|---------------------------------------------------------------|-------------------|-----------|
| Resource efficiency | Increased efficiency of production and distribution processes | Direct operations | India     |

JSL's transition opportunities primarily stem from the integration of renewable energy and energy-efficient technologies across its Hisar and Jajpur facilities in line with the proportion of renewable energy integration under the business as usual and the low carbon scenario.

### Quantified Financial Opportunity

| Opportunity Area              | Estimated Annual Financial Impact (INR crores) | Primary Financial Effect                        |
|-------------------------------|------------------------------------------------|-------------------------------------------------|
| Renewable Power Procurement   | 66.8                                           | Reduced power purchase cost                     |
| Energy Efficiency Initiatives | 56.5                                           | Reduced indirect operating costs                |
| Total                         | 123.3                                          | Aggregate benefit from operational cost savings |



JSL estimates a total financial opportunity of approximately ₹1,233 million (INR 123.3 crores) in FY 2024–25 arising from renewable energy substitution and energy efficiency measures.

These benefits are derived from:



Avg. Grid power cost  
₹ 7.15 / kWh



Avg. Renewable power cost  
₹ 5.31 / kWh



Avg. Per-unit saving  
₹ 1.84 / kWh over 3,63,297 MWh renewable energy consumption

## Effect on Financial Performance

The combined renewable and energy-efficiency initiatives have already lowered JSL's cost of production, mitigating the impact of rising fuel and electricity prices.

These measures have enhanced operational margins and reduced carbon exposure risk, delivering tangible financial gains while supporting the company's broader Net Zero ambition.

## Strategic Significance

By integrating renewable energy, green hydrogen, and energy-efficient systems, JSL is not only reducing its operational carbon footprint but also improving its cost structure in a carbon-constrained economy.

These initiatives demonstrate that climate action and financial performance are mutually reinforcing, positioning JSL as a leader in low-carbon stainless steel manufacturing.

# STRENGTHENING CLIMATE RISK MANAGEMENT

As climate-related risks increasingly influence industrial, financial, and regulatory landscapes, Jindal Stainless Limited (JSL) has strengthened its risk management systems to embed climate considerations more deeply into enterprise decision-making. In FY24, JSL laid the

foundation by conducting scenario-based assessments of physical and transition risks. In FY25, we built on this by initiating financial quantification of these risks (refer Section 5.2), demonstrating continued progress in translating climate insight into risk-informed strategy.

## PROCESSES FOR IDENTIFYING AND ASSESSING CLIMATE-RELATED RISKS

JSL's climate risk identification and assessment processes are embedded within its Risk Management framework. These processes ensure climate-related exposures—across physical, transition, and value chain dimensions—are assessed alongside conventional financial and operational risks.



### Systematic Risk Identification

We continuously scan regulatory developments, stakeholder expectations, climate policy trends, and global climate data to identify risks relevant to our operations and supply chain.



### Scenario-Driven Evaluation

As established in FY24, climate scenario analysis informs risk evaluation across short-, medium-, and long-term horizons using IPCC and NGFS-aligned pathways. These scenarios help anticipate how diverse climate trajectories may affect JSL.



### Impact and Probability Assessment

Risks are rated based on likelihood and magnitude of financial, operational, or reputational impact. This ensures prioritization of high-risk areas and alignment with enterprise-level materiality thresholds.



### Tailored Categorization

Risks are classified by type (acute/chronic physical, policy, technology, market, reputational), enabling targeted response planning and seamless integration with the broader risk register.



### Designing Mitigation Solutions

For risks rated as material, JSL formulates mitigation strategies tailored to the risk profile—ranging from process adaptation and technology upgrades to supplier engagement or policy advocacy. These solutions are designed in coordination with functional teams and guided by strategic ESG priorities.

This structured process enables JSL to proactively identify, assess, and plan responses to climate-related risks, fostering resilience and strategic alignment.

## PROCESSES FOR MANAGING CLIMATE-RELATED RISKS

Once risks are identified and assessed, JSL activates a structured management and mitigation protocol. In FY25, this process has been enhanced through closer integration with financial risk modeling and ESG performance monitoring systems.



### Mitigation Action Planning

Risk-specific mitigation strategies are developed across domains—such as investing in low-carbon technologies, adapting plant infrastructure, or engaging supply chain partners on emissions reduction.



### Cross-Functional Implementation

Responsibility for implementation rests with cross-functional teams spanning engineering, sustainability,

procurement, and plant operations to ensure site-specific action.



### Real-Time Monitoring and Review

While full real-time emissions monitoring dashboards are under development, ESG performance is tracked through digital platforms like the Updapt ESG tool, enabling improved oversight of risk mitigation outcomes.



### Continuous Learning

Climate risk management remains iterative. We conduct periodic reviews to learn from past experiences and refine our strategies to ensure that our risk management practices evolve in response to new information and changing conditions.

## INTEGRATION INTO RISK MANAGEMENT FRAMEWORK

Climate risk management is embedded within JSL's risk management framework, enabling alignment between sustainability strategy and corporate risk oversight.



### Governance Embeddedness

Climate-related risks are reviewed quarterly by the Board-level Risk Management Committee, which includes Independent Directors, the Managing Director, and Executive Directors. The ESG Committee provides strategic guidance and ensures these risks are considered across the organization.



### Strategic and Operational Alignment

Insights from climate risk assessments are integrated into business continuity planning, investment decisions, and decarbonization strategies—reinforcing climate alignment across departments.



### Cross-Hierarchy Ownership

Departmental heads and site-level managers are responsible for executing risk mitigation strategies. This ensures ownership at the ground level and enables effective integration of climate considerations into daily operations.



### Frequency of Review

Climate-related risks are formally reviewed on a quarterly basis by the Risk Management Committee and ESG Committee. This review cadence ensures timely adaptation of risk response strategies based on new data, policy developments, or internal changes.

Through systematic integration, timely review, and empowered ownership, JSL's climate risk governance ensures that the company is equipped to navigate a low-carbon future while protecting long-term value.



# GOVERNANCE, POLICY & STAKEHOLDERS

At Jindal Stainless, governance of climate-related issues is embedded across all levels of leadership, reflecting the company's commitment to sustainability as a strategic business imperative. Climate change continues to be a key agenda item in deliberations related to strategy formulation, operational performance, investment planning, and scenario analysis.

JSL's ESG governance framework is fully integrated with its climate governance mechanisms, ensuring cohesive and consistent oversight of sustainability matters. The Board of Directors retains overall oversight of climate-related topics and is supported by a Board-level ESG Committee, which provides strategic direction and monitors the integration of climate considerations into core decision-making processes.

Members of the Board bring expertise in areas such as supply chain management, technology, finance, corporate governance, and public administration—enabling effective oversight of emerging climate-related challenges and opportunities.

A management-level ESG Steering Committee is responsible for implementing strategies, coordinating across departments, and ensuring that climate-related risks and opportunities are actively monitored. The Steering Committee routinely escalates key insights and updates to the Board and ESG Committee to support proactive and informed leadership decisions.

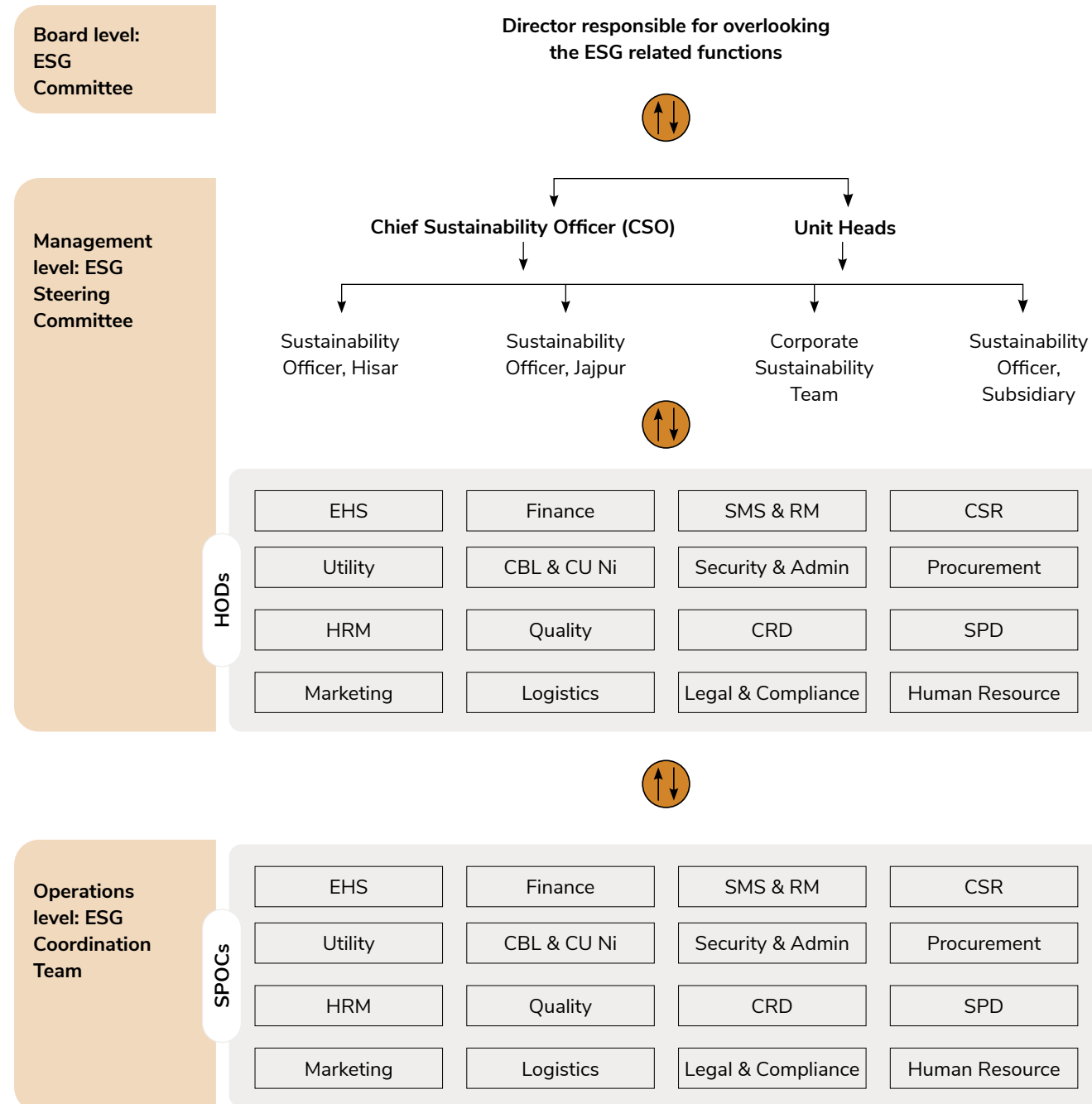
To ensure continuous alignment with evolving sustainability expectations, regular orientation and capacity-building sessions are conducted for the Board and Key Managerial Personnel (KMP). These sessions cover safety, health, environment, governance, industry trends, and regulatory updates to strengthen their understanding of ESG topics.

The Board carried out an annual evaluation of its own performance, the performance of the Independent Directors individually, as well as the evaluation of the working of the Committees of the Board. For this purpose, assessment questionnaires were circulated to all Directors, and their feedback was obtained and recorded. The performance evaluation of all the Directors was carried out by the Nomination and Remuneration Committee, while the performance evaluation of the Chairman and the Non-Independent Directors was undertaken by the Independent Directors.

All strategic and operational decisions are approached with an informed awareness of the dynamic climate and sustainability landscape—demonstrating JSL's continued commitment to responsible leadership and long-term value creation.

## CLIMATE CHANGE GOVERNANCE

### ESG Governance Structure



## BOARD AND ESG COMMITTEES

### Apex Level: Board-Level ESG Oversight

The Board of Directors holds overarching accountability for the company's long-term strategy and ensures that ESG priorities, including climate-related risks and opportunities, are effectively integrated into strategic and operational decision-making.

A dedicated ESG Committee of the Board plays a central role in guiding this agenda, including oversight of the company's Net Zero target for 2050. The committee comprises five members—three Independent Directors, including the Committee Chair, and two Executive Directors—ensuring a balance of external perspective and internal insight.

|                     |                                                    |
|---------------------|----------------------------------------------------|
| Ms Arti Luniya      | Chairperson of the Committee, Independent Director |
| Mr Abhyuday Jindal  | Member, Managing Director                          |
| Mr Jayaram Easwaran | Member, Independent Director                       |
| Mr Jagmohan Sood    | Member, Whole Time Director and COO                |
| Dr Rajeev Uberoi    | Member, Independent Director                       |

### The ESG Committee is responsible for:



Reviewing the company's ESG framework and its alignment with business strategy



Recommending ESG-related policies



Overseeing stakeholder engagement on material sustainability issues



Evaluating climate-related and broader ESG risks and opportunities



Monitoring progress against ESG objectives and key performance indicators



Ensuring timely and transparent disclosures on ESG performance

Regular updates on evolving ESG themes, including climate-related developments, are shared with the full Board, reinforcing alignment with strategic goals and enhancing accountability at the highest level of governance.

This structure ensures that sustainability considerations remain embedded in JSL's core governance systems and continue to inform resilient and long-term value creation.



## Management Level: ESG Steering Committee

The ESG Steering Committee, chaired by the Chief Sustainability Officer (CSO), constitutes the second tier of JSL's ESG governance structure. The committee is responsible for translating the Board's strategic direction into operational actions and is composed of facility-level sustainability officers and functional department heads across key business units.

The committee's responsibilities include:

**Embedding Climate Considerations and Governance:** Integrating climate-related factors into business planning and operations while ensuring alignment with relevant governance frameworks and regulatory developments across geographies.

**Monitoring ESG Targets and Progress:** Tracking performance against short-, medium-, and long-term ESG objectives, including Net Zero targets. The committee recommends improvements to governance mechanisms and progress monitoring systems.

**Cultural Integration and Implementation:** Facilitating company-wide adoption of climate-conscious practices, advancing implementation of sustainability initiatives, and strengthening ESG-related governance and advocacy.

**Risk Evaluation and Reporting:** Evaluating emerging climate-related risks and opportunities and providing guidance on mitigation and response strategies. The committee also reviews key sustainability disclosures—including BRSR and TCFD reports—for completeness and accuracy prior to submission to the ESG Committee.

The ESG Steering Committee ensures continuity in execution, coordination across functions, and regular reporting to the Board on the status of ESG initiatives, including progress made, risks encountered, opportunities identified, and emissions-related performance.



## Operational Level: ESG Coordination Teams

At the operational level, ESG Coordination Teams, supported by departmental Single Points of Contact (SPOCs), are responsible for implementing sustainability and climate-related initiatives across JSL's facilities and functions.

These teams facilitate cross-functional coordination to embed ESG strategies into routine operations by overseeing documentation, monitoring progress, and tracking departmental targets to ensure timely achievement of sustainability objectives.

In close coordination with departmental heads, the ESG Coordination Teams report performance updates, escalate implementation issues, and support the advancement of key initiatives. Their responsibilities include monitoring climate-related risks and opportunities, driving carbon reduction strategies, and ensuring alignment with the company's broader ESG and Net Zero goals.

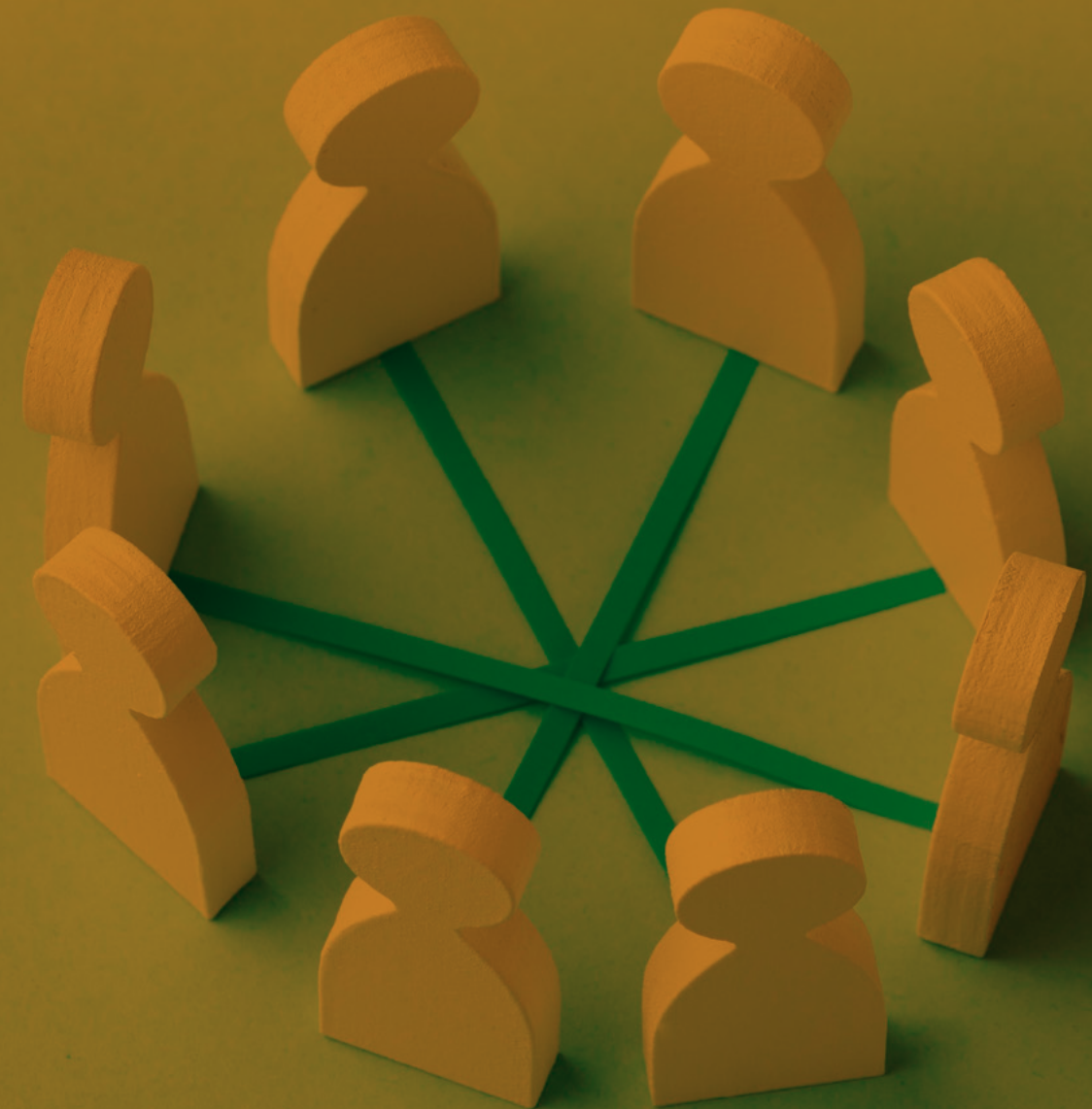
## STAKEHOLDER ENGAGEMENT

Jindal Stainless remains committed to robust governance practices, including active and ongoing engagement with shareholders and suppliers on ESG and climate-related matters. These stakeholder groups play a key role in shaping the company's strategic priorities, and the Board ensures that communication channels remain open to receive and incorporate their inputs.

We engage through a combination of formal and informal mechanisms to understand and address shareholder and supplier perspectives. As environmental and climate concerns continue to grow in significance, discussions on climate change have become a core part of our regular investor dialogues and are increasingly reflected in supplier engagements as well.

Feedback is gathered through various platforms such as investor meetings and one-on-one interactions—both in-person and virtual. These exchanges provide valuable insight into shareholder expectations on climate-related issues and help us understand evolving ESG practices and climate risk considerations across our supply chain.

All feedback is systematically captured, documented, and communicated to the Board, ensuring it contributes to strategic discussions and decision-making. This structured engagement approach supports our commitment to transparency, responsiveness, and informed climate governance.



## ADVOCATING FOR GLOBAL CLIMATE ACTION

As a responsible industry leader, Jindal Stainless' engagement extends beyond operational excellence to contributing to public policy and industrial discourse. The company views a progressive regulatory ecosystem as essential for long-term national and industrial development and considers policy advocacy a key lever to promote sustainability, innovation, and competitiveness.

Jindal Stainless contributes to national policymaking through continuous dialogue with government and regulatory institutions. In FY2024–25, key areas of engagement included:

Development of a taxonomy for green steel

Promotion of demand for sustainable steel solutions

Advocacy for carbon emissions monitoring and accelerated adoption of renewable energy

Participation in discussions on the Carbon Border Adjustment Mechanism (CBAM) to align with India's climate targets

Support for trade remedial measures to safeguard domestic industry

Contribution of insights during Free Trade Agreement (FTA) negotiations

Advocacy for aligning public procurement policies with the 'Make in India' initiative



The company actively collaborates with industry associations such as the Confederation of Indian Industry (CII), Federation of Indian Chambers of Commerce and Industry (FICCI), and Indian Stainless Steel Development Association (ISSDA). These partnerships support awareness-building, technical workshops, and policy dialogues on topics such as sustainable manufacturing, decarbonisation, and corrosion mitigation. In October 2024, Managing Director Abhyuday Jindal was elected President of the Indian Chamber of Commerce (ICC), following his tenure as Senior Vice President from October 2023 to October 2024.

On the international front, Jindal Stainless participates in bilateral engagements and global climate platforms to share knowledge and contribute to decarbonisation in the global steel sector. Its involvement in platforms such as Responsible Steel reflects its alignment with international sustainability benchmarks.

In FY2024–25, the company invested over INR 1.31 crore towards memberships and partnerships in these advocacy platforms, underscoring its commitment to collective industry advancement and a sustainable future.

## AWARDS AND ACCOLADES

Jindal Stainless' commitment to advancing low-carbon technologies, strengthening energy efficiency, and embedding sustainability in its operations has been recognized at national and international forums. These accolades reaffirm the company's role as a leader in driving climate action within the stainless-steel sector.

### Hydrogen & Renewable Energy Leadership

- ★ Hydrogen Leadership Award (The Economic Times) – for pioneering initiatives in green hydrogen production and renewable energy integration.
- ★ Special Recognition – ET Energy Leadership Award 2024 (The Economic Times) – for innovation-led contributions to sustainable development.
- ★ Global Environment Award 2024 (Energy and Environment Foundation) – for achievements in green hydrogen integration and energy efficiency.
- ★ SKOCH Award – Hisar Unit – for carbon emission reduction through the Green Hydrogen Plant.

### ESG & Sustainability Performance

- ★ Best ESG Programme 2024 (Institutional Investor Research, All Asia ex-Japan Executive Team Rankings) – recognizing JSL's comprehensive ESG framework.
- ★ Sustainability Performance Award 2024 – Hisar Unit (Responsible Business Awards).
- ★ Indian Chamber of Commerce (ICC) Award – 2nd place in the Sustainability Performance category.
- ★ Environmental Stewardship
- ★ Platinum Global Environment Award 2024 – Jajpur Unit (Energy and Environment Foundation) – for outstanding achievements in environmental excellence.

### Energy Efficiency Excellence

- ★ Six Awards – 8th CII National Energy Circle Competition 2024, across categories including low-carbon initiatives, innovation in energy efficiency, and ISO 50001 implementation.
- ★ 25th CII National Award for Excellence in Energy Management 2024 – Jajpur & Hisar Units, recognized as Energy Efficient Units.
- ★ SEEM Awards – Hisar Unit, including:
  - SEEM Platinum Award 2023 – National Energy Management System
  - SEEM Gold Award 2023 – National Sustainability Award
  - SEEM Star Performance Award 2023
  - Certified Energy Manager (Mr. Sandeep Agarwal)
- ★ Energy Efficiency Management Award – Hisar Unit (Global Energy & Environment Foundation).



# PERFORMANCE METRICS: TRACKING OUR CLIMATE AND RESOURCE FOOTPRINT

Jindal Stainless recognizes that robust and transparent performance measurement is essential to driving accountability and continuous improvement in our climate strategy. This section outlines our key environmental performance metrics—spanning greenhouse gas emissions, energy consumption, water usage, and

waste management—that reflect our progress toward decarbonization and resource efficiency goals.

By consistently monitoring and disclosing these indicators, we aim to align with global best practices, meet stakeholder expectations, and ensure that our sustainability efforts remain data-driven and impact-focused.



## GREENHOUSE GAS (GHG) EMISSIONS

In FY 2024–25, Jindal Stainless continued to strengthen the coverage and consistency of its greenhouse gas (GHG) inventory. This enhanced scope enables more precise monitoring and disclosure of emissions across operational boundaries, supporting improved emissions management and alignment with climate goals.

**Scope 1 Emissions:** Direct emissions arising from operations under JSL's control, primarily from fuel

combustion in the Steel Melting Shop (SMS), rolling mills, and captive power plants.

**Scope 2 Emissions:** Indirect emissions resulting from the consumption of purchased electricity across operational units.

**Scope 3 Emissions:** Indirect emissions across the value chain, including upstream and downstream activities involving suppliers and customers.

### Methodology Used:

Emissions for FY25 have been calculated in accordance with the methodology prescribed by the WRI–WBCSD Greenhouse Gas Protocol and the ISO 14064-Part I standard. JSL has adopted the Operational Control Approach to account for emissions from all facilities under its operational control.

For FY25, the organizational boundary of the GHG inventory includes JSL's standalone operations in Hisar and Jajpur.

The data in the table below and the subsequent tables represent the GHG inventory of the most material entities under JSL covering a substantial amount of our GHG emissions.

#### GHG INVENTORY AND INTENSITY JSL

| Particulars                                                   | 2022-23   | 2023-24   | 2024-25   |
|---------------------------------------------------------------|-----------|-----------|-----------|
| Scope 1 (tCO <sub>2</sub> e)                                  | 25,48,227 | 29,92,334 | 29,95,799 |
| Scope 2 (tCO <sub>2</sub> e)                                  | 7,35,756  | 7,87,141  | 6,22,511  |
| Scope 3 (tCO <sub>2</sub> e)                                  | 32,83,983 | 33,45,443 | 32,16,693 |
| GHG Emission Intensity (Scope 1, 2 in tCO <sub>2</sub> e/tcs) | 2.08      | 2.15      | 1.85      |
| GHG Emission Intensity (Scope 3 in tCO <sub>2</sub> e/tcs)    | 1.76      | 1.90      | 1.64      |

#### JSL SCOPE 3 EMISSIONS CATEGORY-WISE

| Scope 3 Categories (tCO <sub>2</sub> e)    | 2023-24   | 2024-25   |
|--------------------------------------------|-----------|-----------|
| Purchased Goods & Services                 | 13,20,286 | 18,27,971 |
| Capital Goods                              | 37,344    | 43,896    |
| Fuel and energy-related activities         | 9,34,410  | 1,68,668  |
| Upstream transportation and distribution   | 1,13,714  | 2,23,445  |
| Waste generated in operations              | 20,894    | 5,767     |
| Business Travel                            | 1,038     | 3,188     |
| Employee commuting                         | 6,309     | 10,183    |
| Downstream transportation and distribution | 1,59,416  | 1,72,284  |
| Processing of sold products                | 7,40,655  | 7,57,191  |
| End-of-life treatment of sold products     | 11,377    | 4,100     |
| Total                                      | 33,45,443 | 32,16,693 |

## GHG Emissions and Intensity at Business Unit level

#### GHG INVENTORIZATION AND INTENSITY HISSAR

| Particulars                                                   | 2022-23  | 2023-24  | 2024-25   |
|---------------------------------------------------------------|----------|----------|-----------|
| Scope 1 (tCO <sub>2</sub> e)                                  | 2,41,731 | 2,57,138 | 2,40,832  |
| Scope 2 (tCO <sub>2</sub> e)                                  | 5,10,878 | 5,42,585 | 4,18,898  |
| Scope 3 (tCO <sub>2</sub> e)                                  | 8,82,934 | 9,70,607 | 13,65,779 |
| GHG Emission Intensity (Scope 1, 2 in tCO <sub>2</sub> e/tcs) | 1.27     | 1.26     | 0.96      |
| GHG Emission Intensity (Scope 3 in tCO <sub>2</sub> e/tcs)    | 1.49     | 1.53     | 1.99      |

#### GHG INVENTORIZATION AND INTENSITY JAJPUR

| Particulars                                                   | 2022-23   | 2023-24   | 2024-25   |
|---------------------------------------------------------------|-----------|-----------|-----------|
| Particulars                                                   | 2022-23   | 2023-24   | 2024-25   |
| Scope 1 (tCO <sub>2</sub> e)                                  | 22,62,884 | 27,01,048 | 27,54,782 |
| Scope 2 (tCO <sub>2</sub> e)                                  | 1,42,112  | 1,71,564  | 2,00,293  |
| Scope 3 (tCO <sub>2</sub> e)                                  | 18,61,283 | 23,74,836 | 18,46,540 |
| GHG Emission Intensity (Scope 1, 2 in tCO <sub>2</sub> e/tcs) | 2.44      | 2.55      | 2.32      |
| GHG Emission Intensity (Scope 3 in tCO <sub>2</sub> e/tcs)    | 1.89      | 2.11      | 1.45      |

#### JSL CORPORATE OFFICE AND MINES EMISSIONS

| GHG Emissions (tCO <sub>2</sub> e) | 2023-24 | 2024-25 |
|------------------------------------|---------|---------|
| Gurgaon (Corporate Office)         |         |         |
| Scope 1 (tCO <sub>2</sub> e)       | 47      | 92      |
| Scope 2 (tCO <sub>2</sub> e)       | 617     | 663     |
| Scope 3 (tCO <sub>2</sub> e)       | 2,802   | 2,758   |
| Sukinda Mines                      |         |         |
| Scope 1 (tCO <sub>2</sub> e)       | 104     | 92      |
| Scope 2 (tCO <sub>2</sub> e)       | 1,493   | 2,657   |
| Scope 3 (tCO <sub>2</sub> e)       | 1,220   | 1,616   |

## ENERGY EFFICIENCY

Our total energy consumption for 2024-25 compared to FY 2021-22 has decreased by 8.8%, and the share of renewable energy in total energy consumption compared to FY 2021 baseline has increased from 0.38% to 4.1%.

*Note: Designer to convert the below table to graphical representation*

### ENERGY CONSUMPTION

| Particulars                      | Unit | 2022-23   | 2023-24   | 2024-25   |
|----------------------------------|------|-----------|-----------|-----------|
| Non-renewable energy consumption | MWh  | 83,85,221 | 97,08,052 | 85,42,995 |
| Renewable energy consumption     | MWh  | 33,676    | 55,652    | 3,63,297  |
| Total energy consumption         | MWh  | 84,18,897 | 97,63,704 | 89,06,292 |

### ELECTRICITY CONSUMPTION

| Particulars                           | Unit | 2022-23   | 2023-24   | 2024-25   |
|---------------------------------------|------|-----------|-----------|-----------|
| Non-renewable electricity consumption | MWh  | 10,66,955 | 11,14,844 | 8,51,708  |
| Renewable electricity consumption     | MWh  | 33,644    | 28,844    | 2,95,210  |
| Total electricity consumption         | MWh  | 11,00,599 | 11,44,728 | 11,46,918 |

### TOTAL ENERGY CONSUMPTION

| Parameter (Figures are in gigajoules (GJ))                  | 2022-23                      | 2023-24                      | 2024-25                      |
|-------------------------------------------------------------|------------------------------|------------------------------|------------------------------|
| <b>From renewable/ low carbon sources</b>                   |                              |                              |                              |
| Total electricity consumption (A)                           | 1,21,060                     | 1,07,386                     | 10,61,462                    |
| Total fuel consumption (B)                                  | -                            | 92,808                       | 2,45,769                     |
| Energy consumption through other sources (C)                | -                            | -                            | -                            |
| <b>Total energy consumed from renewable sources (A+B+C)</b> | <b>1,21,060</b>              | <b>2,00,194</b>              | <b>13,07,231</b>             |
| <b>From non-renewable sources</b>                           |                              |                              |                              |
| Total electricity consumption (D)                           | 38,39,160                    | 40,11,619                    | 30,62,665                    |
| Total fuel consumption (E)                                  | 2,63,42,463                  | 3,09,31,896                  | 2,76,77,080                  |
| Energy consumption through other sources (F)                | -                            | -                            | -                            |
| Total energy consumed from non-renewable sources (D+E+F)    | 3,01,81,623                  | 3,49,43,515                  | 3,07,39,746                  |
| <b>Total energy consumed (A+B+C+D+E+F)</b>                  | <b>3,03,02,683</b>           | <b>3,51,43,709</b>           | <b>3,20,46,976</b>           |
| <b>Energy intensity per rupee of turnover</b>               | <b>865.04 GJ / Crore INR</b> | <b>916.25 GJ / Crore INR</b> | <b>797.55 GJ / Crore INR</b> |
| <b>Energy intensity in terms of physical output</b>         | <b>19.17 GJ / TCS</b>        | <b>19.97 GJ / TCS</b>        | <b>16.36 GJ / TCS</b>        |

## WATER CONSERVATION

Water plays a critical role in stainless steel manufacturing—particularly in cooling, pickling, and cleaning processes. At Jindal Stainless, we continue to advance our water management practices through a combination of policy-driven initiatives, technological upgrades, and circularity-focused solutions.

In FY25, we strengthened water stewardship across our Hisar and Jajpur units (both Zero Liquid Discharge

facilities) through real-time monitoring, regular audits, and structured tracking of water use. Water is sourced from surface, ground, and third-party supplies and managed using closed-loop systems and metered infrastructure. Our rainwater harvesting infrastructure at Jajpur and Hisar helped collect 4,10,855 m³ of rainwater in FY24, and a 5,500 m³/day surface runoff treatment plant has been operationalized in partnership with S J Environmental Solutions.

### Water Management Roadmap

Our company-wide Water Management Policy guides our commitment to sustainable water use. It emphasizes reduced water withdrawal, 100% recycling, and ZLD compliance, while aligning with UN Sustainable Development Goal 6. The policy covers all stakeholders—employees, suppliers, contractors, and communities—and focuses on water body restoration, safe drinking water (WASH), and sanitation access for all.

Implementation is supported by regular water audits, public disclosure, and collaborations with local communities and academic institutions. Awareness-building among internal and external partners further reinforces our water conservation ethos.

### Cooling Systems and Resource Circularity

To minimize freshwater consumption, we have implemented closed-loop cooling systems across sites. Cooling tower blowdown water is treated via skimming tanks, oil separation units, and reverse osmosis systems, then reused for hot slab cooling, slag quenching, dust suppression, and ash slurry preparation. Treated sewage water is also repurposed for horticultural and other non-process activities. These initiatives follow the Reduce, Reuse, Recycle, and Recover principles and align with our ISO 14001-certified EMS.

By maintaining a cycles-of-concentration (COC) of around six, we maximize internal recirculation and reduce overall water withdrawal significantly.

### Internal Water Pricing (IWP)

In FY25, Jindal Stainless further institutionalized Internal Water Pricing (IWP)—a strategic approach that assigns economic value to internal water usage. IWP incentivizes efficient water use and supports behavioral change toward conservation. The pricing considers scarcity, operational need, and sustainability targets, with proceeds reinvested into water-saving technologies and initiatives.

## WATER CONSUMPTION DETAILS

| Parameter (Figures are in kilolitres (kl))  | 2022-23               | 2023-24               | 2024-25               |
|---------------------------------------------|-----------------------|-----------------------|-----------------------|
| Total volume of water withdrawal            | 1,16,70,159           | 1,33,20,439           | 1,50,77,894           |
| Total volume of water consumption           | 1,11,90,622           | 1,27,72,873           | 1,44,11,834           |
| Water intensity per rupee of turnover       | 319.45 KL / Crore INR | 333.01 KL / Crore INR | 358.67 KL / Crore INR |
| Water intensity in terms of physical output | 7.1 KL / TCS          | 7.26 KL / TCS         | 7.36 KL/TCS           |

### Water-stress area - Hisar Unit, Haryana

|                                       |                     |                     |                      |
|---------------------------------------|---------------------|---------------------|----------------------|
| Total volume of water withdrawal      | 20,44,612           | 23,36,887           | 22,18,698            |
| Total volume of water consumption     | 20,44,612           | 23,36,887           | 22,18,698            |
| Water intensity per rupee of turnover | 58.4 KL / INR Crore | 60.9 KL / INR Crore | 55.22 KL / INR Crore |



## WASTE MANAGEMENT

Jindal Stainless has implemented structured waste management practices guided by the principles of Reduce, Reuse, Recycle, and Recover. These practices focus on minimizing hazardous and non-hazardous waste generation across operations at the Hisar and Jajpur facilities. Waste is carefully segregated, stored by category, and either recycled internally or sold to authorized vendors, in compliance with SPCB and CPCB norms. Our efforts are aimed at maximizing material recovery and reducing the use of hazardous substances across our processes.

### WASTE GENERATION

| Parameter (Figures are in metric tonnes (MT))  | 2022-23              | 2023-24              | 2024-25              |
|------------------------------------------------|----------------------|----------------------|----------------------|
| Total Hazardous Waste Generated                | 49,796               | 75,228               | 75,102               |
| Total Non-Hazardous Waste Generated            | 11,75,778            | 15,07,686            | 18,68,802            |
| Total Waste Disposed                           | 0.74                 | 42,808               | 42,852               |
| Waste Recycled                                 | 2,80,346             | 16,74,108            | 20,00,024            |
| Waste Re-used                                  | 18,508               | 84,174               | 17,937               |
| Waste recovered through other recovery options | 18,356               | 19,419               | 76.5997,63,705       |
| Waste Intensity per rupee of turnover          | 35.01 MT / Crore INR | 41.31 MT / Crore INR | 48.42 MT / Crore INR |
| Waste intensity in terms of physical output    | 0.7759 MT / TCS      | 0.9006 MT / TCS      | 0.95 MT / TCS        |

## Sustainability Metrics in Capital Allocation

Building on our detailed tracking of climate-related performance across emissions, energy, water, and waste, JSL integrates these metrics directly into strategic capital allocation decisions. For instance, investments in renewable energy infrastructure—such as solar power projects and green hydrogen facilities—are guided by our emission reduction targets and broader Net Zero roadmap.

This deliberate alignment ensures that capital expenditures contribute meaningfully to our sustainability objectives. By embedding environmental performance considerations into financial decision-making, JSL reinforces its commitment to climate resilience, long-term value creation, and transparent stakeholder engagement.



# BEYOND STEEL

## CIRCULARITY: REDUCING EMISSIONS THROUGH MATERIAL REUSE

Jindal Stainless embeds circular economy practices to drive down emissions:

### Scrap First Production

Scrap accounts for 90% of our raw material input. Using Electric Arc Furnaces (EAF) powered by recycled feedstock maintains a low carbon profile and minimizes upstream GHG emissions.



### By Product Recycling

We recycle mill scale, bag filter dust, interleaving paper, and plastic waste. Fly ash is supplied to cement and brick manufacturers, while bottom ash supports land restoration.

### Metal Recovery at Jajpur

In FY25, 29,144.53 MT of metal were recovered from the HARSSCO plant at Jajpur and reintegrated into steelmaking, while 3,08,336.9 MT of ferrochrome slag were repurposed, advancing resource efficiency and circularity across operations.



### Waste Reuse Performance

In FY 2024–25, JSL generated approximately 1.95 million MT of waste. Through strong circularity practices—including recycling, reuse, and recovery—the company processed over 2.01 million MT of material, a figure that also includes legacy and carryover waste streams. Importantly, only about 42,852 MT was disposed to landfill, underscoring JSL's continued focus on minimizing disposal and maximizing resource efficiency across operations.

These initiatives close material loops, reduce carbon intensity, and strengthen JSL's resilience to climate-related resource constraints.

## CLIMATE-DRIVEN SUPPLY CHAIN MANAGEMENT

Jindal Stainless extends its climate commitment beyond its own operations by embedding low carbon principles throughout its supplier network. In FY 2024–25, the company refined its supply chain programs to align with its Net Zero ambition and decarbonization targets:

### Responsible Sourcing & Supplier Code of Conduct

- » Over 700 suppliers are onboarded under JSL's Responsible Sourcing Policy, which mandates annual commitment to the Supplier Code of Conduct covering environmental responsibility alongside ethics, safety, and human rights.
- » All high value suppliers (100%) undergo yearly SCoC compliance assessments, ensuring that environmental standards are upheld in raw material sourcing and logistics.

### Supplier ESG Integration & Capacity Building

- » Four targeted awareness programmes addressed the nine principles of the National Guidelines on Responsible Business Conduct (NGRBC), covering upcoming ESG regulations such as CBAM and BRSR, grievance mechanisms, and JSL's expectations.
- » Training sessions and vendor meetings equipped suppliers with best practices for carbon emissions monitoring, renewable energy adoption, and pre dispatch inspection, fostering alignment with JSL's climate goals.

### Product Carbon Footprint & Circular Economy

- » JSL completed Product Carbon Footprint (PCF) assessments and developed Environmental Product Declarations (EPDs) for its stainless steel grades, providing transparency on cradle to gate emissions; EPD verification is currently in progress.
- » Approximately 72% of JSL's raw material input comprises high-quality recycled scrap, significantly reducing reliance on virgin resources and lowering carbon emissions across its operations. This strengthens its climate-aligned supply chain—directly supporting the Net Zero by 2050 target.

### Supplier Development Framework: ESG Risk Screening & Supplier Criticality

- » The Supplier Development Framework employs a comprehensive Supply Chain Screening Tool to strengthen ESG risk management and supplier criticality assessment.
- » Suppliers are evaluated on two parameters: non-substitutability (operational reliance and spend share) and ESG risk exposure (policy coverage, sector risks, country-specific risks including governance and natural disasters, and commodity risks such as price volatility).

- » Based on this evaluation, suppliers are classified into low, medium, or high risk categories, allowing JSL to identify critical suppliers and prioritize engagement and risk mitigation strategies.

### Governance & Performance Oversight

- » Progress on supplier ESG metrics—such as the number of suppliers assessed, trained, and PCF ready—is reported periodically to the Board of Directors.
- » The Head of Procurement provides operational oversight to the Chief Sustainability Officer, ensuring that climate related supply chain initiatives are advanced in line with corporate governance expectations.
- » Through these measures, JSL is reinforcing a low carbon, resilient supply chain that not only supports its own decarbonization roadmap but also elevates climate performance across its entire value network.



## DIGITALIZATION FOR CLIMATE PERFORMANCE

Jindal Stainless leverages its Industry 4.0 digital transformation to enhance climate-related performance through data-driven insights and automation:



### IoT-Enabled Digital Control Tower

At the Jajpur and Hisar sites, IoT sensors feed a cloud based Digital Control Tower that consolidates machine health, quality, and operational KPIs on real time dashboards. This unified platform supports paperless operations and lays the groundwork for integrating energy, water, and emissions metrics into predictive and prescriptive analytics.



### Streamlined Supply Chain Visibility

Integration with logistics tools (Vaahan, Saarathi, ULIP, FASTag) and SAP ARIBA enhances supplier and transport data accuracy. This transparency supports scope 3 emissions reporting by validating vehicle and cargo movements across our network.



### SAP S/4HANA Integration

The seamless migration to SAP S/4HANA under the "Rise with SAP" framework has fortified our ERP backbone. By unifying procurement, logistics, and production data, the system improves traceability of material and energy flows—critical for calculating and managing the carbon footprint of our operations.



### Award Winning Transformation

Recognition such as the QuPID Digital Transformation Award underscores our leadership in deploying these technologies, which not only drive efficiency and quality but also create the digital infrastructure needed to monitor and manage our climate impact.

Through these digital initiatives, JSL is building the capabilities to track resource use and emissions in real time, enabling more responsive climate risk management and progress toward its Net Zero objectives.

# ANNEXURE 1: PHYSICAL AND TRANSITION RISKS – BUSINESS IMPACTS AND MITIGATION MEASURES

## PHYSICAL RISKS SCENARIOS – BUSINESS IMPACTS AND MITIGATION MEASURES

The overall summary for impacts and plausible mitigation measures at the JSL Sites for physical risk scenarios is shown in table below:

### CLIMATE CHANGE PHYSICAL RISK IMPLICATIONS AND ADAPTATION MEASURES

| Climate Hazard: <b>Water Scarcity</b> (Acute# and Chronic*)                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Applicable Site Locations:                                                    | Implications:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Adaptation Measures (Internal):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Adaptation Measures (External):                                                                                                                                                                                                                                                                                                                                                                                                      |
| <p>High Baseline and Future risk</p> <p><b>Jajpur</b></p> <p><b>Hisar</b></p> | <ul style="list-style-type: none"> <li>» Reduced or unavailability of water for domestic and operational purposes including drinking and sanitation.</li> <li>» Increased water tariffs</li> <li>» Increased operational costs due to reliance on alternate water sources.</li> <li>» Potential production delays or shutdowns during severe shortages.</li> <li>» More stringent regulatory requirements for Water conservation and efficiency</li> <li>» Higher reputational risks due to public concerns about water usage.</li> </ul> | <p><b>Manufacturing Sites</b></p> <ul style="list-style-type: none"> <li>» Priority actions identified include conducting detailed water risk assessments and preparing site-specific mitigation plans.</li> <li>» Regular water audits and process efficiency improvements are under consideration to minimize wastage.</li> <li>» Evaluation of alternate water sources for use during periods of scarcity is planned.</li> <li>» Opportunities for implementing advanced water-saving technologies are being reviewed.</li> <li>» Rainwater harvesting and groundwater recharge remain areas of focus for enhancing resilience.</li> <li>» Employee and supplier awareness programmes on water conservation are being strengthened.</li> <li>» The company is aligning its long-term strategy with the goal of water neutrality/positivity, with periodic monitoring of progress identified as a key focus area.</li> </ul> <p>Timeline: Less than 5 years</p> | <p><b>Manufacturing Sites</b></p> <ul style="list-style-type: none"> <li>» JSL engages with regulatory authorities, NGOs, and neighboring industries to contribute to local water conservation initiatives.</li> <li>» Best practices and performance insights are shared with industry peers and regulators to promote collaborative water resource management at the regional level.</li> </ul> <p>Timeline: Less than 5 years</p> |



Climate Hazard: **Flooding** (Acute# and Chronic\*)

| Applicable Site Locations:                               | Implications:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Adaptation Measures (Internal):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Adaptation Measures (External)                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| High Baseline and Future risk<br><b>Jajpur<br/>Hisar</b> | <ul style="list-style-type: none"> <li>» Physical damage to the structural integrity of buildings, electrical equipment, machinery, and utilities.</li> <li>» Deterioration in water quality due to carry over of sediments along with the storm run-off.</li> <li>» Increased cost of water treatment.</li> <li>» Supply chain disruption.</li> <li>» Restricted access to sites due to flooding; impacting the delivery of raw materials.</li> <li>» Increased logistics costs.</li> <li>» Risk to health and safety of the employees.</li> <li>» Power failure.</li> <li>» Business disruptions, temporary closure, loss in revenue.</li> </ul> | <ul style="list-style-type: none"> <li>» Priority adaptation actions include undertaking detailed flood risk assessments and developing site-level flood mitigation plans.</li> <li>» Emergency response protocols for flooding are identified as an area of focus under the Business Continuity framework.</li> <li>» Options such as upgrading drainage systems and integrating nature-based solutions (e.g., green buffers, permeable surfaces) are being evaluated to manage stormwater and reduce flood impacts.</li> <li>» Regular inspection and maintenance of drainage and flood protection structures will be strengthened to ensure continued effectiveness.</li> <li>» Advanced flood forecasting and early warning systems are being considered to enhance preparedness.</li> <li>» Measures such as elevating sensitive equipment and training employees on flood safety protocols are under review for inclusion in site-level adaptation planning.</li> <li>» Rainwater harvesting initiatives are being expanded to reduce runoff and enhance resilience to flooding.</li> </ul> <p>Timeline: Less than 5 years</p> | <ul style="list-style-type: none"> <li>» JSL intends to strengthen collaboration with local authorities on regional flood prevention infrastructure.</li> <li>» Engagement with local communities is planned to incorporate their perspectives into flood preparedness and response planning.</li> <li>» Partnership opportunities with supply chain stakeholders are being assessed to minimize disruption and strengthen resilience during flood events.</li> </ul> <p>Timeline: Less than 5 years</p> |



Climate Hazard: **Extreme Heat** (Acute#)

| Applicable Site Locations:                               | Implications:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Adaptation Measures (Internal):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Adaptation Measures (External)                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| High Baseline and Future risk<br><b>Jajpur<br/>Hisar</b> | <ul style="list-style-type: none"> <li>» Equipment overheating leading to breakdowns or inefficiencies.</li> <li>» Product quality deterioration due to heat-sensitive materials.</li> <li>» Excessive evaporation losses in cooling towers leading to excessive make-up water requirement.</li> <li>» Increased power and water demand for cooling and associated costs.</li> <li>» Early wearing of the equipments/ materials, requiring replacement.</li> <li>» Increased risk of heat-related illnesses like heatstroke and dehydration.</li> </ul> | <ul style="list-style-type: none"> <li>» Structural and cooling system designs are being reviewed to ensure alignment with projected temperature ranges.</li> <li>» A heat stress management plan for employees has been identified as a key requirement to safeguard workforce health.</li> <li>» Options for industrial cooling systems (air circulation, fans, and air conditioners where necessary) are being evaluated.</li> <li>» Provision of hydration stations and shaded rest zones is being strengthened across facilities.</li> <li>» Work scheduling adjustments to cooler periods of the day are being considered to minimize employee exposure.</li> </ul> <p>Timeline: 5 to 10 years</p> | <ul style="list-style-type: none"> <li>» Engagement with local health services is under consideration to provide on-site medical support during heat waves.</li> <li>» Collaboration with utility providers is being explored to ensure uninterrupted power supply for cooling systems during high-demand periods</li> </ul> <p>Timeline: Less than 5 years</p> |

| Climate Hazard: Cyclone and Wind (Acute#) |                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Applicable Site Locations:                | Implications:                                                                                                                                                                                                                                                                   | Adaptation Measures (Internal):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Adaptation Measures (External):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| High Baseline and Future risk<br>Jajpur   | <ul style="list-style-type: none"> <li>» Machinery and infrastructure damaged by strong winds and flooding.</li> <li>» Interruptions in production schedules due to damage or evacuation.</li> <li>» Risk of injury or fatality due to high winds or falling debris.</li> </ul> | <ul style="list-style-type: none"> <li>» Structural reinforcements, including storm-resistant roofing and protective fittings, are being reviewed to improve resilience against high winds.</li> <li>» Machinery and equipment anchoring measures are being considered to ensure operational safety during extreme wind events.</li> <li>» Evacuation plans and regular drills have been identified as critical preparedness measures for employees.</li> <li>» Capacity-building initiatives, including awareness and training sessions for employees, are being developed to strengthen preparedness and response.</li> <li>» Backup power generators are being evaluated to maintain essential operations during cyclone-induced outages.</li> </ul> <p>Timeline: 5 to 10 years</p> | <ul style="list-style-type: none"> <li>» Engagement with supply chain partners is being explored to ensure continuity of raw materials and product movement during disruptions.</li> <li>» Collaboration with local authorities is under consideration to support cyclone preparedness, including evacuation and flood-control infrastructure.</li> <li>» Industry-level advocacy for stronger storm surge protection and drainage systems in industrial zones is being undertaken to mitigate regional risks.</li> </ul> <p>Timeline: 5 to 10 years</p> |

## TRANSITION RISK AND OPPORTUNITY SCENARIOS – BUSINESS IMPACTS AND MITIGATION MEASURES

### BUSINESS IMPACTS



#### Transition opportunities

Transition opportunities are expected to be related to increased demand for JSL products, government policy incentives and reputational benefits from climate leadership. A summary of how key transition opportunities may affect JSL is provided below.

##### Increased Demand for Stainless Steel

To facilitate the climate transition, extensive investment in infrastructure and new technologies is expected to take place to green the energy supply along with electrification which is an important opportunity for JSL. Under a net-zero scenario, the energy sector is expected to rapidly decarbonize for which technologies such as wind energy, solar and nuclear are expected to expand in India and are all dependent on steel components to be developed along with grid infrastructure which will. Under India's net-zero plans by 2070, this is further expected to back this trend. Cumulative steel demand is expected to be 5 billion tonnes, accounting for 75% of the material requirement for the energy transition between 2022-2050, however it is expected that some of this demand will come from recycled steel due to steel's high end-of-life recycling capacity.

##### Use of supportive government decarbonization policy incentives

Steel plays a central role in India's GHG emissions, with the IEA estimating that 41% of final energy consumption in India was consumed by the industrial from which a large proportion is made up by steel. As steel is simultaneously a key sector for Indian economic development and a hard-to-abate sector, it is expected that industrial activities such as steel production will be regarded by the government as a crucial sector to curb emissions from to meet ambitious decarbonization target. This is expected to result in substantial policy support to reduce emissions in the steel sector and promote green steel developments, such as India's Green Steel Taxonomy that was recently published



## Transition risks

While the uptake of the energy transition under a low carbon scenario provides with ample opportunities, the climate transition may also affect JSL's operational practices. Key identified risks include government regulatory requirements such as emissions performance and carbon taxation, as well as supply chain disruptions resulting from increased demand for stainless steel.

### Emerging mandates on stainless steel industry

India's Net-zero target by 2070 will lead to substantial changes in the energy system and pressure on particularly on heavy industries to decarbonize. It is expected that while governments will provide incentives to decarbonize, it is also expected to introduce more stringent rules on energy performance and reduce support of the fossil fuel sector which can lead to increased operational expenditure to meet the standards, energy procurement costs along with increased investment to retrofit or replace existing equipment.

Fossil fuel subsidies have decreased by 59% since 2014 in India, a clear indication of the willingness to move into a new direction, further substantiated by allocating USD 4.4 billion for priority capital investment toward the energy transition and net-zero objectives. India has further committed to reduce emissions intensity of GDP by 45% by 2030 from 2005 levels for which substantial requirements are expected to come in place for energy intensive industries. India's energy efficiency policies and plans are implemented through the Bureau of Energy Efficiency (BEE) and the Energy Conservation Act. The BEE developed a strategic plan called "Unlocking National Energy Efficiency Potential" to meeting India's 2030 NDC targets published in 2017. This plan estimates that emission intensity can reduce by 36%, under a moderate savings scenario, out of which 50% originates from energy efficiency measures. Under a low carbon scenario, these mandates are expected to emerge rapidly and lead to financial burdens which may outweigh government benefits.

### Exposure to emerging GHG and climate-related regulations

Regulatory mechanisms have emerged across regions as key tools for decarbonization, such as carbon pricing, climate disclosure requirements to companies and sustainability taxonomies. While India currently does not have a carbon pricing mechanism in place, legislative progress is underway through the national government for the development of a Carbon Credit Trading Scheme (CCTS) through the 2022 Energy Conservation Act. CCTS will be based on an intensity-based 'baseline-and-credit' scheme, with mandatory GHG emissions intensity targets and is expected to cover industries included by the Perform, Achieve and Trade (PAT). PAT is a mandatory energy efficiency scheme covered over 1,000 entities from 13 energy intensive industries, including the steel sector. Furthermore, the impact of international carbon pricing mechanisms such as the EU's Carbon Border Adjustment Mechanism (CBAM) is also expected to affect JSL and may impact the business' outlook on geographical expansion or business.

### Increased raw material costs due to increased stainless steel demand

As the demand for stainless steel rises to meet the energy transition's objectives, competition to procure the components to produce steel are also expected to rise, leading to potential supply chain disruptions and price changes in components required for steel production. This demand may come from local competition as well as international players who may seek to capitalize on.



## Mitigation Strategies

JSL is proactively addressing transition risks and capitalizing on emerging opportunities to ensure its long-term competitiveness and contribute to a more sustainable future for India and globally. Some of the mitigation measures planned include:

### Short/Medium-term – Upto 2030

#### Energy Efficiency

- » Conduct energy audits and implement quick-win measures to optimize energy consumption in existing processes (e.g., lighting upgrades, process optimization).
- » Invest in energy-efficient equipment and technologies for immediate improvements (e.g., high-efficiency motors, heat recovery systems).
- » Implement employee training programs on energy conservation and best practices.
- » Pursue LEED and IGBC certifications for buildings to enhance energy efficiency and sustainability in operations
- » Use of direct reduced iron (DRI) in electric arc furnace to reduce carbon emissions and improve energy efficiency in steelmaking

#### Policy Engagement

- » Stay informed about upcoming environmental regulations and policies (e.g., carbon pricing, renewable energy mandates).
- » Engage with industry associations and policymakers to advocate for policies that support a just transition and incentivize emissions reduction

#### Supply Chain Engagement

- » Assess the carbon footprint of key suppliers and identify opportunities for collaboration on emissions reduction.

- » Encourage suppliers to adopt sustainable practices and set emissions reduction targets.

#### Renewable Energy Adoption

- » Install on-site renewable energy generation capacity (e.g., rooftop solar) to reduce reliance on fossil fuels.
- » Explore opportunities for procuring renewable energy through Power Purchase Agreements (PPAs).

#### Technology Upgrades

- » Invest in pilot projects to test and evaluate emerging technologies for low-carbon steelmaking (e.g., hydrogen-based direct reduction).

#### Circular Economy Practices

- » Implement increased recycling and waste reduction programs to minimize waste generation and resource consumption.
- » Explore further opportunities for using by-products and waste materials from other industries as inputs in stainless steel production.

#### Product Portfolio Diversification

- » Begin developing and marketing "low carbon stainless steel" products with lower embodied carbon to cater to growing demand from environmentally conscious customers.
- » Explore green financing options and sustainability-linked loans

### Long-term – Upto 2050

- » Gradually replace older, less efficient equipment with newer, more energy-efficient technologies.
- » Explore low carbon energy sources (solar, wind, nuclear etc.) to power manufacturing operations.
- » Invest in energy storage solutions to improve the reliability of renewable energy sources.
- » Analyze the feasibility of carbon capture and storage (CCS) technologies
- » Invest in research and development of low-carbon steel production technologies (e.g., hydrogen-based steelmaking).
- » Continue to monitor and enhance emissions reduction targets aligned with the Paris Agreement goals.
- » Participate in industry collaborations and initiatives to accelerate the development and adoption of breakthrough technologies.

# ANNEXURE 2: ACRONYMS AND ABBREVIATIONS

| ACRONYMS           | ABBREVIATIONS                                                                    |
|--------------------|----------------------------------------------------------------------------------|
| JSL                | Jindal Stainless Limited                                                         |
| TCFD               | Task Force on Climate-related Financial Disclosures                              |
| BRSR               | Business Responsibility and Sustainability Reporting                             |
| GHG                | Greenhouse Gas                                                                   |
| WRI                | World Resources Institute                                                        |
| WGI                | IPCC Working Group I                                                             |
| WBCSD              | World Business Council for Sustainable Development                               |
| IFRS S2            | International Financial Reporting Standards Sustainability Disclosure Standard 2 |
| SASB               | Sustainability Accounting Standards Board                                        |
| NDC                | Nationally Determined Contributions                                              |
| SBTi               | Science Based Targets initiative                                                 |
| CCRA               | Climate Change Physical Risk Assessment                                          |
| tCO <sub>2</sub> e | Tonnes of Carbon Di-Oxide equivalent                                             |
| MWh                | Mega Watt-Hour                                                                   |
| MWp                | Megawatt peak                                                                    |
| tcs                | Tonnes of crude steel                                                            |
| GW                 | Giga-watt                                                                        |
| BIS                | Bureau of Indian Standards                                                       |
| TOE                | Tonne of Oil Equivalent                                                          |
| CSO                | Chief Sustainability Officer                                                     |
| CBAM               | Carbon Border Adjustment Mechanism                                               |
| FICCI              | Federation of Indian Chambers of Commerce & Industry                             |

| ACRONYMS | ABBREVIATIONS                                  |
|----------|------------------------------------------------|
| CII      | Confederation of Indian Industry               |
| ISSDA    | Indian Stainless Steel Development Association |
| NGFS     | Network of Greening the Financial System       |
| CCTS     | Carbon Credit Trading Scheme                   |
| RPO      | Renewable Purchase Obligation                  |
| PPA      | Power Purchase Agreement                       |
| CCUS     | Carbon Capture, Utilization and Storage        |
| ICP      | Internal Carbon Price                          |
| IPCC     | Intergovernmental Panel on Climate Change      |
| SSP      | Shared Socio-Economic Pathways                 |
| RCP      | Representation Concentration Pathways          |
| CAPEX    | Capital Expenditure                            |
| OPEX     | Operational Expenditure                        |
| BEE      | Bureau of Energy Efficiency                    |
| ENCON    | Energy Conservation                            |
| PCF      | Product Carbon Footprint                       |
| EPD      | Environmental Product Declaration              |
| WBF      | Working Blast Furnace                          |
| EV       | Electric Vehicle                               |
| ZLD      | Zero Liquid Discharge                          |
| STP      | Sewage Treatment Plant                         |
| ETP      | Effluent Treatment Plant                       |
| SMS      | Steel Melt Shop                                |
| SPCB     | State Pollution Control Board                  |
| CPCB     | Central Pollution Control Board                |

## Glossary

| Terms   | Meaning                                                                                    |
|---------|--------------------------------------------------------------------------------------------|
| Scope 1 | refers to all direct GHG emissions                                                         |
| Scope 2 | refers to indirect GHG emissions from consumption of purchased electricity, heat, or steam |

| Terms                                                                                      | Meaning                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Scope 3                                                                                    | refers to other indirect emissions not covered in Scope 2 that occur in the value chain of the reporting company, including both upstream and downstream emissions                                                                                                                                                                                                                                                                      |
| Greenhouse Gas (GHG) Emissions                                                             | Gases such as carbon dioxide (CO <sub>2</sub> ), methane (CH <sub>4</sub> ), and nitrous oxide (N <sub>2</sub> O) that trap heat in the Earth's atmosphere, contributing to global warming and climate change                                                                                                                                                                                                                           |
| Acute Physical Risks                                                                       | Climate-related risks that result from extreme weather events such as hurricanes, floods, wildfires, and heatwaves. These events can cause immediate damage to infrastructure, disrupt supply chains, and affect business continuity                                                                                                                                                                                                    |
| Chronic Physical Risks                                                                     | Long-term climate-related risks arising from gradual changes such as rising sea levels, increasing average temperatures, and long-term shifts in precipitation patterns. These risks can affect operations, supply chains, and resource availability over extended periods                                                                                                                                                              |
| Transition Risks                                                                           | Financial and operational risks that arise due to shifts in policies, technologies, and market preferences as economies transition to low-carbon practices                                                                                                                                                                                                                                                                              |
| Task Force on Climate-related Financial Disclosures (TCFD)                                 | A framework developed by the Financial Stability Board (FSB) to guide companies in reporting climate-related risks and opportunities                                                                                                                                                                                                                                                                                                    |
| International Financial Reporting Standards Sustainability Disclosure Standard 2 (IFRS S2) | A sustainability reporting standard that mandates companies to disclose information about their climate-related risks and opportunities, focusing on aspects like governance, strategy, risk management, and metrics related to climate change                                                                                                                                                                                          |
| Business Responsibility and Sustainability Reporting (BRSR)                                | A reporting framework mandated by the Securities and Exchange Board of India (SEBI) to ensure transparency in corporate sustainability practices                                                                                                                                                                                                                                                                                        |
| Intergovernmental Panel on Climate Change (IPCC)                                           | A scientific body under the United Nations responsible for assessing climate change science and its impacts globally                                                                                                                                                                                                                                                                                                                    |
| Carbon Border Adjustment Mechanism (CBAM)                                                  | A European Union policy that imposes a carbon price on imports of carbon-intensive goods to prevent carbon leakage and encourage cleaner production practices globally                                                                                                                                                                                                                                                                  |
| Science Based Targets initiative (SBTi)                                                    | The Science Based Targets initiative (SBTi) is a global collaboration between CDP, the United Nations Global Compact (UNGC), World Resources Institute (WRI), and the World Wide Fund for Nature (WWF). It drives ambitious corporate climate action by enabling companies to set greenhouse gas (GHG) emission reduction targets in line with the latest climate science to limit global warming to 1.5°C above pre-industrial levels. |
| Decarbonization                                                                            | The process of reducing carbon dioxide (CO <sub>2</sub> ) emissions from industrial activities, energy production, and other sectors to mitigate climate change                                                                                                                                                                                                                                                                         |
| Net Zero Emissions                                                                         | A state in which an entity's greenhouse gas emissions are balanced by removals or offsets, leading to no net increase in atmospheric carbon dioxide levels                                                                                                                                                                                                                                                                              |
| Low-Carbon Economy                                                                         | An economic system that prioritizes reducing carbon emissions through the use of renewable energy, energy efficiency, and sustainable industrial practices                                                                                                                                                                                                                                                                              |
| Renewable Purchase Obligation (RPO)                                                        | A policy that mandates businesses and utilities to purchase a certain percentage of their energy from renewable sources to promote sustainability                                                                                                                                                                                                                                                                                       |
| Nationally Determined Contributions                                                        | refers to the post-2020 actions that a country intends to take under the international climate agreement adopted in Paris                                                                                                                                                                                                                                                                                                               |
| Tonnes of Carbon Di-Oxide equivalent                                                       | a unit of measurement used to compare the environmental impact of different greenhouse gases by converting them to an equivalent amount of carbon dioxide based on their global warming potential (GWP)                                                                                                                                                                                                                                 |
| Carbon Capture, Utilization and Storage                                                    | A technology that captures carbon dioxide emissions from industrial sources and either stores it underground or repurposes it for industrial use to reduce emissions                                                                                                                                                                                                                                                                    |
| Shared Socio-Economic Pathways                                                             | Climate change scenarios developed by the IPCC to explore different potential future socio-economic and environmental developments                                                                                                                                                                                                                                                                                                      |
| Representation Concentration Pathways                                                      | a standardized scenario used in climate modeling that outlines a possible trajectory of greenhouse gas concentrations over time, representing different levels of human emissions and the resulting climate change impacts, with each pathway identified by a number indicating its projected radiative forcing by 2100                                                                                                                 |

## ANNEXURE 3:

### COMBINED INDEX: TCFD & IFRS S2

| TOPIC           | Sub-Topic                                         | TCFD/IFRS S2 | Disclosure                                                                                                                                                | Chapters                    |
|-----------------|---------------------------------------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| Governance      | Board Oversight                                   | TCFD         | Describe the board of directors' oversight of climate-related risks and opportunities                                                                     | 6.1                         |
|                 |                                                   | IFRS S2      | Governance processes, controls and procedures used to monitor, manage and oversee climate-related risks and opportunities                                 | 6.1                         |
|                 | Management's Role                                 | TCFD         | Describe management's role in assessing and managing risks and opportunities.                                                                             | 6.1                         |
|                 |                                                   | IFRS S2      | Management's role in the governance processes, controls and procedures used to monitor, manage and oversee climate-related risks and opportunities        | 6.1                         |
| Strategy        | Climate-related Risks and Opportunities           | TCFD         | Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.                               | 5.1.1, 5.1.2                |
|                 |                                                   | IFRS S2      | Disclosure of significant climate-related risks and opportunities affecting business operations                                                           | 5.1.1, 5.1.2                |
|                 | Impact on Business Model and Financial Planning   | TCFD         | Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.                        | 5.2, Annexure 1             |
|                 |                                                   | IFRS S2      | Effects on financial position, performance, and cash flows                                                                                                | 5.2, Annexure 1             |
|                 | Resilience and Scenario Analysis                  | TCFD         | Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario. | 4, 5.1.1, 5.1.2, Annexure 1 |
|                 |                                                   | IFRS S2      | Mandatory disclosure of resilience analysis and transition plans                                                                                          | 4, 5.1.1, 5.1.2, Annexure 1 |
| Risk management | Identification and Assessment of Climate Risks    | TCFD         | Describe the organization's processes for identifying and assessing climate-related risks.                                                                | 5.3.1                       |
|                 |                                                   | IFRS S2      | Disclosure of risk identification and prioritization                                                                                                      | 5.3.1                       |
|                 | Risk Integration into Overall Risk Management     | TCFD         | Describe the organization's processes for managing climate-related risks.                                                                                 | 5.3.2                       |
|                 |                                                   | IFRS S2      | Transition planning, risk mitigation measures, and adaptation plans                                                                                       | 5.1.2, 5.3.2, Annexure 1    |
|                 | Climate Risk Mitigation and Adaptation Strategies | IFRS S2      | Transition planning, risk mitigation measures, and adaptation plans                                                                                       | 5.3.3                       |
|                 |                                                   | TCFD         | Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.     | 5.3.3                       |

| TOPIC               | Sub-Topic                           | TCFD/IFRS S2 | Disclosure                                                                                                                                             | Chapters |
|---------------------|-------------------------------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Metrics and targets | Climate-related Performance Metrics | TCFD         | Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process. | 3.2, 7   |
|                     |                                     | IFRS S2      | Industry-specific climate-related metrics                                                                                                              | 3.2, 7   |
|                     | GHG Emissions Reporting             | TCFD         | Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions and the related risks.                                          | 7        |
|                     |                                     | IFRS S2      | Mandatory disclosure of Scope 1, 2, and 3 emissions                                                                                                    | 7        |
|                     | Targets and Progress Tracking       | TCFD         | Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.                       | 3.2, 7   |
|                     |                                     | IFRS S2      | Disclosure of climate targets, progress measurement, and supporting assumptions                                                                        | 3.2, 7   |

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