JSW Cement Limited - Climate Change 2023

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

JSW Cement is part of the diversified US$ 23 billion JSW Group. As one of India's leading business houses, JSW Group also has other business interests in sectors such as steel, energy, infrastructure, paints, B2B Ecommerce, sports and venture capital. JSW Cement is India's leading Green Cement company with current capacity of 19 MTPA having six operating plants in India which are Nandyal (Andhra Pradesh), Vijayanagar (Karnataka), Dolvi (Maharashtra), Salboni (West Bengal), Jajpur (Odisha) ,including one subsidiary unit Shiva in Odisha. The company is present across the entire value-chain of building materials comprising cement, & construction chemicals. This gives JSW Cement a unique advantage to cater to the diverse needs of the construction industry with its premium, high quality & eco-friendly products. The company converts industrial byproducts of Steel manufacturing into cement and other building materials thereby ensuring a greener future for the next generation. Its capable marketing & service teams ensure that customer's needs are met within the shortest time by extensively leveraging digital tools, mobile-tech and conversational commerce interventions. JSW Cement's growth plans include a capacity target of 50 MTPA. All current business investments are driven to achieve this goal. Its business vision has been acknowledged through various honours & awards including The Economic Times Sustainable Organisation of the year 2022, CII Sustainability Award 2022 for Outstanding accomplishment under Corporate excellence, Best Infrastructure Brand (2022 & 2021) among others. JSW Cement also ranks first in the Sustainalytics ESG risk rating globally in the construction material industry group of more than 140 companies.

All six plants mentioned above are covered in CDP reporting scope. All these units together which produce six products: Clinker, Portland Slag Cement (PSC), Ordinary Portland Cement (OPC), Concreel HD (higher quality PSC), Composite Cement (CC) and Ground Granulated Blast Furnace Slag (GGBS). At JSW Cement, our major objective is to leverage technology to successfully integrate sustainability in the production process by converting an industrial by-product (Blast Furnace Slag) into green cement, i.e. PSC and CHD which is engineered for strength and durability. The installed capacity of JSW Cement is 17 MTPA as of FY23 in India. Almost a decade later since its inception, JSW Cement has emerged as one of India's leading manufacturers of 'green cement', using industrial by-products such as slag. JSW PSC has lowest clinker ratio which helps to conserve natural resources viz. Limestone, raw mix additives, coal and pet coke and water. PSC also consumes least amount of electrical energy compared to all other types of cement products in the Indian market. In recognition of our unique product portfolio, our PSC & GGBS as well as concrete products are certified under EPD & Green Pro. As per EPD, our PSC has the lowest global warming potential (GWP) in the cement industry. At JSW Cement, we already progressing well on sustainability within our operations but we plan to further integrated the same into our supply chain engaging with our shareholders, customers, employees, suppliers and business partners and communities.

Our vision - Global recognition for quality and efficiency while nurturing nature and society.

With regard to Sustainability, we have adopted a vision that puts across our belief that encompasses three main pillars of responsibility: Environmental, Social and Governance (ESG). For our sustainability strategy to be effective, we have developed a Sustainability Framework to ensure that the strategy is implemented consistently and then continue to operate effectively. In developing the architecture and details of our Framework, we take into account, the national and international standards that already exist across the corporate world, for example UN Global Compact, International Finance Corporation (IFC) performance standards, OECD Guidelines, ISO standards, UN Guiding Principles on Business & Human Rights, UN SDGs, GRI Standards etc.

JSW Cement has committed to all three of The Climate Group's campaigns - RE100, EV100 and EP100 in one go and we are globally first company in heavy industries to do so.

Our R&D team is working on identifying other potential industrial wastes to use as alternate fuels and raw materials. Last year we started using Ladle furnace slag, a waste from steel plants, as alternate raw material to replace usage of laterite, which is a natural resource.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data and indicate whether you will be providing emissions data for past reporting years.

Reporting year

Start date
April 1 2022

End date
March 31 2023

Indicate if you are providing emissions data for past reporting years
Yes

Select the number of past reporting years you will be providing Scope 1 emissions data for
3 years

Select the number of past reporting years you will be providing Scope 2 emissions data for
3 years

Select the number of past reporting years you will be providing Scope 3 emissions data for
2 years

C0.3

(C0.3) Select the countries/areas in which you operate.
India

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.
INR

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.
Operational control

C-CE0.7

(C-CE0.7) Which part of the concrete value chain does your organization operate in?
Limestone quarrying
Clinker production
Portland cement manufacturing
Blended cement

C0.8

(C0.8) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

Indicate whether you are able to provide a unique identifier for your organization	Provide your unique identifier
Yes, an ISIN code	INE718I01012

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?
Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual or committee	Responsibilities for climate-related issues
Board-level committee	The Board of Directors have constituted a sub-committee of the Board known as the "Sustainability Committee" to assess environment / sustainability / climate change related performance of the Company. The committee discusses the all sustainability topics specially the Climate targets (Long Term Short Term), Our strategy, Our commitments, Our progress against those targets. The climate change related issues and Energy efficiency measures and technology adoption is discussed and approved by the Board. The Sustainability Committee comprises of two Executive Directors and three Non-Executive Independent Directors. The Company Secretary acts as the Secretary of the Committee. The roles and responsibilities approved by the Board, for the functioning of Sustainability Committee, inter alia include: 1. Responsible for adoption of National Guidelines on Responsible Business Conduct (NG RBC) in business practice of JSW Cement. 2. Reviews adoption of all sustainability related policies and standards. 3. Oversee management processes to ensure compliance with policies and standards. 4. Review audits and assurance reports on how policies and standards are implemented. 5. Review the progress of business sustainability initiative and progress at JSW Cement. 6. Review the annual business responsibility report and present to the Board for approval. Last year we had undertaken the peer analysis of their ESG performance which helped us to frame our own SD targets. All SD targets were earlier approved by the board committee which also included targets for climate emission intensity . Last year in FY23, we have raised the Sustainability Linked Loan which is linked to CO2 emission intensity reduction targets for scope 1+scope 2. The same was presented and approved by Board committee.
Chief Executive Officer (CEO)	The key Role and Responsibilities of the Chief Executive Officer is 1. Review and Advise on our climate strategy and public commitments 2. Advise Senior Management to include sustainability elements particularly climate related, on strategic decisions across all functions - Manufacturing, HR, Marketing, Commercial and Sustainability etc.
Chief Sustainability Officer (CSO)	The key Role and Responsibilities of the Chief Sustainability Officer is 1. Briefing the Board of Directors on sustainability issues 2. Engage executives on various sustainability updates 3. Engage with CEO & Senior Management to include sustainability on strategic decisions. 4. Drive and manage sustainability throughout the organization 5. Engage with internal & external stakeholders The CSO is also primarily responsible for deciding on actions on policy advocacy with external takeholders, analysis and mitigation plans for climate change risks for all operating units, need analysis of research and development needed, development of targets, and formulation of long term action plan, among others.
Chief Operating Officer (COO)	Chief Operating or Manufacturing Officer is responsible for implementing various measures and initiatives at plant for reducing CO2 emissions. These projects may relate to energy efficiency, raw material optimization or product optimization etc. COO also guides on our target development of CO2 and its levers considering the future product portfolio and upgradation projects. Company's performance against those targets is reviewed on monthly basis.
Board-level committee	The Board of Directors have constituted a sub-committee of the Board known as the "Risk Committee" to assess environment / climate change related performance of the Company. The Risk Committee comprises of three Non- Executive Director and One Independent Directors. The Company Secretary acts as the Secretary of the Committee. The broad terms of reference of Risk Committee are: a) To formulate and recommend to the Board Risk Management Policy for approval. b) To review the Risk Management Policy from time to time and recommend to the Board for review. c) Implement the Risk Management Policy as approved by the Board. d) To access the Company's risk profile and Key area of Risk in particular. e) To recommend to the Board adoption of risk assessment and rating procedures. f) To periodically review risk assessment and minimization procedure to ensure that Executive Management controls risk through means of defined framework g) Provide a methodology to identify and analyze the financial impact of loss to the organization, employees, the public, and the environment. h) To access and recommend to the Board acceptable level of risk. i) To review and nature and level of Insurance Coverage. j) Prepare risk management and insurance budgets and allocate claim costs and premiums to departments and divisions. k) To define risk appetite of the Company and review the risk profile of the Company from time to time to ensure that risk is not higher than the risk appetite approved by the Board. l) Provide for the establishment and maintenance of records including insurance policies, claim and loss experience. m) To exercise such powers as may be delegated by the Board of Directors from time to time. n) To exercise such powers as may be delegated by the Board of Directors from time to time. We have also undertaken the detailed TCFD assessment and outcome will be embeddded into enterprise level risk management and shall be presented to Risk Management committee also.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Scope of board-level oversight	Please explain

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Scope of board-level oversight	Please explain
Scheduled – all meetings	Reviewing and guiding annual budgets Overseeing major capital expenditures Overseeing acquisitions, mergers, and divestitures Reviewing innovation/R&D priorities Overseeing and guiding employee incentives Reviewing and guiding strategy Overseeing and guiding the development of a transition plan Monitoring the implementation of a transition plan Overseeing and guiding scenario analysis Overseeing the setting of corporate targets Monitoring progress towards corporate targets Overseeing and guiding public policy engagement Overseeing value chain engagement Reviewing and guiding the risk management process	<Not Applicable>	The Board of Directors have constituted a sub-committee of the Board known as the “Sustainability Committee” to assess environment / sustainability / climate change related performance of the Company. The committee discusses the all sustainability topics specially the Climate targets (Long Term Short Term), Our strategy, Our commitments, Our progress against those targets. The company has constituted an Executive committee (reporting to the Managing Director) which is responsible for monitoring all environmental/safety/climate related issues through monthly meetings. This Executive Committee(EC) is comprised of CEO, CFO, Chief Manufacturing Officer, Chief Marketing Officer, Chief Sustainability and Innovation Officer, Projects Head, HR Head & Plant Heads. Various issues related to environment performance, safety performance, operational performance, compliance, energy efficiency, emission performance, utilization of alternative fuels and raw materials, innovative products etc are discussed at these meetings. The EC sets annual targets, as applicable, allocates budget for relevant activities. The progress of various activities is continuously monitored during the monthly review meetings. The key findings are reported to the board at each quarterly board meetings through the Risk Committee . During the Sustainability Board Committee meetings, the committee also reviews the proposed budgets and strategy for implementation of various measures relating to climate change as well as status of ongoing projects. Wherever required committee gives guidance to the specific projects based upon the status of implementation. Approves the necessary budgets for implementation of the projects and financial allocation is done as per the Business Plan. Committee prioritizes the projects for implementation based upon the impact as well as associated outcomes. Employee incentive mechanism and performance linked bonus is also discussed and finalised where climate related levers related to operational performance (Energy intensity, Thermal Substitution Rate) are reflected in everyone's KPI including the Top Management.
Scheduled – all meetings	Overseeing major capital expenditures Overseeing the setting of corporate targets Monitoring progress towards corporate targets Overseeing and guiding public policy engagement	<Not Applicable>	There are certain decisions taken at the Board level regarding strategic decisions. These proposal are first discussed at EXCO level and after elaborate deliberations, it is moved to the board level for their approval. For example, in FY23, the committee has approved the procurement strategy of additional solar power through long term PPA with JSW Energy. Case study: Situation: We currently source 6% Clean and green energy from 5.5 MW solar plant from JSW energy at our Nandyal Location. We planned to increase this percentage in coming two years. Task: In order to increase the percentage, we entered into a long term PPA with JSW energy to source almost 3 times of our current energy. This necessitated that we needed to build additional solar capacity. Action: In just a span of 1.5 years, additional capacity of 10 MW was executed at Nandyal most of which was already commissioned. Result: Currently from June'23 onwards, we are withdrawing more green energy and this percentage will increase in coming months after complete commissioning and stabilization.

C1.1d

(C1.1d) Does your organization have at least one board member with competence on climate-related issues?

	Board member(s) have competence on climate-related issues	Criteria used to assess competence of board member(s) on climate-related issues	Primary reason for no board-level competence on climate-related issues	Explain why your organization does not have at least one board member with competence on climate-related issues and any plans to address board-level competence in the future
Row 1	Yes	The governance structure at JSW Cement is in accordance with the necessary regulatory requirements. The Board and senior management charged with governance have the capability to influence and monitor the strategic direction of the organisation and its approach to risk management to improve business operations. Our Sustainability Board Committee consist of 2 independent members and both members have competency on climate related issues. One board member is from Cement industry and very well familiar with climate change impacts the sector is contributing to. He speaks and presents at different forums about the subject of climate change. Another board members is the also on the board of CDP.	<Not Applicable>	<Not Applicable>

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Position or committee
Chief Executive Officer (CEO)

Climate-related responsibilities of this position
Managing climate-related acquisitions, mergers, and divestitures
Providing climate-related employee incentives
Integrating climate-related issues into the strategy
Setting climate-related corporate targets
Monitoring progress against climate-related corporate targets
Managing climate-related risks and opportunities

Coverage of responsibilities
<Not Applicable>

Reporting line
Reports to the board directly

Frequency of reporting to the board on climate-related issues via this reporting line
Quarterly

Please explain
The company has constituted an Executive committee (reporting to the Managing Director) which is responsible for monitoring all ESG including Climate, through monthly meetings. This Executive Committee(EC) is headed by CEO and comprising CFO, Chief Manufacturing Officer, Chief Marketing Officer, Chief Sustainability and Innovation Officer, Projects Head, HR Head & Plant Heads. Various issues related to environment performance, safety performance, operational performance, compliance, energy efficiency, emission performance, utilization of alternative fuels and raw materials, innovative products etc are discussed at these meetings.

The key Role and Responsibilities of the Chief Executive Officer is 1. Review and Advise on our climate strategy and public commitments 2. Advise Senior Management to include sustainability elements particularly on climate on strategic decisions across all functions - Manufacturing, HR, Marketing, Commercial etc.

CEO is also a director on the board.

Position or committee
Chief Operating Officer (COO)

Climate-related responsibilities of this position
Managing major capital and/or operational expenditures related to low-carbon products or services (including R&D)
Providing climate-related employee incentives
Implementing a climate transition plan
Setting climate-related corporate targets
Managing climate-related risks and opportunities

Coverage of responsibilities
<Not Applicable>

Reporting line
CEO reporting line

Frequency of reporting to the board on climate-related issues via this reporting line
More frequently than quarterly

Please explain
COO or Chief Manufacturing Officer is not only responsible for implementation the climate transition plan but also guides on development of targets for CO2 emission Reduction Levers.

He is responsible for implementing various measures and initiatives at plant for reducing CO2 emissions. These projects may relate to energy efficiency, Raw material optimisation or product optimisation etc. He also guides on our target development considering the future product portfolio and upgradation projects.

Position or committee
Chief Sustainability Officer (CSO)

Climate-related responsibilities of this position
Managing annual budgets for climate mitigation activities
Managing major capital and/or operational expenditures related to low-carbon products or services (including R&D)
Managing climate-related acquisitions, mergers, and divestitures

Developing a climate transition plan
Implementing a climate transition plan
Integrating climate-related issues into the strategy
Conducting climate-related scenario analysis
Setting climate-related corporate targets
Monitoring progress against climate-related corporate targets
Managing public policy engagement that may impact the climate
Managing value chain engagement on climate-related issues
Assessing climate-related risks and opportunities
Managing climate-related risks and opportunities

Coverage of responsibilities
<Not Applicable>

Reporting line
CEO reporting line

Frequency of reporting to the board on climate-related issues via this reporting line
More frequently than quarterly

Please explain
The key Role and Responsibilities of the Chief Sustainability Officer is 1. Briefing the Board of Directors on sustainability issues 2. Engage executives on various sustainability updates 3. Engage with CEO & Senior Management to include sustainability on strategic decisions. 4. Drive and manage sustainability throughout the organization 5. Engage with internal & external stakeholders The CSO is also primarily responsible for deciding on actions on policy advocacy with external stakeholders, analysis and mitigation plans for climate change risks for all operating units, need analysis of research and development needed, development of targets, and formulation of long term action plan, among others.

He is also responsible for driving new research and innovation projects in collaboration with academics institutes, start-ups, research organisations etc.

Position or committee
Sustainability committee

Climate-related responsibilities of this position
Managing annual budgets for climate mitigation activities
Developing a climate transition plan
Implementing a climate transition plan
Integrating climate-related issues into the strategy
Conducting climate-related scenario analysis
Setting climate-related corporate targets
Monitoring progress against climate-related corporate targets
Managing public policy engagement that may impact the climate
Managing value chain engagement on climate-related issues
Assessing climate-related risks and opportunities
Managing climate-related risks and opportunities

Coverage of responsibilities
<Not Applicable>

Reporting line
Reports to the board directly

Frequency of reporting to the board on climate-related issues via this reporting line
Half-yearly

Please explain
The Board of Directors have constituted a sub-committee of the Board known as the “Sustainability Committee” to assess environment / sustainability / climate change related performance of the Company. The committee discusses the Climate targets (Long Term SHort Term, Our strategy, Our committments, Our progress against those targets.The climate change related issues and Energy efficiency measures and technology adoption is discussed and approved by the Board. The Sustainability Committee comprises of two Executive Directors and two Non-Executive Independent Directors. The Company Secretary acts as the Secretary of the Committee. The roles and responsibilities approved by the Board, for the functioning of Sustainability Committee, inter alia include: 1. Responsible for adoption of National Guidelines on Responsible Business Conduct (NG RBC) in business practice of JSW Cement. 2. Reviews adoption of all sustainability related policies and standards. 3. Oversee management processes to ensure compliance with policies and standards. 4. Review audits and assurance reports on how policies and standards are implemented. 5. Review the progress of business sustainability initiative and progress at JSW Cement. 6. Review the annual business responsibility report and present to the Board for approval.

Few of the important decision undertaken by the board committee were as below:

1. Last year we revisited our targets as per our committements, CoP 27 outcomes, SLL targets etc
2. Commitment to SBTi
3. Approval of CO2 emission targets developed under Sustainability Linked Loan
4. Peer Benchmarking Analysis of their targets
5. Undertaking TCFD analysis for detailed climate risk assessment

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Position or committee
Risk committee

Climate-related responsibilities of this position
Assessing climate-related risks and opportunities
Managing climate-related risks and opportunities

Coverage of responsibilities
<Not Applicable>

Reporting line
Reports to the board directly

Frequency of reporting to the board on climate-related issues via this reporting line
Half-yearly

Please explain
The Board of Directors have constituted a sub-committee of the Board known as the “Risk Committee” to assess environment / climate change related performance of the Company. The Risk Committee comprises of three Non- Executive Director and One Independent Directors. The Company Secretary acts as the Secretary of the Committee. The broad terms of reference of Risk Committee are: a) To formulate and recommend to the Board Risk Management Policy for approval. b) To review the Risk Management Policy from time to time and recommend to the Board for review. c) Implement the Risk Management Policy as approved by the Board. d) To access the Company’s risk profile and Key area of Risk in particular. e) To recommend to the Board adoption of risk assessment and rating procedures. f) To periodically review risk assessment and minimization procedure to ensure that Executive Management controls risk through means of defined framework g) Provide a methodology to identify and analyze the financial impact of loss to the organization, employees, the public, and the environment. h) To access and recommend to the Board acceptable level of risk. i) To review and nature and level of Insurance Coverage. j) Prepare risk management and insurance budgets and allocate claim costs and premiums to departments and divisions. k) To define risk appetite of the Company and review the risk profile of the Company from time to time to ensure that risk is not higher than the risk appetite approved by the Board. l) Provide for the establishment and maintenance of records including insurance policies, claim and loss experience. m) To exercise such powers as may be delegated by the Board of Directors from time to time. n) To exercise such powers as may be delegated by the Board of
Directors from time to time.

Position or committee
Chief Financial Officer (CFO)

Climate-related responsibilities of this position
Integrating climate-related issues into the strategy
Assessing climate-related risks and opportunities
Managing climate-related risks and opportunities

Coverage of responsibilities
<Not Applicable>

Reporting line
CEO reporting line

Frequency of reporting to the board on climate-related issues via this reporting line
More frequently than quarterly

Please explain
There are few of the risks identified which are related to Sustainability and Finance. CFO is responsible to taking strategic decisions to managing those risks.

In the reporting year, one of the risk identified was high borrowing cost impacting the profitability. As a response to this,
Company has taken Sustainability Linked Loan of 100 million USD from MUFG Bank and BNP Paribas which are linked to CO2 emission intensity reduction targets.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	Monetary Rewards in terms of performance linked Bonus and incentives are provided to almost at all levels for different climate related levers KPIs ranging from energy intensity reduction, improving Thermal substitution Rate, Raw materials reduction and enhancing low carbon product sales. All level means: Executive Board, Corporate Executive Team, CEO, CFO, Business Unit Managers, Energy Manager, Environment/Sustainability Manager, Process Operation Manager, Procurement Manager,

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive
Corporate executive team

Type of incentive
Monetary reward

Incentive(s)
Bonus - % of salary
Shares

Performance indicator(s)
Board approval of climate transition plan
Achievement of climate transition plan KPI
Progress towards a climate-related target
Energy efficiency improvement
Increased share of low-carbon energy in total energy consumption
Increased share of renewable energy in total energy consumption
Increased share of revenue from low-carbon products or services in product or service portfolio
Company performance against a climate-related sustainability index (e.g., DJSI, CDP Climate Change score etc.)

Incentive plan(s) this incentive is linked to
Both Short-Term and Long-Term Incentive Plan

Further details of incentive(s)
Few of the climate related targets and aspects are related to variable component of the salary of Executive Committee members. In case these targets are not met, this may impact the performance linked variable component.
Certain KPIs appear in respective team members but not all the members. For ex. In the KPI sheet of CSO and Head Sustainability, there are targets for improving our performance on pubic disclosure, approval of revised sustainability strategy and targets. If we achieve these targets, this will help us identifying focus areas/levers in our climate transition plan. This will help also help us devising our future strategy.

Improving our rating in sustainability related index is important as we are planning to for an IPO in coming year. looking at the increased focus on sustainability related issues, it is pertinent that we perform as per the our stakeholders expectation. All employees are also given ESOPs which are not linked directly to Climate related KPIs or performance however, we assume that post listing our share price will be partially driven by external ESG and climate Ratings. Thus we have also done the Sustainalyitcs rating in FY23 wherein we have been ranked no 1 among 140 construction companies globally.

Explain how this incentive contributes to the implementation of your organization's climate commitments and/or climate transition plan
The plant performance forms a part of the employee compensation structure known as Performance Improvement Bonus for Senior managers and below.

In case the KPI or targets are not achieved, it may impact the performance rating, the performance linked bonus and increment. We have taken a target for net zero by 2050 and 15% reduction in scope 1 and scope 2 emission intensity by 2026 (vs 2021) . IN order to achieve this, we have set sub-targets

To increase our Thermal substitution Rate (TSR) to 30% by 2030.
To increase our green energy portfolio by atleast 50% by 2030.
Improving energy efficiency.

These targets are further drilled down to line management's performance indicator. Climate related targets and projects are recognized and rewarded monthly, quarterly and yearly through quality improvement projects, and/kaizens.
Thus it becomes important that we optimise our production process and take every possible efforts to reach these targets.

For ex. We have taken a target to increase our Thermal substitution Rate (TSR) to 30% by 2030. Thus it is very important to secure the supply of suitable waste materials (Plastic waste, liquid waste, Biomass etc) . For FY22, our coal substitution rate was 7.1% which we plan to take at least 15% by 2025. We achieved TSR of 8% in FY23. Procurement manager is responsible to map new suppliers for similar or better materials with lowest cost possible so that we can increase the TSR % gradually. Sustainability Manager has the the KPI of climate/sustainability related index.

Monetary incentives provided to lower management on sustainability topics are helpful in achieving executive targets in several ways such as:
Motivation and alignment
Improved performance and efficiency
Enhanced accountability and responsibility
Knowledge sharing and collaboration
Continuous improvement and innovation

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?
Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	3	We consider few emerging risks such as increase of fuel/raw material cost and availability in the span of 0-3 years. Also in terms of mitigation strategies, initiatives which can be implemented in 3 years of time may relate to energy reduction /improvement measures, utilization of waste in place of raw materials & fuels to minimize carbon emissions, shifting to latest energy efficient equipment's, deploying Electric Vehicles etc.
Medium-term	3	10	We foresee some risks/opportunities which could be due to change in local regulations - Carbon Tax, Emissions trading mechanisms etc in coming 3-10 years. Our mitigation strategies which we would realize in coming 10 years may include shift to Renewable energy sources (Wind/solar farm) , shift in mode of transportation through EV, setting up of pre-processing facilities for increased waste utilisation
Long-term	10	30	Long terms horizon will include risks of not achievement of Carbon reduction targets or Net Zero Goal. The time horizon of 20 years will also encompass leveraging opportunities of the scale-up phase of innovative technologies such as CCUS, clinker less cement or R&D projects on zero clinker cement, etc.

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

The risk management process in JSW cement is guided by 'COSO' framework of Enterprise Risk Management. ERM brings together the understanding of the potential upside and downside of all those factors which can affect the organisation with an objective to maximise sustainable value to all the activities of the organisation and to its stakeholders. The company recognises that the emerging and identified risks need to be managed and mitigated, in order to - a. protect its shareholders and other stakeholders' interest b. achieve its business objective. c. enable sustainable growth.

There are three steps of Risk Management process

1. Risk identification: Identification, assessment, response & tracking of risks under their control are ensured by the Risk owners (HODs) at respective locations. Risk is identified by the risk owners at the plant level and functional levels. subsequently, all the plant level risks and risks of corporate functions as well as organisational risks requiring review of macro environment, policies, processes are discussed at the Corporate meetings.

2. Risk assessment: The framework provides the platform to discuss the risk factors which have significant impact on business sustainability, including that of climate change risks

3. Risk Response (e.g., avoid, mitigate, or retain). Risk mitigation is done through business continuity plans to manage disasters and other uncontrollable external risks and minimizing vulnerability through proactive planning, insurance and due diligence.

We consider following timelines for risk assessment

0-3 years - Short term

3-10 years- Medium Term

10-30 years - long term

For our climate risk assessment aligning TCFD, We considered market, financial, regulatory, technology and reputational category

We use scenario analysis for both **physical and transition risks & opportunities,** and evaluate the impacts for both, near (2030) and far term (2050). The level of risks for physical risks is based on likelihood of the event occurring as well as the impact (intensity). We have defined the substantive financial or strategic impact on our business using a mix of both qualitative and quantitative indicators as follows –

Critical Risk – Very high (almost certain) probability of occurrence and severe impact on business & operations

Eg. The risk is likely to occur frequently, the financial impact is likely to exceed USD 100 million or loss of lives coupled with severe injury or disability and protests or disruption from communities and stakeholders.

High Risk – High probability of occurrence and high impact on business & operations

Eg. The risk is likely to occur frequently, the financial impact is likely to exceed USD 50 million or severe injuries or disability and protests or disruption from communities and stakeholders.

Moderate Risk – Medium probability of occurrence and medium impact on business & operations

Eg. The risk is likely to occur frequently (1 x 8-10 years), the financial impact is likely to exceed USD 30 million or severe injuries or disability and protests or disruption from communities and stakeholders.

Insignificant Risk – Low probability of occurrence and some impact on business & operations

Eg .The risk is likely to occur frequently (10+ years), the financial impact is likely to less than USD 1 million or some injuries or near misses along with some grievances from communities and stakeholders.

For opportunities assessment, we have the following classifications

Extensive – Changes in the regulatory & policy, markets & consumer and technological landscape are likely to certainly evolve (in the next 1-3 years) in a way that exclusively benefits JSW cement (both, directly and indirectly) to fortify or elevate its position as market leader, increase revenues & profitability and significantly improve perception amongst stakeholders and shareholders.

High – Changes in the regulatory & policy, markets & consumer and technological landscape are likely to certainly evolve (in the next 4-5 years) in a way that largely benefits JSW cement to maintain its position as market leader, increase revenues & profitability and significantly improve perception amongst stakeholders and shareholders.

Moderate – Changes in the regulatory & policy, markets & consumer and technological landscape are likely to potentially evolve (in the next 5-10 years) in a way that it somewhat benefits JSW cement (directly, but mostly indirectly) to maintain its position as market leader, increase revenues & profitability and potentially improve perception amongst stakeholders and shareholders.

Irrelevant - Changes in the regulatory & policy, markets & consumer and technological landscape could evolve (in 10+ years) in a way that it may (and if so, insignificantly) benefit JSW cement to maintain or further enhance its position as market leaders, increase revenues & profitability and improve perception amongst stakeholders and shareholders.

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered
Direct operations
Upstream
Downstream

Risk management process
Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment
More than once a year

Time horizon(s) covered
Short-term
Medium-term
Long-term

Description of process
The Risk Committee comprises of four Non-Executive Director of which two are Independent Director. The Company Secretary acts as the Secretary of the Committee. Key risk identified, presented by all plants and corporate updates on risk mitigation action status on half yearly basis are reviewed by Board of Directors. The risks and opportunities are identified and classified as high, medium or low based on the scale: severity, probability of occurrence and duration of the impact. The framework provides the platform to discuss the risk factors which have significant impact on business sustainability, including that of climate change risks. The risks are identified and their movement, impact and response strategies are mapped.

Additionally, considering the climate being the most material topic of cement industry, the company has identified the climate risks and opportunities aligning with TCFD recommendations too ,at the corporate level.

JSW Cement has adopted Enterprise Risk Management (ERM) that is based on the globally recognised 'COSO' framework, which brings together the understanding of the potential upside and downside of all those factors which can affect the organisation with an objective to add maximum sustainable value to all the activities & to various stakeholders. The company recognises that the emerging and identified risks need to be managed and mitigated, in order to - a. protect its shareholders and other stakeholders' interest b. achieve its business objective. c. enable sustainable growth. The risks are identified as per the following levels:

Site-level risk identification: Risks are identified by each risk owners at the plant level which is reviewed at respective plant level risk committee, headed by the plant head.
Corporate Risks at each functional level: Risks are identified by the risk owners at the corporates level which is reviewed at functional level.
Company level Corporate risks: –All the plant level risks and risks of corporate functions as well as organizational risks requiring review of macro environment, policies, processes are discussed at the corporate and Group level.

Risk assessment was carried out at each and every site wrt all aspects related to climate change, safety, environment, legal, finance, cost, logistics, raw materials, fuels, stakeholders etc.

Case study for Climate-related Opportunity

Situation: Based on the risk assessment, the company has identified increasing cost of power as a risk for many of our locations. Our plant at Nandyal, this financial impact of this risk was substantial since more than 90 % of electricity is purchased from gird.

Task: It was decided to lower our dependence on Grid electricity and enhance our clean energy portfolio
Action and Timelines: To leverage on this opportunity, we have planned for an installation of WHRS of 12.3 MW with the capex of INR 150 Crore. We also enhanced our solar power sourcing from 5.5. MW to 15.5 MW. This was to be implemented in 1-2 years of time.
Result: After the commissioning of WHRS and solar power in FY24, more than ~ 50% of power requirement will be met from this. This will not only reduce our dependency on grid but will also reduce our scope 2 CO_2 emissions by half.

This year, we have also undertaken climate risk and opportunity assessment aligning with TCFD recommendation.

Physical Risks and Opportunity: We have covered both chronic hazards (changing air temperature, changing precipitation patterns, sea level rise, water stress and soil erosion), and acute hazards (extreme heat, extreme cold, wildfire, tropical cyclone, storm, drought, extreme precipitation, flood, landslide, and subsidence) for assessment of physical risks. The base assessment is complimented by high resolution flood maps of 30 m resolution. Following timeframes were considered to assess physical risks and opportunities-
• Baseline: average 1985 and 2014;
• 2030: average between 2015 and 2044 values;
• 2050: average between 2035 and 2064 values.

Transition Risk and Opportunity: Transitioning to a lower-carbon economy may entail extensive policy, legal, technology, and market changes to address mitigation and adaptation requirements related to climate change. Following timeframes were considered to assess transition risks and opportunities-
• Short Term (2025)
• Medium Term (2030)
• Long term (2035)

Physical and transition risks and opportunities were identified and assessed as follows:

1) Physical Risks were assessed for JSW Cement's own Assets, Suppliers and Key Markets. For identification and assessment of climate-related physical risks, location and region-specific climate perils were analysed for 8 owned assets (6 owned+2 groups) , 3 suppliers and 1 key market to determine climate change impacts on our cement operations, supply chain and business. These risks were assessed based on three parameters:

• Hazards: climate-related events
• Exposure: Location, physical attributes, and value of assets (buildings, factories, farmland, etc.) or people that could be affected by a hazard;
• Vulnerability: Propensity or predisposition to be adversely affected by a certain hazard and encompasses a variety of concepts and elements, including sensitivity or

susceptibility to harm.

Based only on an assets/suppliers exposition to perils (relatively to the portfolio studied) and on the vulnerability depending on the type of building and industry, climate risk score (multiperil score) are calculated and are divided into-

• Extreme risk with potential medium to long-term damages
• High risk with potential medium-term damages
• Medium risk with potential impact on business continuity or short-term damages and
• Low risk that does not require further interventions)' categories.

Using the multiperil score and financial value (total asset insured value)/supplier revenue of an asset, iso-risk was estimated for each asset to account for the financial exposure.

2) Transition Risks at business/corporate level: Climate-related transition risks for our business arising due to changes in climate policies and regulations, market and technology landscape and stakeholder reputation are identified and assessed at the corporate level. Similar to physical risks, transition risks are also classified into critical, high, moderate and irrelevant risks based on the likelihood and level of impact that these risks might have on our business as whole.

Risk Management and Strategy Formulation: To inform the strategic outlook for sustainable and low carbon growth of JSW Cement, the key risks and opportunities identified are reviewed, monitored, and evaluated to develop risk mitigation strategies. Similar to risk identification, strategy formulation to address and manage identified climate-related risks and opportunities takes place at both corporate/business and asset/plant level.

C2.2a

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Perform, Achieve & Trade (PAT) scheme is an energy reduction program regulated by Bureau of Energy Efficiency (BEE) which is part of NDCs and indirectly relates to Climate Change. As part of this programme, BEE specifies a target value for energy reduction which need to be complied in the specified timelines. To comply with this, company implemented various energy reduction measures such as improving energy efficiency, optimization of process, usage of renewable energy, usage of alternative fuels, minimizing clinker factor and maximizing utilization of industrial wastes and by products which will have positive impact on the environment as well as lowering the carbon emissions. Case Study: At our Nandyal Plant, the primary fuels used Coal. in FY2021, we were replacing ~4% of coal with Fuels. . It was decided to increase this percentage by putting efforts in building our technical capability and souring more AFR. We planned an investment of around 5 Crores around this with a timeline of 3 years. In FY22, we invested almost 2.5 Crores. We have also sourced more waste materials as AF. As a result, we have reached almost 8% TSR in FY23 and we hope to reach around 14-15% in FY24.
Emerging regulation	Relevant, always included	We always consider emerging regulations related to climate change and other emission parameters which can impact our operations. We continuously evaluate and plan to implement the mitigation measures to avoid the risks and minimize their impact. While considering this, we always include energy efficient technologies with minimal impact on environment in complying the emerging regulations. Few of the regulations related to ground water withdrawal is getting stricter. This may expose a risk to few of our operations which are dependent on GW. Few of our current operations such as Shiva, Salboni and Nandyal are dependent on GW. Few of new upcoming projects also may need to withdraw from Ground water Recently in FY23-FY24, The Bureau of Energy Efficiency (BEE), an agency established by the Ministry of Power to create awareness and disseminate information on energy efficiency and conservation as also help develop strategies and policies towards that end, has launched the Carbon Credit Trading Scheme to address the issue of greenhouse gas (GHG) emissions and mitigation of climate change in the country. The Carbon Credit Trading Scheme assigns a value, known as a carbon credit, to each tonne of carbon dioxide equivalent (tCO2e) reduced or avoided. These credits could be bought, sold and traded within the country's carbon market framework. For energy intensive sectors, GHG emissions intensity benchmark and targets will be developed, which will be aligned with India's emissions trajectory as per climate goals. The trading of carbon credits will take place based on the performance against these sectoral trajectories. While this may pose a risk to many companies but for us, we see this as an opportunity rather than risk owing to our low emission intensity.
Technology	Relevant, always included	We continuously explore opportunities for adopting new technologies which can help us in conserving natural resources such as limestone, coal etc. A few technologies are quite capital intensive and difficult to adopt in today's scenario. Thus there is a risk of the cost of carbon capture technology being significantly higher than existing carbon pricing mechanisms in place and the lack of integrated deployment of Carbon Capture and required supply chain ecosystems (transportation, sequestration, etc.), preventing a successful and economically viable implementation of carbon capture technologies. Since our plants are comparatively newer than many others, they are designed with several energy conservation measures that reduce gate to gate energy consumption. As part of it, upgrading our existing infrastructure with latest generation energy efficiency equipment's wherever possible. Replacing old in-efficient pumps or motors with latest generation energy efficient pumps or motors. Implementation of digital technology to optimize the process energy consumption and minimizing the losses. Adoption of best available technology (BAT) in the market at that time. Case Study: In FY23, Shiva cement works was upgraded and recommissioned with a Clinker Production Capacity of 4,000 TPD. Equipped with all the latest technologies and most energy efficient systems, the Shiva plant having a capacity of 1.4 MTPA, will take the total clinkering capacity of JSW Cement to 4.5 MTPA. The plant is designed to achieve capacity with lowest possible Sp. Power and Fuel Consumption and thus can be considered as one of the most sustainable manufacturing unit of JSW Cements. The plant has deployed Waste Heat Recovery System that converts waste heat derived during the production process into energy. WHRS with a capacity of 8.9 MW, to capture and utilize excess heat from preheater and clinker cooler gases from kilns and other processes which will reduce its power consumption. Through this system, the plant will be meeting almost 70% of total power demand. This will help JSW cement meet its commitment to reach net zero by 2050 by reducing its scope 2 emissions. Co-processing system, still under final stage of commissioning at Shiva is designed for feeding of solid RDF and usage of various alternative fuels and materials with 30% of Thermal Substitution Rate (TSR) to reduce reliance on fossil fuels such as coal and conserve natural resources.
Legal	Relevant, always included	We continuously keep track of change in legal framework including all regulations on plant & product performance in the country which has implications on climate change. Similarly, legal regulations on air emissions are also getting more and more stringent but we are taking possible efforts to avoid any non-compliance. Case Study: At our recently commissioned plant Shiva, we have considered in design stage , dust emission limit of ≤ 10 mg/Nm3 where as local norms are 30mg/Nm3. Bag Filters have been considered at material transfer points and shall keep the dust emission below ≤ 15 mg/Nm3. To minimize the fugitive dust emissions during operation of the plant, sufficient number of standardized dust filters (nuisance filters) of the fabric type. Modern technology burners, dosing systems (fuel and kiln feed), emissions monitoring and kiln control systems have been considered to minimize gaseous emissions from combustion processes (e.g. NOx, CO, SO2).

	Relevance & inclusion	Please explain
Market	Relevant, always included	We analyse the market requirements, evolving demand from our customers for green products and the impact therefore on our activity. To Support our claims of green products, We have carried out Environmental Product Declaration (EPD) for our PSC and GGBS products based upon a LCA study. As per the EPD our PSC and GGBS products are having minimal impact on environment in terms on energy consumption, natural raw materials, water and emissions etc. Our Products are also certified under "GreenPro" certification. Based upon our LCA & EPD our Portland Slag Cement (PSC) is having 325 kg CO2/Tonne of PSC which is lowest among the cement products across the world. We encourage the customers to purchase green products which are having minimal impact on environment. Case Study: Despite the fact that our products being most eco-friendly, there was not enough awareness and market penetration of Green products in certain geographies and Green Building Market. Thus We planned to get our all products get an external certification for Green building rating system and create more awareness among top builders who have the same vision of Net Zero. Last year in FY23, we have obtained GRIHA Certification for our products and now all our products are appearing in their Catalogue. We also took focused sessions on our low carbon product range, to many of our current and potential customers. This will help the green rating companies, architectures and builders to choose our eco-friendly products and we hope to see increased demand. Last year our GGBS production has increased from 35% to 40% among total product portfolio.
Reputation	Relevant, always included	We constantly evaluate our performance on sustainability & climate changes issues to improve our reputation. Since last year we have started disclosing our sustainability performance to various stakeholders through various forums. Our majority of the products are having lower carbon footprint with superior performance. Most of our products are blended cement. Our products are certified under EPD, Green Pro certifications which further strengthen our green image. All these initiatives are related to our plan of low carbon transition. We are working towards validating our CO2 Targets through SBTI which will bring more credibility among our stakeholders. Case Study In FY23, we raised a sustainability linked loan of 50 million USD which is linked linked to CO2 emissions intensity targets. Meeting the target or not meeting that targets will have a significant reputational impact. Thus we we are conscious about and our every action related to climate change and thus implementing various initiatives to minimize CO2 emissions and which will have positive impact at larger level for different stakeholders like investors, customers, financial institutions, etc. For achieving this, we have made a year-wise plan and we hope to achieve the target in prescribed timelines. In FY23, we have participated in the Sustainalyitcs rating wherein we have been ranked no 1 among 140 construction companies globally. These kind of renowned rating systems helps building reputation.
Acute physical	Relevant, always included	We have presence at different locations and we strive to minimize our impact due to climate change impact such as cyclones, flooding and droughts and considered during the design of the buildings, infrastructure and equipment's. Case Study One of our plants located in regions with medium to high risk of flooding (such as Dolvi Works) wherein climate events can lead to operational shutdowns, damage assets and/or facilities, increase insurance premiums as well as disrupt supply chain by impacting availability of raw materials and supply of finished goods. This is important as Dolvi works is dependent on Dolvi steel and our jetty which may further get exposed to high level of risks.
Chronic physical	Relevant, always included	We have presence at different locations and we don't foresee any drastic change in high temperatures due to which our operations will be affected. However we have considered the worst case scenario and planning our production units at different parts of the country to minimize this impact. considering we have identified one of our location, Vijaynagar ,which may be exposed to Chronic Physical risk Case Study Our Vijayanagar cement works (grinding unit) is accounting for almost one-third of our production. For our primary raw materials that is slag, we are dependent on JSW Steel Vijayanagar. Both the plants, JSW Steel and Cement are located located in water stressed regions and water shortage/water unavailability has been identified as a physical risk which can potentially have high impact on steel operations . Thus our operations are also exposed to this risk. However, the level of impact would not be substantive considering the lower intensity of the grinding unit.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical	Flood (coastal, fluvial, pluvial, groundwater)

Primary potential financial impact

Decreased revenues due to reduced production capacity

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

Increased frequency of extreme weather events such as extreme rainfall and floods can negatively impact our operation. One of our plants, Dolvi is located in coastal zone where there is a possibility of floods in coming years.

Time horizon

Medium-term

Likelihood

More likely than not

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
6000000

Potential financial impact figure – maximum (currency)
30000000

Explanation of financial impact figure
JSW Dolvi cement works sources slag from JSW Steel plant. Both are located at western coast of Maharashtra .
In case there is a flood in the area, the operation, logistics and supply of raw materials may be impacted. We also have captive jetty to handle the raw material (clinker). Present per day capacity of the plant is 6000 MT/day . Due to non-availability of raw material & disruption in operation due to natural calamities may result in the loss of production for few days. In case the production is lost for 1 day to 5 days the impact would be. The EBITDA of 1 T of cement/GGBS is Rs 1000 .

for 1 day loss, 1000 *6000 *1= 6,000,000
for 5 day loss, 1000 *6000 *5= 30,000,000

Cost of response to risk
140000000

Description of response and explanation of cost calculation
We are planning to source most of clinker from our Nandyal plant which will come through road reducing our dependency on jetty for sourcing raw material. Through our group JSW, we are planning to increase our mangrove cover through restoration projects to prevent sea water entering inland & reduce soil erosion and construction of retaining wall.

Mangrove restoration project to prevent sea water entering inland & reduce soil erosion- 50,000,000 INR 4. Construction of retaining wall- 90,000,000 INR.

This risk management initiatives will be undertaken by JSW Steel and likely to be completed in medium term by 2030.

Comment
This risk is primarily for the steel plant of JSW Steel, Dolvi but since we are also present in the same location we are also exposed to that risk

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Identifier
Risk 2

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation	Carbon pricing mechanisms

Primary potential financial impact
Increased direct costs

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
JSW Cement imports coal from Indonesia, South Africa, USA and other regions of the world. Government of India is imposing a "Coal Cess" on the imported coal and it is having a huge financial impact on the organization. In 2022-23, we have consumed ` 0.15 Million tonnes of coal at our Nandyal plant and the financial impact of coal cess is INR 6 Crore.

Time horizon
Medium-term

Likelihood
Likely

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
180000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
Currently, the coal cess levied is at Rs. 400/T of coal . We have consumed almost 0.1 Million T . Based on the assumption that if Coal CESS is increased to INR 600 by 2030 and our coal consumption is increased to 0.30 MT of coal (owing to our increased production) and the financial impact will be around ~ INR 18 Crore per annum.

Cost of response to risk
40000000

Description of response and explanation of cost calculation
We are upgrading on installation of co-processing facilities to increase the consumption of alternative fuels to replace our coal requirement. Thus we will reduce the

consumption of coal required for our operations. Thus minimizing the impact of coal cess. The total approx. capex is INR 28-30 Crore consisting of primary shredder, secondary shredder, conveying systems, storage areas, shelters, firefighting system etc. In FY23, we have invested almost 2.5 crore for AFR facility at Nandyal. If we divide it into 7 years, this may translate to ~4 crore per annum

Comment
The financial impact calculation is for Nandyal but the risk will be for other units also.

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?
Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier
Opp1

Where in the value chain does the opportunity occur?
Downstream

Opportunity type
Products and services

Primary climate-related opportunity driver
Development and/or expansion of low emission goods and services

Primary potential financial impact
Increased revenues resulting from increased demand for products and services

Company-specific description
In last few years, we have seen a growing awareness and demand for Low carbon products. Our product GGBS is a green product (made from industrial by-waste) has the lowest carbon footprint. Our flagship product GGBS portfolio has been increasing gradually over the past years. In 2022-23, our share of GGBS in the total product portfolio has increased from 35% to 40% . We foresee a growing opportunity if we develop more innovative and sustainable products that too in a short to medium term.

Time horizon
Medium-term

Likelihood
Likely

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
249600000

Potential financial impact figure – maximum (currency)
499200000

Explanation of financial impact figure
For financial impact calculation, we are taking example of GGBS .

We have produced around 3.84 Million T of GGBS in 2022-23. EDITDA of GGBS = INR 1300 /T. Considering that because of increasd demand, if we increase our GGBS production between 5% (0.192 Million T) to 10% (0.384 Million T) in 2-3 years, it will lead to increase in Total EBITDA as below

Financial impact minimum range = 49,92,00,000 INR(0.192*10^6*1300) per annum
Financial impact minimum range = 748,800,000 INR(0.384*10^6*1300) per annum

Cost to realize opportunity
160000000

Strategy to realize opportunity and explanation of cost calculation
Considering the cost of slag and manufacturing cost of GGBS @1000 RS /T and additional cost of 1 crore INR on certification, branding , promotion etc, the total cost to realise this opportunity will be
(1000 *150000)+10000000= 160000000 .

We are making efforts by engaging with our all our potential customers with an objective to create awareness about our products and push for a demand of Low carbon and sustainable products. We have also invested towards green product certification.

Comment
We have increased our plant capacities in FY23 particularly to increase our production of low carbon products.

Identifier
Opp2

Where in the value chain does the opportunity occur?
Direct operations

Opportunity type
Energy source

Primary climate-related opportunity driver
Use of supportive policy incentives

Primary potential financial impact
Increased revenues through access to new and emerging markets

Company-specific description
The Bureau of Energy Efficiency (BEE), an agency established by the Ministry of Power to create awareness and disseminate information on energy efficiency and conservation as also help develop strategies and policies towards that end, has launched the Carbon Credit Trading Scheme to address the issue of greenhouse gas (GHG) emissions and mitigation of climate change in the country. The Carbon Credit Trading Scheme assigns a value, known as a carbon credit, to each tonne of carbon dioxide equivalent (tCO2e) reduced or avoided. These credits could be bought, sold and traded within the country's carbon market framework. For energy intensive sectors, GHG emissions intensity benchmark and targets will be developed, which will be aligned with India's emissions trajectory as per climate goals. The trading of carbon credits will take place based on the performance against these sectoral trajectories.

JSW Cement has the lowest emission intensity of ~173.5 kg/T of cementitious materials while the national average is around 541 kg/T. The company consider this as a great opportunity to bring in a new revenue stream owing to our lower emissions.

Time horizon
Medium-term

Likelihood
Virtually certain

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
345600000

Potential financial impact figure – maximum (currency)
691200000

Explanation of financial impact figure
If we assume that for cement sector GHG emission intensity benchmark will be 520 kg/t and if we could maintain ours emissions of 220kg/T (considering FY22 value as FY23 is not representational) we will have a credit of almost 300 Kg/t.

If we assume the production of FY23 i.e. 9.6 Million T and considering the selling price of Carbon credit as 1.5 USD/T to 3USD /T (1 USD - 80 Rs), it will lead to the potential revenue of

Rs. 34,56,00,000 (0.3 *9.6*10^6*120) per annum
Rs. 691,200,000 (0.3 *9.6*10^6*240) per annum

Cost to realize opportunity
500000000

Strategy to realize opportunity and explanation of cost calculation
We will be producing more volumes specially the clinker so our total emissions will be increasing. If we do not put efforts to main our leadership position our intensity will also be increasing. Thus we will be investing almost Rs. 50 crores to reduce our emissions by enhancing our clean energy portfolio, installing upgraded technologies and enhancing our AFR portfolio at Shiva and Nandyal.

Comment
Last year (FY23) our scope1 +scope 2 emission intensity was 206 but the primary reason was lower clinker production . But going forward we plan to lower our emissions by putting focused efforts on AFR and green energy.

C3. Business Strategy

C3.1

(C3.1) Does your organization's strategy include a climate transition plan that aligns with a 1.5°C world?

Row 1

Climate transition plan

Yes, we have a climate transition plan which aligns with a 1.5°C world

Publicly available climate transition plan

Yes

Mechanism by which feedback is collected from shareholders on your climate transition plan

We have a different feedback mechanism in place

Description of feedback mechanism

JSW cement is not a listed company and is closely held by the promoter group companies. In addition, some of the employees are given stock options. The promoter is the Managing Director of the company and is a part of board level Sustainability Committee along with the CEO and 3 other independent board members. Sustainability Committee meetings are held twice/thrice in a year where they provide feedback on our targets, performance, low carbon transition plans, our mitigation, strategies and all the public commitments we are making.

Frequency of feedback collection

More frequently than annually

Attach any relevant documents which detail your climate transition plan (optional)

We have committed to various climate related charters, ambitions and targets which are aligned to 1.5 Transition Plan.

Explain why your organization does not have a climate transition plan that aligns with a 1.5°C world and any plans to develop one in the future

<Not Applicable>

Explain why climate-related risks and opportunities have not influenced your strategy

<Not Applicable>

C3.2

(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?

	Use of climate-related scenario analysis to inform strategy	Primary reason why your organization does not use climate-related scenario analysis to inform its strategy	Explain why your organization does not use climate-related scenario analysis to inform its strategy and any plans to use it in the future
Row 1	Yes, qualitative and quantitative	<Not Applicable>	<Not Applicable>

C3.2a

(C3.2a) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenario	Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices
Transition scenarios: IEA NZE 2050	Company-wide	<Not Applicable>	We have considered scenarios covering broad spectrum of climate outcomes to gain insights into our risk & opportunities we might face over the time. Transition risks and opportunities for JSW Cement's business and operations were assessed using hypothetical scenarios on climate policy and technology trend for two (2) scenarios: • Net Zero (NZ) 2050 • Nationally Determined Contributions (NDCs) We have identified following risks and opportunities that may have substantive financial impact on its business. Examples of risks are listed below: • Increase in regulations and environmental litigations • Increasing compliance related to PAT and carbon tax (coal cess) • Emerging regulations on carbon tax/ trading • Increasing compliance related to RPO • Emerging regulations on use of blended cement in RMC • Increase in CAPEX or early retirement of assets due to new technology and equipment • Scarcity of specific raw materials • Attracting talent and community perception Examples of opportunities include: • Monetization of credits via emerging carbon market mechanism • Increasing demand for low carbon products • Increased use of alternative fuel and raw material • Attracting investors and securing capital • Improved perception due to use of low carbon vehicle Results are still under validation.
Physical climate scenarios: RCP 8.5	Company-wide	<Not Applicable>	We have considered scenarios covering broad spectrum of climate outcomes to gain insights into our risk & opportunities we might face over the time. We utilized internationally accepted scenarios from Intergovernmental Panel on Climate Change (IPCC) for Climate Physical Risks We used IPCC Representative Concentration Pathways SSP 5 (RCP) 8.5 and SSP 2 (RCP) 4.5 for assessing location-specific physical risks. This includes computation of 30-year averages (monthly, seasonally, yearly) around 2020, 2030 and 2050 to monitor the evolution of climate hazards over time. Climate hazards are computed for IPCC two emissions scenarios, which are aligned with TCFD guidelines- • SSP2-4.5 – Middle of the Road Scenario: This scenario is projected to lead to a mid-century warming of 1.6 to 2.5°C and end of the century warming of 2.1 to 3.5°C. • SSP5-8.5 – High-reference Scenario (Fossil-fueled Development): This scenario, which is the most pessimistic one, is projected to lead to a mid-century warming of 1.9 to 3°C and end of the century warming of 3.3 to 5.7°C. We have considered 9 perils and as per initial assessments, following perils are found to be top most with considerable impact • Drought • Flood • Heat Index (HI) These perils can lead to business interruption and damage to assets. Results are still under validation.

C3.2b

(C3.2b) Provide details of the focal questions your organization seeks to address by using climate-related scenario analysis, and summarize the results with respect to these questions.

Row 1

Focal questions

We used the scenario analysis to understand to answer the following focal questions
1. 'how climate-related events and their associated risks and opportunities will impact our company's business model, strategy and financial performance over time in different time horizons
2. How we can build our resiliency in different scenarios?
3. What investments we need to plan in order to meet our Net Zero target by 2050?

Results of the climate-related scenario analysis with respect to the focal questions

The results (yet being validated) of the different scenario analysis indicates that:

For physical risks climate scenario analysis, we have used IEA NZE 2050 and NDC, under short term horizon or medium term (1-10 Years), we are not exposed to any transition risks significantly except regulatory risks due to ever changing regulations. Infact, we have more opportunities rather than risks due to our lowest emission intensity and 90% low carbon product portfolio. Thus we need to leverage these opportunities. If we consider long term (10-30 Years), technology is seen as a risk because of investments in capital intensive technologies such as CCUS.

As per RCP 8.5 and RCP 4.5 scenario for physical risks, few our operations are exposed to water unavailability, extreme rainfall & flooding risks in medium (3-10 years) and long term scenario (10-30 years).

In 2022-23, JSW cement has the lowest carbon intensity (Net scope 1) with 173 kg/T of cementitious material which 1/3rd of the global Average and ~32% of the national Average. Thus JSW cement is considered a leader in its decarbonization Journey. Because of this, we assume that can leverage the opportunities of earning credits in recently launched Carbon Market Mechanism in India.

In order to maintain the leadership position , we need to plan our future course of action with planned investments.
Case Study
We are increasing our investments in Green and Low carbon energy such as AFR, WHRS and Renewable Energy. We have also issued Sustainability Linked Loan linked Sustainability performance target of reducing 15% reduction by 2026 in its Carbon emission intensity (scope1+scope2) with a baseline of 2020-21.
We have also planned significant investments towards Clean and Green Energy to build our resilience for future anticipated risks.

C3.3

(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	Strategy impacted by climate-related risks and opportunities: More focus on low carbon products such as Portland Slag Cement (PSC), Composite Cement (CC), Ground Granulated Blast Furnace Slag (GGBS), Slag Sand etc. Climate-related risks and opportunities have influenced our strategy concerning products with low-carbon footprint such as GGBS, PSC, CompoCem, Slag Sand etc. Our entire company business model is unique and revolves around circular economy. Our majority of our product portfolio is based upon slag which is an industrial by-product coming from steel industry. Our products are having least carbon foot print when compared with similar type of products available in the market. For example - For every one tonne of our CHD production: 1. we emits 56% less CO2 emissions wrt one tonne of OPC 2. we consume 56% less specific thermal energy when compared with one tonne of OPC 3. we consume 26% less specific electrical energy when compared with one tonne of OPC The same thing has been validated by conducting EPDs for our PSC and GGBS products which is based upon LCA study. As per the finding our products consume least amount of natural resources such as limestone, water, energy, fuel and maximum amount of wastes. Case Study: As part of our continuous improvement in our low carbon products, we have also started producing "Slag Sand" which replaces natural sand in ready mix concrete production. Slag Sand is manufactured using the by-product coming out from Steel Industries. By manufacturing this product, we expect increased demand for low-carbon products in the construction sector which will have very positive impact on the built environment. We expect more revenues to the company from this product. At our Dolvi plant, we have started the production of Slag Sand from 2021 onwards. We have invested around INR 22.26 Crore for setting up the slag sand plant at Dolvi. Slag Sand product will have an impact from immediate to long term time horizon i.e up to 30 years. Major environment impact by our "Slag Sand" product is avoiding dredging of rivers for natural sand which effects a lot on aquatic life and other climate related issues in a broad sense. We expect to increase our revenues by 2 to 3% from this product itself which will enhance our low carbon product portfolio. Time frame - 0 to 3 years
Supply chain and/or value chain	Yes	Strategy impacted by climate-related risks and opportunities -Operations closer to the raw material source and market and moving to bulk/rail transport. We are continuously evaluating our logistics footprint throughout our value chain and identified different actions in minimizing our environmental impact. More and more material is shifted to bulk transport wherever possible. Depending upon the market location and conditions different modes of transportation is deployed. We are planning to have dedicated railway sidings at some of the locations to further enhance the logistics performance. We always consider our supply chain and logistics impact in all our new projects. Our most recent plant which got operational - Salem , is just 1.5 km from our steel plant, from where we take slag (our primary raw material for this plant and this reduces our logistics cost as well as impact. Case Study: Nandyal produces clinker and receives slag from our JSW Vijaynagar Steel Plant while JSW Vijaynagar Cement plant receives clinker from Nandyal. For this, we have been using diesel trucks. Last year Vijaynagar received 546953 T of clinker. As part of our climate change mitigation measures in supply chain, We have ordered 5 EVs trucks ~ 55 Tonnes capacity so that we can reduce the logistics emissions. In FY23-FY24, we have received 2 Trucks and 3 are yet to be delivered. We hope to reduce our scope 3 emissions in coming years through this. Once we have all EV trucks deliverad, we anticipate to avoid ~1700 T of CO2 emissions Time Frame - 0 to 3years
Investment in R&D	Yes	Strategy impacted by climate-related risks and opportunities -Developing Low Carbon and sustainable Products We are working with various institutions globally and national in developing new products with least amount of clinker or even zero clinker cement. Apart from that, utilization of different types of steel slag such as EAF, BOF, EOD etc. in cement manufacturing which will replace clinker which indirectly reduce the amount of limestone consumption. Around 2% of profit is allocated to various initiatives towards sustainability, R&D, marketing, technical services etc. year FY23. Case Study: In past couple of years, our R&D has developed in-house an additive which is used in cement grinding and which helps in reduction of clinker consumption in every tonne of cement. By this initiative, in FY23, we were able reduce clinker factor by 0.02 and almost 90000 Tonnes of CO2 emissions were avoided. Time Frame - 0 to 10 years
Operations	Yes	Strategy impacted by climate-related risks and opportunities: 1. Increased usage of industrial wastes such as slag, flyash, red mud, biomass, alternatives fuels to replace coal and usage of additives, thereby reducing clinker consumption in cement. Increased usage of alternative fuels by 30 to 40%, thus reducing the dependency of fossil fuels as well as reducing CO2 emissions. Implementing various energy conservation and efficiency measures such as switching to latest generation efficient equipment's, installation of VFD's, LED lighting, minimizing the idle running of the equipment's etc. 2. Exploring the possibilities of renewable energy usage in place of conventional energy. Implementation of Waste heat recovery systems (WHRS) wherever possible. Installation of solar power plant within the premises wherever possible or sourcing of renewable power. Thus overall it has a positive impact on climate change by reducing CO2 emissions. Time Frame - 0 to 10 years

C3.4

(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues Direct costs Indirect costs Capital expenditures Capital allocation Acquisitions and divestments Access to capital Assets	We are evaluating all the possibilities to minimize our impact on climate change in our entire value chain of operations. As part of this only, we have initiated installation of Waste Heat Recovery Systems (WHRS) in our existing plants and in all the upcoming projects WHRS is considered as default. Apart from WHRS, we have also projects for utilization of waste as fuel in our cement kiln thus increasing our TSR %. To do that, we are planning to have pre-processing system at our plant premises. Sourcing of renewable energy, up-gradation of existing infrastructure to energy efficient infrastructure. Case Study Last Year, As part of our climate risk mitigation, we have allocated ~ INR 433 Crore capex for implementation of WHRS and Kiln upgradation at our Nandyal Plant which is almost completed. Another initiative regarding supply chain, we are deploying heavy duty electric vehicles for transportation of raw materials with an estimated capex of INR 4 Crore initially for four vehicles which is soon to be delivered. This will have positive impact on our Scope-3 CO2 emissions. We have already approved budgets in place for implementing various projects which will help in mitigating CO2 emissions from our operations. The timelines of these projects vary from 1 to 3 years from now onwards.

C3.5

(C3.5) In your organization's financial accounting, do you identify spending/revenue that is aligned with your organization's climate transition?

	Identification of spending/revenue that is aligned with your organization's climate transition	Indicate the level at which you identify the alignment of your spending/revenue with a sustainable finance taxonomy
Row 1	Yes, we identify alignment with our climate transition plan	<Not Applicable>

C3.5a

(C3.5a) Quantify the percentage share of your spending/revenue that is aligned with your organization's climate transition.

Financial Metric
Revenue/Turnover

Type of alignment being reported for this financial metric
Alignment with our climate transition plan

Taxonomy under which information is being reported
<Not Applicable>

Objective under which alignment is being reported
<Not Applicable>

Amount of selected financial metric that is aligned in the reporting year (unit currency as selected in C0.4)
14010000000

Percentage share of selected financial metric aligned in the reporting year (%)
30

Percentage share of selected financial metric planned to align in 2025 (%)
35

Percentage share of selected financial metric planned to align in 2030 (%)
40

Describe the methodology used to identify spending/revenue that is aligned
While 90% of our total product portfolio is low carbon - PSC and GGBS (having emission intensity lesser than half of conventional product - i.e. OPC. We have defined low carbon (aligned to transition plan) based on the intensity of each product. We conducted the LCA and published EPD for PSC and GGBS. As per the results, PSC has the emission intensity of ~325 kg/T, GGBS has 60kg/T of intensity whereas OPC has 740 kg/T.

For above calculation on alignment with climate transition plan, we have only considered the revenue generated from the sale of GGBS . Currently this percentage is 30% which we plan to take to 35% by 2025 and 40% by 2030.

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?
Intensity target

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number
Int 1

Is this a science-based target?
Yes, we consider this a science-based target, and we have committed to seek validation of this target by the Science Based Targets initiative in the next two years

Target ambition
1.5°C aligned

Year target was set
2022

Target coverage
Company-wide

Scope(s)
Scope 1
Scope 2

Scope 2 accounting method
Location-based

Scope 3 category(ies)
<Not Applicable>

Intensity metric
Metric tons CO2e per metric ton of product

Base year
2021

Intensity figure in base year for Scope 1 (metric tons CO2e per unit of activity)
0.216

Intensity figure in base year for Scope 2 (metric tons CO2e per unit of activity)
0.046

Intensity figure in base year for Scope 3, Category 1: Purchased goods and services (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 2: Capital goods (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 5: Waste generated in operations (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 6: Business travel (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 7: Employee commuting (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 8: Upstream leased assets (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 10: Processing of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 11: Use of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 13: Downstream leased assets (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 14: Franchises (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 15: Investments (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Other (upstream) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Other (downstream) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for total Scope 3 (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for all selected Scopes (metric tons CO2e per unit of activity)
0.262

% of total base year emissions in Scope 1 covered by this Scope 1 intensity figure
100

% of total base year emissions in Scope 2 covered by this Scope 2 intensity figure
100

% of total base year emissions in Scope 3, Category 1: Purchased goods and services covered by this Scope 3, Category 1: Purchased goods and services intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 2: Capital goods covered by this Scope 3, Category 2: Capital goods intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) covered by this Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution covered by this Scope 3, Category 4: Upstream transportation and distribution intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 5: Waste generated in operations covered by this Scope 3, Category 5: Waste generated in operations intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 6: Business travel covered by this Scope 3, Category 6: Business travel intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 7: Employee commuting covered by this Scope 3, Category 7: Employee commuting intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 8: Upstream leased assets covered by this Scope 3, Category 8: Upstream leased assets intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution covered by this Scope 3, Category 9: Downstream transportation and distribution intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 10: Processing of sold products covered by this Scope 3, Category 10: Processing of sold products intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 11: Use of sold products covered by this Scope 3, Category 11: Use of sold products intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products covered by this Scope 3, Category 12: End-of-life treatment of sold products intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 13: Downstream leased assets covered by this Scope 3, Category 13: Downstream leased assets intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 14: Franchises covered by this Scope 3, Category 14: Franchises intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 15: Investments covered by this Scope 3, Category 15: Investments intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Other (upstream) covered by this Scope 3, Other (upstream) intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Other (downstream) covered by this Scope 3, Other (downstream) intensity figure
<Not Applicable>

% of total base year emissions in Scope 3 (in all Scope 3 categories) covered by this total Scope 3 intensity figure
<Not Applicable>

% of total base year emissions in all selected Scopes covered by this intensity figure
100

Target year
2026

Targeted reduction from base year (%)
15

Intensity figure in target year for all selected Scopes (metric tons CO2e per unit of activity) [auto-calculated]
0.2227

% change anticipated in absolute Scope 1+2 emissions
15

% change anticipated in absolute Scope 3 emissions
5

Intensity figure in reporting year for Scope 1 (metric tons CO2e per unit of activity)
0.173

Intensity figure in reporting year for Scope 2 (metric tons CO2e per unit of activity)
0.033

Intensity figure in reporting year for Scope 3, Category 1: Purchased goods and services (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 2: Capital goods (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 5: Waste generated in operations (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 6: Business travel (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 7: Employee commuting (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 8: Upstream leased assets (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 10: Processing of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 11: Use of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 13: Downstream leased assets (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 14: Franchises (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 15: Investments (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Other (upstream) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Other (downstream) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for total Scope 3 (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for all selected Scopes (metric tons CO2e per unit of activity)
0.206

Does this target cover any land-related emissions?
No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

% of target achieved relative to base year [auto-calculated]
142.493638676845

Target status in reporting year
Achieved

Please explain target coverage and identify any exclusions
The target is for Net CO2 emission intensity.The unit of the target T per T of cementitious products. (cement+ GGBS - purchased clinker). Scope of this target is our current operations in India - Nandyal, VJNR, Salboni, Jajpur, Dolvi, Shiva and Selam. While we have put many efforts for reduction of our emissions, but the primary reason for low carbon intensity is the lesser production of clinker. One of our manufacturing units was under upgradation for almost 3 months thus the clinker (which is the most emission intensity phase) production was lower than the previous year.

Plan for achieving target, and progress made to the end of the reporting year
<Not Applicable>

List the emissions reduction initiatives which contributed most to achieving this target
1. Increase in RE portfolio from 3.6% to 3.9%
2. Increase in thermal substitution rate from 7% to 8%
3. 20% Increase in GGBS portion (the low carbon product)
4. ~15% Lesser production of clinker than last year
5. Energy efficiency measures at plants

Target reference number

Int 2

Is this a science-based target?
Yes, we consider this a science-based target, and we have committed to seek validation of this target by the Science Based Targets initiative in the next two years

Target ambition
1.5°C aligned

Year target was set
2020

Target coverage
Company-wide

Scope(s)
Scope 1
Scope 2

Scope 2 accounting method
Location-based

Scope 3 category(ies)
<Not Applicable>

Intensity metric
Metric tons CO2e per metric ton of cement

Base year
2015

Intensity figure in base year for Scope 1 (metric tons CO2e per unit of activity)
0.335

Intensity figure in base year for Scope 2 (metric tons CO2e per unit of activity)
0.057

Intensity figure in base year for Scope 3, Category 1: Purchased goods and services (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 2: Capital goods (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 5: Waste generated in operations (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 6: Business travel (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 7: Employee commuting (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 8: Upstream leased assets (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 10: Processing of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 11: Use of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 13: Downstream leased assets (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 14: Franchises (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 15: Investments (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Other (upstream) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Other (downstream) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for total Scope 3 (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for all selected Scopes (metric tons CO2e per unit of activity)
0.394

% of total base year emissions in Scope 1 covered by this Scope 1 intensity figure
100

% of total base year emissions in Scope 2 covered by this Scope 2 intensity figure
100

% of total base year emissions in Scope 3, Category 1: Purchased goods and services covered by this Scope 3, Category 1: Purchased goods and services intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 2: Capital goods covered by this Scope 3, Category 2: Capital goods intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) covered by this Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution covered by this Scope 3, Category 4: Upstream transportation and distribution intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 5: Waste generated in operations covered by this Scope 3, Category 5: Waste generated in operations intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 6: Business travel covered by this Scope 3, Category 6: Business travel intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 7: Employee commuting covered by this Scope 3, Category 7: Employee commuting intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 8: Upstream leased assets covered by this Scope 3, Category 8: Upstream leased assets intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution covered by this Scope 3, Category 9: Downstream transportation and distribution intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 10: Processing of sold products covered by this Scope 3, Category 10: Processing of sold products intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 11: Use of sold products covered by this Scope 3, Category 11: Use of sold products intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products covered by this Scope 3, Category 12: End-of-life treatment of sold products intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 13: Downstream leased assets covered by this Scope 3, Category 13: Downstream leased assets intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 14: Franchises covered by this Scope 3, Category 14: Franchises intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 15: Investments covered by this Scope 3, Category 15: Investments intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Other (upstream) covered by this Scope 3, Other (upstream) intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Other (downstream) covered by this Scope 3, Other (downstream) intensity figure
<Not Applicable>

% of total base year emissions in Scope 3 (in all Scope 3 categories) covered by this total Scope 3 intensity figure
<Not Applicable>

% of total base year emissions in all selected Scopes covered by this intensity figure
100

Target year
2030

Targeted reduction from base year (%)
23

Intensity figure in target year for all selected Scopes (metric tons CO2e per unit of activity) [auto-calculated]
0.30338

% change anticipated in absolute Scope 1+2 emissions
1

% change anticipated in absolute Scope 3 emissions
0

Intensity figure in reporting year for Scope 1 (metric tons CO2e per unit of activity)
0.173

Intensity figure in reporting year for Scope 2 (metric tons CO2e per unit of activity)
0.033

Intensity figure in reporting year for Scope 3, Category 1: Purchased goods and services (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 2: Capital goods (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 5: Waste generated in operations (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 6: Business travel (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 7: Employee commuting (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 8: Upstream leased assets (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 10: Processing of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 11: Use of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 13: Downstream leased assets (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 14: Franchises (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 15: Investments (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Other (upstream) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Other (downstream) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for total Scope 3 (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for all selected Scopes (metric tons CO2e per unit of activity)
0.206

Does this target cover any land-related emissions?
No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

% of target achieved relative to base year [auto-calculated]
207.459721915692

Target status in reporting year
Achieved

Please explain target coverage and identify any exclusions
The target is for Net CO2 emission intensity . The scope of the target will be our current operations as well as few of our new projects. While we have put many efforts for reduction of our emissions, but the primary reason for low carbon intensity in FY23 is the lesser production of clinker, which is the most emission intensive phase. One of our manufacturing units was under upgradation for almost 3 months thus the clinker (which is the most emission intensity phase) production was lower than the previous year.

Plan for achieving target, and progress made to the end of the reporting year
<Not Applicable>

List the emissions reduction initiatives which contributed most to achieving this target
1. Increase in RE portfolio from 3.6% to 3.9%
2. Increase in thermal substitution rate from 7% to 8%
3. 20% Increase in GGBS portion (the low carbon product)
4. ~15% Lesser production of clinker than last year
5. Energy efficiency measures at plants

Target reference number
Int 3

Is this a science-based target?
Yes, we consider this a science-based target, and we have committed to seek validation of this target by the Science Based Targets initiative in the next two years

Target ambition

1.5°C aligned

Year target was set
2020

Target coverage
Company-wide

Scope(s)
Scope 1
Scope 2

Scope 2 accounting method
Location-based

Scope 3 category(ies)
<Not Applicable>

Intensity metric
Metric tons CO2e per metric ton of product

Base year
2015

Intensity figure in base year for Scope 1 (metric tons CO2e per unit of activity)
0.336

Intensity figure in base year for Scope 2 (metric tons CO2e per unit of activity)
0.057

Intensity figure in base year for Scope 3, Category 1: Purchased goods and services (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 2: Capital goods (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 5: Waste generated in operations (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 6: Business travel (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 7: Employee commuting (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 8: Upstream leased assets (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 10: Processing of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 11: Use of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 13: Downstream leased assets (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 14: Franchises (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 15: Investments (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Other (upstream) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Other (downstream) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for total Scope 3 (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for all selected Scopes (metric tons CO2e per unit of activity)
0.393

% of total base year emissions in Scope 1 covered by this Scope 1 intensity figure
100

% of total base year emissions in Scope 2 covered by this Scope 2 intensity figure
100

% of total base year emissions in Scope 3, Category 1: Purchased goods and services covered by this Scope 3, Category 1: Purchased goods and services intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 2: Capital goods covered by this Scope 3, Category 2: Capital goods intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) covered by this Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution covered by this Scope 3, Category 4: Upstream transportation and distribution intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 5: Waste generated in operations covered by this Scope 3, Category 5: Waste generated in operations intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 6: Business travel covered by this Scope 3, Category 6: Business travel intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 7: Employee commuting covered by this Scope 3, Category 7: Employee commuting intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 8: Upstream leased assets covered by this Scope 3, Category 8: Upstream leased assets intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution covered by this Scope 3, Category 9: Downstream transportation and distribution intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 10: Processing of sold products covered by this Scope 3, Category 10: Processing of sold products intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 11: Use of sold products covered by this Scope 3, Category 11: Use of sold products intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products covered by this Scope 3, Category 12: End-of-life treatment of sold products intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 13: Downstream leased assets covered by this Scope 3, Category 13: Downstream leased assets intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 14: Franchises covered by this Scope 3, Category 14: Franchises intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 15: Investments covered by this Scope 3, Category 15: Investments intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Other (upstream) covered by this Scope 3, Other (upstream) intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Other (downstream) covered by this Scope 3, Other (downstream) intensity figure
<Not Applicable>

% of total base year emissions in Scope 3 (in all Scope 3 categories) covered by this total Scope 3 intensity figure
<Not Applicable>

% of total base year emissions in all selected Scopes covered by this intensity figure
100

Target year
2050

Targeted reduction from base year (%)
95

Intensity figure in target year for all selected Scopes (metric tons CO2e per unit of activity) [auto-calculated]
0.01965

% change anticipated in absolute Scope 1+2 emissions
-95

% change anticipated in absolute Scope 3 emissions
-30

Intensity figure in reporting year for Scope 1 (metric tons CO2e per unit of activity)
0.173

Intensity figure in reporting year for Scope 2 (metric tons CO2e per unit of activity)
0.33

Intensity figure in reporting year for Scope 3, Category 1: Purchased goods and services (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 2: Capital goods (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 5: Waste generated in operations (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 6: Business travel (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 7: Employee commuting (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 8: Upstream leased assets (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 10: Processing of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 11: Use of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 13: Downstream leased assets (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 14: Franchises (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 15: Investments (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Other (upstream) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Other (downstream) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for total Scope 3 (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for all selected Scopes (metric tons CO2e per unit of activity)
0.206

Does this target cover any land-related emissions?
No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

% of target achieved relative to base year [auto-calculated]
50.0870496852819

Target status in reporting year
Underway

Please explain target coverage and identify any exclusions
The target is for scope 1+scope 2 net emission intensity, where in we plan to reduce the intensity by 95% by 2050. The scope of the target will be our current operations as well as few of our new projects.

Plan for achieving target, and progress made to the end of the reporting year
We have identified following milestones and initiatives for reaching our net zero target.

Short Term (0-3 years) - During this period, We plan to increase our Clean Energy (WHRS and RE) portfolio by 30%, our Thermal Substitution Rate by 20% and to improvement our energy intensities. We will be making investments around these at our respective locations.
Medium Term (3-10 Years): 1. Increase in RE portfolio to 50-60% . 2. Increase in thermal substitution rate to >30%, To commercially launch our low carbon products - LC3, Geopolymer , Exploration of CCUS technology and one pilot demonstration in collaboration with partners.
Long Term (10-30 Years) - Increase of low carbon product portfolio, Technology upgradation (basis the development around this), 100% Clean energy portfolio by 2050. We may also go for 50% of TSR (depending on the material availability and technological advancement). commercializing and implementation of CCUS technologies.

We will also be working biological carbon sequestration projects to partially compensate our residual emissions.

While we have put many efforts for reduction of our emissions, but the primary reason for low carbon intensity in FY23 is the lesser production of clinker, which is the most emission intensive phase. One of our manufacturing units was under upgradation for almost 3 months thus the clinker (which is the most emission intensity phase) production was lower than the previous year.

1. Increase in RE portfolio from 3.6% to 3.9%
2. Increase in thermal substitution rate from 7% to 8%
3. 20% Increase in GGBS portion (the low carbon product)
4. ~15% Lesser production of clinker than last year
5. Energy efficiency measures at plants

List the emissions reduction initiatives which contributed most to achieving this target
<Not Applicable>

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?
Target(s) to increase low-carbon energy consumption or production
Net-zero target(s)

C4.2a

(C4.2a) Provide details of your target(s) to increase low-carbon energy consumption or production.

Target reference number
Low 1

Year target was set
2021

Target coverage
Company-wide

Target type: energy carrier
Heat

Target type: activity
Consumption

Target type: energy source
Low-carbon energy source(s)

Base year
2020

Consumption or production of selected energy carrier in base year (MWh)
59540

% share of low-carbon or renewable energy in base year
4.5

Target year
2030

% share of low-carbon or renewable energy in target year
30

% share of low-carbon or renewable energy in reporting year
8

% of target achieved relative to base year [auto-calculated]
13.7254901960784

Target status in reporting year
Underway

Is this target part of an emissions target?
Yes

Is this target part of an overarching initiative?
Other, please specify (We have signed the UN Energy compact as per which we have taken a target for Thermal Substitution Rate of 20%)

Please explain target coverage and identify any exclusions
This target is for whole company without any exclusions. To reduce our dependence on coal, we have taken a target of thermal substitution rate from the base of 4.5% (FY21) to 30% by 2030 (FY31).

Plan for achieving target, and progress made to the end of the reporting year
-Have increased the use of AFR (have achieved upto 15% of TSR)
-Sourcing of legacy waste (RDF) from different suppliers
-Building storage, and co-processing capacities at Nandyal and Shiva by investing in latest technologies and systems

List the actions which contributed most to achieving this target
<Not Applicable>

Target reference number
Low 2

Year target was set
2021

Target coverage
Company-wide

Target type: energy carrier
Electricity

Target type: activity

Consumption

Target type: energy source
Renewable energy source(s) only

Base year
2020

Consumption or production of selected energy carrier in base year (MWh)
11504567

% share of low-carbon or renewable energy in base year
3

Target year
2030

% share of low-carbon or renewable energy in target year
60

% share of low-carbon or renewable energy in reporting year
4

% of target achieved relative to base year [auto-calculated]
1.75438596491228

Target status in reporting year
Underway

Is this target part of an emissions target?
Yes this is a part of emission target

Is this target part of an overarching initiative?
RE100

Please explain target coverage and identify any exclusions
We have taken a target of increasing our clean energy portfolio by 60% (FY31) from the baseline of 3%(FY21)
Under Clean energy scope, we have considered renewable energy as well as Waste Heat Recovery System.

Plan for achieving target, and progress made to the end of the reporting year
JSW Cement has consumed 4% of green & Clean energy in FY23. The company has current installed capacity of (Total 26.5 MW) of solar power plants in Nandyal (15.5), Vijayanagar (8MW) and the Salboni (3.5 MW) units, respectively. We have consumed 16 million units of solar power in FY 2022-23. The company is also investing in new renewable energy projects primarily solar project to further enhance the share of green energy in total power consumption. The company has committed to RE100 as per which it will reach 60% RE by 2030, 90% by 2040 and 100% RE by 2050.

JSW Cement has recently installed Waste Heat Recovery Systems (WHRS) of 12.3 MW and 9.0 MW capacity at the Nandyal and Shiva cement units respectively. Thus the company has built a total of ~48 MW of non-fossil energy capacity which we will increase in coming years.

List the actions which contributed most to achieving this target
<Not Applicable>

C4.2c

(C4.2c) Provide details of your net-zero target(s).

Target reference number
NZ1

Target coverage
Company-wide

Absolute/intensity emission target(s) linked to this net-zero target
Int1
Int2
Int3

Target year for achieving net zero
2050

Is this a science-based target?
Yes, we consider this a science-based target, and we have committed to seek validation of this target by the Science Based Targets initiative in the next two years

Please explain target coverage and identify any exclusions
We have committed to Net Zero Target by 2050 through various public commitments including SBTi. However long term and short terms targets are yet to be validated.

Do you intend to neutralize any unabated emissions with permanent carbon removals at the target year?
Yes

Planned milestones and/or near-term investments for neutralization at target year
We have identified initiatives, target and and milestone as below
Short Term (0-3 years) - During this period, We plan to increase our Clean Energy (WHRS and RE) portfolio by 30%, our Thermal Substitution Rate by 20% and to improvement our energy intensities. We will be making investments around these at our respective locations.
Medium Term (3-10 Years): 1. Increase in RE portfolio to 50-60% . 2. Increase in thermal substitution rate to >30%, To commercially launch our low carbon products - LC3, Geopolymer , Exploration of CCUS technology and one pilot demonstration in collaboration with partners.
Long Term (10-30 Years) - Increase of low carbon product portfolio, Technology upgradation (basis the development around this), 100% Clean energy portfolio by 2050. We may also go for 50% of TSR (depending on the material availability and technological advancement.

We will also be working biological carbon sequestration projects to partially compensate our residual emissions.

Planned actions to mitigate emissions beyond your value chain (optional)
As we have committed to EV100, we have also planned to reduce our Scope 3 emission through variety of measures and initiatives.
Raw material Transport and product transport through bulk/rail or EVs
Distance lead optimization
Local sourcing from nearby locations as much possible
Supply chain engagements on sustainability
Awareness on embodied and operational carbon among customers etc.

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.
Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	6	71002
To be implemented*	12	52429
Implementation commenced*	18	101281
Implemented*	26	148643.84
Not to be implemented	0	0

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Low-carbon energy consumption	Solid biofuels

Estimated annual CO2e savings (metric tonnes CO2e)
22227

Scope(s) or Scope 3 category(ies) where emissions savings occur
Scope 1
Scope 3 category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
62500000

Investment required (unit currency – as specified in C0.4)
250000000

Payback period
1-3 years

Estimated lifetime of the initiative
>30 years

Comment
This saving is from one project on Alternative Fuels at Nandyal. Annual Thermal Substitution rate was 8% for FY23 for which Energy from waste sources (290TJ) and including biomass (90TJ) out of total ~4500 TJ. Biomass is carbon neutral but waste has an emission factor of 76.6 kg/GJ, it was calculated as 22,227 T of avoided emissions. We plan to increase th TSR in coming year by 15% that is why the payback period will be lesser than 3 years.

Initiative category & Initiative type

Waste reduction and material circularity	Product/component/material recycling

Estimated annual CO2e savings (metric tonnes CO2e)
94064.13

Scope(s) or Scope 3 category(ies) where emissions savings occur
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
207494424

Investment required (unit currency – as specified in C0.4)
50000000

Payback period
<1 year

Estimated lifetime of the initiative
Ongoing

Comment
Our R&D efforts are on to reduce the clinker percentage in our PSC and composite Cement while meeting the legal norms. Coming from 5 projects at different locations, we have reduced our clinker factor by 2% which has helped us to reduce the overall CO2 emissions also. Though this We have saved 115274 T of clinker and considering the clinker emission factor of 0.816 T, we have avoided 94,064 T of CO2. The cost mentioned is towards use of performance enhancers which is specialized materials. The payback period mentioned in approximate/average.

Initiative category & Initiative type

Energy efficiency in production processes	Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)
32344

Scope(s) or Scope 3 category(ies) where emissions savings occur
Scope 1
Scope 2 (market-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
18300000

Investment required (unit currency – as specified in C0.4)
9000000

Payback period
<1 year

Estimated lifetime of the initiative
6-10 years

Comment
This includes all the energy efficiency measures and initiatives around thermal and electrical energy
With almost 20 projects on energy efficiency and saving were calculated from power saving and multiplying with grid emission factor. Overall we have reduced 32,344 T.
The payback period mentioned in approximate/average.

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Compliance with regulatory requirements/standards	In view of promoting sustainable development, Government of India has come up with several acts, rules and notification. PAT is one of the examples of regulatory framework by BEE.
Dedicated budget for energy efficiency	Energy is one of the major cost lever of our operations and we continuously implement various measures in energy efficiency.
Dedicated budget for low-carbon product R&D	We continuously strive to improve our product performance as well as CO2 performance. We have dedicated team in R&D to improve our clinker factor by using waste materials such as slag thus reducing CO2 emissions.
Employee engagement	We encourage employees in implementing CO2 reduction initiatives such identifying energy reduction measures and other related activities. Ideas were discussed during tool box talk, visiting the shopfloor etc.
Dedicated budget for other emissions reduction activities	We continuously improve of our emission performance by installation of air emission control equipment's such as ESPs, Bag House or Bag Filters etc as applicable.
Internal price on carbon	1. Prioritize the climate change related risks & opportunities 2. Make informed decisions & incentivize low cost abatement options 3. As a preparatory tool for future government climate change policies. JSW cement has adopted USD 21/tonne as the shadow internal carbon price.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products.

Level of aggregation

Group of products or services

Taxonomy used to classify product(s) or service(s) as low-carbon

Other, please specify (Comparison between CO2 emissions from Ordinary Portland Cement (OPC) with our products.))

Type of product(s) or service(s)

Cement and concrete	Other, please specify (Most of our cement products i.e PSC, CHD, CompoCem & GGBS are low carbon products.)

Description of product(s) or service(s)

Most of our cement products i.e PSC, CHD, Compo Cem
We have used the following criteria for defining low carbon products
To have at least a 50% lower specific CO2 emissions than a local industry average product / baseline such as OPC.
We have done the validation Life Cycle Assessment / Environmental Product Declarations published by us.

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

Yes

Methodology used to calculate avoided emissions

Methodology for Environmental Life-Cycle Assessment of Information and Communication Technology Goods, Networks and Services (ITU-TL.1410)

Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Cradle-to-gate

Functional unit used

T of OPC Vs T of PSC

Reference product/service or baseline scenario used

Ordinary Portland Cement

Life cycle stage(s) covered for the reference product/service or baseline scenario

Gate-to-gate

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

0.417

Explain your calculation of avoided emissions, including any assumptions

Ordinary portland cement has a GWP around 742 kg/T (GCCA reference).
Our PSC has GWP of 325 kg/T (EPD)
We have used the difference (742-325) - 417 kg for PSC.

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

50

Level of aggregation

Product or service

Taxonomy used to classify product(s) or service(s) as low-carbon
Other, please specify (Comparison between CO2 emissions from Ordinary Portland Cement (OPC) with GGBS)

Type of product(s) or service(s)

Cement and concrete	Other, please specify (GGBS are low carbon products.)

Description of product(s) or service(s)
GGBS are low carbon products.

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)
Yes

Methodology used to calculate avoided emissions
Methodology for Environmental Life-Cycle Assessment of Information and Communication Technology Goods, Networks and Services (ITU-TL.1410)

Life cycle stage(s) covered for the low-carbon product(s) or services(s)
Cradle-to-gate

Functional unit used
T of GGBS vs T of OPC

Reference product/service or baseline scenario used
OPC

Life cycle stage(s) covered for the reference product/service or baseline scenario
Gate-to-gate

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario
682

Explain your calculation of avoided emissions, including any assumptions
Ordinary portland cement has a GWP around 742 kg/T (GCCA reference).
GGBS has GWP of 60kg/T
We have used the difference (742-60) - 682 kg for PSC.

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year
30

C-CE4.9

(C-CE4.9) Disclose your organization's best available techniques as a percentage of Portland cement clinker production capacity.

	Total production capacity coverage (%)
4+ cyclone preheating	100
Pre-calciner	100

C5. Emissions methodology

C5.1

(C5.1) Is this your first year of reporting emissions data to CDP?
No

C5.1a

(C5.1a) Has your organization undergone any structural changes in the reporting year, or are any previous structural changes being accounted for in this disclosure of emissions data?

Row 1

Has there been a structural change?
No

Name of organization(s) acquired, divested from, or merged with
<Not Applicable>

Details of structural change(s), including completion dates
<Not Applicable>

C5.1b

(C5.1b) Has your emissions accounting methodology, boundary, and/or reporting year definition changed in the reporting year?

	Change(s) in methodology, boundary, and/or reporting year definition?	Details of methodology, boundary, and/or reporting year definition change(s)
Row 1	Yes, a change in methodology	Earlier we used to report location based and market based emissions. From this year onwards, we will be reporting only location based emissions which will take into account only the grid electricity (with CEA emission factor) and the renewable power (with zero emissions factor) which we are consuming through Power Purchase Agreement.

C5.1c

(C5.1c) Have your organization's base year emissions and past years' emissions been recalculated as a result of any changes or errors reported in C5.1a and/or C5.1b?

	Base year recalculation	Scope(s) recalculated	Base year emissions recalculation policy, including significance threshold	Past years' recalculation
Row 1	Yes	Scope 2, location-based Scope 2, market-based	Scope 2, market-based emissions for base year and past years will be reported as zero . Location based emissions of past years will also be recalculated.	Yes

C5.2

(C5.2) Provide your base year and base year emissions.

Scope 1

Base year start
April 1 2014

Base year end
March 31 2015

Base year emissions (metric tons CO2e)
992149

Comment
Scope 1 Emissions (Net) excluding emissions from Alternative Fuels.

Scope 2 (location-based)

Base year start
April 1 2014

Base year end
March 31 2015

Base year emissions (metric tons CO2e)
139441

Comment
Scope 2 Emissions from purchased electricity

Scope 2 (market-based)

Base year start
April 1 2014

Base year end
March 31 2015

Base year emissions (metric tons CO2e)
0

Comment
We account for Location-based emissions in scope 2.

Scope 3 category 1: Purchased goods and services

Base year start
April 1 2020

Base year end
March 31 2021

Base year emissions (metric tons CO2e)
332866

Comment
All primary raw materials including Clinker

Scope 3 category 2: Capital goods

Base year start
April 1 2020

Base year end
March 31 2021

Base year emissions (metric tons CO2e)
0

Comment
As per an assessment made in Scope 3 GHG Accounting and Reporting Guidance, developed by the WBCSD Cement Sustainability Initiative and considering the share of these emissions within the total Scope 3 emissions for the cement industry, the source "Capital Goods" has been considered as not relevant.

Scope 3 category 3: Fuel-and-energy-related activities (not included in Scope 1 or 2)

Base year start
April 1 2020

Base year end
March 31 2021

Base year emissions (metric tons CO2e)
0

Comment
Primary fuels - Coal and petcoke

Scope 3 category 4: Upstream transportation and distribution

Base year start
April 1 2020

Base year end
March 31 2021

Base year emissions (metric tons CO2e)
65772

Comment
Upstream transportation through trucks and trains for all raw materials and fuels

Scope 3 category 5: Waste generated in operations

Base year start
April 1 2020

Base year end
March 31 2021

Base year emissions (metric tons CO2e)
0

Comment
As per an assessment made in Scope 3 GHG Accounting and Reporting Guidance, developed by the WBCSD Cement Sustainability Initiative and considering the share of these emissions within the total Scope 3 emissions for the cement industry, the source "Waste Generated in operations" has been considered as not relevant.

Scope 3 category 6: Business travel

Base year start
April 1 2020

Base year end
March 31 2021

Base year emissions (metric tons CO2e)
3175

Comment
Official Travel (air)

Scope 3 category 7: Employee commuting

Base year start
April 1 2020

Base year end
March 31 2021

Base year emissions (metric tons CO2e)
1361

Comment
As per an assessment made in Scope 3 GHG Accounting and Reporting Guidance, developed by the WBCSD Cement Sustainability Initiative and considering the share of these emissions within the total Scope 3 emissions for the cement industry, the source "Employee commuting" has been considered as not relevant.

Scope 3 category 8: Upstream leased assets

Base year start
April 1 2020

Base year end
March 31 2021

Base year emissions (metric tons CO2e)
0

Comment
As per an assessment made in Scope 3 GHG Accounting and Reporting Guidance, developed by the WBCSD Cement Sustainability Initiative and considering the share of these emissions within the total Scope 3 emissions for the cement industry, the source "Upstream Leased assets" has been considered as not relevant.

Scope 3 category 9: Downstream transportation and distribution

Base year start
April 1 2020

Base year end
March 31 2021

Base year emissions (metric tons CO2e)
156492

Comment
Downstream transportation through trucks and trains.

Scope 3 category 10: Processing of sold products

Base year start
April 1 2020

Base year end
March 31 2021

Base year emissions (metric tons CO2e)
0

Comment
As per an assessment made in Scope 3 GHG Accounting and Reporting Guidance, developed by the WBCSD Cement Sustainability Initiative and considering the share of these emissions within the total Scope 3 emissions for the cement industry, the source "processing of sold products" has been considered as not relevant.

Scope 3 category 11: Use of sold products

Base year start
April 1 2020

Base year end
March 31 2021

Base year emissions (metric tons CO2e)
0

Comment
As per an assessment made in Scope 3 GHG Accounting and Reporting Guidance, developed by the WBCSD Cement Sustainability Initiative and considering the share of these emissions within the total Scope 3 emissions for the cement industry, the source "use of sold products" has been considered as not relevant.

Scope 3 category 12: End of life treatment of sold products

Base year start
April 1 2020

Base year end
March 31 2021

Base year emissions (metric tons CO2e)
0

Comment
As per an assessment made in Scope 3 GHG Accounting and Reporting Guidance, developed by the WBCSD Cement Sustainability Initiative and considering the share of these emissions within the total Scope 3 emissions for the cement industry, the source "End of life treatment of sold product" has been considered as not relevant.

Scope 3 category 13: Downstream leased assets

Base year start
April 1 2020

Base year end
March 31 2021

Base year emissions (metric tons CO2e)
0

Comment
As per an assessment made in Scope 3 GHG Accounting and Reporting Guidance, developed by the WBCSD Cement Sustainability Initiative and considering the share of these emissions within the total Scope 3 emissions for the cement industry, the source "Downstream leased assets" has been considered as not relevant.

Scope 3 category 14: Franchises

Base year start
April 1 2020

Base year end
March 31 2021

Base year emissions (metric tons CO2e)
0

Comment
As per an assessment made in Scope 3 GHG Accounting and Reporting Guidance, developed by the WBCSD Cement Sustainability Initiative and considering the share of these emissions within the total Scope 3 emissions for the cement industry, the source "Franchisee" has been considered as not relevant.

Scope 3 category 15: Investments

Base year start
April 1 2020

Base year end
March 31 2021

Base year emissions (metric tons CO2e)
0

Comment
As per an assessment made in Scope 3 GHG Accounting and Reporting Guidance, developed by the WBCSD Cement Sustainability Initiative and considering the share of these emissions within the total Scope 3 emissions for the cement industry, the source "investments" has been considered as not relevant.

Scope 3: Other (upstream)

Base year start
April 1 2020

Base year end
March 31 2021

Base year emissions (metric tons CO2e)
0

Comment
Not relevant so not calculated

Scope 3: Other (downstream)

Base year start
April 1 2020

Base year end
March 31 2021

Base year emissions (metric tons CO2e)
0

Comment
Not relevant so not calculated

C5.3

(C5.3) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.
India GHG Inventory Programme
IPCC Guidelines for National Greenhouse Gas Inventories, 2006
ISO 14064-1
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
WBCSD: The Cement CO2 and Energy Protocol

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)
1536549

Start date
April 1 2022

End date
March 31 2023

Comment
Gross emissions

Past year 1

Gross global Scope 1 emissions (metric tons CO2e)
1776102.3

Start date
April 1 2021

End date
March 31 2022

Comment
Gross emissions

Past year 2

Gross global Scope 1 emissions (metric tons CO2e)
1590391

Start date
April 1 2020

End date
March 31 2021

Comment
Gross emissions

Past year 3

Gross global Scope 1 emissions (metric tons CO2e)
1398609

Start date
April 1 2019

End date
March 31 2020

Comment
Gross emissions

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based
We are reporting a Scope 2, location-based figure

Scope 2, market-based
We have no operations where we are able to access electricity supplier emission factors or residual emissions factors and are unable to report a Scope 2, market-based figure

Comment
We are reporting our scope-2 CO2 emissions location based calculated based upon the latest CEA guidelines - CO2 Baseline Database for the Indian Power Sector v 18.0 considering CO2 emission factor of 0.71 for the Indian Grid electricity.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based
288027.56

Scope 2, market-based (if applicable)
<Not Applicable>

Start date
April 1 2022

End date
March 31 2023

Comment
For Gross/net, We are reporting our scope-2 CO2 emissions location based calculated based upon the latest CEA guidelines - CO2 Baseline Database for the Indian Power Sector v 18.0 considering CO2 emission factor of 0.71 for the Indian Grid electricity.
.

Past year 1

Scope 2, location-based
352116.9

Scope 2, market-based (if applicable)
<Not Applicable>

Start date
April 1 2021

End date
March 31 2022

Comment
We are reporting our scope-2 CO2 emissions location based calculated based upon the latest CEA guidelines - CO2 Baseline Database for the Indian Power Sector v 17.0 considering CO2 emission factor of 0.91 for the Indian Grid electricity.

Past year 2

Scope 2, location-based
322123

Scope 2, market-based (if applicable)
<Not Applicable>

Start date
April 1 2020

End date
March 31 2021

Comment
We are reporting our scope-2 CO2 emissions location based calculated based upon the latest CEA guidelines - CO2 Baseline Database for the Indian Power Sector v 16.0 considering CO2 emission factor of 0.91 for the Indian Grid electricity.

Past year 3

Scope 2, location-based
317706

Scope 2, market-based (if applicable)
<Not Applicable>

Start date
April 1 2019

End date
March 31 2020

Comment
We are reporting our scope-2 CO2 emissions location based calculated based upon the latest CEA guidelines - CO2 Baseline Database for the Indian Power Sector v 15.0 considering CO2 emission factor of 0.91 for the Indian Grid electricity.

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1, Scope 2 or Scope 3 emissions that are within your selected reporting boundary which are not included in your disclosure?
No

C6.5

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
710196

Emissions calculation methodology
Supplier-specific method
Distance-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
70

Please explain
Emissions are calculated according to the Cement Sector Scope 3 GHG Accounting and Reporting Guidance developed by the WBCSD Cement Sustainability Initiative. The category 1 emission has been calculated by multiplying the quantity of material with the emission factor for the same which were taken from GAbi. For clinker, emissions factor are taken from public disclosure.

Capital goods

Evaluation status
Not relevant, calculated

Emissions in reporting year (metric tons CO2e)
14537

Emissions calculation methodology
Average spend-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Please explain
We have taken the CAPEX spend amount and used the USEPA factor supply chain emission factors for different categories of capital goods. We also collected the details of asset and got their embodied emission details for example steel.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
80802

Emissions calculation methodology
Average data method
Fuel-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
15

Please explain
Scope 3 emissions from Fuel and energy related activities are calculated according to the Cement Sector Scope 3 GHG Accounting and Reporting Guidance developed by the WBCSD Cement Sustainability Initiative. The category 3 emission has been calculated by multiplying the quantity of material with the emission factor.

Upstream transportation and distribution

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
68915

Emissions calculation methodology
Distance-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
90

Please explain
Emissions are calculated according to the Cement Sector Scope 3 GHG Accounting and Reporting Guidance developed by the WBCSD Cement Sustainability Initiative. The category 4 emission has been calculated by multiplying the quantity of material with the distance to which it is transported and emission factor of the transport medium.

Waste generated in operations

Evaluation status
Not relevant, calculated

Emissions in reporting year (metric tons CO2e)
22152

Emissions calculation methodology
Supplier-specific method
Distance-based method
Waste-type-specific method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
20

Please explain
Emission caused due to waste disposal activity for the waste treated internally & at authorized waste handler as per the guidance provided by statutory body in waste authorisation. Though as per an assessment made in Scope 3 GHG Accounting and Reporting Guidance, developed by the WBCSD Cement Sustainability Initiative and considering the share of these emissions within the total Scope 3 emissions for the cement industry, the source "Waste Generated in operations" has been considered as not relevant. Still we have calculated.

Business travel

Evaluation status
Not relevant, calculated

Emissions in reporting year (metric tons CO2e)
734

Emissions calculation methodology
Supplier-specific method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Please explain
Emissions on account of travel is given by our supplier. Details are obtained by JSW Travel Desk who manages employee travel bookings.
Though as per an assessment made in Scope 3 GHG Accounting and Reporting Guidance, developed by the WBCSD Cement Sustainability Initiative and considering the share of these emissions within the total Scope 3 emissions for the cement industry, the source "Business Travel" has been considered as not relevant. Still we have calculated.

Employee commuting

Evaluation status
Not relevant, calculated

Emissions in reporting year (metric tons CO2e)
1240

Emissions calculation methodology
Distance-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Please explain
We calculated the total distance traveled by our employees and their mode of transport and then calculated by emission factor.
2. For other road travel, calculations are done on the basis of fuel consumption (Diesel)- [{Fuel consumption (L)} * {Energy conversion factor of fuel (GJ / MT) * Density of fuel (kg / L)} * Emission factor of fuel (tCO2 / GJ)] / 1000 Used WRI GHG tool & IPCC emission factors.

Upstream leased assets

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
We do not have any upstream leased assets. Also as per an assessment made in Scope 3 GHG Accounting and Reporting Guidance, developed by the WBCSD Cement Sustainability Initiative and considering the share of these emissions within the total Scope 3 emissions for the cement industry, the source "Upstream Leased assets" has been considered as not relevant.

Downstream transportation and distribution

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
86691

Emissions calculation methodology
Average data method
Distance-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
30

Please explain
The emissions from finished or semi-finished products transportation and calculated based upon average emissions. Emission factor has been used are from Indian Govt guidelines

Processing of sold products

Evaluation status
Not relevant, calculated

Emissions in reporting year (metric tons CO2e)
86400

Emissions calculation methodology
Supplier-specific method
Average data method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
40

Please explain
As per an assessment made in Scope 3 GHG Accounting and Reporting Guidance, developed by the WBCSD Cement Sustainability Initiative and considering the share of these emissions within the total Scope 3 emissions for the cement industry, the source "processing of sold products" has been considered as not relevant. Still we have calculated the emissions

Use of sold products

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
0

Emissions calculation methodology
Hybrid method
Average product method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
20

Please explain
Use of sold products and end of life emissions, cement and concrete are known to uptake CO2 emission rather than releasing it. As of now we have put zero as we can not put -ve value

End of life treatment of sold products

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
0

Emissions calculation methodology
Hybrid method
Average data method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Use of sold products and end of life emissions, cement and concrete are known to uptake CO2 emission rather than releasing it. As of now we have put zero as we can not put -ve value

Downstream leased assets

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
As per an assessment made in Scope 3 GHG Accounting and Reporting Guidance, developed by the WBCSD Cement Sustainability Initiative and considering the share of these emissions within the total Scope 3 emissions for the cement industry, the source "Downstream Leased assets" has been considered as not relevant

Franchises

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
As per an assessment made in Scope 3 GHG Accounting and Reporting Guidance, developed by the WBCSD Cement Sustainability Initiative and considering the share of these emissions within the total Scope 3 emissions for the cement industry, the source "FRanchise" has been considered as not relevant.

Investments

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
As per an assessment made in Scope 3 GHG Accounting and Reporting Guidance, developed by the WBCSD Cement Sustainability Initiative and considering the share of these emissions within the total Scope 3 emissions for the cement industry, the source "Investments" has been considered as not relevant.

Other (upstream)

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
As per an assessment made in Scope 3 GHG Accounting and Reporting Guidance, developed by the WBCSD Cement Sustainability Initiative, this category is not relevant.

Other (downstream)

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
As per an assessment made in Scope 3 GHG Accounting and Reporting Guidance, developed by the WBCSD Cement Sustainability Initiative, this category is not relevant.

C6.5a

(C6.5a) Disclose or restate your Scope 3 emissions data for previous years.

Past year 1

Start date
April 1 2021

End date
March 31 2022

Scope 3: Purchased goods and services (metric tons CO2e)
488679

Scope 3: Capital goods (metric tons CO2e)
0

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)
84498

Scope 3: Upstream transportation and distribution (metric tons CO2e)
36457

Scope 3: Waste generated in operations (metric tons CO2e)
0

Scope 3: Business travel (metric tons CO2e)
186.106

Scope 3: Employee commuting (metric tons CO2e)
0

Scope 3: Upstream leased assets (metric tons CO2e)
0

Scope 3: Downstream transportation and distribution (metric tons CO2e)
68859.559

Scope 3: Processing of sold products (metric tons CO2e)
0

Scope 3: Use of sold products (metric tons CO2e)
0

Scope 3: End of life treatment of sold products (metric tons CO2e)
0

Scope 3: Downstream leased assets (metric tons CO2e)
0

Scope 3: Franchises (metric tons CO2e)
0

Scope 3: Investments (metric tons CO2e)
0

Scope 3: Other (upstream) (metric tons CO2e)
0

Scope 3: Other (downstream) (metric tons CO2e)
0

Comment
Last Year we have calculated the scope 3 emissions for 5 categories only.

Past year 2

Start date
April 1 2020

End date
March 31 2021

Scope 3: Purchased goods and services (metric tons CO2e)
332866

Scope 3: Capital goods (metric tons CO2e)
0

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)
0

Scope 3: Upstream transportation and distribution (metric tons CO2e)
65772

Scope 3: Waste generated in operations (metric tons CO2e)
0

Scope 3: Business travel (metric tons CO2e)
3175

Scope 3: Employee commuting (metric tons CO2e)
1361

Scope 3: Upstream leased assets (metric tons CO2e)
0

Scope 3: Downstream transportation and distribution (metric tons CO2e)
156492

Scope 3: Processing of sold products (metric tons CO2e)
0

Scope 3: Use of sold products (metric tons CO2e)
0

Scope 3: End of life treatment of sold products (metric tons CO2e)
0

Scope 3: Downstream leased assets (metric tons CO2e)
0

Scope 3: Franchises (metric tons CO2e)
0

Scope 3: Investments (metric tons CO2e)
0

Scope 3: Other (upstream) (metric tons CO2e)
0

Scope 3: Other (downstream) (metric tons CO2e)
0

Comment
Last Year we have calculated the scope 3 emissions for 5 categories only.

C6.7

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?
Yes

C6.7a

(C6.7a) Provide the emissions from biogenic carbon relevant to your organization in metric tons CO2.

	CO2 emissions from biogenic carbon (metric tons CO2)	Comment
Row 1	8901	We have used Biomass waste as fuel.

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure
0.00000315

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)
1824576.76

Metric denominator
unit total revenue

Metric denominator: Unit total
57850000000

Scope 2 figure used
Location-based

% change from previous year
40

Direction of change
Decreased

Reason(s) for change
Change in output
Change in revenue

Please explain
We have produced lesser clinker which is most emission intensive production stage thus our absolute emissions have reduced by 14%. But we overall increased our production and thus the revenue increased by almost 35% from last year. As a result, our intensity has reduced significantly.

C-CE6.11

(C-CE6.11) State your organization's Scope 1 and Scope 2 emissions intensities related to cement production activities.

	Gross Scope 1 emissions intensity, metric tons CO2e per metric ton	Net Scope 1 emissions intensity, metric tons CO2e per metric ton	Scope 2, location-based emissions intensity, metric tons CO2e per metric ton
Clinker	0.968	0.953	0.19
Cement equivalent	0.266	0.262	0.052
Cementitious products	0.176	0.173	0.033
Low-CO2 materials	0.1762	0.174	0.035

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?
Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	1536549	IPCC Sixth Assessment Report (AR6 - 100 year)

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/area/region.

Country/area/region	Scope 1 emissions (metric tons CO2e)
India	1536549

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By facility

C7.3b

(C7.3b) Break down your total gross global Scope 1 emissions by business facility.

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
JSW Cement – Dolvi Cement Works	40456	18.666667	73.083333
JSW Cement – Nandyal Cement Works	1233463	15.670833	78.455833
JSW Cement – Salboni Cement Works	40276	22.576666	87.306111
JSW Cement – Vijaynagar Cement Works	100001	15.179722	76.700277
JSW Cement - Jajpur Cement Works	12939	20.953888	86.039166
Shiva Cement	109413	21.8577	85.002

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Net Scope 1 emissions , metric tons CO2e	Comment
Cement production activities	1536549	1514323	Net Emissions are calculated by excluding emission on account of alternative fuels
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Electric utility activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/area/region.

Country/area/region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
India *We are reporting only Location based emissions only*	288027	0

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By facility

C7.6b

(C7.6b) Break down your total gross global Scope 2 emissions by business facility.

Facility	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
JSW Cement – Dolvi Cement Works	53611.62	0
JSW Cement – Nandyal Cement Works	99122.117	0
JSW Cement – Salboni Cement Works	33595.78	0
JSW Cement – Vijaynagar Cement Works	81573.355	0
JSW Cement - Jajpur Cement Works	13912.676	0
JSW Cement-Shiva	6212.01	0

C7.7

(C7.7) Is your organization able to break down your emissions data for any of the subsidiaries included in your CDP response?
Yes

C7.7a

(C7.7a) Break down your gross Scope 1 and Scope 2 emissions by subsidiary.

Subsidiary name
Shiva

Primary activity
Cement

Select the unique identifier(s) you are able to provide for this subsidiary
ISIN code - equity

ISIN code – bond
<Not Applicable>

ISIN code – equity
INE555C01029

CUSIP number
<Not Applicable>

Ticker symbol
<Not Applicable>

SEDOL code
<Not Applicable>

LEI number
<Not Applicable>

Other unique identifier
<Not Applicable>

Scope 1 emissions (metric tons CO2e)
109413

Scope 2, location-based emissions (metric tons CO2e)
6212.01

Scope 2, market-based emissions (metric tons CO2e)
0

Comment
scope 1 and scope 2 emissions reported are gross numbers

C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7

(C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7) Break down your organization's total gross global Scope 2 emissions by sector production activity in metric tons CO2e.

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Cement production activities	288027.56	0	We are not reporting market based emissions
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change in emissions	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	81908.35	Decreased	3.85	We have used 8,50,355 kwh more renewable energy than last year. Multiplying with emission factor of 0.91 kg/kwh, we get the total value of 773.82 T . Also because of Renewable energy in the Indian Grid, the factor has changed from 0.91 to 0.71 kg/kwh thus 81,138 T of CO2 was saved. Thus change in emissions through RE is 81,908.35. Total emission (scope 1+scope 2) of FY22 was 2128657.3 thus percentage is (81,908.35/2128657.3)*100 is 3.84%
Other emissions reduction activities	148643.84	Decreased	6.98	We have take various emission reduction activities including lesser clinker production which saved a significant amount of CO2 emissions. Thus we have saved 148,643.84 Total emission (scope 1+scope 2) of FY22 was 2128657.3 thus percentage is (1,48,643.8/2128657.3)*100 is 6.98
Divestment	0	No change	0	no comments
Acquisitions	0	No change	0	no comments
Mergers	0	No change	0	no comments
Change in output	168617.65	Increased	7.92	We have produced more cementitious materials over last year and thus our emissions increased by 168617.65T. Total emission (scope 1+scope 2) of FY22 was 2128657.3 thus percentage is (168617.65 /2128657.3)*100 is 7.92%
Change in methodology	0	No change	0	No comments
Change in boundary	0	No change	0	No comments
Change in physical operating conditions	242145.98	Decreased	11.38	We have produced lesser clinker in FY23 owing to shut down activities and upgradation. Since clinker production is most intensive stage it saved a significant amount of CO2 emissions. Thus we have saved 242,145.98. Total emission (scope 1+scope 2) of FY22 was 2128657.3 thus percentage is (242,145.98/2128657.3)*100 is 11.38
Unidentified	0	No change	0	no comments
Other	0	No change	0	No comments

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 25% but less than or equal to 30%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	84274.71	1943782.15	2028056.86
Consumption of purchased or acquired electricity	<Not Applicable>	16029.58	405672.62	421702.2
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	0	<Not Applicable>	0
Total energy consumption	<Not Applicable>	100304.29	2353093.46	2453397.76

C-CE8.2a

(C-CE8.2a) Report your organization's energy consumption totals (excluding feedstocks) for cement production activities in MWh.

	Heating value	Total MWh
Consumption of fuel (excluding feedstocks)	LHV (lower heating value)	2028056.86
Consumption of purchased or acquired electricity	<Not Applicable>	421702.2
Consumption of other purchased or acquired energy (heat, steam and/or cooling)	<Not Applicable>	<Not Applicable>
Total energy consumption	<Not Applicable>	2449759.06

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Sustainable biomass

Heating value
LHV

Total fuel MWh consumed by the organization
0

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
<Not Applicable>

Comment
We are using biomass but not sure if that is sustainable biomass

Other biomass

Heating value
LHV

Total fuel MWh consumed by the organization
22477

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
22477

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
<Not Applicable>

Comment
We have used the biomass in cement kilns

Other renewable fuels (e.g. renewable hydrogen)

Heating value
LHV

Total fuel MWh consumed by the organization
0

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
<Not Applicable>

Comment
we do not use any hydrogen fuel as of now

Coal

Heating value
LHV

Total fuel MWh consumed by the organization
967265

MWh fuel consumed for self-generation of electricity
8054.53

MWh fuel consumed for self-generation of heat
959210.32

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
<Not Applicable>

Comment
Fuel include coal and Petcoke

Oil

Heating value
LHV

Total fuel MWh consumed by the organization
12053

MWh fuel consumed for self-generation of electricity
88.8

MWh fuel consumed for self-generation of heat
11963.74

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
<Not Applicable>

Comment
This includes diesel used in kiln, non kiln and captive power plant

Gas

Heating value
LHV

Total fuel MWh consumed by the organization
136473

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
136473

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
<Not Applicable>

Comment
BF gas and CO gas received from our JSW steel plant is used for slag drying

Other non-renewable fuels (e.g. non-renewable hydrogen)

Heating value
LHV

Total fuel MWh consumed by the organization
84275

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
84275

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
<Not Applicable>

Comment
Fuels include Alternative Fuel - Industrial Waste , plastic waste, PPF etc.

Total fuel

Heating value
LHV

Total fuel MWh consumed by the organization
1222541.97

MWh fuel consumed for self-generation of electricity
8143.33

MWh fuel consumed for self-generation of heat
1214398.64

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
<Not Applicable>

Comment
No comments

C-CE8.2c

(C-CE8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel for cement production activities.

Sustainable biomass

Heating value
LHV

Total MWh fuel consumed for cement production activities
0

MWh fuel consumed at the kiln
0

MWh fuel consumed for the generation of heat that is not used in the kiln
0

MWh fuel consumed for the self-generation of electricity
0

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Comment
We are using biomass but not sure if that is sustainable biomass

Other biomass

Heating value
LHV

Total MWh fuel consumed for cement production activities
22477

MWh fuel consumed at the kiln
22477

MWh fuel consumed for the generation of heat that is not used in the kiln
0

MWh fuel consumed for the self-generation of electricity
0

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Comment
We have used biomass only in kiln

Other renewable fuels (e.g. renewable hydrogen)

Heating value
LHV

Total MWh fuel consumed for cement production activities
0

MWh fuel consumed at the kiln
0

MWh fuel consumed for the generation of heat that is not used in the kiln
0

MWh fuel consumed for the self-generation of electricity
0

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Comment
We have not used any hyderogen

Coal

Heating value
LHV

Total MWh fuel consumed for cement production activities
967265

MWh fuel consumed at the kiln
499359.14

MWh fuel consumed for the generation of heat that is not used in the kiln
459851.18

MWh fuel consumed for the self-generation of electricity
8054.53

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Comment
It includes coal and petcoke

Oil

Heating value
LHV

Total MWh fuel consumed for cement production activities
12053

MWh fuel consumed at the kiln
3342.79

MWh fuel consumed for the generation of heat that is not used in the kiln
8620.95

MWh fuel consumed for the self-generation of electricity
88.8

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Comment
Diesel used

Gas

Heating value
LHV

Total MWh fuel consumed for cement production activities
136473

MWh fuel consumed at the kiln
0

MWh fuel consumed for the generation of heat that is not used in the kiln
136473

MWh fuel consumed for the self-generation of electricity
0

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Comment
BF and CO gas used taken from JSW Steel

Other non-renewable fuels (e.g. non-renewable hydrogen)

Heating value

Total MWh fuel consumed for cement production activities
84275

MWh fuel consumed at the kiln
80636

MWh fuel consumed for the generation of heat that is not used in the kiln
3639

MWh fuel consumed for the self-generation of electricity
0

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Comment
Fuels include Alternative Fuel - Industrial Waste , plastic waste, PPF etc.

Total fuel

Heating value
LHV

Total MWh fuel consumed for cement production activities
1222541.97

MWh fuel consumed at the kiln
605814.46

MWh fuel consumed for the generation of heat that is not used in the kiln
608584.18

MWh fuel consumed for the self-generation of electricity
8143.33

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Comment
All fuels combined

C8.2d

(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	8143.33	8143.33	0	0
Heat	1214398.64	1214398.64	0	0
Steam	0	0	0	0
Cooling	0	0	0	0

C-CE8.2d

(C-CE8.2d) Provide details on the electricity and heat your organization has generated and consumed for cement production activities.

	Total gross generation (MWh) inside the cement sector boundary	Generation that is consumed (MWh) inside the cement sector boundary
Electricity	8143.33	8143.33
Heat	1214398.64	1214398.64
Steam	0	0

C8.2g

(C8.2g) Provide a breakdown by country/area of your non-fuel energy consumption in the reporting year.

Country/area
India

Consumption of purchased electricity (MWh)
16029584

Consumption of self-generated electricity (MWh)
0

Is this electricity consumption excluded from your RE100 commitment?
No

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
16029584

C8.2h

(C8.2h) Provide details of your organization's renewable electricity purchases in the reporting year by country/area.

Country/area of consumption of purchased renewable electricity
India

Sourcing method
Purchase from an on-site installation owned by a third party (on-site PPA)

Renewable electricity technology type
Solar

Renewable electricity consumed via selected sourcing method in the reporting year (MWh)
16029584

Tracking instrument used
Contract

Country/area of origin (generation) of purchased renewable electricity
India

Are you able to report the commissioning or re-powering year of the energy generation facility?
Yes

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)
2020

Vintage of the renewable energy/attribute (i.e. year of generation)
2020

Supply arrangement start year
2020

Additional, voluntary label associated with purchased renewable electricity
No additional, voluntary label

Comment
We are sourcing this energy from solar power plant owned by JSW Energy through PPA

C8.2j

(C8.2j) Provide details of your organization's renewable electricity generation by country/area in the reporting year.

Country/area of generation
India

Renewable electricity technology type
Solar

Facility capacity (MW)
0

Total renewable electricity generated by this facility in the reporting year (MWh)
0

Renewable electricity consumed by your organization from this facility in the reporting year (MWh)
0

Energy attribute certificates issued for this generation
No

Type of energy attribute certificate
<Not Applicable>

Comment
We do not own any solar plant currently.

C8.2k

(C8.2k) Describe how your organization's renewable electricity sourcing strategy directly or indirectly contributes to bringing new capacity into the grid in the countries/areas in which you operate.

As we have committed to RE100, we have set certain targets -

60% RE by 2030, 90% RE by 2040 and 100% RE by 2050. this can be done in different ways which will certainly contributes to bringing new capacity into the grid, directly or indirectly

1. If we invest in renewable energy projects such as solar farms, wind farms, or hydroelectric plants they certainly increase the overall renewable energy capacity available in the grid directly or indirectly.

2. Power Purchase Agreements (PPAs): If we can enter into long-term PPAs with renewable energy providers for sourcing increased amount of power, they provide financial stability to these projects or companies, making it easier for developers to secure financing for new capacity expansion.

3. Renewable Energy Certificates (RECs): In areas where green tariffs or RECs are available, we may go for buying those. incentivizes utilities to invest in and procure more renewable capacity to meet the demand.

in Future, we may collaborate with utilities and grid operators or other partners to develop renewable energy project. This can help accelerate the deployment of renewable energy capacity.

At few of the locations, our CSR initiatives that include sustainability and renewable energy goals or projects. Meeting these goals often involves supporting the development of new renewable energy capacity, though at a small scale.

Overall, our commitment to sourcing electricity from renewable sources can create an impact on the growth of renewable energy capacity in the countries/areas in which they operate, helping to transition towards a more sustainable and greener energy future.

C8.2l

(C8.2l) In the reporting year, has your organization faced any challenges to sourcing renewable electricity?

	Challenges to sourcing renewable electricity	Challenges faced by your organization which were not country/area-specific
Row 1	No	<Not Applicable>

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

Description
Other, please specify (Blended cement Portfolio)

Metric value
91

Metric numerator
Product volumes (T) containing slags

Metric denominator (intensity metric only)
Total Production of cement + GGBS (T)

% change from previous year
1.1

Direction of change
Increased

Please explain
We have increased the percentage of low carbon products % marginally as it was already high (90%). The higher it is, better it is for Decarbonisation

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Description
Energy usage

Metric value
8

Metric numerator
Thermal energy used through Alternative Fuel

Metric denominator (intensity metric only)
Total amount of Thermal energy used

% change from previous year
14

Direction of change
Increased

Please explain
We have increased the percentage of Thermal substitution Rate (%) which is met through waste fuels that totalling 370 TJ of Energy. Last Year, it was 7.1 and this year it was 8.1. The higher it is, better it is for decarbonization.

C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

	Investment in low-carbon R&D	Comment
Row 1	Yes	We strongly believe in embracing a green environment, adopting circular economy principles, and pursuing decarbonisation. We have incorporated the same as a basic guiding force in whatever business pursuit we undertake and feel that our efforts would help create a more resilient and environmentally conscious society. As a part of our concerted action towards decarbonisation, we have established a dedicated research & development Centre with the sole purpose of creating products that contribute to minimalistic carbon emission. Our dedicated R&D team has been diligently researching different types of hazardous slag to develop building products that possess superior strength, have enhanced durability, are resistant to corrosive environments, are complaint and most importantly, contribute significantly less to carbon emissions. We have also established partnerships with esteemed institutions to support our research and development centre. These include the FEhS Building Materials Institute in Duisburg, Europe and Eco Mister in Canada, who provide us with technological support. Additionally, we have been closely collaborating with renowned indigenous institutes such as IIT Delhi, IIT Bombay, IIT Guwahati, IIT Chennai, and IISc Bangalore. With more than six patents already filed and several more in the pipeline, we are committed to driving innovation in the field. we have recently collaborated with IIT Roorkee to develop a patent for manufacturing eco-friendly and biodegradable cement bags Our newest addition to the portfolio is Slag Sand, a revolutionary substitute for conventional natural river sand, which is extensively used in concrete production and saves natural sand. By conserving river sand, we are also contributing to reduce ecological impacts which are caused by river sand mining. Last year we have invested almost Rs. 20,000,000 towards R&D.

C-CE9.6a

(C-CE9.6a) Provide details of your organization's low-carbon investments for cement production activities over the last three years.

Technology area
Alternative low-CO2 cements/binders

Stage of development in the reporting year
Pilot demonstration

Average % of total R&D investment over the last 3 years
30

R&D investment figure in the reporting year (unit currency as selected in C0.4) (optional)

20000000

Average % of total R&D investment planned over the next 5 years
20

Explain how your R&D investment in this technology area is aligned with your climate commitments and/or climate transition plan
We strongly believe in embracing a green environment, adopting circular economy principles, and pursuing decarbonisation. We have incorporated the same as a basic guiding force in whatever business pursuit we undertake and feel that our efforts would help create a more resilient and environmentally conscious society. As a part of our concerted action towards decarbonisation, we have established a dedicated research & development Centre with the sole purpose of creating products that contribute to minimalistic carbon emission.

Our dedicated R&D team has been diligently researching different types of hazardous slag to develop building products that possess superior strength, have enhanced durability, are resistant to corrosive environments, are complaint and most importantly, contribute significantly less to carbon emissions. We are actively working on Low carbon cement such as Super Sulphated Cement, Limestone Calcined Clay LC3 cement, and Geopolymer cement. We are also working towards innovative methods to maximize the utilization of various slags such as AOD, EAF, and LD slag. A notable achievement in circularity and sustainability is the substitution of Al-laterite mineral with ladle furnace slag, a by-product of steel plants. This substitution not only reduces CO2 emissions through pre-calcined CaO but also provides a valuable source of Alumina, which serves as a mineral additive during clinkerization.

Last year we have invested almost Rs. 20,000,000 towards R&D.

Technology area
Low clinker cement

Stage of development in the reporting year
Large scale commercial deployment

Average % of total R&D investment over the last 3 years
15

R&D investment figure in the reporting year (unit currency as selected in C0.4) (optional)
20000000

Average % of total R&D investment planned over the next 5 years
15

Explain how your R&D investment in this technology area is aligned with your climate commitments and/or climate transition plan
We strongly believe in embracing a green environment, adopting circular economy principles, and pursuing decarbonisation. We have incorporated the same as a basic guiding force in whatever business pursuit we undertake and feel that our efforts would help create a more resilient and environmentally conscious society. As a part of our concerted action towards decarbonisation, we have established a dedicated research & development Centre with the sole purpose of creating products that contribute to minimalistic carbon emission.

Our dedicated R&D team has been diligently researching different types of hazardous slag to develop building products that possess superior strength, have enhanced durability, are resistant to corrosive environments, are complaint and most importantly, contribute significantly less to carbon emissions.

Our R&D efforts are on to reduce the clinker percentage in our PSC and composite Cement while meeting the legal norms. Last year FY23, owing to our efforts we have reduced our clinker factor by 2% which has helped us to reduce the overall CO2 emissions also. This was done by using performance enhancers.

Technology area
Carbon capture, utilization, and storage (CCUS)

Stage of development in the reporting year
Basic academic/theoretical research

Average % of total R&D investment over the last 3 years
10

R&D investment figure in the reporting year (unit currency as selected in C0.4) (optional)
20000000

Average % of total R&D investment planned over the next 5 years
25

Explain how your R&D investment in this technology area is aligned with your climate commitments and/or climate transition plan
Launched in 2020, the Innovandi Global Cement and Concrete Research Network (GCCRN)is a consortium which critically brings together academia (over 40 leading global institutions) and industry (34 cement and concrete manufacturers, admixture companies, equipment and technology suppliers) to collaborate on essential actionable pre-competitive research, in areas such as calcined clays, concrete recycling, kiln electrification and carbonation. JSW Cement has also become a member of Innovandi GCCRN.

While we are exploring CCUS project with a few organization. Since 2021, have tied with Fortera as part of Innovandi . Based in the USA, Fortera’s technology captures CO2 emissions from cement plants, combining it with calcium oxide to make reactive calcium carbonate. It is being supported by JSW Cement along with a few other cement companies

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Technology area
Fuel switching

Stage of development in the reporting year
Applied research and development

Average % of total R&D investment over the last 3 years
10

R&D investment figure in the reporting year (unit currency as selected in C0.4) (optional)
20000000

Average % of total R&D investment planned over the next 5 years
15

Explain how your R&D investment in this technology area is aligned with your climate commitments and/or climate transition plan
Launched in 2020, the Innovandi Global Cement and Concrete Research Network (GCCRN)is a consortium which critically brings together academia (over 40 leading global institutions) and industry (34 cement and concrete manufacturers, admixture companies, equipment and technology suppliers) to collaborate on essential actionable pre-competitive research, in areas such as calcined clays, concrete recycling, kiln electrification and carbonation. JSW Cement has also become a member of Innovandi GCCRN.

While we are exploring new and innovative with a few start-ups. Since 2021, As a part of Innovandi, we are working with a strat-up called Coomtech. Based in the UK, Coomtech has developed a low energy, low cost drying technology using managed turbulent air, creating kinetic energy to remove moisture. It is being supported by JSW Cement along with a few other cement companies

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Y
Final GHG verification statement_JSW_2022-23. V02_signed.pdf

Page/ section reference
All

Relevant standard
ISAE3000

Proportion of reported emissions verified (%)
100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Scope 2 approach
Scope 2 location-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Y
Final GHG verification statement_JSW_2022-23. V02_signed.pdf

Page/ section reference
All

Relevant standard
ISAE3000

Proportion of reported emissions verified (%)
100

C10.1c

(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope 3 category
Scope 3: Purchased goods and services
Scope 3: Capital goods
Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2)
Scope 3: Upstream transportation and distribution
Scope 3: Waste generated in operations
Scope 3: Business travel
Scope 3: Employee commuting
Scope 3: Downstream transportation and distribution
Scope 3: Processing of sold products

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Y
Final GHG verification statement_JSW_2022-23. V02_signed.pdf

Page/section reference
All

Relevant standard
ISAE3000

Proportion of reported emissions verified (%)
90

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?
Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C4. Targets and performance	Year on year change in emissions (Scope 1)	ISAE 3000 SLL framework	2026 Target is also third party verified as a part of Sustainability Linked Loan Intensity Target Performance is verified as part of Verification statement attached. JSW Cement's Integrated report will also assured by 3rd party. FY23 Integrated report will be available shortly.
C4. Targets and performance	Year on year change in emissions (Scope 2)	ISAE 3000 SLL framework	2026 Target is also third party verified as a part of Sustainability Linked Loan Intensity Target Performance is verified as part of Verification statement attached. JSW Cement's Integrated report will also assured by 3rd party. FY23 Integrated report will be available shortly.
C5. Emissions performance	Year on year change in emissions (Scope 1 and 2)	ISAE 3000 SLL framework	2026 Target is also third party verified as a part of Sustainability Linked Loan Intensity Target Performance is verified as part of Verification statement attached. JSW Cement's Integrated report will also assured by 3rd party. FY23 Integrated report will be available shortly.
C8. Energy	Energy consumption	ISAE 3000	JSW Cement's Integrated report is assured by 3rd party. FY23 Integrated report will be available shortly.
C7. Emissions breakdown	Year on year emissions intensity figure	ISAE 3000	2026 Target is also third party verified as a part of Sustainability Linked Loan Intensity Target Performance is verified as part of Verification statement attached. JSW Cement's Integrated report will also assured by 3rd party. FY23 Integrated report will be available shortly.
C5. Emissions performance	Progress against emissions reduction target	ISAE 3000	2026 Target is also third party verified as a part of Sustainability Linked Loan Intensity Target Performance is verified as part of Verification statement attached. JSW Cement's Integrated report will also assured by 3rd party. FY23 Integrated report will be available shortly.

Final SPO.pdf
Final GHG verification statement_JSW_2022-23.
V02_signed.pdf

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?
Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.
Other carbon tax, please specify (Formally, there is no explicit carbon tax however, there are two types of policy instruments implemented over the years, are: 1. Policy mechanisms: Carbon pricing policies, such as carbon tax in the form of coal CESS, as established by Indian Govt.)

C11.1c

(C11.1c) Complete the following table for each of the tax systems you are regulated by.

Other carbon tax, please specify

Period start date
April 1 2022

Period end date
March 31 2023

% of total Scope 1 emissions covered by tax
30

Total cost of tax paid
79245651

Comment
Formally, there is no explicit domestic carbon pricing policy or emission trading market established by Indian Govt, however, there are two types of policy instruments implemented over the years, are:
1. Policy mechanisms: Carbon pricing policies, such as carbon tax in the form of coal CESS. The tax of ~Rs 10 Crore includes primarily the coal CESS (Rs. 400/T) which we have paid basis consumption of Coal. We consumed ~198000 T of coal and we paid 79,245,651 of COAL CESS.

Another policy instrument is Renewable Energy Certificate (REC) Mechanism: which is implemented to promote further investment and development of renewable energy sources in India. This is complementary to the state-wise targets for Renewable Purchase Obligation (RPOs) mandated by the Government with an aim to increase the share of renewable energy in India's energy mix.

Recently there is a draft Indian Carbon Market regulations released which will get finalised by next year or so.

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

JSW cement's sustainability strategy focuses primarily around CO2 emission reduction and adopting the circular economy approach. We are signatory to RE100, EV100 and EP100. There are various regulatory requirements such as Perform, Achieve, and Trade (PAT) scheme, Renewable Energy Certificate (REC) mechanism, Renewable Purchase Obligation (RPOs), and coal CESS tax to which we are exposed to. We are adopting following strategies

1. Clinker Substitution: Utilising industrial waste, such as blast furnace slag or flyash, to substitute clinker in the production of cement or cementitious products

2. Using alternate fuel :Conserving natural resources such as coal and pet coke via co-processing of alternate fuel in clinker plant at our Nandyal and Shiva units

3. Waste heat recovery: Reducing the consumption of coal/diesel, utilising clinker plant waste hot gases for slag drying at Nandyal and Shiva (Will start from FY24)

4. Shifting towards renewable energy Solar plants at the Nandyal unit: `5.5 MW and the Salboni unit: 3.5 MW

5. New Innovative Products We are working towards production of Lime stone calcined clay cement (LC3), Geopolymer Cement, Super Sulphated Cement etc

6. Afforestation – Part of our CO2 emissions will be offset by afforestation activities to sequester CO2to reach our Decarbonisation goal.

We are working towards implementing various energy efficiency projects, enhancing renewable energy to provide electricity in our existing and plants. We are also increasingly using slag from steel industry and flyash from thermal power plants, in our cement industry. This helps us to reduce clinker factor thereby reducing the utilization of natural raw materials. Additionally we have increased usage of Waste and biomass as AF to replace fossil fuels (i.e. Coal) that provides the energy needed to operate a cement kiln. Currently we are at 8% TSR which reduces our coal requirement and equivalent amount of CESS.

A description of your strategy for complying with the system in which we anticipate being regulated in the next 3 years

In Indian, we have the Indian Carbon Market regulations coming in by 2023-24 formally in place along with Carbon Credit Trading Scheme to address the issue of greenhouse gas (GHG) emissions and mitigation of climate change in the country. The Carbon Credit Trading Scheme will assigns a value, known as a carbon credit, to each tonne of carbon dioxide equivalent (tCO2e) reduced or avoided. These credits could be bought, sold and traded within the country's carbon market framework. For energy intensive sectors, GHG emissions intensity benchmark and targets will be developed, which will be aligned with India's emissions trajectory as per climate goals. The trading of carbon credits will take place based on the performance against these sectoral trajectories.

We foresee that these regulations will be an opportunity for us as our emissions intensity are the lowest in India.

C11.2

(C11.2) Has your organization canceled any project-based carbon credits within the reporting year?
No

C11.3

(C11.3) Does your organization use an internal price on carbon?
Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Type of internal carbon price
Shadow price

How the price is determined
Benchmarking against peers
Price with material impact on business decisions

Objective(s) for implementing this internal carbon price
Drive energy efficiency
Drive low-carbon investment
Identify and seize low-carbon opportunities

Scope(s) covered
Scope 1
Scope 2
Scope 3 (upstream)
Scope 3 (downstream)

Pricing approach used – spatial variance
Uniform

Pricing approach used – temporal variance
Static

Indicate how you expect the price to change over time
<Not Applicable>

Actual price(s) used – minimum (currency as specified in C0.4 per metric ton CO2e)
1550

Actual price(s) used – maximum (currency as specified in C0.4 per metric ton CO2e)
1743

Business decision-making processes this internal carbon price is applied to
Capital expenditure
Product and R&D
Risk management

Mandatory enforcement of this internal carbon price within these business decision-making processes
Yes, for some decision-making processes, please specify (We are internalising the ICP for driving new low carbon projects such as WHRS, RE, AFR etc)

Explain how this internal carbon price has contributed to the implementation of your organization's climate commitments and/or climate transition plan
The Internal Carbon Pricing adopted by JSW Cement is based upon shadow pricing and shall be used to 1. Prioritize the climate change related risks & opportunities 2.Make informed decisions & incentivize low cost abatement options 3. As a preparatory tool for future government climate change policies

For example, we evaluate the cost of CO2 emissions savings from proposed projects which reduces CO2 emissions from baseline scenario. We also evaluate the cost of CO2 emissions in EU ETS scheme and if in case it is implemented in India and how much is the financial impact to us. We generally do benchmarking of our Sp. CO2 emissions and evaluate the gap between our emissions and national average emissions. Based upon the diff. We calculate the value of CO2 emissions for abatement if we are exceeding the national average.
As of now, we are revising our Internal carbon pricing owing to the changing regulations in India wrt to Carbon Market and Carbon Credit Mechanism.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?
Yes, our suppliers
Yes, our customers/clients
Yes, other partners in the value chain

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement
Innovation & collaboration (changing markets)

Details of engagement
Run a campaign to encourage innovation to reduce climate impacts on products and services
Invest jointly with suppliers in R&D of relevant low-carbon technologies

% of suppliers by number
5

% total procurement spend (direct and indirect)
45

% of supplier-related Scope 3 emissions as reported in C6.5
50

Rationale for the coverage of your engagement
In FY23, we undertook a detailed analysis of our suppliers profile and identified the critical suppliers . Critical suppliers are identified based on high volume, critical components & non-substitutability. Top 5% of our suppliers (50 by numbers) contribute ~60% of our total procurement spend. We reached out to almost 40 of them to collect the information and 20-25% of them have responded. The questionnaire comprise of all sustainability aspects including climate change. They have been self assessed and given a score. Going ahead we plan to engage with those suppliers who do not meet a threshold score and engage with them for improving their sustainability performance. We have also developed a sustainable supply chain standards (in final stage) to guide our team.

JSW Steel is one of our primary raw material supplier. We are working on many collaborative work (R&D) to use their other types of slags into our manufacturing process. We are exploring some collaboration opportunities for CCUS projects.

Impact of engagement, including measures of success
The assessment exercise gives insights of ESG aspects followed by our suppliers. About 50 suppliers were invited for the session on sustainability in supply chain. This was done to make them aware of our ESG assessment questionnaire and clarify any doubt. The assessment gives an overall information on adherence to the sustainability aspects which are a part of our sustainability framework. It provides an important step for JSW to be a sustainable company including its partners i.e. suppliers & vendors. We will do the assessment annually and we will monitor the score. Improvement in scope will be considered as a measure of success.

Comment
This was done and being driven at JSW group level where all group companies including JSW Cement take care our their respective suppliers

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement & Details of engagement

Collaboration & innovation	Run a campaign to encourage innovation to reduce climate change impacts

% of customers by number
60

% of customer - related Scope 3 emissions as reported in C6.5
20

Please explain the rationale for selecting this group of customers and scope of engagement
Most of our products are manufactured with Slag (a by product from steel industry) and thus have significantly lower carbon footprint. While our competitors also have similar products, but on average basis, our product has the lowest carbon emission intensity. Also our marquee product - GGBS has a carbon footprint of 60 kg/T only. Thus we engage with our all customers with an objective to create awareness about our products and push for a demand of Low carbon and sustainable products. Rationale : We engage with all types of customers - Direct and indirect customers. However, our engagement are more frequent with our direct customers, as we can reach out to them easily and influence their choices/decision with our regular engagement activities.

We have reached out to ~60% of our customers in last year. Also we undertake programs f or potential customers too which may include civil engineers, architects, builders and contractors also. Scope of Engagement: In 2022-23, we have conducted almost ~90 programs (seminars, workshops, sessions covering many topic including JSW Green products and sustainability for our product usage) across various states, which were attended by more than 5000 participants. We share information about our third party certifications like EPD, GreenPro etc, and also inform about the advantages of our products. We inform that by using our products in construction they may get additional points if they are going for any green building certification i.e USGBC - LEED, CII IGBC Green Building rating. We also engage wit various stakeholders(including customers) through social media platforms, regular media posts which primarily focuses on CO2 impact of our products. We ran a campaign with few of our customers who shares the same vision of net zero future as us. We have conducted Sustainability awareness session with each one of them.

In FY23, JSW cement joined an initiative called 'Build Ahead' to strengthen our work, and help drive progress within the ecosystem to support the long-term decarbonisation of the construction sector. This is an industry-first coalition consisting of forward-leaning businesses committed to scale decarbonisation efforts across the Indian construction value chain. Its coalition members include Godrej Construction, JLL, JSW Cement, Lodha, SED Fund and Shell India.

Impact of engagement, including measures of success
With the help of our continuous information sharing about our products and its relevant certifications as well as information about low carbon cement & cementitious products, we have seen increased awareness among the existing as well as new customers. Due to our consistent efforts in sharing the information about our product certifications and environmental foot print and its advantages, we have observed there is a shift in the customer acceptance for our products. We consider few KPIs as measure of success of our engagement which include 1. % of sales increase from our low carbon products 2. % of customers has changed from OPC (conventional product having high CO2 footprint) to our PSC/CHD products (having very low CO2 footprint, almost 40% of OPC).

We have increased our GGBS sale from 35% (in FY22) to ~40%(in FY23)
We have also initiated a customer satisfaction survey which should be completed by FY24.

C12.1d

(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.

We are an active member of various trade bodies, associations and programs which help us to showcase our initiatives in low carbon products as well as climate related issues. The following are our current memberships:

1. Global Cement and Concrete Association (GCCA) - Global

2. Cement Manufacturing Association (CMA) - India

3. Global Cement and Concrete Association (GCCA) - India

4. Federation of Indian Chambers of Commerce & Industry

5. CII Climate Charter

6. National Council for *Cement* and Building Materials (*NCB*)

With GCCA India, we worked on development of technical paper showcasing the advantages of blended cement over Ordinary Portland Cement (OPC). As part of this exercise, we have engaged NCB in developing the technical paper. This technical paper outlines all the advantages by using blended cement over OPC. It covers the different aspects like clinker factor, CO2 emissions, sp. thermal energy, sp. electrical energy, limestone consumption, etc. From this paper, it is evident that Blended cements are much more superior in terms of quality, durability and performance with minimal environment impact (specifically CO2 emissions wrt OPC. This technical document helps the government to take conscious decision while choosing the cement for major infrastructure projects across the country. Thus we contribute to the low carbon economy on the larger picture entire the value chain.

With GCCA India, we also worked on a report showcasing the advantages of blended cement over Ordinary Portland Cement (OPC). As part of this exercise, we have engaged NCB in developing the technical paper. This technical paper outlines all the advantages by using blended cement over OPC. It covers the different aspects like clinker factor, CO2 emissions, sp. thermal energy, sp. electrical energy, limestone consumption, etc... By all this, it is evident that Blended cements are much more superior in terms of quality, durability and performance with minimal environment impact (specifically CO2 emissions0 wrt OPC. This technical document will help us to push green procurement policy for major infrastructure projects across the country. Thus we contribute to the low carbon economy on the larger picture entire the value chain.

C12.2

(C12.2) Do your suppliers have to meet climate-related requirements as part of your organization's purchasing process?

Yes, climate-related requirements are included in our supplier contracts

C12.2a

(C12.2a) Provide details of the climate-related requirements that suppliers have to meet as part of your organization's purchasing process and the compliance mechanisms in place.

Climate-related requirement

Climate-related disclosure through a public platform

Description of this climate related requirement

In FY23, we undertook a detailed analysis of our suppliers profile and identified the critical suppliers . Critical suppliers are identified based on high volume, critical components & non-substitutability. Top 5% of our suppliers (50 by numbers) contribute ~60% of our total procurement spend. We reached out to almost 40 of them to collect the information and 20-25% of them have responded. The Suppliers assessment questionnaire comprise of all sustainability aspects including climate change there are questions thier reporting, GH targets, disclosers, Renewable Energy and energy consumptions.

% suppliers by procurement spend that have to comply with this climate-related requirement

100

% suppliers by procurement spend in compliance with this climate-related requirement

30

Mechanisms for monitoring compliance with this climate-related requirement

Supplier self-assessment

Response to supplier non-compliance with this climate-related requirement

Retain and engage

C12.3

(C12.3) Does your organization engage in activities that could either directly or indirectly influence policy, law, or regulation that may impact the climate?

Row 1

External engagement activities that could directly or indirectly influence policy, law, or regulation that may impact the climate

Yes, we engage directly with policy makers

Yes, our membership of/engagement with trade associations could influence policy, law, or regulation that may impact the climate

Does your organization have a public commitment or position statement to conduct your engagement activities in line with the goals of the Paris Agreement?

Yes

Attach commitment or position statement(s)

1. As a member of GCCA, JSW cement committed to the GCCA 2050 Cement and Concrete Industry Roadmap for Net Zero Concrete. 2. JSW cement is the first company in the sector to have committed to all the three campaigns of RE100, EP100 and EV100 of ,The Climate Group, in one go. 3. We have signed the UN Energy Compact which are voluntary commitments of action, with specific targets and timelines to drive the progress on the achievement of SDG7. It highlights the next Decade Action Agenda to advance SDG7 on sustainable energy for all, in line with the goals of the Paris Agreement on Climate Change. 4. We have signed the Global F.ramework Principles for Decarbonising Heavy Industry which provides clear steps to reduce emissions in heavy industries across the world, to both strengthen economies and help limit global warming to 1.5°C. 5. We have recently become a member of UNIDO's Industrial Deep Decarbonization Initiative's (IDDI) advisory group 6. We have recently signed the CII's Climate Charter. 7. Last Year we were invited by the Indian Govt. to become a member of 'Development Council for Cement Industry (DCCI) 8.We have also committed to SBTi but the acknowledgement has not come yet8)Xynteo Build Ahead.

Describe the process(es) your organization has in place to ensure that your external engagement activities are consistent with your climate commitments and/or climate transition plan

All our above engagements are consistent with our Climate change strategy. We evaluate our potential engagement/partnerships from the view that it should help us currently or in future in meeting our Net Zero Goal by 2050.

Primary reason for not engaging in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate

<Not Applicable>

Explain why your organization does not engage in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate

<Not Applicable>

C12.3a

(C12.3a) On what policy, law, or regulation that may impact the climate has your organization been engaging directly with policy makers in the reporting year?

Specify the policy, law, or regulation on which your organization is engaging with policy makers

Current BIS standards
https://bis.gov.in/wp-content/uploads/2019/03/IS-16415-Product-Manual.pdf https://bis.gov.in/wp-content/uploads/2018/12/IS-1489-Part-1-Final-Product-Manual.pdf

Category of policy, law, or regulation that may impact the climate

Low-carbon products and services

Focus area of policy, law, or regulation that may impact the climate

Low-carbon innovation and R&D

Policy, law, or regulation geographic coverage

National

Country/area/region the policy, law, or regulation applies to

India

Your organization's position on the policy, law, or regulation

Support with minor exceptions

Description of engagement with policy makers

At many forums/coalitions, we are a member of, such as LeadIT, Global Cement and Concrete Association etc, we have been advocating for following:

1. Green procurement policy for government construction/infrastructure projects where they mandate/ give preference for greener cement (what is also knows as Blended cements which has significantly lower CO2) than OPC. This will encourgae cement manufacturing companies to make more blended cements
2. Development of Concrete standards for using triple blend (Cement+Flyash+Slag).

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

Currently as per BIS standards, the percentage of use of slag and flyash in the blended cements is prescribed which limits the further use of slag and flyash. We are proposing to make performance based standards rather than prescribed standards for blended cement which will help in increased use of Flyash/slag in blended cements and lead to CO2 reduction.

Have you evaluated whether your organization's engagement on this policy, law, or regulation is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Please explain whether this policy, law or regulation is central to the achievement of your climate transition plan and, if so, how?

Yes, This will be helpful. In the case of JSW Cement, our Cements are already blended and we use almost 60% of Slag in our PSC. This is be central to the achievement of climate transition plan of cement industry.

C12.3b

(C12.3b) Provide details of the trade associations your organization is a member of, or engages with, which are likely to take a position on any policy, law or regulation that may impact the climate.

Trade association
Confederation of Indian Industries (CII)

Is your organization's position on climate change policy consistent with theirs?
Consistent

Has your organization attempted to influence their position in the reporting year?
Yes, we publicly promoted their current position

Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position
We have signed to the CII's Climate Charter and we promote their position on climate related issues. We are also a member of Indian Business and Biodiversity Initiatives. Both initiatives are zero fee memberships.

Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)
0

Describe the aim of your organization's funding
<Not Applicable>

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?
Yes, we have evaluated, and it is aligned

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication
In mainstream reports

Status
Underway – previous year attached

Attach the document
y
Final Annual-report-2021-22.pdf

Page/Section reference
79-86, 135-138, 187

Content elements
Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets

Comment
Risk & Opportunities, Targets and sub targets will be covered in this year's report.

C12.5

(C12.5) Indicate the collaborative frameworks, initiatives and/or commitments related to environmental issues for which you are a signatory/member.

	Environmental collaborative framework, initiative and/or commitment	Describe your organization's role within each framework, initiative and/or commitment
Row 1	Mission Possible Partnership RE100 UN Global Compact World Business Council for Sustainable Development (WBCSD) Other, please specify (We are a member of RE100, EP100, EV100, UN Energy compact, IDDI, UNGC, CII's Climate Charter,)	The Climate Groups Initiative RE100, EV100, EP100 - We are working with them to monitor our targets, updating our progress, taking support for policy related work

C15. Biodiversity

C15.1

(C15.1) Is there board-level oversight and/or executive management-level responsibility for biodiversity-related issues within your organization?

	Board-level oversight and/or executive management-level responsibility for biodiversity-related issues	Description of oversight and objectives relating to biodiversity	Scope of board-level oversight
Row 1	Yes, both board-level oversight and executive management-level responsibility	We have a board level Sustainability Committee which reviews all aspects of our SD including Biodiversity targets , commitments and initiatives. The overall implementation of the Sustainability Performance Monitoring (including Biodiversity) and Reporting Management System is governed by JSW Group Business Heads (Chief Executive Officer, Chief Sustainability Officer and relevant management heads). But at company level, roles and responsibilities for driving and complying with policies and standard are assigned to Sustainability Function .	<Not Applicable>

C15.2

(C15.2) Has your organization made a public commitment and/or endorsed any initiatives related to biodiversity?

	Indicate whether your organization made a public commitment or endorsed any initiatives related to biodiversity	Biodiversity-related public commitments	Initiatives endorsed
Row 1	Yes, we have made public commitments and publicly endorsed initiatives related to biodiversity	Commitment to No Net Loss Adoption of the mitigation hierarchy approach	CBD – Global Biodiversity Framework SDG

C15.3

(C15.3) Does your organization assess the impacts and dependencies of its value chain on biodiversity?

Impacts on biodiversity

Indicate whether your organization undertakes this type of assessment
Yes

Value chain stage(s) covered
Direct operations
Upstream

Portfolio activity
<Not Applicable>

Tools and methods to assess impacts and/or dependencies on biodiversity
Biodiversity indicators for site-based impacts
CBD – Global Biodiversity Framework
TNFD – Taskforce on Nature-related Financial Disclosures

Please explain how the tools and methods are implemented and provide an indication of the associated outcome(s)
We are undertaking a detailed assessment of our dependency and impact on biodiversity and ecosystem services, aligning with above mentioned tools and methodologies.

We have initiated the same in FY23 and still undergoing assessment results of which will be published in FY24.

Dependencies on biodiversity

Indicate whether your organization undertakes this type of assessment
Yes

Value chain stage(s) covered
Direct operations
Upstream

Portfolio activity
<Not Applicable>

Tools and methods to assess impacts and/or dependencies on biodiversity
CBD – Global Biodiversity Framework
TNFD – Taskforce on Nature-related Financial Disclosures

Please explain how the tools and methods are implemented and provide an indication of the associated outcome(s)
We are undertaking a detailed assessment of our dependency and impact on biodiversity and ecosystem services, aligning with above mentioned tools and methodologies.

We have initiated the same in FY23 and still undergoing assessment results of which will be published in FY24.

C15.4

(C15.4) Does your organization have activities located in or near to biodiversity- sensitive areas in the reporting year?
Yes

C15.4a

(C15.4a) Provide details of your organization's activities in the reporting year located in or near to biodiversity -sensitive areas.

Classification of biodiversity -sensitive area
Other biodiversity sensitive area, please specify (Nationally protected Area - rollapadu wildlife sanctuary)

Country/area
India

Name of the biodiversity-sensitive area
Rollapadu wildlife sanctuary

Proximity
Up to 25 km

Briefly describe your organization's activities in the reporting year located in or near to the selected area
While we are located more than 10 km far from the sanctuary and may not have a direct impact on that area, but we are required to make a wildlife Conservation Plan as per local legal requirements.

Indicate whether any of your organization's activities located in or near to the selected area could negatively affect biodiversity
Yes, but mitigation measures have been implemented

Mitigation measures implemented within the selected area
Scheduling
Physical controls
Operational controls
Restoration

Explain how your organization's activities located in or near to the selected area could negatively affect biodiversity, how this was assessed, and describe any mitigation measures implemented
While we are located more than 10 km far from the sanctuary and may not have a direct impact on that area, but we are required to make a wildlife Conservation Plan as per local legal requirements.

There are few Schedule 1 species which are found within 10km of the radius and thus we are requirement to put efforts for their conservation.

C15.5

(C15.5) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?

	Have you taken any actions in the reporting period to progress your biodiversity-related commitments?	Type of action taken to progress biodiversity- related commitments
Row 1	Yes, we are taking actions to progress our biodiversity-related commitments	Land/water management Species management

C15.6

(C15.6) Does your organization use biodiversity indicators to monitor performance across its activities?

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
Row 1	No, we do not use indicators, but plan to within the next two years	Other, please specify (We are developing a few indicators.)

C15.7

(C15.7) Have you published information about your organization's response to biodiversity-related issues for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Report type	Content elements	Attach the document and indicate where in the document the relevant biodiversity information is located
In mainstream financial reports	Impacts on biodiversity Biodiversity strategy	Page 90 Final Annual-report-2021-22.pdf

C16. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

JSW Cement has engaged Sustainalyitcs, a leading independent ESG and corporate governance research, ratings and analytics firm, early this year to undertake a ESG risk rating exercise for the company. The exercise is quite comprehensive, detailed and time consuming which was done over the last one month or so. The rating offers clear insights into company-level ESG risk by measuring the size of an organization's unmanaged ESG risk. This is measured by a unique set of MEIs, so it only considers issues which have a potentially substantial impact on the company's economic value. It gives a rating score which can be categorized across five risk levels: negligible (0-10), low (10-20), medium (20-30), high (30-40), and severe (40+). Lower the score, the better it is.

As a result, Sustainalytics has rated JSW cement as the best in the sector, in its ESG risk rating report. With an ESG risk score of 17, **JSW Cement ranks first among all 141 global construction materials companies analysed by Sustainalytics**. The score of 17 is perhaps the lowest any cement company has ever achieved.

C16.1

(C16.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Chief Executive Officer	Chief Executive Officer (CEO)

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I understand that my response will be shared with all requesting stakeholders	Response permission
Please select your submission options	Yes	Public

Please confirm below

I have read and accept the applicable Terms