JSW Cement Limited - Climate Change 2022

C0. Introduction

C0.1

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

JSW Cement, a leading cement producer from the house of JSW Group, was incorporated in 2006 and started its commercial operations in 2009. The very reason for having JSW Cement was rooted in the philosophy of circularity. It uses blast furnace slag which is a by-product from steel plants to manufacture green cement products (PSC & CC), converts blast furnace slag into a value added product GGBS (Ground Granulated Blast Furnace Slag). These products are not only environment friendly but also technically superior cementitious material given its property of higher late strength and sulphide resistance.

JSW cement has operating plants at Nandyal (Andhra Pradesh), Vijayanagar (Karnataka), Dolvi (Maharashtra), Salboni (West Bengal), Jajpur (Odisha) and a clinker unit in Fujairah (UAE), which produce five products: Portland Slag Cement (PSC), Ordinary Portland Cement (OPC), Concreel HD (higher quality PSC), Composite Cement (CC) and Ground Granulated Blast Furnace Slag (GGBS). It also has a subsidiary plant - Shiva cement and under upgradation. 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 16 MTPA as of FY22 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 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.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	April 1 2021	March 31 2022	Yes	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(s)	Please explain
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 climate change related issues and Energy efficiency measures and technology adoption is discussed and approved by the Board. Environment, health and safety risks are managed by compliance with norms through right selection of equipment, processes and inputs; tracking emissions, tracking changing technology and future norms; adoption of best available technology (BAT), safety training, medical facilities and health insurance policy for employees and their families. 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. Last year we had undertaken the peer analysis of their ESG performance which helped us to frame our own SD targets. Many SD targets were approved by the board committee which also included targets for climate emission intensity and for associated levers, which are as following: 1. Reduction in Sp. CO2 Emissions per T of cement - ~23% by 2030 wrt 2015 2. Improve Thermal Substitution Rate (TSR) to 30% by 2030 3. To use 30 Million T of waste derived resources by 2030 However later on, starting this year , with increased focus on setting SBTs, we are working towards validation of climate targets through SBTi which may result in revision of our climate targets.
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 climate change related issues and Energy efficiency measures and technology adoption is discussed and approved by the Board. 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. As part of the climate change mitigation, our board has approved for execution of Waste Heat Recovery Systems (WHRS) of 12.3 MW capacity with ~ INR 150 Crore capex at our Nandyal Plant with air cooled condenser which is under execution. After commissioning of WHRS, we will reduce our dependency on grid electricity as well as will reduce ~ 89000 Tonnes of CO2 emissions.
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 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.

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
Scheduled – all meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures	<Not Applicable>	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 meeting the committee also reviews the proposed budgets 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.
Scheduled – all meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues	<Not Applicable>	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 half board meetings through the Sustainability Committee. During the meeting the committee also reviews the proposed budgets 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. For example, committee has approved for purchase of heavy duty electric vehicles of 55 Tonnes capacity for transportation of raw materials. Committee prioritizes the projects for implementation based upon the impact as well as associated outcomes.

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	Few of our board members have competence on climate related issues	<Not Applicable>	<Not Applicable>

C1.2

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

Name of the position(s) and/or committee(s)	Reporting line	Responsibility	Coverage of responsibility	Frequency of reporting to the board on climate-related issues
Risk committee	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Sustainability committee	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Half-yearly
Chief Executive Officer (CEO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly
Chief Financial Officer (CFO)	<Not Applicable>	Managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Chief Procurement Officer (CPO)	<Not Applicable>	Managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly
Chief Sustainability Officer (CSO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly
Chief Operating Officer (COO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly
Chief Risks Officer (CRO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Facility manager	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly
Environment/ Sustainability manager	<Not Applicable>	Assessing climate-related risks and opportunities	<Not Applicable>	Half-yearly
Other, please specify (Executive Committee - All top management personnel are member of Executive Committee (EC))	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

Risk Committee and Sustainability Committee

The Board of Directors have constituted a sub-committee of the Board known as the “Risk Committee” and " Sustainability Committee" to assess environment/sustainability/climate change related performance of the Company. The Risk Committee convenes at each quarterly board meeting and Sustainability Committee convenes at half yearly to review various issues related to climate change/environment/sustainability etc. Company's strategic decisions made last year in these committees with respect to enhancing Renewable Energy, increasing thermal substitution, installing Waste Heat Recovery systems or enhancing slag products portfolio have actually strengthened the future climate mitigation strategy also

Executive Committee (EC)

EC which meets every month, consolidate key findings, discuss the points, presented in the quarterly board meetings and half yearly board meetings. Committee reviews the performance of the organization on different indicators related to environment, sustainability, climate change etc. Based upon the performance, the committee advices us to focus on indicators which needs more improvement.

Executive Directors - Managing Director (MD) and Chief Executive Officer (CEO)

MD and CEO are part of executive directors who lead the implementation of sustainability initiatives in terms of approving budgets and necessary resources. They do periodical review of the company performance with identified KPI's. New initiatives were discussed in the meetings. Any risk associated due to climate change on the operations is discussed in length and its impact on the overall business. Based upon the discussions and outcome , an action plan is formulated to implement the necessary measures to minimize or avoid the impact.

Chief Manufacturing officer (CMO) and Deputy CMO (equivalent to Chief Operating Officer (COO)

CMO and Dy CMO, also an EC member, reports directly to the CEO. CMO along with CEO reviews the progress on climate related levers and various KPIs such as Thermal Energy consumption , Electrical energy consumption, Thermal Substitution Rate etc. CMO also provides guidance and support to our operating plants in improving our efficiency parameters by implementing energy efficiency initiatives, by fostering the use of alternative fuels and by reducing the clinker factor. This ensures an appropriate overview for the top management related to climate issues in a technical context.

Chief Financial Officer

While the CFO has the overall responsibility of the Enterprise Risk Management(ERM) process, EHS related risks are also embedded into the ERM. Additionally Sustainability team has worked towards identification of climate related risk s and impacts and developed a time bound action plan and mitigation strategy which will be further validated by third party and subsequently embedded into the ERM. Apart from this, risk and opportunities related to climate are also discussed during the company-wide enterprise risk identification and mitigation process, which is coordinated by the group risk management team.

Chief Sustainability and Innovation Officer

At JSW cement, top management personnel is nominated for driving the overall sustainability initiatives aligning the business strategy and sustainability strategy . CSO also engaged with concerning climate-related policy makers and in trade associations and also engages in policy advocacy activities in the area of energy ,climate and other topics.

Chief Procurement Officer

The person responsible is involved in sourcing, procuring low carbon fuels sources such as Biomass fuels, Industrial Waste, Refuse Derived Fuels etc and Slag, Flyash etc which help us mitigating the risk of increased cost and availability of Fuels/Raw materials.

Chief Risk Officer

The person responsible at JSW Group level is primarily involved identifying the various types of risk and opportunities including Climate related such as Cost/availability of fuels and raw materials, Distruption in operations due to extreme events (floods, heavy rains etc) . He also leads the development of mitigation plan of risk and presents the same to the Risk Committee.

Sustainability Head

A dedicated Sustainability team has also been constituted last year to further strengthen the overall Sustainability strategy and ESG initiatives along with Sustainability Head. He /She guides the TCFD alignment with the Business risks and also monitors any developments/frameworks requirements and how to implement those. The team is also responsible for exploring various options for future mitigation strategies by collaborating with concerned associations, partners etc.

Facility Manager (FM)

FM is responsible for identifying all operational related including climate related risk/opportunities at facility level. He/she is also for implementing the mitigation actions at the ground and also achieving the facility targets for operational KPIs.

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 - 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	Type of incentive	Activity incentivized	Comment
Board/Executive board	Monetary reward	Company performance against a climate-related sustainability index Other (please specify) (Overall Performance of the Company)	Overall performance of the company as a consequence to higher energy efficiency, higher Thermal Substitution Rate (TSR), lower clinker ratio and lower specific fuel consumption.
Corporate executive team	Monetary reward	Company performance against a climate-related sustainability index Other (please specify) (Overall performance of the company)	Overall performance of the company as a consequence to higher energy efficiency, higher Thermal Substitution Rate (TSR), lower clinker ratio and lower specific fuel consumption.
Chief Executive Officer (CEO)	Monetary reward	Company performance against a climate-related sustainability index Other (please specify) (Overall Performance of the company)	Overall performance of the company as a consequence to higher energy efficiency, higher Thermal Substitution Rate (TSR), lower clinker ratio and lower specific fuel consumption.
Chief Financial Officer (CFO)	Monetary reward	Company performance against a climate-related sustainability index Other (please specify) (Overall Performance of the Company)	Overall performance of the company as a consequence to higher energy efficiency, higher Thermal Substitution Rate (TSR), lower clinker ratio and lower specific fuel consumption.
Business unit manager	Monetary reward	Emissions reduction project Emissions reduction target Energy reduction project Energy reduction target Efficiency project Efficiency target Environmental criteria included in purchases Supply chain engagement Other (please specify) (Overall Performance of the Plant)	Overall performance of the plant as a consequence to higher energy efficiency, higher Thermal Substitution Rate (TSR), lower clinker ratio and lower specific fuel consumption.
Energy manager	Monetary reward	Energy reduction project Energy reduction target Efficiency project Efficiency target	Overall energy performance of the plant as a consequence to higher energy efficiency and lower specific fuel consumption.
Environment/Sustainability manager	Monetary reward	Emissions reduction project Emissions reduction target Other (please specify) (Compliance to environment norms)	Overall environment performance of the company and compliance to environment norms
Process operation manager	Monetary reward	Emissions reduction project Emissions reduction target Energy reduction project Energy reduction target Efficiency project Efficiency target	Improvement in utilization of raw materials, alternative fuels, quality improvement, reduction in energy & emission performance of the plant
All employees	Monetary reward	Emissions reduction project Emissions reduction target Energy reduction project Energy reduction target Efficiency project Efficiency target Behavior change related indicator Supply chain engagement Other (please specify) (Improvement in respective working areas)	Performance improvement related to respective working activities in the plant which leads in minimizing energy consumption, emission reduction and waste reduction
Procurement manager	Monetary reward	Environmental criteria included in purchases Supply chain engagement	Procurement manager includes environment criteria while purchasing the goods which have least environment impact.
All employees	Non-monetary reward	Behavior change related indicator	Employees are recognized by peer members as well as superiors through internal recognition mechanisms
Chief Sustainability Officer (CSO)	Monetary reward	Behavior change related indicator Company performance against a climate-related sustainability index Other (please specify) (Overall Performance of the Company)	Overall performance of the company as a consequence to higher energy efficiency, higher Thermal Substitution Rate (TSR), lower clinker ratio and lower specific fuel consumption.
Chief Procurement Officer (CPO)	Monetary reward	Behavior change related indicator Environmental criteria included in purchases Supply chain engagement Other (please specify) (Overall Performance of the company related to procurement)	Procurement manager includes environment criteria while purchasing the goods which have least environment impact.
Buyers/purchasers	Monetary reward	Environmental criteria included in purchases Supply chain engagement	Procurement manager includes environment criteria while purchasing the goods which have least environment impact.

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 e
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	20	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?

Any activity influenced by internal decisions or external factors such as legislation, policy or events which impacts the business operations continuity and /or financial profitability is defined to have a substantive financial or strategic impact on the 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 which is reviewed at respective plant level risk committee, headed by the plant head. Later on once all plant level risks are consolidated at corporate level –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: ERM 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 minimising vulnerability through proactive planning, insurance and due diligence.

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. An impact would be considered as substantive for the company as soon as it is High and would be identified as Key risks.

Substantive Financial Impact - If there is any activity, risks, opportunities results in financial implication of **>3% of EBITDA** , is considered as Substantive Financial Impact on our business.

We consider the following matrices in identifying them such as raw material cost, fuel and power cost, freight & handling cost, production cost, sale of cement & cementitious products and new innovative products.

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
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. Corporate Risk committee is headed by the JMD & CEO. 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. All these activities are coordinated by a Chief Risk Officer. 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. Case study for Climate-related opportunity In 2020-21, based upon the risk/opportunity analysis 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. Opportunity Realisation strategy To leverage on this opportunity, we have planned and approved installation of WHRS of 12.3 MW with the capex of INR 150 Crore. After the commissioning of WHRS, ~ 50% of power requirement will be met from it. This will not only reduce our dependency on grid but will also reduce our scope 2 CO2 emissions. Case study for physical risk/opportunity: Climate-related physical risk At one our plant, due to rainfall , there is water logging problem due to which our transport and logistic operation gets disrupted. If these incidences increases, the impact may be substantial. Our response to the risk We are taking measures to reduce such water logging incidences by dewatering mechanisms so that our operations may be less impacted.

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 will specify a target value for energy reduction which need to be complied in the specified timelines. To comply with this, company has planned and 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. Apart from that, currently we are paying coal cess on the amount of coal we use in our operations. This cess is charged additionally over and above other taxes by Govt. of India. At JSW Cement, we are trying our level best to utilize other fuels in place of coal to minimize our CO2 emissions as well as reducing financial liability to the organization.
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. For example, if Emission Trading Scheme (ETS) for CO2 emissions are introduced in India, we have evaluated the financial impact for JSW Cement based upon country sp. average CO2 per tonne of cementitious material and wrt to our sp. CO2 emissions per tonne of cementitious material. We have calculated the impact wrt to EU ETS considering 54.26 Euro / Tonnes of CO2 (price as on 9th July 2021), For JSW Cement we have a positive impact of INR 1322 Crore (notional value). It is arrived as per this calculation: (GCCA India 2019 sp. Co2 emission value - JSW Cement Sp, Co2 emission) X 54.26 euro/tonne of CO2 = ((560 - 223)/1000)X54.26X 8.82 Million Tonnes X 82 = INR 1322 Crore We have considered the financial value of per tonne of CO2 emissions wrt Internal Carbon Price, EU ETS, etc..
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. Our plants 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. As part of this, we are working on a R&D project which will have zero clinker i.e Geopolymer Cement and once it is completed, it will have huge impact on our Scope-1 CO2 emissions by decreasing them. One more initiative is installation of Waste Heat Recovery Systems (WHRS) at our Nandyal plant and which will reduce our Scope-2 CO2 emissions. During the year we have also worked on usage of different alternative fuels which further reduce our overall CO2 emissions. With the help of our R&D team, during the year we have developed an additive which is used in cement grinding and it helps in reducing clinker consumption during manufacturing of cement. By this initiative we have saved ~ 50,000 Tonnes of Clinker and avoided ~ 25000 Tonnes of CO2 Emissions as well as financial savings of ~ INR 4 Crore An example of the risks being considered is the 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. The current cost of CCU plant (Mineralization Carbonation Technology) is ~ INR 875 Crore / Million Tonne of CO2 emissions per year.
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. We closely monitor our air quality, effluent discharge, ground water levels, noise levels and other environmental parameters to ensure compliance. We implement various control measures while co-processing of different hazardous and non-hazardous waste while complying to various environment regulations. By co-processing the waste in our cement kilns, we are minimizing the impact on environment by avoiding land-filing. For example, for any non-compliance of the above mentioned parameters respective State Pollution Control Board will issue show cause or closure notice to the operations. This will impact the financial performance of the company as well as brand image.
Market	Relevant, always included	We analyse the market requirements, evolving demand from our customers for green products and the impact therefore on our activity. As part of this, we have developed composite cement (CompoCem) which is a blended cement with superior quality performance for the desired requirement. CompoCem is having lower carbon foot print. 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. For example - For every one tonne of PSC production we consume 63% less specific thermal energy when compared with one tonne of OPC. We consume 30% less specific electrical energy wrt OPC we emit 63% less CO2 emissions wrt OPC
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. Additionally, we are in process of raising a sustainability linked loan which will be linked to CO2 emissions 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.
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.
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.

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

Current 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 2021-22, we have consumed ` 0.2 Million tonnes of coal at our Nandyal plant and the financial impact of coal cess is

INR 8.1 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)
108000000

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 is at Rs. 400 and the coal requirement of Nandyal plant in 2020-21 was ~0.2 Million Tonnes. Hence, the current coal cess is around INR 8 Crore. Based on the assumption that if Coal CESS is doubled to INR 800 by 2030 and our coal consumption is increased to 0.45 MT of coal and the financial impact is ~ INR 36 Crore per annum. In case we are able to replace even 30% of coal by 2030, we would save around (0.45 X 1000000x800 x 0.3) = INR 108000000 per annum

Cost of response to risk
400000000

Description of response and explanation of cost calculation
We are working on installation of pre-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 40 Crore consisting of primary shredder, secondary shredder, conveying systems, storage areas, shelters, firefighting system etc. Approx, INR 30 Crore towards shredders and conveying systems, INR 6 Crore towards Shed and storage areas and INR 4 Crore towards safety systems, firefighting systems, treatment facilities and auxiliary etc.

Comment
Continuous improvements in usage of alternative fuels utilization

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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	Enhanced emissions-reporting obligations

Primary potential financial impact
Increased indirect (operating) costs

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

Company-specific description
With the increasing number of countries committing to net zero by mid-century, there can be an increasing pressure on India to take rigorous policy actions to decarbonize the industries. Thus, there is a huge potential for Carbon tax to come up in future.

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)
5017500000

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

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

Explanation of financial impact figure
As per the estimates, the average carbon tax in the developing countries stands at 5.3 USD/tCO2e and for developed countries, this value is 36.5 USD/tCO2e. Since, India is a developing country, a price value of 10 USD/t is considered. JSW Cement has a target of 223 tCO2e/ton of cementitious material by 2026 with a capacity of 30 MTPA. Using these numbers, quantification of impact is calculated. 10 *75*0.223*30000000 = 5,017,500,000 (1 USD- INR 75)

Cost of response to risk
1500000000

Description of response and explanation of cost calculation
We are working on multiple initiatives in mitigating the risk like change in product mix, fuel mix, improving clinker factor, usage of renewable energy. At one of our plant i.e Nandyal we are installing Waste Heat Recovery System (WHRS) of 12.3 MW capacity with an capex investment of INR 150 Crore and By this we will be able to minimize our Scope-2 CO2 Emissions. Also we are planning to invest in R&D efforts to develop low carbon products.

Comment
We are continuously working on improving our product mix, fuel mix, improving clinker factor , installation of WHRS etc.

Identifier
Risk 3

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
Likely

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)
72000000

Potential financial impact figure – maximum (currency)
360000000

Explanation of financial impact figure
JSW Dolvi cement works sources slag from JSW Steel plan. Both are located at western coast of Maharashtra . In case there is a flood, 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 & will doubled to 12000 MT/day in FY22. 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 cost of 1 T of cement is Rs 6000 per T. for 1 day loss, 12000 *6000 = 72,000,000 for 5 day loss, 12000 *6000 *5= 36,000,000

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.

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

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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?
Direct operations

Opportunity type
Energy source

Primary climate-related opportunity driver
Use of lower-emission sources of energy

Primary potential financial impact
Reduced direct costs

Company-specific description
Cement manufacturing is an energy intensive industry and it needs coal for clinker manufacturing, slag drying grinding as well as for electricity generation. We have currently two clinkering plant, 5 grinding units, one captive power plant, where we use coal. Last year due to increased demand and on-going geo-political issues, the coal prices have increased significantly. We foresee that the price will further increase in near future, which will impact our input cost. Company strives to turn this into an opportunity by increased usage of alternative fuels in place of fossil fuels. By using alternative fuels we will reduce our CO2 emissions. Company has started switching to Petcoke, biomass, alternative fuels to minimize the CO2 emissions from the operations.

Time horizon
Short-term

Likelihood
Very likely

Magnitude of impact
Medium-high

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

Potential financial impact figure (currency)
1336500000

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

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

Explanation of financial impact figure
We have used almost 3 Lac tones of coal for different purpose in 2021-22. Current coal price is around ~17000 INR per Ton. Considering the increased capacity and coal requirement (4.5 lac tones) in 3-5 years , even 10% increase in cost will result in 8,415,000,000 INR of fuel cost. Even if we replace 30% of coal with biomass or other industrial waste with an approximate average price of 8000 INR per T , we would save around 133 Crore INR (17000-8000) *450000*1.1*0.3 = 1,336,500,000 INR per annum

Cost to realize opportunity
70000000

Strategy to realize opportunity and explanation of cost calculation
Cost of the pre-processing system and some modifications in the kiln system for utilizing more amount of Alternative Fuels will cost approx. INR 40 Crore. The break of cost is as follows - Shredder, Conveying system, firefighting system, storage facilities etc. We are planning to phase out our captive power plant and source our power through renewable energy/grid power. We are also increasing our alternative fuels in kiln and biomass in our Slag dryer. For feeding biomass in dryer, we will need to change our Hot air Gas Generator (HAG) at 3 plants - Salboni, Jajpur and Vijaynagar which will cost around 30 Crore (3*10 crore). So the total cost will be around 70 Crore.

Comment
As we have already invested and installed system for alternative fuel usage at our Nandyal unit. for Grinding units, we still have to undertake modifications.

Identifier
Opp2

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 Low carbon products. Our product GGBS is a green product (industrial by-waste) has the lowest carbon footprint. Also , 5 years ago, we have launched CHD (higher quality PSC) which also has lower CO2 footprint. In 2021-22, our share of turnover from GGBS has increased from 18% to 21 % and share for CHD has increased from 13% to 22%. 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, a single figure estimate

Potential financial impact figure (currency)
315000000

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

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

Explanation of financial impact figure
We have produced around 3.1 Million T of GGBS in 2021-22. If we increase our production and sales of GGBS by 5% per annum, we will have a positive financial impact of 30 Crore pe annum. Price of GGBS = 2100 Rs /T Increased GGBS = 150000 T Financial impact = 315,000,000 INR

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 .

Comment
We are currently working on slag based products and will continue to do so.

C3. Business Strategy

C3.1

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

Row 1

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

Publicly available transition plan
Yes

Mechanism by which feedback is collected from shareholders on your 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 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 transition plan (optional)
We have committed to various climate related charters, ambitions and targets which are aligned to 1.5 Transition Plan.
un_-_energy_compact_-_jsw_cement_india_03sep21.docx.pdf
RE100 29-04-2021.pdf
EP100 29-04-2021 (1).pdf
CII Climate Charter.pdf
Signed Document to GFP for Heavy Industry 10-02-2021.pdf
EV100 29-04-2021.pdf

Explain why your organization does not have a 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
Physical climate scenarios: Customized publicly available physical scenario	Company-wide	1.5ºC	In 2021, the GCCA (Global Cement and Concrete Association) member companies (including JSW Cement) developed the 2050 Cement and Concrete Industry Roadmap for Net Zero Concrete. The GCCA 2050 Roadmap to net zero concrete builds on the ground-breaking GCCA climate ambition and aligns with global climate targets of limiting global warming to a 1.5ºC scenario. The sector is committed to producing net zero concrete by 2050 and is committed to acting now. The roadmap actions between now and 2030 will prevent almost 5 billion tonnes of CO2 emissions from entering the atmosphere compared to a business-as-usual scenario. JSW cement also having committed to Net zero 2050, also undertook analysis of its earlier targets and tried to found out if they align with the commitment. A case study of how the results of the scenario analysis and this roadmap have directly influenced our business objectives and strategy. Situation: JSW cement has the lowest carbon intensity with 216 kg/T of cementitious material and thus already a leader in its decarbonization Journey. It aims to maintain the leadership position in future too. In 2020, the company had set target of reducing its emissions per T of cement by 23% by 2030 with a baseline of 2014-15. Task: what needed to be done: As it has committed to Net Zero by 2050, the company reworked its targets in 2021-22 and planned to validate its targets through SBTi with 1.5 C scenario. Action: what was the course of action taken? JSW started its engagement with SBTi to commit to Net Zero Ambition and signed the SBTi. Parrallely, it also worked towards revisiting its targets. Result - It has worked out a new target for 2030 which is yet to be validated by SBTi. Additionally it has worked out an intermediate target which will be linked to Sustainability Linked Loan Last year, JSW Cement has used the models by IITM (Indian Institute of Tropical Meteorology) for scenario analysis. Further on, JSW Cement is looking to do a detailed scenario analysis.

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

Considering the fact that our 2020-21 net carbon emission intensity (216 kg/T) is already very low (1/3rd of Global average i.e. 608 kg/T as per GCCA GNR data 2019) and we have committed to Net Zero by 2050, we planned to use the scenario analysis about the possible short term intermediate targets we can set. There are different levers which results in CO2 emission reduction which is Clinker Factor reduction, Thermal Substitution Rate, Energy efficiency, Product Portfolio etc. Also we have different plants - two integrated plants and 4 Grinding units. We also envisaged to use the scenario analysis to look at the risks in more detailed manner to find out the contribution of each factor such as contribution of our each manufacturing plant and associated levers to overall CO2 emission reduction in short term, medium term and Long term horizon.

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

In 2020-21, JSW cement has the lowest carbon intensity with 216 kg/T of cementitious material which 1/3rd of the global Average and ~30% of the global Average. Thus JSW cement was considered a leader in its decarbonization Journey. It aims to maintain the leadership position in future too. In 2019-20, the company had set target of reducing its emissions per T of cement by 23% by 2030 with a baseline of 2014-15. As per the roadmap 2050 Cement and Concrete Industry Roadmap for Net Zero Concrete, 2030 CO2 REDUCTION MILESTONES was 20% reduction as compared to 2020 baseline. At that time, JSW cement envisaged that we probably need to revisit our targets in line with climate scenario used in roadmap and latest climate science. 2) Task: what needed to be done: Revisiting its targets and sub-targets aligning with SBTi and undertake the detailed scenario analysis 3) Action: what was the course of action taken? JSW started its engagement with SBTi. Being a member company of GCCA and considering its commitment to Net Zero by 2050, the company reworked its targets in 2021-22 and planned to validate its targets through SBTi with 1.5 C scenario. JSW cement used the SBTi Net Zero tool which uses data from the IEA Net Zero Emissions (NZE) scenario, as well as a cross-sector pathway and FLAG sector pathway that were developed by the SBTi. JSW cement has worked out a trend of reaching Net Zero Ambition and signed. It also committed to SBTi and in process of development of its Near term targets which would be further validated by SBTi. Parallelly, it has worked out an intermediate target for 2026 for the purpose of Sustainability Linked Loan which will have a Sustainability performance target of reducing 15% reduction in its Carbon emission intensity with a baseline of 2020-21. 4) Result - It has worked out two new targets 2026 and 2030. While 2026 target will be the part of a Sustainability Linked Loan which we will be raising soon, 2030 target is yet to be validated. As of now, we have done the scenario analysis internally, but further we are planning to undertake the detailed scenario analysis through third party to bring in authenticity.

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. 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. Time horizon: 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. 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. 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. As part of our climate change mitigation measures in supply chain, we are in the process of deploying heavy duty electric vehicles for transportation of raw materials. In EV100 commitment, we have clearly specified about our commitment related heavy vehicles which are of ~ 55 Tonnes capacity. As per the EV100 commitment it talk about vehicles upo 10 Tonnes only. Time Frame - 0 to 5 years
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 FY22. Our R&D team is working on "Clinker Free Cement" i.e Geopolymer Cement. Once it is established, then it will have a huge impact on our overall CO2 emissions from our operations. 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, we were able to save ~ 45000 Tonnes of Clinker and ~ 24000 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. As part of the operations initiatives, during FY22 by using reducing clinker factor at our Salboni & Jajpur plant we have saved ~ 25000 Tonnes of CO2 emissions and financial savings ~ INR 4 Crore. 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 Capital expenditures Acquisitions and divestments 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. For example- 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. This will be completed by the end of 2022. Currently the work is under progress. 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 transition to a 1.5°C world?

Yes

C3.5a

(C3.5a) Quantify the percentage share of your spending/revenue that is aligned with your organization's transition to a 1.5°C world.

Financial Metric
Revenue

Percentage share of selected financial metric aligned with a 1.5°C world in the reporting year (%)
30

Percentage share of selected financial metric planned to align with a 1.5°C world in 2025 (%)
40

Percentage share of selected financial metric planned to align with a 1.5°C world in 2030 (%)
50

Describe the methodology used to identify spending/revenue that is aligned with a 1.5°C world
Our current flagship products - GGBS and Slag cement are low carbon products because of which our current CO2 intensity is 1/3rd of global average. However, for 1.5°C world, we have considered only GGBS as a product alignment, as it has has a global warming potential of only 60 kg/T as compared to ~700 kg/T of ordinary portland cement. Revenue generated from GGBS is almost 30% and we want to increase the portfolio of such products by 50% 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

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

Target reference number
Int 1

Year target was set
2021

Target coverage
Company-wide

Scope(s)
Scope 1
Scope 2

Scope 2 accounting method
Market-based

Scope 3 category(ies)
<Not Applicable>

Intensity metric
Metric tons CO2e per metric ton of cement

Base year
2020

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 (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 (in all Scope 3 categories) covered by this 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
0

Intensity figure in reporting year for Scope 1 (metric tons CO2e per unit of activity)
0.219

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

Intensity figure in reporting year for 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)
0.265

% of target achieved relative to base year [auto-calculated]
-7.63358778625955

Target status in reporting year
Underway

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

Please explain target coverage and identify any exclusions
The 2026 Target is set considering the current operating units(including our most recent operating plant - Salem) along with any expansion in these units. No new green field projects are included in the scope of these targets.

Plan for achieving target, and progress made to the end of the reporting year
We have identified various levers for achieving our targets: Clinker Factor reduction by way of blended cements and cementitious products Increasing our Renewable Energy Portfolio/WHRS Energy efficiency Replacement of Coal with Alternative Fuels In 2021-22, we produced more clinker and we have acquired CPP thus our emissions scope 1 have increased while scope 2 remains almost same. In 2022-23, our WHRS plant will be operational which will help us reduce our scope 2 emissions. also we plant to increase our alternative fuels percentage.

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

Target reference number
Int 2

Year target was set
2021

Target coverage
Company-wide

Scope(s)
Scope 1
Scope 2

Scope 2 accounting method
Market-based

Scope 3 category(ies)
<Not Applicable>

Intensity metric
Metric tons CO2e per metric ton of cement

Base year
2020

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 (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 (in all Scope 3 categories) covered by this 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 (%)
20

Intensity figure in target year for all selected Scopes (metric tons CO2e per unit of activity) [auto-calculated]
0.2096

% change anticipated in absolute Scope 1+2 emissions
20

% change anticipated in absolute Scope 3 emissions
0

Intensity figure in reporting year for Scope 1 (metric tons CO2e per unit of activity)
0.219

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

Intensity figure in reporting year for 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)
0.265

% of target achieved relative to base year [auto-calculated]
-5.72519083969466

Target status in reporting year
Underway

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

Please explain target coverage and identify any exclusions
The 2026 Target is set considering the current operating units(including our most recent operating plant - Salem) along with any expansion in these units. No new green field projects are included in the scope of these targets.

Plan for achieving target, and progress made to the end of the reporting year
We have identified various levers for achieving our targets: Clinker Factor reduction by way of blended cements and cementitious products Increasing our Renewable Energy Portfolio/WHRS Energy efficiency Replacement of Coal with Alternative Fuels In 2021-22, we produced more clinker and we have acquired CPP thus our emissions scope 1 have increased while scope 2 remains almost same. In 2022-23, our WHRS plant will be operational which will help us reduce our scope 2 emissions. Also we plant to increase our alternative fuels percentage.

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)
Other climate-related 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
7.1

% of target achieved relative to base year [auto-calculated]
10.1960784313725

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
Company is implementing various measures in increasing utilization of waste materials as fuel in clinker manufacturing. Base year is 2020-21 and the Target year is 2030. During the year 2021-22, company has consumed ~35000 Tonnes of alternatives fuels (including biomass) and in our cement kiln at Nandyal which resulted in reduction of ~ 40000 Tonnes of CO2 Emissions.

Plan for achieving target, and progress made to the end of the reporting year
We are increasing our co-processing capability with required upgradation at plant level. We are also partnering with Waste generators (indutries) , municipalities, farmers and biomass suppliers to provide us the waste and biomass.

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

Is this target part of an overarching initiative?

RE100

Please explain target coverage and identify any exclusions
We have made a commitment to procure 100% of its power/ electricity from renewable sources by 2050. We have intermediate target - 90% by 2040 and 60% by 2030. We have also considered Waste Heat Recovery Systems also in the scope of RE.

Plan for achieving target, and progress made to the end of the reporting year
Setting up Waste Heat Recovery System, captive solar plants, wind farms, use of biomass based energy/electricity and procuring electricity from renewable sources.

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

C4.2b

(C4.2b) Provide details of any other climate-related targets, including methane reduction targets.

Target reference number
Oth 1

Year target was set
2020

Target coverage
Company-wide

Target type: absolute or intensity
Intensity

Target type: category & Metric (target numerator if reporting an intensity target)

Energy productivity	metric tons of cement

Target denominator (intensity targets only)
GJ

Base year
2014

Figure or percentage in base year
1491

Target year
2037

Figure or percentage in target year
2982

Figure or percentage in reporting year
2872

% of target achieved relative to base year [auto-calculated]
92.6224010731053

Target status in reporting year
Underway

Is this target part of an emissions target?
Yes

Is this target part of an overarching initiative?
EP100

Please explain target coverage and identify any exclusions
We have taken a target of doubling our energy productivity by 2037. We are revisiting this target as we have almost achieved our target and also we believe that the metric is not a adequate enough thus we are planning to change the metric also - from Revenue/Energy input to Cement production/Energy input.

Plan for achieving target, and progress made to the end of the reporting year
We have been continuously working towards lowering our energy requirement and increasing our revenue by producing low carbon products which also required less heat. We are increasing our Renewable Energy Portfolio, WHRS and AFR capacity to optimize our energy demands and improve energy productivity.

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

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 2 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, it is 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
Yes, we are exploring with various agencies for Carbon Capture Utilisation and Storage projects and their feasibility. Milestones and investments particularly wrt to CCUS is mostly after 2035 but the efforts are on. Also we are working biological carbon sequestration projects to partially compensate the 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.

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	13	0
To be implemented*	21	6921
Implementation commenced*	2	2162
Implemented*	36	72560
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

Energy efficiency in production processes	Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)
5353

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

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
25021278

Investment required (unit currency – as specified in C0.4)
5076552

Payback period
1-3 years

Estimated lifetime of the initiative
3-5 years

Comment
Most of initiatives were replacing old and inefficient parts with energy efficient motors, VFDs , necessary upgradation and modification of equipments.

Initiative category & Initiative type

Energy efficiency in production processes	Fuel switch

Estimated annual CO2e savings (metric tonnes CO2e)
34892

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)
16170268

Investment required (unit currency – as specified in C0.4)
8000000

Payback period
<1 year

Estimated lifetime of the initiative
6-10 years

Comment
Using industrial, Biomass and plastic waste as Alternative Fuels and reducing coal.

Initiative category & Initiative type

Waste reduction and material circularity	Product/component/material recycling

Estimated annual CO2e savings (metric tonnes CO2e)
28971

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)
1992888

Investment required (unit currency – as specified in C0.4)
500000

Payback period
<1 year

Estimated lifetime of the initiative
11-15 years

Comment
Replacing limestone with Slag and Flyash which are by-product generated by our Steel and Captive Power plants

Initiative category & Initiative type

Low-carbon energy consumption	Solar PV

Estimated annual CO2e savings (metric tonnes CO2e)
3344

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

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
21704942

Investment required (unit currency – as specified in C0.4)
0

Payback period
<1 year

Estimated lifetime of the initiative
16-20 years

Comment
Solar power plants at Nandyal and Salboni were already existing however we increased the consumption of solar power to 1,51,79,229 in 2021-22 from 1,15,04,567 Kwh in FY20-21

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 SNCR, 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 & 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 cement

Reference product/service or baseline scenario used
Ordinary Portland Cement

Life cycle stage(s) covered for the reference product/service or baseline scenario
Cradle-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 Our PSC has GWP of 325 kg/T (EPD)

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year
85

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?

Yes, other structural change, please specify (Last Year, our subsidiary (Shiva) emission data was not included but from this year, we have included it in the scope. Also in 2021, we have acquired a captive power plant , emissions of which are included in this year.)

Name of organization(s) acquired, divested from, or merged with

Shiva Cement is included now. It was acquired prior to the reporting year but are being accounted for in this disclosure (due to a lack of data, and now have the data to include the acquired company's emissions data in this CDP response) CPP at Salboni was aquired in 2021

Details of structural change(s), including completion dates

JSW Cement has acquired control over Shiva Cement and has become the promoter of the Shiva Cement in 2017. It is a strategic investment to make JSW Cement a 10 MTPA (Million Tonne Per Annum) player in the eastern side of the country and a 25 MTPA player across India. Clinker Produced at this plant will cater to the requirements of our Salboni and Jajpur Grinding units .

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 boundary	Last year we had not included our subsidiary Shiva but this year we are including. Also this year our CPP plant at Salboni has been included in the reporting as it was aquired in 2021.

C5.1c

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

	Base year recalculation	Base year emissions recalculation policy, including significance threshold
Row 1	Yes	We have set a new target this year as per which our baselines emission also was changed after including Shiva.

C5.2

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

Scope 1

Base year start

April 1 2020

Base year end

March 31 2021

Base year emissions (metric tons CO2e)

1573858

Comment

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

Scope 2 (location-based)

Base year start
April 1 2020

Base year end
March 31 2021

Base year emissions (metric tons CO2e)
343265

Comment
Scope 2 Emissions from purchased electricity

Scope 2 (market-based)

Base year start
April 1 2020

Base year end
March 31 2021

Base year emissions (metric tons CO2e)
332795

Comment
Emissions from purchased electricity (excluding renewables)

Scope 3 category 1: Purchased goods and services

Base year start
April 1 2021

Base year end
March 31 2022

Base year emissions (metric tons CO2e)
488679

Comment
All primary raw materials (Clinker, Gypsum, Laterite etc)

Scope 3 category 2: Capital goods

Base year start
April 1 2021

Base year end
March 31 2022

Base year emissions (metric tons CO2e)
0

Comment
Not relevant so not calculated

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

Base year start
April 1 2021

Base year end
March 31 2022

Base year emissions (metric tons CO2e)
84498

Comment
Primary fuels - Coal and petcoke

Scope 3 category 4: Upstream transportation and distribution

Base year start
April 1 2021

Base year end
March 31 2022

Base year emissions (metric tons CO2e)
36457

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 2021

Base year end
March 31 2022

Base year emissions (metric tons CO2e)
0

Comment
Not relevant so not calculated

Scope 3 category 6: Business travel

Base year start
April 1 2021

Base year end
March 31 2022

Base year emissions (metric tons CO2e)
186

Comment
Official Travel (air)

Scope 3 category 7: Employee commuting

Base year start
April 1 2021

Base year end
March 31 2022

Base year emissions (metric tons CO2e)
0

Comment
Not relevant so not calculated

Scope 3 category 8: Upstream leased assets

Base year start
April 1 2021

Base year end
March 31 2022

Base year emissions (metric tons CO2e)
0

Comment
Not relevant so not calculated

Scope 3 category 9: Downstream transportation and distribution

Base year start
April 1 2021

Base year end
March 31 2022

Base year emissions (metric tons CO2e)
68860

Comment
Downstream transportation through trucks and trains.

Scope 3 category 10: Processing of sold products

Base year start
April 1 2021

Base year end
March 31 2022

Base year emissions (metric tons CO2e)
0

Comment
Not relevant so not calculated

Scope 3 category 11: Use of sold products

Base year start
April 1 2021

Base year end
March 31 2022

Base year emissions (metric tons CO2e)
0

Comment
Not relevant so not calculated

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

Base year start
April 1 2021

Base year end
March 31 2022

Base year emissions (metric tons CO2e)
0

Comment
Not relevant so not calculated

Scope 3 category 13: Downstream leased assets

Base year start
April 1 2021

Base year end
March 31 2022

Base year emissions (metric tons CO2e)
0

Comment
Not relevant so not calculated

Scope 3 category 14: Franchises

Base year start
April 1 2021

Base year end
March 31 2022

Base year emissions (metric tons CO2e)
0

Comment
Not relevant so not calculated

Scope 3 category 15: Investments

Base year start
April 1 2021

Base year end
March 31 2022

Base year emissions (metric tons CO2e)
0

Comment
Not relevant so not calculated

Scope 3: Other (upstream)

Base year start
April 1 2021

Base year end
March 31 2022

Base year emissions (metric tons CO2e)
0

Comment
Not relevant so not calculated

Scope 3: Other (downstream)

Base year start
April 1 2021

Base year end
March 31 2022

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.
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
The Greenhouse Gas Protocol: Scope 2 Guidance
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)
1776102.3

Start date
April 1 2021

End date
March 31 2022

Comment
Including our subsidiary Shiva and CPP at Salboni

Past year 1

Gross global Scope 1 emissions (metric tons CO2e)
1590391

Start date
April 1 2020

End date
March 31 2021

Comment
Including our subsidiary Shiva

Past year 2

Gross global Scope 1 emissions (metric tons CO2e)
1398609

Start date
April 1 2019

End date
March 31 2020

Comment

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 are reporting a Scope 2, market-based figure

Comment
We are reporting our scope-2 CO2 emissions calculated based upon the latest CEA guidelines - CO2 Baseline Database for the Indian Power Sector v 16.0 considering combined margin (CM) CO2 emission factor of 0.91 For Market Based emissions calculation - We have used the zero emission factor for Renewable Energy we are procuring through PPA from JSW Energy and bought Renewable Energy Certificates.

C6.3

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

Reporting year

Scope 2, location-based
379743.1

Scope 2, market-based (if applicable)
365930

Start date
April 1 2021

End date
March 31 2022

Comment
Including our subsidiary Shiva. There is a difference in the location based and market based CO2 emissions. This is due to our renewable energy consumption during the reporting year and equivalent of CO2 emissions where deducted from location based emissions in arriving market based CO2 emissions

Past year 1

Scope 2, location-based
332592

Scope 2, market-based (if applicable)
322123

Start date
April 1 2020

End date
March 31 2021

Comment
Excludes Shiva. There is a difference in the location based and market based CO2 emissions. This is due to our renewable energy consumption during the reporting year and equivalent of CO2 emissions where deducted from location based emissions in arriving market based CO2 emissions

Past year 2

Scope 2, location-based
330164

Scope 2, market-based (if applicable)
317706

Start date
April 1 2019

End date
March 31 2020

Comment
Excludes Shiva. There is a difference in the location based and market based CO2 emissions. This is due to our renewable energy consumption during the reporting year and equivalent of CO2 emissions where deducted from location based emissions in arriving market based CO2 emissions

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 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)
488679

Emissions calculation methodology
Supplier-specific method
Hybrid method
Average data method
Other, please specify (Calculated considering 525 kg CO2/Tonne of Clinker – Default value of WBCSD – CO2 protocol.)

Percentage of emissions calculated using data obtained from suppliers or value chain partners
10

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.

Capital goods

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 "Capital goods" has been considered as not relevant.

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

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
84498

Emissions calculation methodology
Average data method
Fuel-based method
Distance-based method

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

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)
36457

Emissions calculation methodology
Average data method
Distance-based method
Other, please specify (The emissions from raw material transportation is calculated based upon average emissions.)

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, 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
There will be negligible quantities of waste generation during cement manufacturing. 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.

Business travel

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
186

Emissions calculation methodology
Fuel-based method
Distance-based method

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

Please explain
The emissions from business travel are based upon average emissions according to WBCSD CSI Scope 3 methodology. The calculation is based on the actual domestic and overseas air travels of our employees.

Employee commuting

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
1810

Emissions calculation methodology
Average data method

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

Please explain
The emissions from employee travel are calculated based upon average emissions.

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
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)
68860

Emissions calculation methodology
Average data method
Fuel-based method
Distance-based method

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

Please explain
The emissions from finished or semi-finished products transportation and calculated based upon average emissions.

Processing of sold products

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 "Processing of sold products" has been considered as not relevant..

Use of sold products

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
Not applicable to our operations

End of life treatment of sold products

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 "End of life treatment of sold products" has been considered as not relevant..

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 "Waste generated in operations" has been considered as not relevant the source "FRanchisee" 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 and considering the share of these emissions within the total Scope 3 emissions for the cement industry, the source"Other Upstream" has been considered as 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 and considering the share of these emissions within the total Scope 3 emissions for the cement industry, the source "Other DOwnstream" has been considered as not relevant.

C6.5a

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

Past year 1

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

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
We started calculating Scope 3 emissions from 20 onwards

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	11457	We have used biomass (~8900 T) in our clinker manufacturing process.

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
0.269

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)
2142032

Metric denominator
metric ton of product

Metric denominator: Unit total
7963181

Scope 2 figure used
Market-based

% change from previous year
1.7

Direction of change
Increased

Reason for change
Due to increased clinker production, more cement production and CPP emissions at Salboni

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	0.925	0.911	0.19
Cement equivalent	0.311	0.307	0.06
Cementitious products	0.227	0.223	0.04
Low-CO2 materials	0.223	0.22	0.046

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	1776102.1	IPCC Sixth Assessment Report (AR6 - 100 year)

C7.2

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

Country/Region	Scope 1 emissions (metric tons CO2e)
India	1776102.1

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	34772.2	18.666667	73.083333
JSW Cement – Nandyal Cement Works	1551565.5	15.670833	78.455833
JSW Cement – Salboni Cement Works	81186.2	22.576666	87.306111
JSW Cement – Vijaynagar Cement Works	91952.9	15.179722	76.700277
JSW Cement - Jajpur Cement Works	13546.1	20.953888	86.039166
Shiva Cement	3079.2	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	1776102.1	1749273.8	The difference in 26,828 tonnes of CO2 emissions is due to usage 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/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
India	379743	365930

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	63465.8	63465.8
JSW Cement – Nandyal Cement Works	156419.4	148259
JSW Cement – Salboni Cement Works	44421.2	38768.5
JSW Cement – Vijaynagar Cement Works	95115.9	95115.9
JSW Cement - Jajpur Cement Works	18271.1	18271.1
JSW Cement-Shiva	2049.6	2049.6

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	379743	365930	Location based emissions total include emissions based on Grid electricity factor multiplied by total power consumption by the JSW Cement. Market Based Emissions total excludes emissions from RE provider through PPA and REC as the emission factor of all RE and REC is considered as zero.
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?

Increased

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	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	3344	Decreased	0.17	3,344 T of CO2 Emissions were reduced on account of Change in renewable energy consumption. Last year Scope 1+Scope 2 emissions were 18,70,952 T % change 3,344 /18,70,952 = 0.17 %
Other emissions reduction activities	56172	Decreased	3	56172 T of CO2 Emissions were further reduced on account of Emission reduction activities which use of alternative raw materials, necessary upgradation and modifications etc. Last year Scope 1+Scope 2 emissions were 18,70,952 T % change 34,671 /18,70,952 = 3%
Divestment	0	No change	0	NA
Acquisitions	54537	Increased	2.9	54,537 T of CO2 Emissions were further increased on account of CPP Emissions which we acquired in 2021. Last year Scope 1+Scope 2 emissions were 18,70,952 T % change 54,537 /18,70,952 = 2.9%
Mergers	0	No change	0	NA
Change in output	175728	Increased	9.39	1,75,728 T of CO2 Emissions were further increased on account of output increase Last year Scope 1+Scope 2 emissions were 18,70,952 T % change 1,75,728 /18,70,952 = 9.39%
Change in methodology	0	No change	0	NA
Change in boundary	5128	Increased	0.27	5,128 T of CO2 Emissions increased due to increase of Grid Electricity consumption on account of output increase Last year Scope 1+Scope 2 emissions were 18,70,952 T % change 5,128 /18,70,952 = 0.27%
Change in physical operating conditions	0	No change	0	NA
Unidentified	0	No change	0	NA
Other	87606	Increased	4.68	87,606 T of CO2 Emissions increased due to increase of Grid Electricity consumption on account of output increase and increase of average clinker factor. Last year Scope 1+Scope 2 emissions were 18,70,952 T % change 87,606 /18,70,952 = 4.68%

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 10% but less than or equal to 15%

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	No

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)	28958	2146607	2175565
Consumption of purchased or acquired electricity	<Not Applicable>	15179	402120	417300
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>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Total energy consumption	<Not Applicable>	44138	2548728	2592865

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)	2166946
Consumption of purchased or acquired electricity	<Not Applicable>	310293
Consumption of other purchased or acquired energy (heat, steam and/or cooling)	<Not Applicable>	<Not Applicable>
Total energy consumption	<Not Applicable>	2477239

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
28958.4

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
28958.4

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 used biomass in our clinkerisation process replacing coal.

Other 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
NA

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
NA

Coal

Heating value
LHV

Total fuel MWh consumed by the organization
1929829

MWh fuel consumed for self-generation of electricity
45123

MWh fuel consumed for self-generation of heat
1884706

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 coal and petcoke.

Oil

Heating value

Total fuel MWh consumed by the organization
5379.38

MWh fuel consumed for self-generation of electricity
197.72

MWh fuel consumed for self-generation of heat
5181.65

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

Gas

Heating value
LHV

Total fuel MWh consumed by the organization
121003.91

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
121003.91

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

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

Heating value
LHV

Total fuel MWh consumed by the organization
90394.84

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
90394.84

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
2175565.18

MWh fuel consumed for self-generation of electricity
45320.83

MWh fuel consumed for self-generation of heat
2130244.35

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

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
28958.42

MWh fuel consumed at the kiln
28958.42

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>

Other 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>

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>

Coal

Heating value
LHV

Total MWh fuel consumed for cement production activities
1929828.62

MWh fuel consumed at the kiln
1507251.81

MWh fuel consumed for the generation of heat that is not used in the kiln
377453.7

MWh fuel consumed for the self-generation of electricity
45123.1

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

Oil

Heating value
LHV

Total MWh fuel consumed for cement production activities
5379.38

MWh fuel consumed at the kiln
1.06

MWh fuel consumed for the generation of heat that is not used in the kiln
5180.59

MWh fuel consumed for the self-generation of electricity
197.72

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

Gas

Heating value
LHV

Total MWh fuel consumed for cement production activities
121003.91

MWh fuel consumed at the kiln
0

MWh fuel consumed for the generation of heat that is not used in the kiln
121003.91

MWh fuel consumed for the self-generation of electricity
0

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

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

Heating value
LHV

Total MWh fuel consumed for cement production activities
90394.84

MWh fuel consumed at the kiln
86524.28

MWh fuel consumed for the generation of heat that is not used in the kiln
3870.55

MWh fuel consumed for the self-generation of electricity
0

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

Total fuel

Heating value
LHV

Total MWh fuel consumed for cement production activities
2175565.18

MWh fuel consumed at the kiln
1622735.59

MWh fuel consumed for the generation of heat that is not used in the kiln
507508.76

MWh fuel consumed for the self-generation of electricity
45320.83

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

C8.2g

(C8.2g) Provide a breakdown of your non-fuel energy consumption by country.

Country/area
India

Consumption of electricity (MWh)
417300

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

Total non-fuel energy consumption (MWh) [Auto-calculated]
417300

Is this consumption excluded from your RE100 commitment?
No

C8.2h

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

Country/area of renewable electricity consumption
India

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

Renewable electricity technology type
Solar

Renewable electricity consumed via selected sourcing method in the reporting year (MWh)
15179

Tracking instrument used
No instrument used

Total attribute instruments retained for consumption by your organization (MWh)
15179

Country/area of origin (generation) of the renewable electricity/attribute consumed
India

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)
2019

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

Brand, label, or certification of the renewable electricity purchase
No brand, label, or certification

Comment

C8.2j

(C8.2j) Provide details of your organization's renewable electricity generation by country 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 directly consumed by your organization from this facility in the reporting year for which certificates were not issued (MWh)
0

Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were issued and retired (MWh)
0

Renewable electricity sold to the grid in the reporting year (MWh)
0

Certificates issued for the renewable electricity that was sold to the grid (MWh)
0

Certificates issued and retired for self-consumption for the renewable electricity that was sold to the grid (MWh)
0

Type of energy attribute certificate
<Not Applicable>

Total self-generation counted towards RE100 target (MWh) [Auto-calculated]
0

Comment
We do not have any renewable electricity generation by country in the reporting year.

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.

At JSW Cement, We are now increasing the consumption of solar power at our Nandyal plant and Salboni Plant. With two solar plants near Nandyal unit – 5.5 MW and the Salboni unit – 3.5 MW, owned by our sister company JSW Energy, we have plans to enhanced our solar power consumption.

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-specific
Row 1	No	<Not Applicable>

C9. Additional metrics

C9.1

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

Description
Energy usage

Metric value
3042

Metric numerator
Total Thermal energy in MJ

Metric denominator (intensity metric only)
Total Clinker Production in Tonnes

% change from previous year
0.5

Direction of change
Increased

Please explain
Specific thermal energy per tonne of clinker has increased when compared with previous year.

Description
Other, please specify (Blended cement Portfolio)

Metric value
89

Metric numerator
Product volumes (T) containing slags/flyash

Metric denominator (intensity metric only)
Total Production (T)

% change from previous year
1

Direction of change
Increased

Please explain
We have increased slag based production from last year which actually helps in reduction of CO2 emissions.

Description
Other, please specify (Thermal Substitution Rate)

Metric value
7.1

Metric numerator
Thermal energy used through Alternative Fuel

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

% change from previous year
58

Direction of change
Increased

Please explain
We have increased our TSR from 4.5 % to 7.1% this year.

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	Yes, organization has invested in R&D for development of low-carbon products

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	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
Low clinker cement	Applied research and development	≤20%	14800000	R&D initiatives on new cement products and utilization of different types of steel slag in cement manufacturing such as Raw meals, Construction Chemicals etc.

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
GHG Verification Statement-JSW Cement_FY 2021-22_01.08.22.pdf

Page/ section reference
Page 1-2

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
GHG Verification Statement-JSW Cement_FY 2021-22_01.08.22.pdf

Page/ section reference
Page 1-2

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: Fuel and energy-related activities (not included in Scopes 1 or 2)
Scope 3: Upstream transportation and distribution
Scope 3: Business travel
Scope 3: Downstream transportation and distribution

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
GHG Verification Statement-JSW Cement_FY 2021-22_01.08.22.pdf

Page/section reference
page 1-2

Relevant standard
ISAE3000

Proportion of reported emissions verified (%)
100

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?
No, but we are actively considering verifying within the next two years

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 2021

Period end date

March 31 2022

% of total Scope 1 emissions covered by tax

40

Total cost of tax paid

120000000

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 12 Crore includes primarily the coal CESS (Rs. 400/T) which we have paid basis consumption of Coal. 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. Though for JSW we have not been significantly impacted by the REC.

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 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 ~7.1% TSR which reduces our coal requirement and equivalent amount of CESS.

JSW Cement will transition to Renewable Energy across its business operations. It has entered into a long-term contracts with local municipalities and biomass provider for regular alternate fuel supply. As part of its renewable energy strategy, it is increasing its capacity of solar plant and Nandyal and also planning to install Solar facility at Vijayanagar .

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

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.

Objective for implementing an internal carbon price
Navigate GHG regulations
Stakeholder expectations
Change internal behavior
Drive energy efficiency
Drive low-carbon investment
Identify and seize low-carbon opportunities

GHG Scope
Scope 1
Scope 2

Application
In evaluation and mitigation of climate change related risks to the business

Actual price(s) used (Currency /metric ton)
1638

Variance of price(s) used
Our internal carbon price is USD 21 i.e ~ INR 1638

Type of internal carbon price
Shadow price

Impact & implication
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. By this we will able to know the probable financial liability for the company if we are exceeding the national average or else we will be positive side if our emissions are lower than national average.

C12. Engagement

C12.1

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

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement & Details of engagement

Education/information sharing	Run an engagement campaign to educate customers about the climate change impacts of (using) your products, goods, and/or services

% of customers by number

60

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

0

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 products has the lowest carbon footprint. 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 >50% of our customers in last year. Also we undertake programs for potential customers too which may include civil engineers, architects, builders and contractors also. Scope of Engagement: In 2021-22, we have conducted almost ~80 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.

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 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). 2. % of sales increase from our low carbon products While we have seen that our repeated customer base stands at more than 85%, there is also a shift of customers towards low carbon products. If we compare from last year, 2% of our OPC customers have shifted to CHD during FY2021-22. This has resulted in share of turnover from low carbon products going up by 1% than last year. During the year we have seen jump in the revenues coming from low carbon cement products from the previous year.

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:

- Global Cement and Concrete Association (GCCA) - Global
- Cement Manufacturing Association (CMA) - India
- Global Cement and Concrete Association (GCCA) - India
- Federation of Indian Chambers of Commerce & Industry
- CII Climate Charter

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... 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 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?

No, but we plan to introduce climate-related requirements within the next two years

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

Direct or indirect engagement that could influence policy, law, or regulation that may impact the climate

Yes, we engage directly with policy makers

Yes, we engage indirectly through trade associations

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 yet

un_-_energy_compact_-_jsw_cement_india_03sep21.docx.pdf

RE100 29-04-2021.pdf

EP100 29-04-2021 (1).pdf

CII Climate Charter.pdf

Signed Document to GFP for Heavy Industry 10-02-2021.pdf

EV100 29-04-2021.pdf

Describe the process(es) your organization has in place to ensure that your engagement activities are consistent with your overall climate change strategy

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?

Focus of policy, law, or regulation that may impact the climate

Circular economy

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

Policy, law, or regulation geographic coverage

National

Country/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 (which is strength) rather than prescribed standards for blended cement which will help in increased use of Flyash/slag in blended cements.

Have you evaluated whether your organization's engagement is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

C12.3b

(C12.3b) Provide details of the trade associations your organization engages with which are likely to take a position on any policy, law or regulation that may impact the climate.

Trade association
Other, please specify (GCCA)

Is your organization's position on climate change consistent with theirs?
Mixed

Has your organization influenced, or is your organization attempting to influence their position?
We have already influenced them to change their position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)
JSW cement uses BF gas and CO gas - which is waste gas coming form our group company JSW Steel. We have proposed to them to consider BF gas and CO gas as Gaseous Alternative Fuels and emissions from this should be subtracted from the total Gross Emissions to arrive at the Net emissions. They have assessed our proposal at their end and finally accepted it. It is yet to be factored into the tool.

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)
3000000

Describe the aim of your organization's funding
We are paying membership fee of 6,00,000 INR to GCCA India and ~24,00,000 INR to GCCA Global. The aim of this membership is learning from Industry partners, Representation in Indian forum and Global Forum

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
JSW Cement_AR_2020-21_Inner PP_1 (1).pdf
JSWC SR 2021_C2C_V6_11.05.2022.pdf

Page/Section reference
64-65

Content elements
Strategy
Emissions figures
Other metrics
Other, please specify (Initiatives)

Comment
Last year Annual Report t is attached. This year we are publishing Integrated Report which is still underway.

Publication
In voluntary communications

Status
Underway – previous year attached

Attach the document

Page/Section reference
https://www.jswcement.in/eco-friendly-cement-company

Content elements
Strategy
Emissions figures
Other, please specify (Initiatives)

Comment

Publication
In voluntary sustainability report

Status
Underway – previous year attached

Attach the document
JSWC SR 2021_C2C_V6_11.05.2022.pdf

Page/Section reference
45-53

Content elements
Risks & opportunities
Emissions figures
Emission targets

Comment
Last year Annual Report t is attached. This year we are publishing Integrated Report which is still underway. Please refer the pages for metrics, CO2 emissions, Thermal Substitution Rate, Energy parameters etc.

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 Commitment to respect legally designated protected areas Commitment to avoidance of negative impacts on threatened and protected species	Please select

C15.3

(C15.3) Does your organization assess the impact of its value chain on biodiversity?

	Does your organization assess the impact of its value chain on biodiversity?	Portfolio
Row 1	No, but we plan to assess biodiversity-related impacts within the next two years	<Not Applicable>

C15.4

(C15.4) 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 Education & awareness

C15.5

(C15.5) 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	State and benefit indicators Pressure indicators

C15.6

(C15.6) 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	Content of biodiversity-related policies or commitments Impacts on biodiversity Biodiversity strategy	The report is still in preparation stage and will be available in August

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.

No.

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	Mr Nilesh Narwekar, Wholetime Director & Chief Executive Officer of JSW Cement Limited	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