

C0. Introduction

C0.1

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

Company Profile

LafargeHolcim is the global leader in building materials and solutions. It is active in four business segments: Cement, Aggregates, Ready-Mix Concrete, and Solutions and Products. It was founded in mid-2015 following the merger of Lafarge S.A and Holcim Ltd. The Group has a presence in around 80 countries and has over 70 000 employees. In 2019 it recorded CHF 26.7 bn in net sales and has 286 mt of annual cement production capacity worldwide. The Group has over 2,300 plants (including over 1,400 in ready mix concrete, 649 in aggregates and 264 in cement and grinding plants).

The Group has solutions and services in cement, concrete, and aggregates for the following businesses: buildings, infrastructure, distribution, oil and gas, affordable housing, and construction systems.

Cement is manufactured through a large-scale, capital-and-energy-intensive process. At the core of the production process is a rotary kiln, in which limestone and clay are heated to approximately 1,450 degrees Celsius. The semi-finished product, clinker, is created by sintering. In the cement mill, gypsum is added to the clinker and the mixture is ground to a fine powder – traditional Portland cement. Other high-grade materials such as granulated blast furnace slag, fly ash, pozzolan, and limestone can be added in order to modify the properties of the cement for special uses or specific application.

Aggregates include crushed stone, gravel, and sand. They can also be recycled from concrete wastes. They are typically produced by blasting hard rock from quarries and then extracting it and crushing it. Aggregate production also involves the extraction of sand and gravel from both land and under water, which generally requires less crushing. Aggregates are used as raw materials for concrete, masonry, and asphalt and as base materials for roads, landfills, and buildings. As such, they are a key component of construction projects worldwide. There is a very broad range of customers for aggregates. Major customers include concrete and asphalt producers, manufacturers of prefabricated concrete products, and construction and public works contractors of all sizes.

Concrete is the world's second most consumed good by volume after water. One cubic meter consists of approximately 280 kilograms of cement, 175 liters of water, and two tonnes of aggregates. Ready-mix concrete is one of the largest markets for the cement and aggregates industries.

Sustainability Strategy

The global megatrends of population growth, urbanization and rising living standards offer significant business and growth opportunities in our industry. The global building materials market is worth CHF 2.5 trillion annually and is continually growing. At the same time, these trends are challenging our planet through increased carbon emissions, depletion of natural resources and an increase of waste. As countries develop, solutions for sustainable prosperity are needed.

Buildings and infrastructure have come into focus in this challenge. While on one side they form the very basis for societal development, they also account for 30 to 40 percent of worldwide CO2 emissions, with around 5 percent occurring during the construction phase. Also, they consume substantial amounts of raw materials and generate significant volumes of waste. Society thus urgently needs to find solutions for a more sustainable built environment.

At LafargeHolcim we are committed to contribute our share along the value chain. Our commitment to sustainability leadership rests on four strategic pillars: **Climate and Energy, Circular Economy, Environment (with a focus on Water) and Community.**

We are leading the transition towards more low-carbon construction by introducing more low-carbon products and solutions to our customers worldwide and by being at the forefront of innovation in building materials.

Our business also puts us in a leading position to address society's waste problem and to promote a circular economy. As building materials draw on natural resources, protecting our environment is also a strategic priority. And finally, as our business is fundamentally local, we make sure to create value for the communities in which we live and work.

In the center of all our activities to address the four drivers is Innovation. We will continue to develop innovative products and solutions for a built environment that meet these criteria, satisfying a continuously growing market demand for sustainable solutions.

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	January 1 2019	December 31 2019	Yes	1 year

C0.3

(C0.3) Select the countries/areas for which you will be supplying data.

Algeria
Argentina
Australia
Austria
Azerbaijan
Bangladesh
Belgium
Brazil
Bulgaria
Canada
China
Colombia
Costa Rica
Croatia
Czechia
Ecuador
Egypt
El Salvador
France
Germany
Greece
Hungary
India
Iraq
Italy
Jordan
Kenya
Lebanon
Madagascar
Malawi
Mexico
New Zealand
Nicaragua
Nigeria
Philippines
Poland
Réunion
Romania
Russian Federation
Serbia
South Africa
Spain
Switzerland
Uganda
United Kingdom of Great Britain and Northern Ireland
United Republic of Tanzania
United States of America
Zambia
Zimbabwe

C0.4

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

CHF

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.

Financial 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
- Belite cements
- Alternative 'low CO2' cementitious materials production
- Aggregates production
- Concrete production
- Concrete pavement / asphalt / tarmac

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 LafargeHolcim Board of Directors consists of 12 members, all of whom are independent, were not previously members of the LafargeHolcim management, and have no important business connections with LafargeHolcim. LafargeHolcim keeps the functions of Chairman of the Board of Directors and Group CEO separate. The Board of Directors has a dedicated Committee with a specific remit on Sustainability and Health and Safety (HSSC). The committee consists of five Board members and meets at least quarterly. This committee's mission is to provide advice on strategic direction and on the development and promotion of climate related topics. The HSSC's key climate related responsibilities: - informs, reviews and approves the LafargeHolcim's climate strategy framework - is briefed on a quarterly basis on key climate related aspects as well as on performance against key indicators - approves major climate-related capital expenditures, acquisitions and /or divestitures
Other C-Suite Officer	The LafargeHolcim Executive Committee consists of 10 members. LafargeHolcim aims to achieve a balanced relationship between management and control by keeping the functions of Chairman of the Board of Directors and CEO separate. The LH Executive Committee is ultimately responsible for the LafargeHolcim Climate and Energy strategy execution. On a quarterly basis, the Executive Committee is briefed on key climate related aspects as well as on performance against key climate performance indicators. The Group Executive Committee's key climate related responsibilities: - informs and reviews the LafargeHolcim's climate strategy framework and ambition review process - is briefed on a quarterly basis on key climate related aspects as well as on performance against key indicators - approves climate-related capital expenditures, acquisitions and /or divestitures

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 Monitoring and overseeing progress against goals and targets for addressing climate-related issues	<Not Applicable>	The Board of Directors has a dedicated Committee with a specific remit on Sustainability and Health and Safety (HSSC). The committee consists of five Board members and meets at least quarterly. This committee's mission is to provide advice on strategic direction and the development and promotion of safety and sustainability, explicitly including Climate and Energy related topics. The entire Board of Directors is included in the Business Risk Management (BRM) process and are thus regularly updated on climate related risks and opportunities, as well as potential scenarios in carbon price regulation systems such as EU-ETS. The LafargeHolcim process for approval of major climate-related capital expenditures, acquisitions and /or divestitures, includes climate and other environmental and societal considerations in the assessment and ultimately requires the approval of the Board. In 2019, the Health, Safety and Sustainability Committee (HSSC) members have: - informed, reviewed and approved the LafargeHolcim's climate strategy framework and ambition review process - being briefed on a quarterly basis on key climate related aspects as well as on performance against key indicators - approved major climate-related capital expenditures, acquisitions and /or divestitures, includes climate and other environmental and societal considerations

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
Other C-Suite Officer, please specify (Health and Safety and Sustainability Board Committee)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly
Chief Executive Officer (CEO)	<Not Applicable>	Both assessing and 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 Risks Officer (CRO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Public affairs manager	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Not reported to the board

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).

1 - Health and Safety and Sustainability Board Committee (HSSC):

i), ii) LafargeHolcim Board of Directors is the highest management-level Committee with responsibility for climate-related issues and therefore, has a dedicated Committee with a specific remit on Sustainability and Health and Safety (HSSC).

iii) Its mission is to provide advice on strategic direction and the development and promotion of safety and sustainability topics, including climate and energy. The committee consists of four Board members and meets at least quarterly. In 2019, the Health, Safety and Sustainability Committee (HSSC) has been working closely with the sustainability team reviewing LafargeHolcim climate strategy framework and receiving regular updates on key climate related aspects as well as on performance against key indicators. In The HSSC's key climate related responsibilities:

- informs, reviews and approves the LafargeHolcim's climate strategy framework and ambition review process
- is briefed on a quarterly basis on key climate related aspects as well as on performance against key indicators
- approves major climate-related capital expenditures, acquisitions and /or divestitures, includes climate and other environmental and societal considerations

2 - Chief Executive Officer (CEO):

i) The Group CEO reports to the LafargeHolcim Board of Directors

ii) Group CEO is the ultimate responsible for operational management of the company, including corporate climate strategy proposals and executing respective Boards resolutions.

iii) The Group CEO oversees the operational performance of the company against climate and energy targets. The Group CEO's key climate related responsibilities:

- informs and reviews the LafargeHolcim's climate strategy framework and ambition review process
- is briefed on a quarterly basis on key climate related aspects as well as on performance against key indicators
- approves climate-related capital expenditures, acquisitions and /or divestitures, includes climate and other environmental and societal considerations

3 - Chief Sustainability Officer (CSO):

i) LafargeHolcim Group's CSO is a member of the Executive Committee and reports directly to the Group CEO.

ii) The CSO heads the Group Sustainability team, a cross-discipline department which is responsible to oversight the deployment of the LafargeHolcim Sustainability Ambition including its four pillars, Climate and Energy, Circular Economy, Water and Communities.

iii) The CSO is responsible for continuous reviews and guides climate-related items that could influence business strategy. In addition, the CSO closely monitors any developments concerning climate-related issues by engaging with investors and analysts, NGOs, policy makers and trade associations.

Group CSO's key climate related responsibilities:

- develops the LafargeHolcim's climate strategy framework and ambition review process
- briefs on a quarterly basis the LafargeHolcim Board of Directors and Executive Committee on key climate related aspects as well as on performance against key indicators
- reviews the climate-related capital impact of expenditures, acquisitions and /or divestitures
- represents LafargeHolcim Group in a variety of climate related sectoral associations and fora, such as the Global Cement Association and World Business Council of Sustainable Development

4 - Chief Risk Officer (CRO):

i) LafargeHolcim Group's CRO is a member of the leadership team and reports directly to the Group CFO.

ii) The chief risk officer oversees the Group LafargeHolcim Business Risk Management process, consolidates business risk profiles and reports and highlights any relevant climate risks to the Executive Committee and the Audit Committee of the Board.

iii) Group CRO's key climate related responsibilities:

- develops and manages the LafargeHolcim's Business Risk Management process, ensuring the inclusion of climate and energy related aspects
- ensures execution of the LafargeHolcim Business Risk Management process throughout the Group
- briefs on a quarterly basis the LafargeHolcim Board of Directors and Executive Committee on key climate related risks and opportunities

5 - Public Affairs Head:

i) The Vice President for Public Affairs reports directly to the Chief Sustainability Officer.

ii) The Vice President for Public Affairs is responsible for the coordination of advocacy actions within LafargeHolcim and holds direct and specific responsibility for climate change related issues. As such, he ensures that the Group's long-term interests – in line with broader societal interests – are taken into account by public authorities.

iii) The Vice President for Public Affairs represents LafargeHolcim Group in a variety of climate related sectoral associations and fora, such as Cembureau and Global Cement Association

The Vice President for Public Affairs monitors the evolving legislative environment on carbon pricing mechanisms in the countries where we operate.

(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	In recognition of the importance of mitigating the company's impact on the environment, the Nomination, Compensation and Governance Committee of the Board decided to introduce a sustainability objective for the performance shares. The sustainability objective will account for one-third of the performance share award and will encompass three pillars of the sustainability strategy: • Climate and energy: reduction of CO2 emissions with a 50% weight • Circular economy: increased re-use of waste derived resources with a 25% weight • Environment: reduction of freshwater withdrawal with a 25% weight The specific targets will be determined based on the mid-term (2022) objectives communicated in the context of the sustainability strategy and reporting.

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
Corporate executive team	Monetary reward	Emissions reduction target	The LafargeHolcim Group CEO and Executive Committee compensation is designed to reinforce the LafargeHolcim strategy. Its structure balances short-term and long-term performance, combines absolute and relative performance, and financial and non-financial metrics in measuring performance, and delivers compensation through a mix of cash and company shares. The compensation for members of the Executive Committee includes the following elements: - Fixed base salary - Pensions and benefits - Variable compensation: annual and long-term incentives In recognition of the importance of mitigating the company's impact on the environment, the Nomination, Compensation and Governance Committee of the Board decided to introduce a sustainability objective for the performance shares. The sustainability objective accounts for one-third of the performance share award and will encompass three pillars of the sustainability strategy: • Climate and energy: reduction of CO2 emissions with a 50% weight • Circular economy: increased re-use of waste derived resources with a 25% weight • Environment: reduction of freshwater withdrawal with a 25% weight The specific targets will be determined based on the mid-term (2022) objectives communicated in the context of the sustainability strategy and reporting. In addition, the performance share plan is designed to provide further forward-looking incentives for sustained Group performance. Please note that this is not only the case for the CEO but also for some other Executive Committee members. For instance, in Europe the existing carbon cap and trade mechanism is impacting the region's performance with all climate related optimization activities being key to maintain EBITDA and revenue growth - both directly linked to compensation.
Business unit manager	Monetary reward	Efficiency target	Cement plant managers receive variable compensation which is linked to a yearly climate-related sustainability assessment done jointly between Cement Excellence Manufacturing and Sustainable Development. Two criteria and reference values are relevant for this question: 1) Specific Thermal and Electrical Energy consumption 2) Specific net CO2 emissions (kg CO2/t of cementitious) They could be categorized under "emissions reductions", "energy reduction" and "efficiency". In addition, business unit managers who are part of the top 200 leaders are also linked to a sustainability objective for the performance shares Long Term Incentive.

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	Our horizon for risk management cycle is a 3 year time frame in alignment with the strategy 2022 as we define the risk as an uncertainty on the achievement of company objectives.
Medium-term	3	10	We extend the framework to 10 years in order to capture potential disruptions regarding sustainability as our targets aims at achieve decrease in greenhouse emissions by 2030.
Long-term	10	40	In alignment with the International Energy Agency Low-carbon Technology Road Transition for the Cement Industry, our vision expands until 2050 to explore all opportunities of the scale-up phase of innovative technologies.

C2.1b

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

The LafargeHolcim risk management process is structured around several coordinated approaches conducted within the Group and it is subject to continuous improvement.

It includes a bottom-up and top-down risk assessments which cover environmental, sustainability, climate change, market, industrial, operational, financial, legal, compliance and reputational risks, whether under our control or not.

These assessments are used as a basis for the Group risk map, which is updated every year and submitted and analysed by the Group's Executive Committee and the Audit Committee.

The bottom-up assessment includes several stages: i) Risk identification and assessment, ii) Risk mitigation, iii) Monitoring and reporting. The top-down assessment is performed through interviews with Heads of functions, Board of Directors and Executive Committee members and External Auditors.

At Group level, the top-down identification includes specific climate related focus areas:

- Reputation: reputational risks related to external references or stigmatization of the sector and engagement with the relevant stakeholders is being managed between the Group Sustainability Stakeholder and Group Media
- Environmental policies and Regulations: Relevant risks related to policies and regulations such as evolution of carbon pricing schemes are analysed and monitored by the Group Sustainable Development teams and Public Affairs Team
- Technology: The LafargeHolcim Cement Manufacturing Excellence Team oversees the cement technology related risks and opportunities, such as carbon capture technologies.
- Product, services and market related: The impact of climate change risks and opportunities on LafargeHolcim's business is assessed by all stakeholders affected somehow by such risks or opportunities.

At country level management assesses and evaluates the potential impact and likelihood of climate related risks that could have a material adverse effect on the current or future operation of the business.

We define substantive financial or strategic impact as all major adverse events or missed opportunities that may impact our ability to achieve our financial and strategic objectives. We consider strategic objectives **our financial objectives as well as our sustainability commitments and operational targets**, among which climate is a key element. **The risk horizon where climate risks are assessed** includes both the short- to medium-term, typically a 3 year period of time as for any other business risks and the medium- to long term (10 years) in alignment with our sustainability targets .

- Risk assessment at the country level involving all business areas. Involvement of the country ExCo and CEO is required before submission (to Group) of the risk assessment.
- The objective is to make sure that all potential areas of concerns are included in the risk map, and also to ensure that the risk assessment follows a forward-looking approach integrating the potential risks arising from the strategic initiatives / projects that might occur in the next 3 years
- We collect insights from the countries who report the major risks at the local level, then all risks are consolidated and aggregated assessment adjusted in order to take into consideration Group's insight. So both local and global impacts are considered.

Scope of value chain

- In the assessments **we considered both direct operations and supply chain** (especially as regards to business interruption, supplier qualification, compliance)

Definition of likelihood

We define the likelihood as the probability of occurrence of climate related events in the next 3 years.

- Virtually certain > 90%
- Very likely between 75% and 90%
- Likely between 60% and 75%
- More likely than not between 45% and 60%
- About as likely as not between 30% and 45%
- Unlikely between 15% and 30%
- Very unlikely between 5% and 15%
- Exceptionally unlikely <5%

Definition of significance

We define significance (substantive financial impact) based on:

a) The overall financial impact of the respective risk against the yearly average of the next 3 years of Group's operating EBIT.

- Impacts below 5% of operating EBIT are considered as Low
- Impacts between 5-10% of operating EBIT are considered as Medium
- **Impacts between 10-15% of operating EBIT are considered as High**
- **Impacts above 15% of operating EBIT are considered as Very High**

An impact would be considered as substantive for the Group as soon as it is High or Very high.

Aligned with our Risk Management process we consider risks below 10% of EBIT to be not substantive

b) Also considered is the impact on the Group's or local operations reputation, including impairment of reputation with investors, rating agencies, regulators and external stakeholders such as NGO or media.

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

Process and frequency: LafargeHolcim's Business Risk Management (ERM) aims to systematically recognize major risks. In focus are a wide range of different internal and external risk types, among which environmental, energy and climate change related matters. The Group's risk profile is assessed both top down and bottom up. At least on a quarterly basis, climate related risks and opportunities are discussed with the Group Board of Directors Health and Safety and Sustainability Committee (HSSC). Note: For further information see references on frequency on engagement in chapter C1. Governance The LafargeHolcim risk management process is structured around several coordinated approaches conducted within the Group and it is subjected to continuous improvement. It includes a bottom-up and top-down risk assessments. These assessments are used as a basis for the Group risk matrix, which is updated every year and submitted to and analyzed by the Group's Executive Committee and the Audit Committee. Through this process we identify, assess, mitigate and monitor the Group's overall risk exposure. Our goal is to incorporate risk thinking into all strategic decision-making, reducing the likelihood and impact of potential adverse events, ensuring compliance with laws & regulations and ensuring the deployment of our Internal Control system in every country where we operate. The bottom-up assessment includes several stages: i) Risk identification and assessment, ii) Risk mitigation, iii) Verification & Remediation and iv) Monitoring and reporting. Boundaries: Our risk universe takes into consideration all potential risks that might jeopardize our financial and non-financial targets, especially with regards to climate change in our direct operations, upstream supply chain and downstream supply chain. As a consequence, the business assesses the risks arising from the failure of processes whose objectives are to monitor our internal processes in our direct operations, secure our upstream supply chain from an operational, compliance or sustainability perspective, and preserve our reputation in particular at downstream supply chain (customers, regulators, NGO). Risk mitigation: Respective actions and/or controls are defined by the management to mitigate the key risks identified. Risk transfer through insurance solutions and the Internal Control system form an integral part of risk management to mitigate the identified risks. On a quarterly basis, climate related risks and opportunities are discussed with the Board of Directors Health and Safety and Sustainability Committee. In case significant risks and/or opportunities related to climate change are identified, specific actions to mitigate excessive risks or capture identified opportunities are proposed to the HSSC and Executive Committee. Monitor & Reporting: Regular progress on the actions/controls are followed up by risk leads and reported to the Group through the LafargeHolcim Risk Management tool. In terms of frequency, at least twice a year, progress on mitigating actions, controls and overall risk exposure is reported to the Group. Additional reports of the effectiveness of the mandatory controls standards are submitted to the Group on a regular basis. Verification & Remediation: Group Internal Audit performs independent assessments of the effectiveness of mitigating actions and controls and on the effectiveness of Internal Control and on the risk assessment process. The annual audit plan drawn up by Group Internal Audit and approved by the Audit Committee takes into account the various analyses described above. Implementation of this plan and the summary of work presented to the Group Executive Committee and Audit Committee lead to more in-depth analyses in certain areas and contribute to the continuous risk identification process. Case study for transition risk/opportunity: An example of this process is the specific short term response plan established to support the transition to the phase 4 of the new European Trading System which will come into force in 2021. Mitigation / Remediation: In view of the likely effect of the more strict CO2 free credit allocation systems and the likely increase of fossil fuels' costs and scarcity of alternative mineral components as well as our already low intensity levels throughout the region, a specific European decarbonization project climate change was developed distributed in three focus areas: i) CO2 & Energy Performance e.g. increase biomass usage & reduce clinker factor; ii) Further integrate CO2 in management e.g. include cost in production to incentivize change management and include CO2 impact in all M&A and CAPEX decisions; iii) Scenario Planning to evaluate profitability of exports, manage +/- 15% thresholds as well as 50%, 25%, 10% limits in Phase III. This program is being executed by respective countries, supported by Group functions and closely monitored by the Executive Committee. Case study for physical risk/opportunity: LafargeHolcim has experienced business interruptions in recent years due to acute physical risks being materializing. Examples of events include effects on river based supply chains as very low (Rhine in 2018) or very high (Mississippi 2019) water levels have an impact on shipping. Mitigation / Remediation: These events are being dealt with by our logistics departments as they implement well prepared response plans which involve a change in product sourcing from our network of plants and an adaptation of the modes of transport used.

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	LafargeHolcim operates in countries where carbon pricing mechanisms are already in place, in the form of both cap and trade systems and carbon taxes. An example of the risk type - The risk of carbon prices to increase in the short term under the current regulation is therefore considered in our risk management process and used to inform our short term strategy and yearly financial planning on a regular basis. In 2018 in Europe under the current phase 3 of the EU-ETS, the CO2 price evolution from 7 to 23 €/ton CO2 has been closely monitored and respective financial impacts assessed on a monthly basis. How it is included in climate-related risk assessments - Group level, the Public Affairs Department engages with policy representatives and monitors the evolving legislative environment on carbon pricing mechanisms. The Group Finance and Sustainability teams support the process with the development of different scenarios analysis to quantify the potential impacts. This work is used to inform regional and country existing business plans and short term strategies when significant risks are identified. At country level, Country Public Affairs Managers engage with local and regional policy representatives and associations. This informs representative groups of CEOs and functional managers, who regularly meet and monitor latest regulatory developments and activities influencing policy, that could have a material adverse effect on the current or future operation of the business. Updates on current carbon pricing regulations are regularly presented to our main governing bodies, mainly the Country and Group Executive Committees.
Emerging regulation	Relevant, always included	LafargeHolcim operates in countries where existing carbon pricing mechanisms are evolving, or new ones are being considered / being implemented. The introduction of new or change of existing carbon pricing regulations could have a significant impact on our operations as a large carbon emitter. An example of the risk type - The risk of carbon prices to be included in the short and mid term is therefore considered in our risk management process and used to inform our short and mid term strategy and yearly financial planning on a regular basis. A tangible example is the European Decarbonization Roadmap, an action plan aimed to manage the potential impact of the upcoming phase 4 under the EU-ETS, after having assessed a range of plausible scenarios of regulation developments. How it is included in climate-related risk assessments - At Group level, the Public Affairs Department monitors the evolving legislative environment on carbon pricing mechanisms in the countries where we operate. This is done in collaboration with Country Public Affairs Managers, who in their respective countries, monitor regulatory developments and activities influencing policy, that could have a material adverse effect on the future operation of the business. Local and Group Finance and Sustainability teams support the process with the development of different scenarios analysis to quantify the potential impacts. This work is used to inform regional and country business plans as well as our short and mid term strategies when significant risks are identified. Updates on emerging carbon pricing regulations are regularly presented to our main governing bodies, mainly the Country and Group Executive Committees.
Technology	Relevant, always included	Innovation is a key pillar in our climate strategy. Risks and opportunities associated with technological innovations or improvements that help us to reduce our CO2 emissions and energy consumption are an integral part of our risk management process. An example of the risk type - 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. How it is included in climate-related risk assessments - Their identification and assessment is centrally coordinated by our Group Cement Manufacturing Excellence team based in Holderbank and our R&D Center in Lyon, supported by regional and country teams. Technology related risks and opportunities have already been identified and respective mitigation measures and action plans have been considered in our Group-wide and Regional initiatives. These initiatives focus among others, on increasing the use of alternative fuels, the production of low carbon binders and the innovation of CO2 neutral technologies such as carbon capture and storage. With regards to increasing the use of alternative fuels and the production of low carbon binders, the availability of both levers has to be managed at regional and business unit level. This needs to be managed with the support of both, our Group Cement Manufacturing Excellence team based in Holderbank, our R&D Center in Lyon and our Group Strategy department. Risks related to carbon capture and storage technologies, are directly assessed and managed by our Group Cement Manufacturing Excellence team based in Holderbank and our R&D Center in Lyon. As result of this work, in 2018 LafargeHolcim has launched a Group-wide initiative to future-proof its sites summarized under the flagship ambition, "The Plants of Tomorrow", which aims to create vertically integrated, intelligent and interconnected digital plants that harness disruptive technologies.
Legal	Relevant, always included	Climate change related litigation risk is an emerging phenomenon, with cases being brought before the courts in a limited number of jurisdictions in which we operate. An example of the risk type - As a large carbon emitter, the risk of Lafarge holcim being increasingly targeted, and potentially causing reputational damage and increased public scrutiny on this regard. This calls for management attention to mitigate possible risks. An example is the case in the Philippines where in 2017, the Human Rights Commission investigated whether the collective contribution to global warming by 47 coal, cement, oil and gas companies has violated Filipinos' basic rights to life, water, food, sanitation, adequate housing and self determination. LafargeHolcim subsidiaries were subject to investigation. How it is included in climate-related risk assessments - LafargeHolcim maintains a comprehensive risk-based compliance program with dedicated resources at local, regional and Group level with central steering under the Group Legal and Compliance Team. Group Legal manages all competition investigations, information requests and enforcement cases through a central team of legal specialists. Group Legal also tracks all Group-relevant litigation cases, and provides support to the relevant operating companies in defense and dispute resolution.
Market	Relevant, always included	Evolution of market demands are considered in our risk process. As the carbon debate intensifies, our main products, cement and concrete could be challenged as the building material of first choice because of perceived high embodied CO2. An example of the risk type - An example being considered is the risk of changing building materials preferences by our customers. In France for instance, timber is increasingly being favored against concrete in public tenders. How it is included in climate-related risk assessments - At Group level, our R&D center is responsible for development of new low carbon solutions, in response to Global and country specific market developments. At country level, Country Sustainability and Public Affairs Managers liaise regularly with respective Sales' teams to monitor trends in demands of these products. LafargeHolcim has an important range of products and brands which can be considered as low carbon products: Ductal®, Agilia®, ThermoMedia 6B®, Aether®, and other solutions to provide the best solutions to its customers, and developing new products with higher CO2 savings potential. In addition, our Group Sustainability Team engages regularly with relevant stakeholders to ensure sufficient transparency is provided on the environmental, social and economic responsibility of concrete, cement and aggregate companies' operations and their supply chains. LafargeHolcim is a founder member of the Concrete Sustainability Council (CSC) designed to provide the required transparency through a certification system. The CSC certification system consists of an operational manual and assessment criteria with guidance on their application. A typical certification process is applicable to all sizes of concrete companies, currently comprises three levels: bronze, silver and gold. Aggregate and cement suppliers can achieve a CSC supplier certificate to support their concrete clients with their CSC assessments.
Reputation	Relevant, always included	An example of the risk type - The risk of being perceived as a large carbon emitter could reduce our attractiveness to stakeholders such as customers, investors, and potential employees. Additionally, not meeting our CO2 reduction targets can have a negative impact on reputation, as stakeholder engagement and communication programs have been put in place. A recent example can be found in the Guardian publication where the concrete industry without clear distinction between respective players was subject to a series of articles pointing to concrete's responsibility in climate change. Such campaigns could lead to a negative perception of our products by our final customers, thus influencing building material preferences. Link: https://www.theguardian.com/cities/series/guardian-concrete-week How it is included in climate-related risk assessments - Our Group Sustainability, Investors Relations and Corporate Communications teams run a regular process of monitoring and engaging with relevant stakeholders to assess and mitigate reputational risks.
Acute physical	Relevant, always included	An example of the risk type - The risk of LafargeHolcim's operations to be affected by extreme weather conditions such as flooding or water shortages. Acute physical risks are included in our risk process. Countries assess and evaluate the impact and likelihood of potential supply chain interruptions plans in the event of natural disasters and build contingency plans. The mentioned risks can have an effect on logistics costs and/or sales volumes in the affected area. Examples are flooding on the Mississippi in 2019 or low water on the Rhine in 2018. How it is included in climate-related risk assessments - The financial impact is estimated based on the production volumes and revenues potentially affected. These risks are often part of insurance solutions. Additionally, our geographic and business diversification serves as a natural hedge.
Chronic physical	Relevant, sometimes included	Our broad geographical presence makes it more likely that at one or other of our operations we could be affected by chronic physical risks such as rising sea levels or water scarcity due to global warming. Chronic disciplinary collaboration including stronger regulations and effective carbon pricing mechanisms are and will be required.

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

Cement production is a process which emits a significant amount of CO2 from the raw materials and fuels (direct) as well as the electricity (indirect). Consequently existing and emerging pricing of CO2 emissions or CO2 taxes are a key component of our risk management process and are used to inform our strategy and financial planning on a regular basis. Today direct CO2 emissions from LafargeHolcim's cement operations are priced only in the EU and Canada, while we see the indirect impact (translating into higher energy costs) in a larger number of jurisdictions. As the direct emissions make up a far larger share of our total emissions we currently see the most substantial and predictable financial impact on our operations in the EU (35 integrated cement plants). Directives guiding the Phase 4 of the EU ETS implementation are in the process of being published. Our current assessment of the situation sees two main drivers of risk: a) Price of EUAs on the market as LH transitions from being long to being short on EUAs b) Imports of clinker and cement from outside the EU and thus not subject to the EU-ETS becoming more cost competitive at the EU borders Through the modeling of various scenarios, we have estimated the financial impact of the upcoming phase 4 of the EU ETS considering a number of variables like: future market price for EUAs, cement demand forecasts, cement price development, new criteria for the calculation of free EUAs (i.e: benchmark).

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Low

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)

50000000

Potential financial impact figure – maximum (currency)

150000000

Explanation of financial impact figure

To estimate the potential of future CO2 costs we have estimated the required yearly EUA purchase based on EU production levels and free allowance allocation through a range of scenarios. The financial impact provided in this example aims to represent one of many results from the scenario planning and should not be considered as a financial forecast. An assumption of a CO2 price between 25 CHF / EUA (low) and 50 CHF/ EUA (high) has been considered to determine the range of the impact. With a potential deficit between 2 Mio (low) and 3 Mio (high) EUAs / year if no mitigating actions are included after 2021. The minimum and maximum financial impacts are calculated in the following way: Minimum: 2,000,000 EUAs x 25 CHF = 50,000,000 CHF Maximum: 3,000,000 EUAs x 50 CHF = 150,000,000 CHF The magnitude of this scenario is considered low since it is < 5% of Group operating EBIT.

Cost of response to risk

1000000

Description of response and explanation of cost calculation

An example of company-specific activities to manage the risk: To support the transition to the phase 4 of the new European Trading System which will come into force in 2021, bringing more strict CO2 free credit allocation systems and the likely increase of fossil fuels' costs and scarcity of alternative mineral components, LafargeHolcim has implemented a regional-wide decarbonization roadmap. The initiative has been distributed in four key areas: i) Energy efficiency improvements and acceleration of Alternative Fuel usage; ii) Enhanced product portfolio optimization to accelerate the production of low carbon binders; iii) Network optimization to evaluate production thresholds and network optimization synergies and iv) Innovation of CO2 neutral technologies such as carbon capture and storage. This program is being executed by respective countries, supported by Group functions and closely monitored by the Executive Committee. As an example in our Austrian Plant Retznei we have achieved > 90% of fuel substitution. How the figure for the cost is calculated: Assuming that 10 people at regional level are dedicated to coordinate the initiative and regional average management cost for senior staff of CHF 100k, the total cost could be in the range of CHF 1 million: 10 FTEs x 100'000 CHF = 1'000'000 CHF

Comment

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Downstream

Risk type & Primary climate-related risk driver

Technology	Unsuccessful investment in new technologies
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Primary potential financial impact

Increased capital expenditures

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

In order to catalyze the level of investment required for operating carbon-capture, a widespread multi disciplinary collaboration including stronger regulations and effective carbon pricing mechanisms are and will be required. LafargeHolcim is engaged in several initiatives which require large investments and others that are still under evaluation. In Europe, and based on the extensive research undertaken by the European Cement Research Academy (ECRA), the project Westküste100, CO2 from our Lägerdorf cement plant in Germany will be transformed into a synthetic fuel. This nine-company consortium is focused on the creation of low-carbon solutions and the development of end-to-end sustainable business practices. In North America, in Canada, we have initiated a project partnership with Svante and Total to develop and

demonstrate the first full-cycle solution to capture and reuse CO2 from a cement plant while also reducing greenhouse gas emissions. This project CO2MENT will demonstrate and evaluate Inventys' CO2 Capture System and a selection of CO2 utilization technologies at Lafarge's Richmond, BC plant. Large-scale deployment of CCU/S will require the development of large-scale CO2 transportation and storage networks, going beyond specific industrial clusters. It is highly dependent on political and regulatory support that is necessary to build the investment business case (e.g. recognition and compensation for carbon removal in installations where carbon is captured for use as a feedstock or for storage). The risk of the cost of technology being significantly higher than existing carbon pricing mechanisms and the lack of integrated deployment of carbon capture and required supply chain ecosystems (transportation, sequestration, etc.), could therefore prevent LafargeHolcim from a successful and economically viable implementation of carbon capture technologies.

Time horizon

Short-term

Likelihood

More likely than not

Magnitude of impact

Low

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)

30000000

Potential financial impact figure – maximum (currency)

60000000

Explanation of financial impact figure

The potential financial impact figures relate only to the capital expenditure required, and it is consistent with LafargeHolcim recent projects and assessments. To estimate this potential financial impact figure we have referred to the four CCUS on-going activities i) the project Westküste100, where CO2 from the Lägerdorf cement plant in Germany will be transformed into a synthetic fuel, ii) the CO2MENT project in Canada that is testing an innovative end-of-pipe solution for CO2 removal and reuse from a cement plant. We have estimated an investment effort to be around CHF 30 millions per initiative. Maximum financial impact figure: 2 initiatives x 30,000,000 CHF = 60 Mio CHF Minimum financial impact figure: 1 initiative x 30,000,000 CHF = 30 Mio CHF As described in question C2.1b, the magnitude of this scenario is considered low since the estimated amount remains below < 5% of Group operating EBIT.

Cost of response to risk

3000000

Description of response and explanation of cost calculation

The costs of the management actions have been estimated assuming a project management cost of approximately 10% the investment effort per initiative. These has been estimated under the explanation of the total financial impact figure at 30 Mio CHF: 0.1 x 30'000'000 CHF = 3'000'000 CHF

Comment

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Chronic physical	Changes in precipitation patterns and extreme variability in weather patterns
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Primary potential financial impact

Other, please specify (Research and development (R&D) expenditures in new and alternative technologies)

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

Being present in a large number of countries increases LafargeHolcim's exposure to meteorological and geological events such as natural disasters or climate hazards which could damage LafargeHolcim's property or lead to business interruption with a material adverse effect on the Group's operations. These risks are fully covered as insurance solutions form an integral part of risk management. Additionally LafargeHolcim counts with a Crisis Management System which sets out the basic requirements for each LafargeHolcim operation to respond against natural disasters. Today a number of our operations are located in places where risks are related to extreme variability in weather patterns. For instance in India, where increased flooding is projected to have an impact upon states, our subsidiaries Ambuja Cements and ACC operates with more than 30 cement and grinding operations. To date, these risks have not materialized, impacting our operations. However through scenario modeling, we have estimated the financial impact of a potential sales volume decrease resulting from meteorological conditions or geological events, considering a number of variables like: (demand forecasts, cement price development, length of business interruption).

Time horizon

Short-term

Likelihood

More likely than not

Magnitude of impact

Low

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)

10000000

Potential financial impact figure – maximum (currency)

20000000

Explanation of financial impact figure

For the potential financial impact range, we have estimated a LafargeHolcim cement plant located in India, with an annual sales volume of 1 million tons of cement that suffers a business interruption due to severe weather conditions. We have estimated the period required to overcome the interruption and be fully operational in the range of 3 to 6 months. The derived loss of volume sold will be [250'000 - 500'000] tons of cement. The calculation of the potential financial impact is completed by assuming a commercial margin of 40 CHF per tonne of product leads to a potential financial impact of [10 - 20] CHF million. Minimum: 250,000 t / year x 40 CHF / t CO₂ = 10,000,000 CHF Maximum: 500,000 t / year x 40 CHF / t CO₂ = 20,000,000 CHF The magnitude of this scenario is considered low since it is < 5% of Group operating EBIT.

Cost of response to risk

1500000

Description of response and explanation of cost calculation

The management of these risks is integrated into the LafargeHolcim Group multi-disciplinary business risk management process. Macroenvironmental related risks, more specifically of natural disasters, are a key criteria of the LafargeHolcim's business risk management process. Our Crisis Management System sets out the basic requirements for each LafargeHolcim operation to respond against these types of risks, including suitable Emergency Response Plan, Crisis Management Plan, Business Continuity Plan, Evacuation Plan. Additionally, Our leading positions in all regions of the world and a balanced portfolio serves as a buffer against sales variations in the markets where we operate, and the broad range of high-quality building materials and solutions combined with our transportation routes allow us to supplement business interruptions if needed. In case of this event to occur, we foresee production level adjustments in business operations that are in the proximity of the affected site combined with ad-hoc delivery routes to mitigate the impact. The cost associated to amend transportation routes are a broad estimate of the resources involved in the decision making process. Assuming that a team of 15 FTEs at Group level is dedicated to ensuring the coverage of volume demands in the markets where we operate through logistics and trading routes and assuming a global management cost of CHF 100k per manager, the total cost is in the range of 1,5 Mio CHF on management costs: 15 FTEs x 100'000 CHF = 1'500'000 CHF

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

Yes

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

Opp1

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

One of LafargeHolcim's main products, concrete, is an intrinsically low-carbon, resilient, recyclable and versatile material, and it is used across our built environment. It is an essential material for resilient infrastructure and for responding to societal expectations. Buildings consume 90% of their total energy during usage through heating, lighting and air-conditioning; only 10% of consumption is linked to the manufacture of building materials and the construction phase. As a growing market opportunity, LafargeHolcim focuses on developing products and solutions that contribute to improving buildings' energy efficiency. Half of our resources and 40% of our patents are aimed at finding sustainable solutions, with a strong focus on low carbon construction. LafargeHolcim is continuously developing low and ultra-low carbon products, such as: Susteno 3R, which saves up to 20% CO₂ compared to an average cement type, and which is the world's first cement that is upcycling construction and demolition waste materials. Solida is a special application cement which absorbs carbon in the binding process with a potential up to 70% reduction in carbon. Our green concrete ECOPact is meeting an increasing customer interest, as construction projects are putting an focus not only on their operational carbon emissions but also want to reduce their embodied carbon footprint. Here we have a tailored offer with at least 30% carbon reduction and the offer to offset the remaining carbon footprint with the ECOPact ZERO line. <https://www.lafargeholcim.com/ecopact-the-green-concrete> Beyond material carbon emissions, we are offering products and services which help customers to reduce their life cycle carbon footprint. Our insulating foam AIRIUM™ is a high performance insulating product, fully recyclable, fireproof, with one of the lowest carbon footprints in the industry. <https://www.lafargeholcim.com/airium> Our ORIS tool is a digital platform for holistic data-driven decisions on road sustainability. <https://www.lafargeholcim.com/oris> Currently 27% of LafargeHolcim net sales are derived from low carbon products. We expect a growth in low-carbon product demand of 5% to 10% on a yearly basis. Therefore a short-term time horizon considered for this opportunity to materialize. The Group's strategy will further focus now on expanding the deployment of our existing low and carbon-neutral concretes in other markets and continue to grow our portfolio of low carbon products.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium-low

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)

360450000

Potential financial impact figure – maximum (currency)

720900000

Explanation of financial impact figure

By investing in R&D and the development of new low carbon products we aim to cover the expected increase in low carbon construction products demand. We expect a growth in low-carbon product demand of 5% to 10% on a yearly basis. The financial impact has been estimated computing this expected growth to the LafargeHolcim 2019 net sales derived from low carbon solutions representing about 27% our total CHF 26.7 bn. Low carbon solutions Minimum: 26'700 mCHF x 0.27 x 0.05 CHF = 360,450,000 CHF Maximum: 26'700 mCHF x 0.27 x 0.10 CHF = 720,900,000 CHF These figures are to be seen as an annual additional net sales derived from low carbon solutions as opposed to the cost of realizing this opportunity. The magnitude of this scenario is considered medium since it falls within the range 8-12% of Group operating EBIT. Low carbon solutions are Products and solutions - primarily Green Cement types and Green Concretes such as ECOPact, which have specific net CO2 emissions in line with the Science Based Targets initiative 2°C scenario, or which contribute to reduced life cycle carbon emissions.

Cost to realize opportunity

87000000

Strategy to realize opportunity and explanation of cost calculation

LafargeHolcim continues to focus on developing new low carbon products and further deploy the existing ones. There are two main business activities involved: i) Our innovation Center in Lyon acts as a hub in a network of local laboratories and country-level innovation teams. The innovation organization counts more than 200 researchers within LafargeHolcim. Thanks to this networked approach, customers around the world have benefited from tailor-made solutions to build more quickly and efficiently, and even to reduce their impact on the environment. ii) The LafargeHolcim Foundation for Sustainable Construction promotes and encourages the development and design of a sustainable built environment. It is a key lever to identify relevant innovations in an early stage. i) Some examples: LafargeHolcim subsidiary, Holcim Mexico, has launched an innovative insulating concrete Ecoterm® that can bring energy consumption savings up to 25% compared to regular concrete. ii) Another example is the Thermedia® range of structural, insulating concrete, and our Efficient Building™ construction systems, such as double-skin concrete walls or UHPC lightweight insulated facades. The annual cost associated with developing this opportunity represents the amount spent by the company of Research and Development in 2019 (CHF 83 million, annual report 2019 page 187) + the annual budget of the LafargeHolcim Foundation for Sustainable Construction in an awards year (CHF 4 million). The sum of the two results in (83 + 4) Mio CHF = 87 Mio CHF

Comment

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Other, please specify (Better competitive position to reflect shifting consumer preferences, resulting in increased revenues)

Company-specific description

It is during the production of clinker, the main component of cement, when most CO2 emissions associated with cement occur. The majority of these emissions are unavoidable, as they result from the chemical reaction that occurs when the raw material (limestone) calcinates into clinker in the kiln. This decarbonation process is our largest source of CO2 emissions, accounting for 68 percent of our total Scope 1 emissions in cement production. One of the key LafargeHolcim levers to reduce the carbon emissions from our operations, is by replacing the volumes of clinker in our final cement products with alternative mineral components such as pozzolan, slag or fly ash reduces the carbon intensity of the cement. A significant portion of these constituents come from waste or byproducts recovered from other industries. This is a company-wide initiative. Currently, Lafarge holcim products use an average of 29 percent of constituents to replace clinker, resulting in one of the lowest levels of clinker content in the sector. However, in markets where these factors are favorable, our replacement rates have reached 50 percent, presenting this as a great opportunity to further scale up this level of performance. Thanks to the replacement of clinker in our final cement products among other levers, LafargeHolcim Net emissions per ton of cementitious products are roughly 5 percent lower than the industry average (see Getting the Number Rights report 2018).

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Low

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)

8050000

Potential financial impact figure – maximum (currency)

16100000

Explanation of financial impact figure

To estimate the potential to save future CO2 costs we have assumed the scenario of reducing our clinker factor by 1 percentage point a year in our business operations in Europe. We have estimated the impact of a 1% improvement in the clinker factor equals a reduction in our carbon intensity of 7 kg CO2 / cementitious. Assuming an EUA price in the range of 25 to 50 CHF/t of CO2 impacting our European production the financial range estimate is [8,050,000 CHF - 16,100,000 CHF]. Assuming a volume of

cementitious of 46,000,00 t cem: Minimum: $1 \times 46,000,000 \text{ t cem} \times 25 \text{ CHF} / \text{t cem} \times 0.007 \text{ tCO}_2 / \text{t cem} = 8,050,000 \text{ CHF}$ Maximum: $1 \times 46,000,000 \text{ t cem} \times 50 \text{ CHF} / \text{t cem} \times 0.007 \text{ tCO}_2 / \text{t cem} = 16,100,000 \text{ CHF}$ The estimated figure shows the potential of reducing CO2 costs by reducing the clinker factor. It does not include the required investment and additional operating costs as this is competitively sensitive information. The magnitude of this scenario is considered low since it is < 5% of Group operating EBIT.

Cost to realize opportunity

300000

Strategy to realize opportunity and explanation of cost calculation

As part of the decarbonization roadmap launched in Europe, a dedicated team of experts oversees and regionally coordinates the strategy of clinker factor reduction of the region, managing our product portfolio against saturation/norms compliance and quality standards. The team also manages relevant capex projects on selected kilns across the region. In Switzerland, the average cement has clinker content of around 75%, but recent efforts from Holcim Switzerland, in partnership with the Swiss Federal Institute of Technology (ETH) Zürich, have yielded a mass cement with less than 50% clinker. To replace the clinker, a combination of high-quality limestone, calcined shales and fly ash were used. A natural activator that was developed by ETH, as well as specially adapted admixtures from Sika, ensure that this low-clinker cement still retains its quality as a building material. This new cement is currently undergoing practical trials, being used for a construction project in Vorarlberg, Austria. Cost: The annual cost associated with developing this opportunity represents the cost of the Regional Cement Manufacturing Excellence resources to identify and implement the respective projects to reduce our clinker factor. Assuming that a team of 3 FTE in the region is dedicated to coordinating these activities and assuming a regional average management cost for senior staff of 100k CHF, the total cost could be in the range of CHF 0,3 million: $3 \text{ FTEs} \times 100,000 \text{ CHF} = 300,000 \text{ CHF}$ It does not include the required investment and additional operating costs as this is competitively sensitive information.

Comment

Identifier

Opp3

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

Another key lever to reduce the carbon intensity of our cement production is to use pretreated waste and low-carbon fuels. These serve as a replacement for fossil fuels that provide the energy needed to operate a cement kiln. Globally, LafargeHolcim currently sources 20 percent of its energy from alternative fuels, low-carbon fuels and biomass. In some of our operations, we have been able to meet more than 90% percent of our energy requirements with alternative fuels, thus we are convinced of the potential to increase this rate significantly in the coming years. Using these alternative energy sources diverts waste from incineration or landfill, providing a solution to the growing waste disposal problems faced by society, and helping to keep fossil fuels in the ground. At the same time they help to reduce our CO2 emissions, as most of them emit less CO2 than traditional fuels. Other sources, such as biomass, are considered carbon neutral.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Low

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)

8050000

Potential financial impact figure – maximum (currency)

16100000

Explanation of financial impact figure

To estimate the potential to save future CO2 costs we have assumed the scenario of increasing our substitution rate of alternative fuels by 2 percentage points a year in our business operations in Europe. We have estimated the impact of a 1% improvement in the TSR equals a reduction in our carbon intensity of 3.5 kg CO2 / cementitious. Assuming an EUA price in the range of 25 to 50 CHF/t of CO2 impacting our European production the financial range estimate is [8,050,000 CHF - 16,100,000 CHF].

Minimum: $2 \times 46,000,000 \text{ t cem} \times 25 \text{ CHF} / \text{t cem} \times 0.0035 \text{ tCO}_2 / \text{t cem} = 8,050,000 \text{ CHF}$ Maximum: $2 \times 46,000,000 \text{ t cem} \times 50 \text{ CHF} / \text{t cem} \times 0.0035 \text{ tCO}_2 / \text{t cem} = 16,100,000 \text{ CHF}$ The estimated figure shows the potential of reducing CO2 costs by reducing the clinker factor. It does not include the required investment and additional operating costs as this is competitively sensitive information. The magnitude of this scenario is considered low since it is < 5% of Group operating EBIT.

Cost to realize opportunity

500000

Strategy to realize opportunity and explanation of cost calculation

Through the LafargeHolcim's business Geocycle, we offer safe and ecological waste solutions, applying the highest international standards – including the German development agency GIZ guidelines on co-processing waste and the Basel Convention. Geocycle offers strategic waste assessment and expertise regarding local regulations. It also provides logistics to transport waste to its state-of-the-art pre-processing facilities, where it is transformed into fuel and raw materials. In 2019, 20 percent of our thermal energy demand for clinker production was covered by alternative fuels. In 2019, our Austrian cement plant based in Retznei plant continued to operate with more than 90% of thermal substitution rate leading to negative fuel cost. In Retznei, preheater kiln was replaced by precalciner, bringing a major advantage to the kiln feeding and enabling total thermal energy costs to be reduced significantly. Retznei is seen as a role model for other plants within the Group and industry. The annual cost associated with developing this opportunity represents the cost of the Regional EU Geocycle resources dedicated to manage these projects to increase the substitution rate of alternative fuels. Assuming that a team of 5 FTE in the region is dedicated to coordinating these activities and assuming a regional average management cost for senior staff of 100k CHF, the total cost could be in the range of CHF 0,5 million: $5 \text{ FTEs} \times 100,000 \text{ CHF} = 500,000 \text{ CHF}$ It does not include the required investment

and additional operating costs as this is competitively sensitive information.

Comment

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?

Yes, and we have developed a low-carbon transition plan

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform its strategy?

Yes, qualitative and quantitative

C3.1b

(C3.1b) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenarios and models applied	Details
2DS	<p>i) Identification of scenarios selected: During 2017 and 2018, LafargeHolcim collaborated actively with the International Energy Agency to update the Low-carbon Technology Roadmap for the Cement industry. The work was published in April 2018, and conducted scenario analyses against various references: a) the reference technology scenario (RTS), b) nationally determined contributions (NDCs) and c) former IEA 2DS for the cement industry. As a result of this exercise, LafargeHolcim revisited its level of ambition to ensure alignment with the IEA roadmap. ii) Description and relevance of time horizons: We considered 2022, 2030 and 2050 to define our short, mid and long term time horizons. 2050: Global cement production growth estimates were assessed by 2050 compared to current levels. As a standard criteria of the IEA, the 2DS sets the target of cutting CO2 emissions by almost 60% by 2050 (compared with 2013), followed by continued decline after 2050 until carbon neutrality is reached. The relevance to our organization lies on the opportunities of the successful deployment and scale-up of innovative technologies such as carbon capture and storage, 2022 and 2030. For the process of reviewing our targets and ambition levels we reviewed our short (2022) and mid term time-horizons (2030). iii) A description of the areas covered in scenarios: a) Supply chain: level of ambition being impacted by increasing the price of fuels and alternative raw materials availability. Risks of business interruption due to changes in weather precipitations. b) Geocycle: waste derived resources availability and increasing number of waste-related regulations supporting the business case of traditional fuels replacement in cement kilns and construction materials (recycled aggregates) c) Procurement: increasing price of traditional fuels and alternative binders, leading to a need of securing these sources for the time horizons considered. iv) Company specific results: As a result of this scenario analysis our climate ambition was impacted. With our revised target of 520 kg CO2/tonne by 2030, we remain committed to reducing emission levels in line with a 2 degree scenario, aligned with the Low-carbon technology roadmap defined by the International Energy Agency (IEA) and adopted a new target on Scope 2 emissions. v) Information of results on business: These revisited ambitions had a range of impacts on our business objectives and strategy for example in terms of capital expenditure, energy sourcing strategies and operating costs. vi) Case study: 1) Situation: LafargeHolcim is committed to living up to the responsibilities that come with being the global leader in building materials and solutions. In 2018 the Group established a clear 2030 ambition aligned with a 2DS with quantified intermediate scenarios to demonstrate the progress that has been done. However a) since this scope 1 emissions target had not been verified by the science based target initiative (SBTi), investors were questioning the validity of this level of ambition and b) LafargeHolcim's strategy did not include scope 2 emissions targets. 2) Task: LafargeHolcim needed to achieve the SBTi certification of its target by the end of 2019. 3) Action: LafargeHolcim accelerated its efforts to establish a solid roadmap to reduce its scope 2 emissions, by setting a dedicated task force with Group energy teams. In parallel, it engaged with SBTi to complete the formal target submission letter to assess the alignment of its CO2 targets against a 2DS scenario. 4) Result: In December 2019, the Science-Based Targets initiative (SBTi) validated LafargeHolcim's targets to reduce its global carbon emissions. According to SBTi, LafargeHolcim's targets were adequate and consistent with the global effort to keep temperatures below the '2°C' threshold. LafargeHolcim also committed to reduce scope 2 GHG emissions from purchased electricity by 65% within the same timeframe.</p>

C3.1d

(C3.1d) 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	i) Influence of climate-related risks/opportunities to strategy AND the time horizon(s) it covers Risks and opportunities related to the growing demand for low carbon products in the construction sector, which requires solutions and innovations for a more sustainable built environment, have influenced our product-related strategy and product portfolio. These are generating substantial revenues and their demand in the markets where we operate continue to increase. We expect a growth in low-carbon product demand of 5% to 10% on a yearly basis. Therefore a short-term time horizon considered for this opportunity to materialize. This opportunity has influenced LafargeHolcim's product portfolio strategy. Since 2017, LafargeHolcim has developed low carbon products and brands such as Susteno®, EcoPact or Evopact, AIRIUM® that enable us to reduce both CO2 emissions generated by the production process and CO2 emissions for our clients in the building sector. The Group's strategy will further focus now on expanding the deployment of our existing low and carbon-neutral concretes in other markets and continue to grow our portfolio of low carbon products. ii) Case study of the most substantial strategic decision 1) Situation: what was the context or background? In 2019, LafargeHolcim introduced its first carbon-neutral concrete in key markets, Switzerland, Germany and France. This was a key milestone in the building materials industry and these products are considered as a successful proof of concept that might be developed in other markets. 2) Task: what needed to be done or what was the problem to be solved? As part of our strategy, there was a need to expand LafargeHolcim's portfolio of low and neutral carbon products. 3) Action: what was the course of action taken? The Group decided to expand the integration of ECOPact, our carbon neutral concrete in new markets. 4) Result: what was the final outcome of the course of action? In 2020, LafargeHolcim launched the industry's broadest range of low carbon concrete for high-performing, sustainable and circular construction, by making ECOPact available in the US with plans to expand into the UK, Canada, Latin America and other markets worldwide in the coming months. With the rollout of this Green Concrete, we are accelerating the transition to more sustainable building materials for low carbon construction.
Supply chain and/or value chain	Yes	i) Influence of climate-related risks/opportunities to strategy AND the time horizon(s) it covers Over the last years LafargeHolcim's supply chain has been affected by extreme weather conditions such as flooding or water shortages. Acute physical risks are therefore included in our risk process and have impacted our business and operations continuity. Therefore, a short-term time horizon considered for this risk to materialize. ii) Case study of the most substantial strategic decision 1) Situation: what was the context or background? LafargeHolcim has experienced more frequent business interruptions in recent years due to acute physical risks being materializing. 2) Task: what needed to be done or what was the problem to be solved? In our operations in Germany (Rhine in 2018) and in US (Mississippi 2019) significant variations in respective river water levels had an impact on shipping and product delivery to our customers leading to revenue losses, incurred costs for recovery and even reputational damages. 3) Action: what was the course of action taken? To be prepared to deal with these events, our logistics departments have developed well prepared response plans which involve a change in product sourcing from our network of plants, additional storage options for inventory and an adaptation of the modes of transport used, reducing the impact. 4) Result: what was the final outcome of the course of action? Thanks to our Logistics's teams prepared response plans LafargeHolcim was able to better anticipate the impact of physical risks, and overcome the business interruptions in both cases and ensure the delivery of our services to our customers.
Investment in R&D	Yes	i) Influence of climate-related risks/opportunities to strategy AND the time horizon(s) it covers Risks and opportunities related to the growing demand for low carbon products in the construction sector, which requires solutions and innovations for a more sustainable built environment, have influenced our strategy to invest in research and development. With the strongest innovation organization in the industry and an extended global network of regional labs, reducing carbon emissions is a key priority of our innovation agenda. We expect a growth in low-carbon product demand of 5% to 10% on a yearly basis. Therefore a short-term time horizon considered for this opportunity to materialize. Half of our resources and 40% of our patents are now aimed at finding sustainable solutions, with a strong focus on low carbon construction. LafargeHolcim anticipates carbon risk and opportunities through its R&D activities led by its global research center in Lyon supplemented by 13 research facilities in 10 countries. Currently the Group has 2000 granted patents or applications and a range of products and solutions with enhanced sustainability performance in the markets. ii) Case study of the most substantial strategic decision 1) Situation: what was the context or background? The growing demand for low carbon products in the construction sector is presented as a business opportunity for LafargeHolcim. 2) Task: what needed to be done or what was the problem to be solved? As an industry leader LafargeHolcim is required to develop new innovations towards a low carbon and circular built environment. With the strongest innovation organization in the industry and an extended global network of regional labs, reducing carbon emissions is a key priority of our innovation agenda. 3) Action: what was the course of action taken? LafargeHolcim's investment in Research and Development had to intensify its focus on new low and neutral carbon products and services development. 4) Result: Half of our resources and 40% of our patents are now aimed at finding sustainable solutions with a strong focus on low carbon construction. As result our wide range of low and ultra-low carbon products, such as Susteno 3R, which saves up to 20% CO2 compared to an average cement type, and which is the world's first cement that is upcycling construction and demolition waste materials.
Operations	Yes	i) Influence of climate-related risks/opportunities to strategy AND the time horizon(s) it covers Our cement plants continue to be the subject of continuous modernization projects to reduce CO2 emissions. Our Group-wide initiatives focus on lowering the calorific consumption, increasing the use of alternative fuels, the production of low carbon binders and the implementation of CO2 neutral technologies in our operations. These projects require large investments, influencing directly the Group's strategy on capital expenditures. This requires a yearly deployment of our decarbonation efforts. Therefore a short-term time horizon considered for this risk to materialize. ii) Case study of the most substantial strategic decision 1) Situation: what was the context or background? Scope 1 emissions from our operations are directly responsible for more than 80% of LafargeHolcim's carbon emissions. LafargeHolcim's operations are and therefore, directly impacted as per all the climate-related risks previously identified. 2) Task: what needed to be done or what was the problem to be solved? To fulfill our decarbonisation roadmap a range of actions to improve the energy efficiency of our operations and enhance the capacity to replace thermal energy consumption with alternative fuels. 3) Action: what was the course of action taken? The LafargeHolcim Group-wide CO2 reduction strategy includes capital expenditure allocation to roll-out the actions. More specifically in Europe, a range of carbon reduction investments was approved in 2018. 4) Result: what was the final outcome of the course of action? In 2019, a number of large investments were successfully implemented, and in 2020 and following years, a large number of new projects are expected to commence or conclude. In Europe, LafargeHolcim will invest CHF 160m and work on more than 80 projects across 19 European countries with a focus on low-carbon fuels, recycled materials and carbon-efficient solutions.

C3.1e

(C3.1e) 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 Capital allocation Acquisitions and divestments Access to capital Assets	Case study and specification of the time horizon covered by the financial planning of the elements selected: The upcoming phase IV of the European Trading System coming into force in 2021, will bring more strict CO2 free credit allocation systems. Therefore a short-term time horizon considered for this risk to materialize. Through the modeling of various scenarios, we have estimated its financial impact, on our European operations' direct costs and capital expenditures. This has been factored in our financial short and mid term planning process. The results of this assessment have been used to inform our strategy and business plan, including the relevant operating costs affected. As a result a dedicated decarbonization roadmap in Europe was put in place to manage respective investments to reduce our emissions. Over the next years, LafargeHolcim will invest CHF 160m and work on more than 80 projects across 19 European countries with a focus on low-carbon fuels, recycled materials and carbon-efficient solutions. With this investment we are aiming at reducing LafargeHolcim's net specific CO2 emissions in Europe by 3MT until 2022. This represents around 15 percent like for like.

C3.1f

(C3.1f) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

N/A

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

2018

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1

Intensity metric

Other, please specify (Net specific CO2 per tonne cementitious)

Base year

2018

Intensity figure in base year (metric tons CO2e per unit of activity)

576

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

95

Target year

2030

Targeted reduction from base year (%)

10

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]

518.4

% change anticipated in absolute Scope 1+2 emissions

-1.2

% change anticipated in absolute Scope 3 emissions

0

Intensity figure in reporting year (metric tons CO2e per unit of activity)

561

% of target achieved [auto-calculated]

26.0416666666667

Target status in reporting year

Revised

Is this a science-based target?

Yes, this target has been approved as science-based by the Science Based Targets initiative

Please explain (including target coverage)

In 2019 we reduced our net CO2 emissions per ton of cementitious material to 561 kg per ton, a decrease of 1.4% against our 2018 performance (constant at 2019 scope). Given this very strong progress we have revised our 2022 target to be more ambitious in the near term, from 560 kg to 550 kg, as we move toward our 2030 target. The Science-Based Targets initiative (SBTi) has validated LafargeHolcim's targets to reduce its global carbon emissions. According to SBTi, LafargeHolcim's targets are adequate and consistent with the global effort to keep temperatures below the '2°C' threshold as agreed at the COP21 world climate conference in Paris. The SBTi has approved LafargeHolcim's commitment to reduce scope 1 GHG emissions by 10% per ton of cementitious materials by 2030 from a 2018 base year. LafargeHolcim also commits to reduce scope 2 GHG emissions from purchased electricity by 65% within the same timeframe. LafargeHolcim's targets, expressed in CO2 emissions per ton of cementitious materials, equate to a reduction from 576 kg in 2018 to 520 kg by 2030. With these targets LafargeHolcim is an industry leader in reducing CO2. By 2019 LafargeHolcim had already reduced its net carbon scope 1 emissions per ton of cementitious material by 27% compared to 1990.

Target reference number

Int 2

Year target was set

2019

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 2 (market-based)

Intensity metric

Other, please specify (kg CO2 Scope 2 per tonne cementitious)

Base year

2018

Intensity figure in base year (metric tons CO2e per unit of activity)

38

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

95

Target year

2030

Targeted reduction from base year (%)

65

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]

13.3

% change anticipated in absolute Scope 1+2 emissions

-0.15

% change anticipated in absolute Scope 3 emissions

0

Intensity figure in reporting year (metric tons CO2e per unit of activity)

37

% of target achieved [auto-calculated]

4.04858299595142

Target status in reporting year

New

Is this a science-based target?

Yes, this target has been approved as science-based by the Science Based Targets initiative

Please explain (including target coverage)

In 2019 we reduced our net CO2 emissions per ton of cementitious material to 561 kg per ton, a decrease of 1.4% against our 2018 performance (constant at 2019 scope). Given this very strong progress we have revised our 2022 target to be more ambitious in the near term, from 560 kg to 550 kg, as we move toward our 2030 target. The Science-Based Targets initiative (SBTi) has validated LafargeHolcim's targets to reduce its global carbon emissions. According to SBTi, LafargeHolcim's targets are adequate and consistent with the global effort to keep temperatures below the '2°C' threshold as agreed at the COP21 world climate conference in Paris. The SBTi has approved LafargeHolcim's commitment to reduce scope 1 GHG emissions by 10% per ton of cementitious materials by 2030 from a 2018 base year. LafargeHolcim also commits to reduce scope 2 GHG emissions from purchased electricity by 65% within the same timeframe. LafargeHolcim's targets, expressed in CO2 emissions per ton of cementitious materials, equate to a reduction from 576 kg in 2018 to 520 kg by 2030. With these targets LafargeHolcim is an industry leader in reducing CO2. By 2019 LafargeHolcim had already reduced its net carbon scope 1 emissions per ton of cementitious material by 27% compared to 1990.

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?

No other climate-related targets

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	50	3000000
To be implemented*	32	2000000
Implementation commenced*	18	1000000
Implemented*	33	1670000
Not to be implemented	1	25000

C4.3b

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

Initiative category & Initiative type

Low-carbon energy generation	Other, please specify (Waste-derived fuels including biomass and efficiency measures)
------------------------------	---

Estimated annual CO2e savings (metric tonnes CO2e)

1000000

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

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

26400000

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

60000000

Payback period

1-3 years

Estimated lifetime of the initiative

21-30 years

Comment

This includes 17 alternative fuels projects implemented across the Group. Annual CO2 Net savings are estimated from replacement of traditional fossil fuels with biomass and alternative fuels, driven by an increase of our thermal energy substitution rate of +1 percentage point (20% in 2019 vs 19% in 2018) (Sustainability Performance Report 2019, page 5). The average payback period reflects those projects implemented.

Initiative category & Initiative type

Energy efficiency in production processes	Process optimization
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Estimated annual CO2e savings (metric tonnes CO2e)

500000

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

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

700000

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

5700000

Payback period

4-10 years

Estimated lifetime of the initiative

16-20 years

Comment

This includes 16 process efficiency projects implemented across the Group. Annual CO2 Net savings are estimated from savings that do not originate from the replacement of traditional fuels with alternative fuels. The average payback period reflects those projects implemented.

Initiative category & Initiative type

Low-carbon energy consumption	Other, please specify (Renewable electricity)
-------------------------------	---

Estimated annual CO2e savings (metric tonnes CO2e)

170000

Scope(s)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

0

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

0

Payback period

No payback

Estimated lifetime of the initiative

16-20 years

Comment

In the 2019 reporting year, 364,088 MWh of additional renewable electricity were purchased or produced. Considering our average grid emission factor of 464 kg CO₂/MWh, a total of around 170'000 t CO₂ of Scope 2 emissions were avoided. The purchase of renewable electricity did not require additional investments (on top of the standard price of electricity) neither has it generated monetary savings.

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

Method	Comment
Dedicated budget for low-carbon product R&D	In addition to addressing industrial performance, LafargeHolcim also harnesses R&D to develop new lower-carbon cements. In 2019, LafargeHolcim invested CHF 83 m in Research and Development (annual report 2019 page 187). The objective of this research is not only to reduce the footprint of specific products, but also to provide solutions that can be manufactured on a large scale through potential adaptations of existing production facilities. R&D can also result in beneficial performance characteristics (in some countries, LafargeHolcim advocates for changing building codes, norms and standards to accept new low-carbon innovative products). Half of our innovation projects are aimed at finding low-carbon solutions, whether they are digital tools to empower greener building, breakthroughs in the chemical processes underlying our cement or shaping the construction industry of the future through our contributions to 3D-printed buildings. Today, around 40 percent of our patents have a positive impact on our carbon footprint along the value chain.
Compliance with regulatory requirements/standards	Finance, Public Affairs and Sustainability teams develop in collaboration different scenarios analysis to quantify the potential impacts of regulatory requirements / standards. This work is used to inform regional and country existing business plans and short term strategies when significant risks are identified, leading to investments in emissions reduction activities where needed. An example is the transition to the phase 4 of the new European Trading System where LafargeHolcim has implemented a regional-wide decarbonization roadmap. As part of this roadmap, a number of CAPEX projects are being considered or / and under execution, aiming to improve our operations' energy efficiency and reduce carbon intensity.
Internal price on carbon	LafargeHolcim promotes the use of the Integrated (Economic, Social and Environmental) Profit and Loss Statement (IPL) methodology as a fundamental tool to assess the future investments to achieve the company's sustainability ambition. This methodology quantifies the equivalent economic value on the social and environmental externalities related to the company's new projects, to raise awareness of how they may or may not affect LafargeHolcim's business, and to assess their relative importance in the decision making process. In this process a list of initiatives are proposed to achieve defined targets. A Social and Environmental PL assessment can be conducted for each of the initiatives, considering a price for carbon and other externalities. In 2013, legacy Holcim completed a pilot project in India – the largest cement market for Holcim that assigned a price to CO ₂ , determined a cost abatement curve and subsequently derived investment decisions for the period 2013 – 2020 to reduce its carbon footprint, while improving its profitability.

C4.5**(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?**

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation

Group of products

Description of product/Group of products

LafargeHolcim has an important range of products and brands which can be considered as low carbon products. They can be considered as low carbon products because of having lower CO2 emissions during the production of the clinker - and/or lower clinker content in cement, and/or lower transportation CO2 impact due to the weight, and/or increase a construction's efficiency over its entire life cycle. LafargeHolcim has a specific definition of sustainable solutions with the following classifications relating to low carbon: Energy Efficiency Solutions: Solutions that improve the energy efficiency in buildings (heating and cooling) while providing better indoor comfort, compared to the next best alternative. Examples: AIRIUM, Thermedia, Geothermal mortars Circular economy solutions: Solutions which save raw material extraction and hence carbon emissions by reuse of mineral materials for aggregates, concrete or cement, e.g. by: Alternative aggregates used for roads and infrastructure Excavation materials backfilling integrated in the aggregates commercial offer Concrete or asphalt which includes a high proportion of alternative aggregates Examples: Aggneo®, Full depth reclamation for road maintenance Solutions which save carbon emissions through waste management services, e.g.: Waste management services Use of waste derived materials as alternative fuels and raw materials Examples: Geocycle on-site total waste management services for L'Oreal, Mexico Resource efficient solutions: Solutions that compared to the next best alternative: Have a longer service life and decreasing needs for maintenance Require less material to achieve the same performance Examples: Ductal®, LafargeHolcim road solutions, Extensia® Low carbon materials and solutions: Products and solutions which are in line with the LafargeHolcim Group Target 2030 of 520 kg CO2/t CEM, or which contribute to reduced life cycle carbon emissions. Examples: Solidia, Susteno, Holcim EcoPact, Holcim Evopact, Lafarge Galaxim Planet, specifically designed towers for windmills (renewable power) We are measuring the commercial success and growth of our low carbon solutions on an annual basis. Out of the 35% net sales with sustainable solutions in total, low carbon solutions account for ~27% of our net sales [2019 figures].

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product and avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify (LafargeHolcim Sustainable Solution Guidelines)

% revenue from low carbon product(s) in the reporting year

27

% of total portfolio value

<Not Applicable>

Asset classes/ product types

<Not Applicable>

Comment

LafargeHolcim's wide range of low-carbon products (Susteno®, EcoPact or Evopact, AIRIUM®) enables us to reduce both CO2 emissions generated by the production process and CO2 emissions for our clients in the building sector. Furthermore, we are developing with our Innovation Centre new products with higher CO2 savings potential (e.g. Solidia with a potential up to 70% CO2 reduction). Please note the 35 % revenue refers to the total percentage of sustainable Solutions in 2019.

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	92
Pre-calcliner	79

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start

January 1 2018

Base year end

December 31 2018

Base year emissions (metric tons CO2e)

121057822

Comment

2018 Net global Scope 1 emissions for Cement operations as reported in the 2019 CDP disclosure. The boundary covers the entities covered in the 2018 Group consolidated financial statements.

Scope 2 (location-based)

Base year start

January 1 2018

Base year end

December 31 2018

Base year emissions (metric tons CO2e)

7841245

Comment

Global Scope 2 (location-based) emissions for Cement operations as reported in the 2019 CDP disclosure. The boundary covers the entities covered in the 2018 Group consolidated financial statements.

Scope 2 (market-based)

Base year start

January 1 2018

Base year end

December 31 2018

Base year emissions (metric tons CO2e)

7960538

Comment

Global Scope 2 (market-based) emissions for Cement operations as reported in the 2019 CDP disclosure. The boundary covers the entities covered in the 2018 Group consolidated financial statements.

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

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)

120820137

Start date

January 1 2019

End date

December 31 2019

Comment

Total Scope 1 emissions as per 2019 consolidation for all segments: Cement, Aggregates, Ready Mix Concrete , Asphalt and Own power generation.

Past year 1

Gross global Scope 1 emissions (metric tons CO2e)

134591919

Start date

January 1 2018

End date

December 31 2018

Comment

Total global Scope 1 emissions for all segments: Cement, Aggregates, Ready Mix Concrete , Asphalt and Own power generation, as reported in the last year CDP disclosure. (Used as reference emissions in C7.9a)

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

Please note that the number published in the 2019 sustainability performance report follows the marked based approach as our operations have the possibilities to update the national grid average with the supplier specific data when available and relevant. Location based Scope figures are publicly disclosed in the CDP submission.

C6.3

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

Reporting year

Scope 2, location-based

6872752

Scope 2, market-based (if applicable)

7525825

Start date

January 1 2019

End date

December 31 2019

Comment

Total Scope 2 emissions for all segments: Cement, Aggregates, Ready Mix Concrete , Asphalt and Own power generation, as per 2019 consolidation

Past year 1

Scope 2, location-based

8286502

Scope 2, market-based (if applicable)

8385513

Start date

January 1 2018

End date

December 31 2018

Comment

Gross global Scope 2 emissions for all segments: Cement, Aggregates, Ready Mix Concrete , Asphalt and Own power generation, as reported in the last year CDP disclosure. (Used as reference emissions in C7.9a)

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

Metric tonnes CO2e

3000679

Emissions calculation methodology

Purchased goods and services emissions have been assessed according to the Cement Sector Scope 3 GHG Accounting and Reporting Guidance developed by the WBCSD Cement Sustainability Initiative. For this purpose we have assessed the most significant of our suppliers emissions due to clinker bought used in the production process during 2019. For the assessment we have used the global purchase volume by the group multiplied by the estimated emission factor for clinker bought according to the WBCSD-CSI CO2 Reporting protocol.

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

0

Please explain

Figures are based on 2019 Scope 3 methodology. As part of our commitment to continuous improvement on climate-related aspects, LafargeHolcim is currently reviewing its Scope 3 methodology, which may lead to adjustments in future reporting cycles.

Capital goods

Evaluation status

Not relevant, explanation provided

Metric tonnes 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

Scope 3 emissions assessment has been made following the material categories of the Cement Sector Scope 3 GHG Accounting and Reporting Guidance developed by the WBCSD Cement Sustainability Initiative which indicates that the source "Capital goods" is not required. After an assessment made 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

Metric tonnes CO2e

6297934

Emissions calculation methodology

Fuel-and-energy-related activities (not included in Scope 1 or 2) emissions have been assessed according to the Cement Sector Scope 3 GHG Accounting and Reporting Guidance developed by the WBCSD Cement Sustainability Initiative. Fuel and energy related activities include mainly extraction, refining and transportation of LafargeHolcim raw fuel sources.

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

0

Please explain

Figures are based on 2019 Scope 3 methodology. As part of our commitment to continuous improvement on climate-related aspects, LafargeHolcim is currently reviewing its Scope 3 methodology, which may lead to adjustments in future reporting cycles.

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

963699

Emissions calculation methodology

Upstream transportation and distribution emissions have been assessed according to the Cement Sector Scope 3 GHG Accounting and Reporting Guidance developed by the WBCSD Cement Sustainability Initiative. The calculation is based on the transportation of raw material (including bought clinker), MIC and traditional fuels reported in our inventories. All raw materials are assumed to come by truck. The emission factor comes from the reference database used in our verified Product Carbon Footprinting tool. For the 2019 reporting year, shipping emissions are part of the Upstream transportation and distribution category for the first time. Sea transportation of clinker, cement, mineral components and fuels is included.

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

0

Please explain

Figures are based on 2019 Scope 3 methodology. As part of our commitment to continuous improvement on climate-related aspects, LafargeHolcim is currently reviewing its Scope 3 methodology, which may lead to adjustments in future reporting cycles.

Waste generated in operations

Evaluation status

Not relevant, explanation provided

Metric tonnes 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

Scope 3 emissions assessment has been made following the material categories of the Cement Sector Scope 3 GHG Accounting and Reporting Guidance developed by the WBCSD Cement Sustainability Initiative which indicates that the source "Waste generated in operations" is not required. After an assessment made 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

Metric tonnes CO₂e

311663

Emissions calculation methodology

Business travel emissions have been assessed according to WBCSD CSI Scope 3 methodology. The calculation is based on the estimates of domestic and overseas travels of our employees, with an average emission factor per FTE estimated from the data provided by two representative group companies from their travel agent.

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

0

Please explain

Figures are based on 2019 Scope 3 methodology. As part of our commitment to continuous improvement on climate-related aspects, LafargeHolcim is currently reviewing its Scope 3 methodology, which may lead to adjustments in future reporting cycles.

Employee commuting

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

83213

Emissions calculation methodology

Employee commuting emissions have been assessed according to WBCSD CSI Scope 3 methodology. We assume that all employees commute for 30 km each day and 50% travel by car while the other use public transportation.

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

0

Please explain

Figures are based on 2019 Scope 3 methodology. As part of our commitment to continuous improvement on climate-related aspects, LafargeHolcim is currently reviewing its Scope 3 methodology, which may lead to adjustments in future reporting cycles.

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes 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

Scope 3 emissions assessment has been made following the material categories of the Cement Sector Scope 3 GHG Accounting and Reporting Guidance developed by the WBCSD Cement Sustainability Initiative which indicates that the source "Upstream leased assets" is not required. After an assessment made 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

Metric tonnes CO₂e

8676581

Emissions calculation methodology

Downstream transportation and distribution emissions have been assessed according to the Cement Sector Scope 3 GHG Accounting and Reporting Guidance developed by the WBCSD Cement Sustainability Initiative. Downstream transportation and distribution is confirmed in the case of LH and this source includes: i) Transportation of clinker to another company and ii) Transportation of cement, ready mix, aggregates, asphalt and concrete products to retailers

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

0

Please explain

Figures are based on 2019 Scope 3 methodology. As part of our commitment to continuous improvement on climate-related aspects, LafargeHolcim is currently reviewing its Scope 3 methodology, which may lead to adjustments in future reporting cycles.

Processing of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes 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

Scope 3 emissions assessment has been made following the material categories of the Cement Sector Scope 3 GHG Accounting and Reporting Guidance developed by the WBCSD Cement Sustainability Initiative which indicates that the source "Processing of sold products" is not required. After an assessment made 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

Metric tonnes 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

Scope 3 emissions assessment has been made following the material categories of the Cement Sector Scope 3 GHG Accounting and Reporting Guidance developed by the WBCSD Cement Sustainability Initiative which indicates that the source "Use of sold products" is not required. After an assessment made and considering the share of these emissions within the total Scope 3 emissions for the cement industry, the source "Use of sold products" has been considered as not relevant.

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes 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

Scope 3 emissions assessment has been made following the material categories of the Cement Sector Scope 3 GHG Accounting and Reporting Guidance developed by the WBCSD Cement Sustainability Initiative which indicates that the source "End of life treatment of sold products" is not required. After an assessment made 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

Metric tonnes 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

Scope 3 emissions assessment has been made following the material categories of the Cement Sector Scope 3 GHG Accounting and Reporting Guidance developed by the WBCSD Cement Sustainability Initiative which indicates that the source "Downstream leased assets" is not required. After an assessment made 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

Metric tonnes 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

Scope 3 emissions assessment has been made following the material categories of the Cement Sector Scope 3 GHG Accounting and Reporting Guidance developed by the WBCSD Cement Sustainability Initiative which indicates that the source "Franchises" is not required. After an assessment made and considering the share of these emissions within the total Scope 3 emissions for the cement industry, the source "Franchises" is considered as not relevant.

Investments

Evaluation status

Not relevant, explanation provided

Metric tonnes 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

Scope 3 emissions assessment has been made following the material categories of the Cement Sector Scope 3 GHG Accounting and Reporting Guidance developed by the WBCSD Cement Sustainability Initiative which indicates that the source "Investments" is not required. After an assessment made 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

Metric tonnes 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

Scope 3 emissions assessment has been made following the material categories of the Cement Sector Scope 3 GHG Accounting and Reporting Guidance developed by the WBCSD Cement Sustainability Initiative which indicates that the source "Other (upstream)" is not required. After an assessment made 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

Metric tonnes 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

Scope 3 emissions assessment has been made following the material categories of the Cement Sector Scope 3 GHG Accounting and Reporting Guidance developed by the WBCSD Cement Sustainability Initiative which indicates that the source "Other (downstream)" is not required. After an assessment made 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.

C6.7

(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	3487959	NA

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

0.0048

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

128345961

Metric denominator

unit total revenue

Metric denominator: Unit total

2672200000

Scope 2 figure used

Market-based

% change from previous year

8.47

Direction of change

Decreased

Reason for change

4.80 kg CO2/CHF revenue in 2019 vs 5.21 kg CO2/CHF revenue in 2018 - ongoing efforts in increasing thermal substitution rate, and in decreasing clinker factor and specific thermal energy consumption - divestments of plants with lower environmental performance - increase of net sales (+3.1% on a like for like basis)

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	0.827	0.788	0.052
Cement equivalent	0.633	0.604	0.04
Cementitious products	0.589	0.561	0.037
Low-CO2 materials	0.516	0.453	0.029

C7. Emissions breakdowns

C7.1

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

No

C7.2

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

Country/Region	Scope 1 emissions (metric tons CO2e)
Africa and Middle East	20858935
Asia Pacific (or JAPA)	41548071
Europe	28838515
Latin America (LATAM)	13152124
North America	16422491

C7.3

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

By activity

C7.3c

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

Activity	Scope 1 emissions (metric tons CO2e)
Clinker and Cement	113230060
Aggregates	429160
Asphalt	225864
Captive Power Plants	6786869
Concrete Products	34773
Ready Mix Concrete	113410

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	113230060	107987492	
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)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
Africa and Middle East	1715292	1898363	3164174	248775
Asia Pacific (or JAPA)	1764420	1900782	2617848	108266
Europe	1658246	1832225	5028349	1111460
Latin America (LATAM)	615905	619415	2224587	722151
North America	1118887	1275038	3186535	394212

C7.6

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

By activity

C7.6c

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

Activity	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Clinker and Cement	6496425	7152727
Aggregates	234554	240430
Asphalt	20944	12800
Captive Power Plants	62621	57838
Concrete Products	10173	9476
Ready Mix Concrete	48035	52554

(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	6496425	7152727	
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C7.9

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

Decreased

C7.9a

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

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	168915	Decreased	0.12	Renewable electricity production and purchases increased by 364,088 MWh from 2018 to 2019. To estimate the emissions saved, we multiply with the average CO2 intensity of electricity purchase in 2019 (which would have been the alternative) (364,088 MWh * 463.9 kg CO2/MWh =168,915 t CO2). These savings represent 0.12% of our 2018 gross scope 1 + 2 emissions reported in the CDP 2019 ((168,915 t / 142,977,431 t)*100 = 0.12%). As a reference, please see our response in the section C4.3b. Please find our changes in emissions visualized consulting the following spreadsheet: https://docs.google.com/spreadsheets/d/1kZklbK-M_FqX6fXtLSQALn01UJmax_PZr94-T2G4xcg/edit?usp=sharing
Other emissions reduction activities	2077156	Decreased	1.45	We decreased our Emissions by 2,077,156 t. This translates into an emission increase of 1.45% ((2,077,156 t / 142,977,431 t)*100 = 1.45%) respective to the 2018 gross scope 1 + 2 emissions declared in the CDP 2019. Please find our changes in emissions visualized consulting the following spreadsheet: https://docs.google.com/spreadsheets/d/1kZklbK-M_FqX6fXtLSQALn01UJmax_PZr94-T2G4xcg/edit?usp=sharing
Divestment	13694510	Decreased	9.58	Due to the divestments in the reporting year 2019 our emissions decreased by 13,694,510 t. This translates into a decrease of 1.45% ((976,467 t / 13,694,510 t)*100 = 9.58%) respective to the 2018 gross scope 1 + 2 emissions declared in the CDP 2019. Please find our changes in emissions visualized consulting the following spreadsheet: https://docs.google.com/spreadsheets/d/1kZklbK-M_FqX6fXtLSQALn01UJmax_PZr94-T2G4xcg/edit?usp=sharing
Acquisitions	0	No change	0	
Mergers	0	No change	0	
Change in output	214648	Increased	0.15	Considering a like for like consolidation of the 2019 reporting year, the production of cementitious material increased by 361,845 t from 2018. Multiplying the 2018 specific emission factor for the production with the production increase, the emission increased by 214'648 t. This translates into an emission change of 0.15% compared to the 2018 Gross Scope 1+2 Emissions reported in the CDP 2019 ((10,657,849 t / 214'648 t)*100 = 0.15%). Please find our changes in emissions visualized consulting the following spreadsheet: https://docs.google.com/spreadsheets/d/1kZklbK-M_FqX6fXtLSQALn01UJmax_PZr94-T2G4xcg/edit?usp=sharing
Change in methodology	0	No change	0	
Change in boundary	0	No change	0	
Change in physical operating conditions	0	No change	0	
Unidentified	0	No change	0	
Other	6226	Decreased	0	The amount of 6,226 t was not allocated to any specific reason. However, we consider this number of 0.68% ((6,226 t / 142,977,431 t)*100= 0.00%) to be non material. Please find our changes in emissions visualized consulting the following spreadsheet: https://docs.google.com/spreadsheets/d/1kZklbK-M_FqX6fXtLSQALn01UJmax_PZr94-T2G4xcg/edit?usp=sharing

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?

Market-based

C8. Energy

C8.1

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

More than 15% but less than or equal to 20%

C8.2

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

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

C8.2a

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

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	9771506	152188990	161960496
Consumption of purchased or acquired electricity	<Not Applicable>	2584864	13636628	16221492
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>	356741	<Not Applicable>	4625
Total energy consumption	<Not Applicable>	12956295	165230319	178186614

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)	137707361
Consumption of purchased or acquired electricity	<Not Applicable>	15170891
Consumption of other purchased or acquired energy (heat, steam and/or cooling)	<Not Applicable>	<Not Applicable>
Total energy consumption	<Not Applicable>	152878252

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.

Fuels (excluding feedstocks)

Coal

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

47228388

MWh fuel consumed for self-generation of electricity

18612213

MWh fuel consumed for self-generation of heat

28616176

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>

Emission factor

96

Unit

kg CO2 per GJ

Emissions factor source

CO2 Accounting and Reporting Standard for the Cement Industry WBCSD-CSI: Default CO2 Emission Factors for Fuels, Version 3.1

Comment

Fuels (excluding feedstocks)

Petroleum Coke

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

51138229

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

51138229

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>

Emission factor

92.8

Unit

kg CO2 per GJ

Emissions factor source

CO2 Accounting and Reporting Standard for the Cement Industry WBCSD-CSI: Default CO2 Emission Factors for Fuels, Version 3.1

Comment

Fuels (excluding feedstocks)

Diesel

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

4612442

MWh fuel consumed for self-generation of electricity

685105

MWh fuel consumed for self-generation of heat

3927337

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>

Emission factor

74.1

Unit

kg CO2 per GJ

Emissions factor source

CO2 Accounting and Reporting Standard for the Cement Industry WBCSD-CSI: Default CO2 Emission Factors for Fuels, Version 3.1

Comment

Fuels (excluding feedstocks)

Natural Gas

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

24977860

MWh fuel consumed for self-generation of electricity

1646653

MWh fuel consumed for self-generation of heat

23331206

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>

Emission factor

56.1

Unit

kg CO2 per GJ

Emissions factor source

CO2 Accounting and Reporting Standard for the Cement Industry WBCSD-CSI: Default CO2 Emission Factors for Fuels, Version 3.1

Comment

Fuels (excluding feedstocks)

Oil Shale

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

148

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

148

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>

Emission factor

107

Unit

kg CO2 per GJ

Emissions factor source

CO2 Accounting and Reporting Standard for the Cement Industry WBCSD-CSI: Default CO2 Emission Factors for Fuels, Version 3.1

Comment

Fuels (excluding feedstocks)

Lignite Coal

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

1847221

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

1847221

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>

Emission factor

101

Unit

kg CO2 per GJ

Emissions factor source

CO2 Accounting and Reporting Standard for the Cement Industry WBCSD-CSI: Default CO2 Emission Factors for Fuels, Version 3.1

Comment

Fuels (excluding feedstocks)

Other, please specify (Heavy fuel)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

4098743

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

4098743

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>

Emission factor

77.4

Unit

lb CO2 per GJ

Emissions factor source

CO2 Accounting and Reporting Standard for the Cement Industry WBCSD-CSI: Default CO2 Emission Factors for Fuels, Version 3.1

Comment

Fuels (excluding feedstocks)

Other, please specify (Other traditional fuels)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

641336

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

641336

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>

Emission factor

96.3

Unit

kg CO2 per GJ

Emissions factor source

Calculated from reported emission factors.

Comment

The emission factor provided above is the actual emission factor, which is calculated using specific emission factors reported by our plants.

Fuels (excluding feedstocks)

Other, please specify (Alternative kiln fuels excluding Biomass)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

17644623

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

17644623

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>

Emission factor

82.5

Unit

kg CO2 per GJ

Emissions factor source

Calculated from emission factors reported by our plants.

Comment

The emission factor provided above is our actual alternative fossil fuels (without biomass) emission factor, which is calculated using specific emission factors reported by our plants.

Fuels (excluding feedstocks)

Other, please specify (Biomass fuels)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

9771506

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

9771506

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>

Emission factor

0

Unit

kg CO2 per GJ

Emissions factor source

Calculated from emission factors reported by our plants. An emission factor of 0 is applied to biomass fuels.

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.

Fuels (excluding feedstocks)

Coal

Heating value

LHV

Total MWh fuel consumed for cement production activities

28616176

MWh fuel consumed at the kiln

28035783

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

580392

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Fuels (excluding feedstocks)

Petroleum Coke

Heating value

LHV

Total MWh fuel consumed for cement production activities

51138229

MWh fuel consumed at the kiln

51138229

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>

Fuels (excluding feedstocks)

Diesel

Heating value

LHV

Total MWh fuel consumed for cement production activities

1710717

MWh fuel consumed at the kiln

253270

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

1457447

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Fuels (excluding feedstocks)

Natural Gas

Heating value

LHV

Total MWh fuel consumed for cement production activities

22238663

MWh fuel consumed at the kiln

21384830

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

853833

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Fuels (excluding feedstocks)

Oil Shale

Heating value

LHV

Total MWh fuel consumed for cement production activities

148

MWh fuel consumed at the kiln

148

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>

Fuels (excluding feedstocks)

Lignite Coal

Heating value

LHV

Total MWh fuel consumed for cement production activities

1847221

MWh fuel consumed at the kiln

1847221

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>

Fuels (excluding feedstocks)

Other, please specify (Heavy fuel)

Heating value

LHV

Total MWh fuel consumed for cement production activities

4098743

MWh fuel consumed at the kiln

4098743

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>

Fuels (excluding feedstocks)

Other, please specify (Other traditional fuels)

Heating value

LHV

Total MWh fuel consumed for cement production activities

641336

MWh fuel consumed at the kiln

0

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

641336

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Fuels (excluding feedstocks)

Other, please specify (Alternative kiln fuels excluding Biomass)

Heating value

LHV

Total MWh fuel consumed for cement production activities

17644623

MWh fuel consumed at the kiln

17644623

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>

Fuels (excluding feedstocks)

Other, please specify (Biomass fuels)

Heating value

LHV

Total MWh fuel consumed for cement production activities

9771506

MWh fuel consumed at the kiln

9771506

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>

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

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	4291938	4291938	358275	356741
Heat	42742	4625	42742	4625
Steam	0	0	0	0
Cooling	0	0	0	0

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

	Total gross generation (MWh) inside the cement sector boundary	Generation that is consumed (MWh) inside the cement sector boundary
Electricity	216674	215140
Heat	31126	0
Steam	0	0

C8.2e**(C8.2e) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero emission factor in the market-based Scope 2 figure reported in C6.3.****Sourcing method**

Other, please specify (Grid mix of renewable electricity)

Low-carbon technology type

Other, please specify (Solar, Wind, Hydropower, Biomass (including biogas), Nuclear)

Country/region of consumption of low-carbon electricity, heat, steam or cooling

Other, please specify (Group level)

MWh consumed accounted for at a zero emission factor

2584864

Comment

Contract with suppliers or utilities, with a supplier-specific emission rate, not backed by electricity attribute certificates.

C9. Additional metrics

C9.1

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

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	

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
Alternative low-CO2 cements/binders	Full/commercial-scale demonstration	≤20%	83000000	In 2019, Research and development costs of CHF 83 million were charged directly to the consolidated statement of income.
Carbon capture and storage (CCS)	Pilot demonstration	≤20%	83000000	In 2019, Research and development costs of CHF 83 million were charged directly to the consolidated statement of income.
Low clinker cement	Full/commercial-scale demonstration	≤20%	83000000	In 2019, Research and development costs of CHF 83 million were charged directly to the consolidated statement of income.

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

02272020-sustainability-lafargeholcim_fy_2019_data_report-en-update2.pdf

Page/ section reference

02272020-sustainability-lafargeholcim_fy_2019_data_report-en-update2.pdf Pages 14, 15 and 16

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 market-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

02272020-sustainability-lafargeholcim_fy_2019_data_report-en-update2.pdf

Page/ section reference

02272020-sustainability-lafargeholcim_fy_2019_data_report-en-update2.pdf Pages 14, 15 and 16

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 (upstream & downstream)

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

02272020-sustainability-lafargeholcim_fy_2019_data_report-en-update2.pdf

Page/section reference

02272020-sustainability-lafargeholcim_fy_2019_data_report-en-update2.pdf Pages 14, 15 and 16

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?

In progress

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.

Alberta Carbon Competitive Incentive Regulation (CCIR) – ETS
BC carbon tax
Canada federal Output Based Pricing System (OBPS) - ETS
Colombia carbon tax
EU ETS
Mexico carbon tax
Québec CaT - ETS
Switzerland carbon tax
Switzerland ETS

C11.1b

(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.

Alberta Carbon Competitive Incentive Regulation (CCIR) – ETS

% of Scope 1 emissions covered by the ETS

0.96

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1 2019

Period end date

December 31 2019

Allowances allocated

1413480

Allowances purchased

0

Verified Scope 1 emissions in metric tons CO2e

1154831

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Facilities we own and operate

Comment

ALBERTA (Exshaw Plant)

Canada federal OBPS - ETS

% of Scope 1 emissions covered by the ETS

0.53

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1 2019

Period end date

December 31 2019

Allowances allocated

576138

Allowances purchased

59503

Verified Scope 1 emissions in metric tons CO2e

635641

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Facilities we own and operate

Comment

Ontario (Bath Cement Plant) falls under the Canada federal OBPS system.

EU ETS**% of Scope 1 emissions covered by the ETS**

17.35

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1 2019

Period end date

December 31 2019

Allowances allocated

20279808

Allowances purchased

0

Verified Scope 1 emissions in metric tons CO2e

20950488

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Facilities we own and operate

Comment**Québec CaT****% of Scope 1 emissions covered by the ETS**

0.6

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1 2019

Period end date

December 31 2019

Allowances allocated

694765

Allowances purchased

0

Verified Scope 1 emissions in metric tons CO2e

724616

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Facilities we own and operate

Comment

Quebec (St. Constant Plant)

Switzerland ETS

% of Scope 1 emissions covered by the ETS

1.08

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1 2019

Period end date

December 31 2019

Allowances allocated

1550364

Allowances purchased

0

Verified Scope 1 emissions in metric tons CO2e

1299825

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Facilities we own and operate

Comment

Facilities we own and operate

C11.1c

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

BC carbon tax

Period start date

January 1 2019

Period end date

December 31 2019

% of total Scope 1 emissions covered by tax

0.56

Total cost of tax paid

3415758

Comment

Colombia carbon tax

Period start date

January 1 2019

Period end date

December 31 2019

% of total Scope 1 emissions covered by tax

0.01

Total cost of tax paid

48129

Comment

Mexico carbon tax

Period start date

January 1 2019

Period end date

December 31 2019

% of total Scope 1 emissions covered by tax

0.25

Total cost of tax paid

74532

Comment

Switzerland carbon tax

Period start date

January 1 2019

Period end date

December 31 2019

% of total Scope 1 emissions covered by tax

0.19

Total cost of tax paid

0

Comment

Tax was refunded due to participation in Swiss Emission trading scheme.

C11.1d

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

i) A description of your strategy for complying with the systems in which you participate

LafargeHolcim CO2 ambition, targets and aspirations for 2022 and 2030, have been cascaded across all business units by the integration in the business management plan of the respective levers.

At the moment, the levers we are currently employing to reduce carbon intensity are focused to reduce our scope 1 and 2 emissions related to process, fuel emissions and energy purchased mainly, being fully aligned with the nature of the carbon systems under which we currently operate.

- **Clinker substitution:** Substitution of clinker with mineral components such as limestone, pozzolan, slag or fly ash. Currently, the products we market use on average 28 percent of constituents to replace clinker.
- **Waste-derived fuels and biomass:** To be used as replacement for fossil fuels that provide the energy needed to operate a cement kiln. We are currently able to source 18 percent of our energy needs from low-carbon fuels and biomass.
- **Increased energy efficiency:** We are optimizing our low-carbon power-producing assets across our production plant portfolio. We are also investing in or purchasing renewable power when it is economically advantageous and investigating opportunities to generate renewable energy by using our land for windmills or solar panel farms, or using quarries as water reservoirs for hydropower.
- **Innovation:** We are continually exploring new strategies and technologies, such as carbon capture and usage and developing new low-carbon solutions.
- **Risk and opportunities:** Monitoring and modeling of distinct and plausible carbon scenarios are used to increase the robustness of our strategy.
- **Transparency:** The Group supports transparency and improved disclosure in carbon-related performance and risks.

ii) A description of your strategy for complying with the system in which you anticipate to participate in, and identification of when you anticipate being regulated in the next 3 years

In our Brookfield Cement, in Nova Scotia, Canada a Cap & Trade program similar in design to the Quebec system has been recently put into place with 2019 being the first year Free Allowances were provided. For the last years, the country Public Affairs managers and Sustainability colleagues have been closely monitoring and modeling what would be the impact on our plant and determining the levers to ensure a smooth transition. In the country, innovative solutions such as carbon technologies are being piloted in other regions which are currently under an existing system. Key learnings are expected to be replicated throughout the cement division.

In Europe we are managing closely the transition to the phase 4 of the new European Trading System which will come into force in 2021, bringing more strict CO2 free credit allocation systems and the likely increase of fossil fuels' costs and scarcity of alternative mineral components. LafargeHolcim has already implemented a dedicated regional-wide decarbonization roadmap. The initiative has been distributed in four key areas, aligned with our global strategy:

- Energy efficiency improvements and acceleration of Alternative Fuel usage
- Enhanced product portfolio optimization to accelerate the production of low carbon binders
- Network optimization to evaluate production thresholds and network optimization synergies
- Innovation of CO2 neutral technologies such as carbon capture and storage

iii) An example of how you have applied your strategy

In Europe, as a result of the european decarbonization roadmap LafargeHolcim has decided to invest CHF 160m and work on more than 80 projects across 19 European countries with a focus on low-carbon fuels, recycled materials and carbon-efficient solutions. With this investment we are aiming at reducing LafargeHolcim's net specific CO2 emissions in Europe by 3MT until 2022. This represents around 15 percent like for like.

C11.2

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

Yes

C11.2a

(C11.2a) Provide details of the project-based carbon credits originated or purchased by your organization in the reporting period.

Credit origination or credit purchase

Credit origination

Project type

Forests

Project identification

The Cerro Blanco Forest is a private reserve of 6,078 hectares and it is one of the last remnants of dry forest on the Ecuadorian coast. The Foundation 'Pro-bosque' protects and rehabilitates this Tropical Dry Forest Region in collaboration with Holcim Ecuador. Holcim Ecuador has an agreement with the Foundation 'Pro-Bosque' to offset the carbon footprint of their products by taking into account the carbon captured by the forest preserved. External Annual audits are carried out to monitor the forest's CO2 capture rate (currently by 'Sambito' Auditing corporation). The Ecuadorian Government recognizes the process and the external audits, 3,300 hectares are currently available to compensate emissions.

Verified to which standard

Not yet verified

Number of credits (metric tonnes CO2e)

10890

Number of credits (metric tonnes CO2e): Risk adjusted volume

10890

Credits cancelled

Yes

Purpose, e.g. compliance

Voluntary Offsetting

Credit origination or credit purchase

Credit purchase

Project type

Other, please specify (Different credits following the standards below.)

Project identification

Carbon credit purchases to compensate for embodied carbon emissions of concrete. The number includes credits purchased in Switzerland, Germany and France.

Verified to which standard

Other, please specify (The credits comply with one of the following standards: Verified carbon standard (VCS), the Gold standard (GS), Forest management certificate, International organization for standardization (ISO), Max Moor.)

Number of credits (metric tonnes CO2e)

350

Number of credits (metric tonnes CO2e): Risk adjusted volume

350

Credits cancelled

Not relevant

Purpose, e.g. compliance

Voluntary Offsetting

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
- Stress test investments
- Identify and seize low-carbon opportunities

GHG Scope

- Scope 1
- Scope 2
- Scope 3

Application

LafargeHolcim promotes the use of the Integrated (Economic, Social and Environmental) Profit and Loss Statement (IPL) methodology as a fundamental tool to assess the initiatives proposed (future investments) to achieve the company's sustainability ambition. This methodology quantifies the equivalent economic value on the social and environmental externalities related to the company's new projects, to raise awareness of how they may or may not affect LafargeHolcim's business, and to assess their relative importance in the decision making process. In this process a list of initiatives are proposed to achieve defined targets. A Social and Environmental PL assessment can be conducted for each of the initiatives, considering a price for carbon and other externalities.

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

34

Variance of price(s) used

We based our figure on a combination of reports, including the Stern report (assuming 25 USD/t in 2007), analysis made by the Environmental Protection Agency (taking the midpoint of 3 percent and 5 percent discount rates in 2019 and inflating this number to 2019: 34 USD/t), combined with prevalent assumptions used by governments that internalize the cost of CO2. Notably, for the purposes of comparison, we considered that, in its impact assessment of the Emission Trading Directive, the European Commission assumed a range of prices between [25 CHF and 50 CHF].

Type of internal carbon price

Shadow price

Impact & implication

Specific description of how organization uses internal price on carbon According to the existing carbon pricing schemes, LafargeHolcim uses an internal price of carbon to estimate the economic impact on the production cost of the sites that are under the defined mechanisms in each country or region. Regarding the efficiency of each production site and the existing and projected market demand, LafargeHolcim makes decisions based on the overall financial impact that the asset has and may have in the future. Based on the obtained results roadmaps are defined to achieve the goals of our sustainability ambition, giving priority to those initiatives (new products, investments or R&D activities) that matched in high integrated P&L value, high feasibility and high estimated net present value. In addition, LafargeHolcim promotes the use of the Integrated (Economic, Social and Environmental) Profit and Loss Statement (IPL) methodology as a fundamental piece of information in its mainstream reports. The LafargeHolcim IPL assumptions are made publicly available: https://www.lafargeholcim.com/sites/lafargeholcim.com/files/atoms/files/lafargeholcim_ipl_15_june_2020.pdf

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

- Yes, our suppliers
- Yes, our customers
- Yes, other partners in the value chain

C12.1a

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

Type of engagement

Innovation & collaboration (changing markets)

Details of engagement

Run a campaign to encourage innovation to reduce climate impacts on products and services

Other, please specify (Partnership projects to incentive innovation, CO2 reduction and Circular Economy - e.g: partner with Transport suppliers that operates with alternative fuels when markets permit (eg electrical Trucks, Liquefied Natural Gas))

% of suppliers by number

34

% total procurement spend (direct and indirect)

59

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

79

Rationale for the coverage of your engagement

i: Rationale ii: Scope of our engagement There are 2 types of engagement process we undertake at LafargeHolcim with regards to suppliers: 1) Sustainable Procurement i) At LafargeHolcim, supplier sustainability compliance is an integral part of any sourcing decision. Our approach includes how we work with our suppliers, deploying responsible sourcing practices in our supply chain. As part of our supplier code of business conduct, we expect from all our suppliers to systematically manage their environmental impacts with regards, but not limited to: climate, energy, water, waste, chemicals, air pollution and biodiversity and set objectives and targets to reduce such impacts. ii) Our Sustainable Procurement model, ensures engagement with suppliers through supplier pre-qualification, which is also enforced in our Minimum Control Standards #30. We engage with suppliers to ensure a robust risk materiality review. Some of steps taken: qualification process, risk mitigation and consequence management, environmental and climate ongoing performance evaluation. Countries identify and prioritize suppliers that pose a higher ESG impact. Those suppliers, together with all new suppliers, are evaluated by an independent third party appropriately to the perceived risk. Positive engagement action plans are then created to address shortfalls which may lead to collaboration partnerships where suitable. 2) Innovation and Collaboration i) At LafargeHolcim we aim to establish partnership projects with our suppliers to incentivize innovation, especially about CO2 reduction and Circular Economy. We believe these collaborations on innovation projects could help to reduce costs, to achieve our CO2 and Circular Economy commitments and to strengthen our sustainable procurement standards. ii) These partnership projects are mainly limited to Global but high ESG impact suppliers. An example is our partnership with a supplier of magnesia, to reuse bricks that are replaced from our kilns as raw material to produce new bricks. The project deploys a reverse logistics process to collect the used bricks from our sites to use them in the production of new magnesia bricks after pre-process the old contaminated bricks. This project helps to the optimization of natural resources and the reduction of carbon intensity in the value chain from the production process.

Impact of engagement, including measures of success

1) Sustainable Procurement Initiative Company specific description of the impact of climate-related supplier engagement: Group companies report annually on their supplier assessments in the annual procurement scorecard. A total of 20'316 high ESG impact suppliers and contractors were assessed for environmental criteria in the LafargeHolcim Sustainable Procurement program by 2019. These suppliers and contractors (screened on environmental criteria) accounted for 59% of total spend, which is considered significant. Suppliers identified as having a high environmental impact shall take action and demonstrate proof of continuous improvement towards having a recognized Environmental Management System in place. Please note that these figures refer to suppliers and contractors that were assessed for compliance. The Supplier code of conduct, however applies to all suppliers and contractors. Description of measures of success: We measure our success in terms of % of spend covered of qualified high ESG impact suppliers. This is the first step of our sustainable procurement journey but still illustrate the impact of our effort, covering a big supplier base across the world and with different ESG challenges. By 2022, we target to have 100% of high ESG impact suppliers assessed with consequence management in place. <http://www.lafargeholcim.com/sites/lafargeholcim.com/files/atoms/files/lafargeholcimbusinessconductforsupplier.pdf> 2) Innovation and Collaboration Projects Company specific description of the impact of climate-related supplier engagement: The positive impact is not only the optimization of natural resources (shortage of magnesia due to stronger regulations), but also a reduction on CO2 in the order of 15% in the bricks production phase (normal process emits 2 CO2 tons per 1 tonne of material produced). Description of measures of success: We measure our success in terms of % reduction of CO2 emissions per tonne of material produced and reduction of the volume of magnesia used per ton of material produced.

Comment

Scope 3: We are working on identifying further reduction opportunities in our upstream and downstream supply chain, starting with Transportation suppliers for inbound and outbound logistics and following with purchased fuels and energy. These two categories account for 61% of our Scope 3 emissions, according to GHG protocol and the accounting methodology used (GCCA Scope 3 emissions methodology). Scope 2: We have established a reduction target for purchased electricity, certified by SBTi in December 2019.

C12.1b

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

Type of engagement

Collaboration & innovation

Details of engagement

Run a campaign to encourage innovation to reduce climate change impacts

% of customers by number

100

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

0

Portfolio coverage (total or outstanding)

<Not Applicable>

Please explain the rationale for selecting this group of customers and scope of engagement

i) Rationale for selecting this group of customers and scope of engagement Rationale LafargeHolcim has an important range of products and brands which can be considered as low carbon products. We engage with our customers in promoting sustainable solutions including solutions specifically geared towards low carbon construction materials and saving carbon emissions over the construction life cycle. In addition, the LafargeHolcim Foundation for Sustainable Construction promotes and encourages the development and design of a sustainable built environment. It is a key lever for LafargeHolcim to collaborate with key customers, incentivizing relevant innovations in an early stage. Scope of engagement The scope of engagement relates to three main actions: Promotion of our low carbon products: Information available in respective country websites, where we promote our low carbon products, and where customers can gather detailed information about the applications and benefits of our low-carbon product portfolio. Collaboration: LafargeHolcim Group Sustainability is engaging with the entire construction value chain including real estate developers and construction companies through its standing stakeholders panel (last meeting in July 2019). Furthermore, dedicated workshop meetings with contractors and construction companies on low carbon construction materials are taking place (so far five meetings in 2019). Incentivisation: LafargeHolcim Foundation for Sustainable Construction runs a 3-year competition with USD 2 million prize money to promote sustainable approaches to creating the built environment with an active focus on reducing CO2 emissions at every stage of a structure's use cycle. The LafargeHolcim Awards are material neutral and the world's most significant competition for sustainable design.

Impact of engagement, including measures of success

ii) specific description of the impact of climate-related engagement strategy with your customers; iii) clear description of measures of success Promotion: On the promotion of low carbon products, we have experienced a yearly growth in revenues from low carbon products from about 3% in 2015, to about 8 % in 2018. We expect this trend to prevail over the next year as we continue to invest in further developing and deploying our low-carbon products portfolio to face the increasing demand. Measure of success: % of Group revenues from low carbon products. Collaboration: The number of dedicated workshop meetings with contractors and construction companies on low carbon construction materials has gone up to 5 meetings in 2019 (vs 3 in 2018). We aim to reach a level of 7 meetings per year in 2019 / 2020. Measure of success: Number of workshop meetings with contractors on low carbon material topics / year. Incentivisation: Since its inception in 2003, the LafargeHolcim Foundation for Sustainable Construction has stimulated a professional and targeted dialogue among building practitioners, academia and public authorities, leading to setting performance indicators, benchmarks and best practice examples for low carbon construction in specific and sustainable construction in general. The main programs of the Foundation within its three-year cycle of activities are: - The international Awards competitions for Sustainable Construction (see above) - The international Forums for Sustainable Construction (6th Forum held in 2019 in Egypt dedicated to "Re-Materialization Construction") - Dedicated publications on low carbon design and construction, e.g. on prize winning projects or in collaboration with L'Architecture d'Aujourd'hui Measure of success: Number of entries to the international Awards competitions for Sustainable Construction, feedback from Forums for Sustainable Construction's participants, number of dedicated publications on low carbon design and construction related to the foundation.

C12.1d

(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.

i) A company specific description of your climate-related engagement strategy with other partners in the value chain

LafargeHolcim is a founding member and the Vice-Chair of the Concrete Sustainability Council (CSC). The system is designed to provide transparency on the climate, environmental, social and economic responsibility of concrete, cement and aggregate companies' operations and their supply chains. By creating a certification system for responsibly sourced concrete, the CSC aims to improve the transparency of the concrete sector, highlighting the essential role of concrete in creating a sustainable construction sector by getting recognition in 'green' procurement government policies and building rating systems. The CSC certification system consists of an operational manual and assessment criteria with guidance on their application. This criteria includes climate related measures such as energy consumption and CO2 intensity. A typical certification process is applicable to all sizes of concrete companies, and currently comprises three levels: bronze, silver and gold. Aggregate and cement suppliers can achieve a CSC supplier certificate to support their concrete clients with their CSC assessments.

ii) A clear explanation of who 'other partners in the value chain' constitutes The CSC certification system has been developed together with a large group of the industry as well as certification institutes (i.e: HeidelbergCement, Cemex, CRH, IUCN, WWF). IUCN convened a consultation process with environmental experts and representatives from civil society focused on providing feedback on the system's environmental and social criteria. The revised technical manual addresses some of the feedback received and aims for continuous improvement. In this respect, CSC will continue the dialogue with civil society organizations and other stakeholders.

iii) A case study/example of your climate-related engagement strategy with other partners in the value chain As one of the first companies globally, LafargeHolcim has adopted the CSC system to its operations. In Germany, the company holds 14 CSC Gold Certificates for Concrete operations, 7 CSC Silver Certificates for Aggregates (highest possible score) and another 8 CSC Silver Certificates for Cement (highest possible score). With this, LafargeHolcim is GLOBALLY THE FIRST company to hold CSC Certificates covering the entire concrete value chain of Cement, Concrete and Aggregates.

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

- Direct engagement with policy makers
- Trade associations
- Funding research organizations

C12.3a

(C12.3a) On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Cap and trade	Support	LafargeHolcim is engaging proactively and transparently with its external stakeholders, including regional and national governments, international organisations and the civil society on the issue of carbon pricing. This includes: At country level: In the USA, as an example, LafargeHolcim is part of the "CEO Climate Dialogue" - a group of corporate and NGO CEOs who are all united in their call for carbon reduction policy and carbon pricing at federal level. At Regional level: in the EU, for example, LafargeHolcim engages directly with the European Commission services on carbon pricing policy (EU ETS), as well as through affiliated organisations such as Cembureau. At global level we engage and promote the carbon pricing agenda through organisations such as the Carbon pricing Leadership coalition (CPLC), hosted by the World Bank and on which LafargeHolcim sits on the Steering Committee. LafargeHolcim initiated a specific study looking at the impact of existing carbon pricing schemes on the construction sector. LafargeHolcim advocates for carbon pricing mechanisms that: Respond dynamically to unforeseen macro-economic evolutions; Provide an unconditional level playing field across regions and industries; Target entire value chains by tackling both supply and demand sides; Enable carbon cost pass-through, thereby creating financial incentives for carbon-efficient solutions. Ultimately, carbon pricing mechanisms must lead to an acceptance of carbon costs across value chains, as carbon costs must increasingly be absorbed in products and solutions. By creating competitive advantages for carbon-efficient products and solutions, carbon pricing mechanisms can then become a key driver for accelerating the demand for low-carbon products.	Carbon pricing mechanisms are central to the carbon neutrality transition. They must be designed in a way that stimulates much needed innovation in advanced technologies (e.g. CO2 capture) and rewards carbon-efficient products and solutions (and thus become a key driver for the demand of low-carbon products). Two particular legislative avenues that LafargeHolcim advocates for are the following: The preservation of a level playing field in relation to carbon costs in countries or regions where carbon pricing mechanisms are in place (e.g. through the establishment of carbon border adjustment mechanisms), which would foster investments in low-carbon technologies and innovation; Shift the focus of carbon pricing mechanisms from emissions to consumption. The adoption of carbon-neutrality in construction is tributary to the acceptance of carbon constraints and costs by all actors of the highly fragmented construction value chain. Carbon costs must progressively be absorbed in products and solutions in order to render the carbon-efficient products and solutions more competitive (thus reversing the current situation). This is necessary to build the necessary business case to deploy, on a large scale, advanced technologies such as Carbon Capture Utilization and Storage (CCUS) on the manufacturing side and low carbon binders on the product side. It requires a dynamic carbon pricing mechanism that is centered on carbon consumption (e.g. carbon consumption charges), integrated across value chains and addressing both supply and demand.
Other, please specify (Carbon border adjustments (CBAM))	Support	LafargeHolcim has been engaging broadly on the issue of carbon border adjustments, with a specific focus on Europe where the topic is on the climate policy agenda. Engagement takes the form of direct discussions with legislators as well as public discussion organised by external parties and stakeholders, such as the OECD Sustainable Development Roundtable or dedicated platforms such as the European Roundtable on Climate Change and Sustainable Transition.	In a European context, LafargeHolcim's position is as follows: the establishment of a CBAM forms a cornerstone for Europe's competitiveness in a carbon neutral economy. The objective must be for non-EU importers to bear the same CO2 costs as EU domestic producers. In order to ensure any form of "double protection", free allocations that are awarded to EU producers must be discounted from the carbon costs levied on imports. Such a mechanism is necessary for EU-based manufacturing to compete fairly with non-EU imports that do not have equivalent carbon costs. Furthermore, it forms an essential policy tool to build the "low-carbon business case" in the long run and secure continued investments in low carbon technologies across European assets.
Other, please specify (Taxonomy and sustainable finance)	Support	Since 2015 LafargeHolcim took part in many initiatives linked to the development of sustainable finance tools, and in particular carbon risks disclosure such as the TCFD and subsequently the development of the Sustainable Finance initiative at EU level. At EU level, LafargeHolcim is a member of the EU's Technical Expert Group on taxonomy and provides specialist advice linked to the definition of metrics and thresholds linked to cement manufacturing. LafargeHolcim fully supports the use of taxonomy in a way to incentives and enables the transition towards low-carbon construction and low carbon manufacturing.	At EU level: LafargeHolcim supports the objectives of the Green Deal and believes taxonomy will enable to accelerate investments to support the green transition. The TEG Report forms a good base to develop the Taxonomy and we welcome the inclusion of cement manufacturing as a mitigation activity to climate change. However, three points of concern are to be considered: 1/ Use of metrics and thresholds: Metrics and thresholds are being defined in order to facilitate the measurement of the mitigation performance of an activity. It seems fundamental that such thresholds are not considered as absolute thresholds leading to a practice of in/out assessments but rather the aim towards which investments should tend. 2/ The use of Refuse Derived Fuels (RDF) in cement manufacturing is excluded on the grounds that it "undermines waste minimisation" and is associated to "emissions of a polluting nature". RDF for use in co-processing is produced from the share of municipal or industrial waste that cannot be recycled (residual waste). The use of waste-derived materials in cement manufacturing – known as co-processing – is a unique process that allows the simultaneous recovery of raw materials and energy while leaving no residue. It is fully regulated through the Industrial Emissions Directive (IED). Its labelling as a polluting activity is erroneous, misleading and driven by other interests. The use of residual waste in industrial process provides a solution that is higher in the waste management hierarchy for a waste fraction that would otherwise be landfilled or incinerated. 3/ To evaluate the climate impact of a building, the use of life-cycle assessments should be prioritised. We encourage the TEG report's approach to building assessment on energy performance and on embodied CO2. We also believe that the Taxonomy should remain material-neutral and not favour the use of one material vs. another. It should remain based on performance.
Other, please specify (Carbon performance of buildings and construction)	Support	LafargeHolcim has been engaging broadly on the integration of carbon performance across the construction value chain. By way of examples, LafargeHolcim engaged proactively on this topic in the context of the UN Climate Action Summit and Parallel ClimateWeekNYC 2019. In this context, LafargeHolcim organised dedicated panel discussions and took part in many third party initiatives. In Europe, LafargeHolcim took part in the real-life testing of LEVEL(s), the EU's sustainability assessment tools for buildings that is under development and provided industrial feedback on the use of the tool in real life environment.	Integration of carbon performance in building standards and codes, ensuring the principles of material- neutrality, life-cycle performance and full value-chain mobilisation. It forms a fundamental step to develop customer acceptance and market-demand for low-carbon solutions, which today remain the exception rather than the rule.
Other, please specify (Waste management)	Support	LafargeHolcim engages globally with Government, NGO, civil society and local stakeholders on the use of co-processing technology, which allows to simultaneously substitute fossil fuels with non-recyclable waste-derived fuels and to recycle the mineral contained in the fuel into our production processes. The use of this technology requires a well established regulatory framework on waste management, as is the case in jurisdictions such as Europe, India and many countries around the world. And, it needs adequate recognition as a desirable waste management alternative that responds to the waste management hierarchy.	Enable resource-efficiency and fossil fuels substitution in energy-intensive sectors (such as cement manufacturing) by providing equal treatment across all sectors regarding the carbon-neutrality of non-fossil alternative energy sources. This is particularly important for residual (non-recyclable) waste streams that are co-processed in industrial activities (a process that enables to simultaneously recover the energy and recycle the mineral content of the waste in an industrial product) and would otherwise be landfilled or incinerated.

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

Yes

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.**Trade association**

Cembureau

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Low-carbon manufacturing: The cement industry will continue to invest in the transition to a low-carbon economy. As an energy intensive industry committed to this low-carbon transition, it is essential to maintain the competitiveness of Europe-based manufacturing and ability to invest in Europe. Given The sector's contribution to jobs, growth and innovation in Europe, its track record on energy and resource efficiency and emissions reductions achieved, it is of key importance that the sector has access to competitively priced, carbon-neutral energy on the road to a low carbon economy. A value chain approach: Transitioning to a low-carbon economy is a significant challenge for the EU and the cement sector. Concrete is one of the most long-lasting and durable materials on earth, and EU policies need to acknowledge its contribution to a low carbon transition through the entire life-cycle of buildings. Today's concrete buildings can save up to two-thirds more energy than older structures. Thermally-activated concrete can ensure a better match between energy demand and supply from fluctuating energy sources. Concrete can naturally absorb CO₂ in a process called recarbonisation. Concrete could potentially offset a considerable proportion of production emissions over its life-cycle. The low-carbon transition in the built environment will require a supply chain approach that allows for collaboration across the construction value chain. This can be achieved by focusing on a holistic implementation of material-neutral and life cycle performance, incentivising demand for low-carbon materials and solutions.

How have you influenced, or are you attempting to influence their position?

We contribute to the development of Cembureau agenda on climate change through active participation. LafargeHolcim representatives lead the work on standardization for GHG reporting, and are active in 4 working bodies whose main focus is Climate Change. In 2019, the country CEO of LafargeHolcim Spain, was appointed Cembureau's new vice-president.

Trade association

International Emission Trading Association (IETA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The International Emission Trading Association deals with regulators, NGOs and external stakeholders to promote the use of ETS systems, to improve the way they work and ensure fungibility and comparability of different carbon systems.

How have you influenced, or are you attempting to influence their position?

LafargeHolcim has an active role in the development of IETA agenda; and LafargeHolcim representatives are members of several working groups.

Trade association

Zürich Carbon Markets Association (ZCMA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The ZCMA provides a network for knowledge sharing for all organisations that are interested in the evolution of sustainability focused and high quality carbon markets with the aim to mitigate greenhouse gas emissions.

How have you influenced, or are you attempting to influence their position?

LafargeHolcim has representation actively driving the ZCMA's program of activities.

Trade association

Global Cement and Concrete Association

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The GCCA (Global Cement and Concrete Association) supports the development of national industry roadmaps to define the potential to reduce carbon emissions from the cement industry and the transition to a low carbon economy. Through the GCCA (previously the Cement Sustainability Initiative), the sector has worked together with the International Energy Association on a Technology roadmap consistent with limiting the average global temperature increase to 2 degrees. This roadmap sets out a key strategy for the cement sector to achieve decoupling of expected cement production growth from related direct CO₂ emissions. This roadmap sets the pathway for the industry to reduce its emissions by 24% from current levels, despite the anticipated increased production by 2050.

How have you influenced, or are you attempting to influence their position?

LafargeHolcim was a founder member of the GCCA and has an active role in the development of the GCCA's agenda. LafargeHolcim champions various focus areas on Climate and Energy and Monitoring and reporting. LafargeHolcim CEO Jan Jenisch is on the board of the GCCA and EXCO member Marcel Cobuz is on the steering committee. In addition, LafargeHolcim subsidiaries are participating in the Low Carbon Technologies Partnership. The use of the roadmap is the first step to developing climate regulations, setting targets for emissions reduction, financed with national resources and reduction financed with international funds.

Trade association

The European Round Table of Industrialists (ERT)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

To reduce CO₂ emissions, binding commitments by the developed countries and Nationally Appropriate Mitigation Actions (NAMAs) of developing countries along with robust measurement, reporting and verification (MRV) are necessary to underpin actions and provide clear signals for investment. All governments should be encouraged to develop national, regional and sector based greenhouse gas emission reduction plans including CO₂ pricing mechanisms. ERT continues to support the development of carbon markets as the approach that can deliver CO₂ reductions at the lowest cost. Industry is a source of sustainable solutions and must be involved in the decision-making and implementation of the various mechanisms and repository of tools that could be used in multilateral and bilateral agreements which may emerge from the on-

going negotiations. In particular, industry input should be sought for the development of the framework on the technology mechanism and on the financing of NAMAs through the Green Climate Fund. ERT highlights that Europe is part of a global market and we need to find ways to keep Europe growing while limiting our carbon footprint and increasing energy efficiency. Climate change is foremost a global challenge and the EU should keep convincing other regions to make similar commitments and putting in place policies such as carbon pricing to reach the objectives. Further information on the ERT's position on climate change is available online at <http://www.ert.eu/issue/climate-change>.

How have you influenced, or are you attempting to influence their position?

LafargeHolcim is an active participant to the climate and energy working group and plays a leading role in the development of forward-looking engagement on the low-carbon transition.

C12.3d

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?

Yes

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

Updates on advocacy initiatives supporting our climate change strategy are regularly presented to our main governing bodies, Board of Directors and the Executive Committee.

At regional levels, representative groups of CEOs and functional managers regularly meet and exchange on the latest regulatory developments and activities influencing policy, and newsletters on the topic are distributed. Local initiatives are also circulated for potential replication within the group. Regional positions (e.g. reform of EU ETS) are developed with the involvement of all legal entities in the regions, as well as all relevant company departments (such as climate protection, carbon trading and public affairs). All positions are systematically validated by regional leadership teams and consistent with global positions to ensure alignment and consistency.

At Group level, the Group Public Affairs department is responsible for the coordination of advocacy actions within LafargeHolcim and holds direct and specific responsibility for climate change related issues. The Public Affairs function ensures alignment on climate policy positions in all parts of the company by sharing on a regular basis position papers and by engaging with the internal lobbying and advocacy network through calls, webinars and newsletters. Positions on policy issues are validated by the relevant internal experts (sustainability, waste management, finance, innovation, etc.) and made available to the Public Affairs community across the Group.

CCEOs and employees that are active in trade associations that we are members of or associated with are systematically engaging in a way that reflects LafargeHolcim's climate positions and ambitions. LafargeHolcim works to ensure that the positions of these organisations are aligned to its own but it also works in full respect of the governance rules in place in all trade associations. Should major divergences in position appear, LafargeHolcim will dissociate itself from the trade association's position and related activities, or in extreme cases, renounce its mandates within the organisation and/or its membership.

As such, it ensures that the Group's long-term interests – in line with broader societal interests – are consistent, and taken into account by public authorities.

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, incorporating the TCFD recommendations

Status

Complete

Attach the document

Annual Report 2019.pdf

02272020-sustainability-lafargeholcim_fy_2019_data_report-en-update2.pdf

Page/Section reference

i) Integrated Annual Report 2019 Governance: page 78 Strategy: pages 42-47 Emission targets: 44-45 Other metrics: page 46-51 Risk & Opportunities: pages 62-67 ii) Sustainability Performance Report 2019 Governance: pages 2 Strategy: page 3 Emission targets: 4, 5 Emission figures: 4, 5

Content elements

Governance

Strategy

Risks & opportunities

Emissions figures

Emission targets

Other metrics

Comment

C15. 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.

N/A

C15.1

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	LafargeHolcim Group CFO	Chief Financial Officer (CFO)

SC. Supply chain module

SC0.0

(SC0.0) If you would like to do so, please provide a separate introduction to this module.

SC0.1

(SC0.1) What is your company's annual revenue for the stated reporting period?

	Annual Revenue
Row 1	

SC0.2

(SC0.2) Do you have an ISIN for your company that you would be willing to share with CDP?
Please select

SC1.1

(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.

SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

SC1.3

(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?

Allocation challenges	Please explain what would help you overcome these challenges
-----------------------	--

SC1.4

(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

Please select

SC2.1

(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.

SC2.2

(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?

Please select

SC3.1

(SC3.1) Do you want to enroll in the 2020-2021 CDP Action Exchange initiative?

Please select

SC3.2

(SC3.2) Is your company a participating supplier in CDP's 2019-2020 Action Exchange initiative?

Please select

SC4.1

(SC4.1) Are you providing product level data for your organization's goods or services?

Please select

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I am submitting to	Public or Non-Public Submission	Are you ready to submit the additional Supply Chain Questions?
I am submitting my response	Investors Customers	Public	Yes, submit Supply Chain Questions now

Please confirm below

I have read and accept the applicable Terms