

CEMEX - Climate Change 2018

C0. Introduction

C0.1

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

CEMEX, S.A.B. de C.V. is a publicly traded stock corporation with variable capital, or sociedad anónima bursátil de capital variable, organized under the laws of Mexico, with its headquarters located at Avenida Ricardo Margáin Zozaya #325, Colonia Valle del Campestre, San Pedro Garza García, Nuevo León, 66265, Mexico. CEMEX's main phone number is +52 81 8888-8888. CEMEX, S.A.B. de C.V. was founded in 1906 and was registered with the Mercantile Section of the Public Registry of Property and Commerce in Monterrey, Nuevo León, Mexico, on June 11, 1920 for a period of 99 years. At our 2002 ordinary general shareholders' meeting, this period was extended to the year 2100 and in 2015 this period changed to be indefinite. Beginning April 2006, CEMEX's full legal and commercial name is CEMEX, Sociedad Anónima Bursátil de Capital Variable. CEMEX is one of the largest cement companies in the world, based on annual installed cement production capacity as of December 31, 2017, of approximately 92.4 million tons. CEMEX is the second largest ready-mix concrete company in the world with annual sales volumes of approximately 51.7 million cubic meters and one of the largest aggregates companies in the world with annual sales volumes of approximately 147.4 million tons, in each case, based on our annual sales volumes in 2017. CEMEX is also one of the world's largest traders of cement and clinker. CEMEX, S.A.B. de C.V. is an operating and holding company engaged, directly or indirectly, through its operating subsidiaries, primarily in the production, distribution, marketing and sale of cement, ready-mix concrete, aggregates, clinker and other construction materials throughout the world, and that provides reliable construction-related services to customers and communities in more than 50 countries throughout the world, and maintains business relationships in over 100 countries worldwide. CEMEX operates globally, with operations in Mexico, the United States, Europe, South America, Central America, the Caribbean, Asia, the Middle East and Africa. CEMEX had total assets of approximately US\$29 billion as of December 31, 2017. As of December 31, 2017, CEMEX's cement production facilities were in Mexico, the United States, the United Kingdom, Germany, Spain, Poland, Latvia, Czech Republic, Croatia, Colombia, Panama, Costa Rica, the Dominican Republic, Puerto Rico, Nicaragua, Trinidad and Tobago, Jamaica, Barbados, Egypt, and the Philippines. CEMEX has a rich history of improving the well-being of those it serves through innovative building solutions, efficiency advancements, and efforts to promote a sustainable future.

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
Row 1	January 1 2017	December 31 2017	No	<Not Applicable>
Row 2	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Row 3	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Row 4	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>

C0.3

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

Colombia
Costa Rica
Croatia
Czechia
Dominican Republic
Egypt
France
Germany
Guatemala
Israel
Latvia
Mexico
Nicaragua
Panama
Philippines
Poland
Puerto Rico
Spain

United Arab Emirates
United Kingdom of Great Britain and Northern Ireland
United States of America

C0.4

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

USD

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 consolidation approach to your Scope 1 and Scope 2 greenhouse gas 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

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) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Other, please specify (Sustainability Committee (Board level))	The Sustainability Committee is responsible for ensuring sustainable development in our strategy; supporting our Board of Directors in fulfilling its responsibility to shareholders regarding sustainable growth; evaluating the effectiveness of sustainability programs and initiatives; providing assistance to our Chief Executive Officer and senior management team regarding the strategic direction on sustainability; and endorsing our model of sustainability, priorities, and key indicators. This explicitly includes all topics related to climate change and CO2 emissions. The Sustainability Committee is made of five Directors on the Board including the Committee's secretary.

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	Please explain
Scheduled – some meetings	<ul style="list-style-type: none"> Reviewing and guiding strategy Reviewing and guiding major plans of action Monitoring implementation and performance of objectives Monitoring and overseeing progress against goals and targets for addressing climate-related issues 	The Sustainability Committee meets four times a year and is normally briefed by the Corporate Director Sustainability or the Executive VP for Sustainability and Operational Development. This includes in-depth reviews of particular topics which are planned in advance (at the end of the previous year) as well as unforeseen recent developments that are considered material enough to be brought to the Board's attention or require guidance from the Sustainability Committee. For example, in 2017 the scheduled agenda for the Sustainability Committee meetings included the following topics that are related to climate change: I/17: Review of 2016 Sustainability KPIs; Presentation of stakeholder survey to define most material sustainability issues II/17: no directly climate change-related topics (focus on governance, ethics, and people management) III/17: sustainability risks agenda; 2018 sustainability initiatives workplan IV/2017: International carbon regulations and CEMEX' CO2 strategy

C1.2

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

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Other C-Suite Officer, please specify (Exec VP Sustainability & Operations Dvlp)	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored.

The Executive VP for Sustainability and Operations Development is a position in the Executive Committee that was newly created in 2017 to oversee the areas of

- Operations & Technology
- Energy
- R&D & IP Management
- Health & Safety
- Procurement
- Sustainability

The Executive VP for Sustainability and Operations Development reports directly to the CEO of the company.

The responsibilities with respect to climate change include

- monitoring of the company's performance in terms of CO2 emissions and related KPIs
- assessment of climate-related risks and opportunities (responsible for climate-related topics in integrated risk assessment)
- preparation of targets and initiatives for approval by ExCo / Board
- implementation of approved targets and initiatives

C1.3

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

Yes

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues.

Who is entitled to benefit from these incentives?

Chief Executive Officer (CEO)

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

Variable compensation is linked to achievement of targets. One of these targets is the achievement of a global CO2 reduction target for the year in question that is in line with a credible pathway towards reaching our publicly stated long-term target.

Who is entitled to benefit from these incentives?

Other C-Suite Officer

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

Variable compensation is linked to achievement of targets. One of these targets is the achievement of a global CO2 reduction target for the year in question that is in line with a credible pathway towards reaching our publicly stated long-term target. These targets are implemented for the Executive VP of Sustainability and Operations Development (global target) and the regional presidents in the ExCo (with region-specific targets).

Who is entitled to benefit from these incentives?

Business unit manager

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

Variable compensation for all our country presidents is linked to achievement of targets. One of these targets is the achievement of country-specific CO2 reduction target for the year in question that is in line with a credible pathway towards reaching our publicly stated long-term target.

C2. Risks and opportunities

C2.1

(C2.1) Describe what your organization considers to be short-, medium- and long-term horizons.

	From (years)	To (years)	Comment
Short-term	0	3	Please note these definitions of short, medium and long term only apply to this questionnaire, particularly our assessment of risks and opportunities, and should not be used for interpreting any other CEMEX communication.
Medium-term	3	6	Please note these definitions of short, medium and long term only apply to this questionnaire, particularly our assessment of risks and opportunities, and should not be used for interpreting any other CEMEX communication.
Long-term	6	35	Please note these definitions of short, medium and long term only apply to this questionnaire, particularly our assessment of risks and opportunities, and should not be used for interpreting any other CEMEX communication.

C2.2

(C2.2) Select the option that best describes how your organization's processes for identifying, assessing, and managing climate-related issues are integrated into your overall risk management.

Integrated into multi-disciplinary company-wide risk identification, assessment, and management processes

C2.2a

(C2.2a) Select the options that best describe your organization's frequency and time horizon for identifying and assessing climate-related risks.

	Frequency of monitoring	How far into the future are risks considered?	Comment
Row 1	Six-monthly or more frequently	>6 years	Regulatory, scientific and other developments are constantly monitored; significant changes trigger a review of the strategy

C2.2b

(C2.2b) Provide further details on your organization's process(es) for identifying and assessing climate-related risks.

CEMEX' Enterprise Risk Management (ERM) system is a network of more than 50 risk management professionals around the world. This includes some corporate risk management specialists that do the assessment in collaboration with regional, national personnel as well as specialists for five key topics (including sustainability, which in turn includes climate change). Please note that - as a rule of thumb - the sustainability specialist in the network focuses on regulatory and other (such as reputational or market) risks, whereas physical risks related to climate change (e.g. increased probability of flooding, potential interruptions of the supply chain) are covered by regional and local representatives. In addition the sustainability expert in the ERM network is collaborating with regional and local sustainability staff for the monitoring and analysis of corresponding developments.

The company's risk agenda is formally updated once a year. However, all contributors (direct and indirect) constantly monitor the evolution of important topics, and changes that are identified as material will trigger an immediate adjustment. For example, regional experts are constantly following legislative developments related to CO₂, analyzing potential impacts for CEMEX, and immediately reporting material changes (such as new emission taxes or important adjustments to emissions trading systems) to the ERM network. Risks are considered substantive when they threaten the competitiveness and / or profitability of at least one cement plants. As the size of cement plants and other decisive parameters vary significantly this cannot be translated into a fix number, but the threshold is typically around 1 mln USD/year.

C2.2c

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

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	A number of CEMEX operations are currently subject to climate change-related legislation, including emissions trading systems (European Union, California) and taxes (e.g. Colombia). Given the significant implications that even small changes to e.g. free allocation to our operations or overall scarcity of allowances can have it is paramount for CEMEX to follow closely current developments and adjust our risk adjustment and strategy accordingly. For example, during 2017 our specialists constantly updated our scenarios for free allocation under the EU ETS in the 2021-30 phase to reflect latest legislative proposals and understand the potential implications.
Emerging regulation	Relevant, always included	CEMEX fully supports the implementation of the Paris Agreement and collaborates with governments around the world to define and implement Nationally Determined Contributions (NDCs). The insights from this collaboration are regularly fed into our risk assessment process as the implications are similar to those coming from existing regulation. Examples include the development of a new emissions trading system in Mexico that will have a noticeable impact on our operations in that country.
Technology	Relevant, always included	Technology is the key lever for CEMEX to significantly reduce its CO2 footprint in the long run. Technological developments, both in CEMEX and outside, are constantly monitored and considered in the risk assessment. New developments (such as our proprietary low-carbon clinker) can help us manage transition risks, but lack of access to new external developments may also aggravate these risks by affecting our future competitiveness. See also our comments on 'Market' and 'Downstream' for technologies that do not affect our own footprint.
Legal	Not relevant, included	CEMEX is currently not subject to any climate change-related litigation and does not expect to be. Nonetheless the topic is regularly assessed as CEMEX is one of the most CO2-intensive companies in the world.
Market	Relevant, always included	The main impact on markets is likely to happen via regulation. The impact of market developments that are not driven by regulation is likely to be rather small in the short term, and changes are expected to occur very slowly. Nonetheless CEMEX has identified this as a key topic in the long run as it has the potential to reshape the industry, and is integrating it in its CO2 strategy. Types of market trends that are likely to become relevant in the long term include demand for products that allow our customers to reduce their own emissions (during the use phase of the product, e.g. by providing thermal mass for better energy efficiency of buildings; improved thermal insulation with new concrete types etc.). The assessment of these trends relies heavily on local experts as they are likely to emerge in few geographies before they become global.
Reputation	Relevant, always included	For the time being the key reputational risks are related to our investors, but in the future it cannot be ruled out that also customers will increasingly base their purchasing decisions on our reputation. CEMEX is in constant exchange with its stakeholders to understand their views and expectations. The most important channels in the context of climate change are: - regular stakeholder surveys, - dialogue with the investment community (e.g. institutional investors, financial and sustainability analysts) - review of external reports by e.g. NGOs, authorities, or media This constant exchange allows us to quickly identify reputational risks and react to them in a timely manner.

	Relevance & inclusion	Please explain
Acute physical	Relevant, always included	The assessment of acute physical climate risks, mainly extreme weather events such as tropical cyclones, is a constant task in our ERM system. This includes both the updating of local emergency plans as well as the collaboration with the insurer to understand the potential changes in insured risks.
Chronic physical	Relevant, sometimes included	Considering that CEMEX operates a number of terminals and also plants directly on the sea chronic physical risks such as rising sea levels could become a long-term problem for the company. However, given the long timescales this risk is not assessed on a yearly basis.
Upstream	Relevant, always included	Upstream supply chain risks for CEMEX include, among others, acute disruptions of supply (e.g. tropical cyclones affecting our sources of petcoke) as well as rather chronic risks (such as less availability of slags and fly ash as a result of technological changes in the metals and power sectors driven by climate change-related legislation).
Downstream	Not relevant, explanation provided	Downstream risks other than those already discussed (e.g. under market risks) have not been identified as relevant. The impact of e.g. extreme weather events on construction activity or logistics systems is considered non material and will be typically hard to distinguish against a background of other factors affecting our sales volumes.

C2.2d

(C2.2d) Describe your process(es) for managing climate-related risks and opportunities.

For Risks and Opportunities that potentially have a non-insurable impact on CEMEX the assessment process operates at 3 levels: a) Corporate: analysis and strategy development (this is the key process described in C2.2b). b) Regional: monitoring, risk and opportunity identification and reporting up c) Country: local analysis, risk and opportunity identification and engagement. In addition, the Corporate Risk Management Department assesses and manages insurable risks at asset level.

CORPORATE LEVEL

The Corporate Director Sustainability is responsible for climate change-related risk analysis at corporate level. In close collaboration with regional and country-level specialists as well as through his participation in key organizations such as the World Business Council for Sustainable Development and the Cement Sustainability Initiative he constantly assesses developments in the area of Climate Change. The findings and recommendations are reported twice yearly to the Sustainability Committee, a sub-set of the Board (see CC1.1a).

REGIONAL/COUNTRY LEVELS

Of the five operating regions that exist, all followed regional developments and collaborated with both Corporate and Country levels. CEMEX's Europe region, for example, monitored relevant bodies that are responsible for climate change policy. CEMEX is a participating member of the EU Parliament branch of GLOBE International (known as the BEE Group).

CORPORATE RISK MANAGEMENT (ASSET

LEVEL - insurable risk exposure)The Corporate Risk Management Department provides support to the climate change risk management process in two principal areas: a) Providing information and analysis on the potential impact of climate change on our current insurance based governance system and, b) Monitoring developments in the insurance sector.

NON-INSURABLE RISKS / OPPORTUNITIES:Risks and opportunities are prioritized based on a number of parameters; the most important ones are probability of occurrence and potential impact on our company. However, given the enormous uncertainty there is no straightforward algorithm for ranking risks and opportunities; the decision on prioritization always involves discussions and subjective judgment by experts.Some of the criteria considered are:- How probable is the occurrence of an event?- Number of assets / production volume potentially affected in single events / at risk in general?- Will an event potentially result in interruption of business activity? If yes, will interruption be permanent or temporary? - How large is the monetary impact?- How well is the company prepared to manage the risk / opportunity?- What does it take to improve the company's capacity to react to that risk / opportunity?INSURABLE RISKS:The process follows the standards developed in the insurance sector and, in fact, is mostly carried out in close collaboration with our insurer. In general many of the criteria are very similar to those mentioned above, but risks can normally be much better quantified.

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

Transition risk

Primary climate-related risk driver

Policy and legal: Other

Type of financial impact driver

Policy and legal: Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

Company- specific description

CEMEX supports carbon pricing, particularly in the form of cap-and-trade, as the most effective and efficient means to combat climate change. However, if a carbon pricing system is badly designed the consequences can be devastating for both the economy and our climate. Of particular concern is the maintenance of fair competition; this not only refers to competition between regulated and unregulated geographies (risk of so-called carbon leakage, i.e. the shift of GHG-intensive activities from regulated to unregulated geographies with no net environmental benefit), but also among potential substitute products (e.g. concrete vs. asphalt or steel) and different phases of the life cycle of a good or service (e.g. production of many materials for the construction of a building is covered by the cap and trade scheme, but the combustion of heating oil during the use is not). While policy makers around the world seem to have understood these implications there is still the risk that nonetheless carbon pricing measures are implemented that do not adequately address them. In the near future CEMEX' cement operations in a number of geographies (European Union, California, Mexico, Colombia) are almost certain to be subject to carbon pricing in one way or another.

Time horizon

Medium-term

Likelihood

About as likely as not

Magnitude of impact

High

Potential financial impact

275000000

Explanation of financial impact

Totals provided are indicative only and refer to the example of the EU ETS as the one where impacts would likely be highest. Total costs for purchasing emission allowances depend on a number of factors such as free allocation and EUA prices. Under free allocation at current levels these would probably be 0 for CEMEX; however, in a worst case scenario with no free allocation and an assumed EUA price of 25 EUR (28 USD) the yearly cost could be in the range of some 250 to 300 mln USD (CEMEX' current EU operations excluding the UK, see below). Please note that depending on the design of the ETS (and particularly measures to avoid carbon leakage) the net impact on CEMEX' bottom line would likely be much lower.

Management method

In order to mitigate the risk of a deficit CEMEX is using all available levers to reduce CO2 emissions in the corresponding operations that are economically feasible under the expected carbon price. This includes improvements to energy efficiency, switch to alternative fuels, particularly biomass, as well as the introduction of natural gas to some of our kilns where this fuel was previously considered not economic, and the use of clinker substitutes. CEMEX has also actively participated in the development of carbon capture and storage as a potential long-term solution. In addition, CEMEX has developed a portfolio of offset projects to reduce our exposure to the existing and emerging trading schemes. Finally, CEMEX maintains constant dialogue with policy makers to ensure that they understand our concerns regarding competitiveness and maintain or improve corresponding legislation.

Cost of management

250000000

Comment

The operational cost of activities described above is typically negative; the investment costs vary from almost 0 (improved operational practices) to several million USD. Since 2005 CEMEX has invested more than 230 million USD in alternative fuel projects. The transaction costs for an offset project can reach a million USD over its lifetime. Public affairs activities are estimated to require a total of 2 person-years/y at a full cost of some 400 kUSD Compliance management does not cause additional costs.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Physical risk

Primary climate-related risk driver

Acute: Increased severity of extreme weather events such as cyclones and floods

Type of financial impact driver

Increased capital costs (e.g., damage to facilities)

Company- specific description

Increased frequency and strength of tropical cyclones (as well as other extreme storms) can cause direct damage to our operations, particularly in some Latin American countries (Costa Rica, Nicaragua, Mexico, Dominican Republic, Puerto Rico), the US gulf coast, and southeast Asia (Philippines)

Time horizon

Long-term

Likelihood

About as likely as not

Magnitude of impact

Medium-low

Potential financial impact

2000000

Explanation of financial impact

A common event of hurricane, typhoon and flooding may be in the order of 100-320 kUSD of physical damage, although higher damage in the million USD range has been observed. Please note that indirect effects (e.g. reduced production volumes) may be significantly higher than the physical damage to the assets. However, quantification of those potential impacts under our Loss-Prevention Program (LPP) has not indicated any material impact of climate change on these risks yet.

Management method

CEMEX considers the most recent risk criteria when designing new facilities or acquiring or modifying assets. Natural hazard risks such as storms and floods and extreme climatic conditions in areas where CEMEX operates, are monitored constantly using risk management tools, where we check for weather alerts on a daily basis. Contingency plans are in place to mitigate the impact of those events, and CEMEX's facilities insured against losses related to extreme weather events. Facilities are assessed annually for the progress of the action plans developed in order to reduce the physical risks associated with Natural Hazards Exposure, among other, and the corresponding actions to minimize operation interruption, damages and consequences from natural events. CEMEX annually reviews its cement plants' exposure to weather related risks also through the LPP. This program is conducted by the engineering services of CEMEX's global property insurer (FM Global) and provides each plant with a grade score by which all plants can be assessed. All recommendations from the LPP are evaluated for decision making using three criteria: 1. Financial loss expectancy should the risk occur, 2. Risk improvement ratios defined as the ratio of loss expectancy to the cost to complete the recommendation to mitigate or avoid the risk exposure, and 3. Specific catastrophe risks. For more details on FM Global's scoring system please visit their website.

Cost of management

29800000

Comment

Cost of management is the fee to the insurance provider in 2017. Please note that the insurance mentioned here covers a wide range of physical risks, not only those related to climate change; detailed estimates for the latter are not available.

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Supply chain

Risk type

Physical risk

Primary climate-related risk driver

Acute: Increased severity of extreme weather events such as cyclones and floods

Type of financial impact driver

Reduced revenue from decreased production capacity (e.g., transport difficulties, supply chain interruptions)

Company- specific description

Extreme storm events can disrupt supply of crucial inputs; for example, in 2005, one of the most active hurricane seasons on record, hurricanes forced some major refineries on the US Gulf Coast to stop operation; as a consequence, supply of petcoke, the main fuel for many of our cement plants, was disrupted, jeopardizing the operation of some of CEMEX' plants in Mexico and the US. As recent scientific studies have fuelled the debate on whether global warming will lead to more frequent and stronger tropical cyclones we have classified the likelihood as "about as likely as not".

Time horizon

Current

Likelihood

About as likely as not

Magnitude of impact

Medium

Potential financial impact

275000000

Explanation of financial impact

Based on work done in Egypt and the Philippines for those two countries the total potential risk was estimated at 250 – 300 mln USD

Management method

CEMEX regularly analyzes potential disruptions in its supply chain and develops strategies to cope with them. This can include diversification of suppliers, but also adjustments to the inventory policies. For example, following hurricane Katrina in 2005, our Mexican cement operations decided to maintain higher minimum inventory levels of its main fuel, petcoke, during hurricane season

Cost of management

0

Comment

These activities are included as part of existing operational policies and do not cause material additional costs.

Identifier

Risk 4

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Physical risk

Primary climate-related risk driver

Chronic: Rising sea levels

Type of financial impact driver

Write-offs and early retirement of existing assets (e.g., damage to property and assets in "high-risk" locations)

Company- specific description

Higher sea levels threaten CEMEX operations on the sea board, such as maritime terminals in various countries (e.g. Mexico, US, France), but potentially also some plants that are close to the sea (e.g. Sv. Juraj cement plant in Croatia). The impacts range from additional investments (e.g. dams) to protect those assets to physical damage and reduced availability; in the worst case, sea-level rise could make those assets completely worthless, although the latter is considered extremely unlikely (see also below - explanation of financial impact).

Time horizon

Long-term

Likelihood

More likely than not

Magnitude of impact

Medium

Potential financial impact

5000000

Explanation of financial impact

The financial impact is subject to significant uncertainty. In a theoretical worst case, the complete replacement of an integrated cement plant on the sea shore would amount to a cost in the range of a hundred million USD, while the replacement of a terminal would cause much lower costs. However, given the long time scales over which sea level rises are happening and the corresponding time to e.g. strategically plan replacement capacity or protect assets with dams etc. significantly reduces the actual impact.

Management method

CEMEX considers the most recent risk criteria when designing new facilities or acquiring or modifying assets. In addition, CEMEX' risk management process identifies potential issues related to sea-level rise long before they become acute, giving the company enough time to plan for an adequate, effective and efficient response.

Cost of management

0

Comment

The cost for managing this risk within CEMEX' risk management process does not lead to material additional costs. Currently no CEMEX asset is considered to be at risk from sea-level rise in the foreseeable future, i.e. currently no risk mitigation activities are carried out.

Identifier

Risk 5

Where in the value chain does the risk driver occur?

Customer

Risk type

Transition risk

Primary climate-related risk driver

Reputation: Increased stakeholder concern or negative stakeholder feedback

Type of financial impact driver

Reputation: Reduced revenue from decreased demand for goods/services

Company- specific description

The reputational risk for CEMEX has a number of facets, both in terms of the potential causes and the implications. It is therefore crucial to manage this risk accordingly. The main risk is certainly related to the relatively large carbon footprint of our products; stakeholders might blame us for climate change in general. However, the risks go beyond this and are also related to the way we manage our position in the fight against climate change. As an example, in the beginning of emissions trading many stakeholders did not understand the concept of carbon leakage and the associated risks. As a consequence, when the cement industry tried to achieve a protective mechanism

against this effect it was accused of trying to avoid its fair share of emission reductions. After long years of open debate many of those stakeholders now support free allocation or other measures for protection of trade-exposed sectors. Reputational damage can have a number of severe consequences for the company, including, but not restricted to, reduced demand for our products, reduced market valuation, more difficult access to finance, or even a threat for our license to operate. As we consider the potential risk of reduced demand for our products the most important one the further discussion below (particularly about the potential financial impact) focuses on this aspect.

Time horizon

Long-term

Likelihood

Unlikely

Magnitude of impact

Medium-high

Potential financial impact

250000000

Explanation of financial impact

The reputational risk is difficult to quantify; some competitors have estimated that a serious reputational issue could reduce sales by as much as 10% in a specific country operation. If we take our operations in the USA as an example, this would mean that our sales could be reduced by around 250 million USD per year. Given the local nature of the market for building materials, any reputational issue would only have an effect in a specific country operation or relatively small region.

Management method

The pillars of our approach to manage reputational risks are a responsible and ambitious climate strategy, and transparency. Our climate change strategy includes a commitment to reduce our specific emissions from cement production by 25% by 2020 (compared to the 1990 baseline); active participation in the discussion on the future political framework; support for fair, ambitious, and efficient regulation; monitoring of our emissions; and development of new processes and products that are less GHG-intensive in their production or enable our clients to reduce their carbon footprint. Transparency means for us regular reporting about our emissions; a clear position on climate change regulation; regular dialogue with our stakeholders; and increased efforts to inform all our stakeholders on how our products can help achieve GHG reductions over the full life-cycle of a building or structure. CEMEX' activities in the field of carbon footprints are an excellent example of open and transparent communication with stakeholders. CEMEX has also taken a leading role in the Concrete Sustainability Council (CSC); the CSC certification will demonstrate to a wider audience that sustainability (including climate change) is already a key topic for our sector.

Cost of management

20000000

Comment

The costs for the technical measures to reduce our emissions is the following: The operational cost of activities described above is typically negative; the investment costs vary from almost 0 (improved operational practices) to several million USD. Since 2005 CEMEX has invested more than 230 million USD in alternative fuel projects. The transaction costs for an offset project can reach a million USD over its lifetime. The cost for the carbon footprint calculator was in the range of 200 kUSD. Our full commitment to the CSC (including membership, in-kind contributions and costs of certifications) is currently below 100 kUSD/year. Other activities mentioned do not lead to material additional costs. The value provided above represents a rough estimate of our yearly cost of management of this particular risk.

C2.4

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

Yes

C2.4a

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

Identifier

Opp1

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Markets

Primary climate-related opportunity driver

Other

Type of financial impact driver

Other, please specify (Competitive advantage)

Competitive advantage

Company- specific description

A well designed cap and trade scheme will reward the most GHG efficient producers. At CEMEX we are convinced that with our commitment to and leadership in sustainability, our experience and progress in emission reductions as well as our ingenuity we are in an excellent position to profit from this opportunity. CEMEX is well on track to reduce its specific emissions by 25% by 2020 (compared to our 1990 baseline). For example, with less GHG-intensive alternative fuels making up some 26% of our kiln fuel needs in 2017, we are one of the industry leaders in fuel substitution. Under a cap and trade scheme (or likewise a carbon tax) the resulting lower carbon footprint will directly translate into a cost advantage

Time horizon

Current

Likelihood

Virtually certain

Magnitude of impact

Medium-high

Potential financial impact

400

Explanation of financial impact

Our CO2 target implies a reduction of around 200 kg CO2 per metric tonne of cementitious product from 1990 to 2020; this means for our operations in the European Union (where we produce far in excess of 10 mln tonnes of cement per year) a yearly reduction of more than 2 mln t CO2 or at the current price of EUAs (16.4 EUR) and exchange rate (1.17 USD/EUR) a positive impact of around 40 mln USD per year; at higher EUA prices the savings will increase accordingly

Strategy to realize opportunity

In order to improve the carbon balance CEMEX is using all available levers to reduce CO2 emissions in the corresponding operations that are economically feasible under the expected carbon price. This includes improvements to energy efficiency, switch to alternative fuels, particularly biomass, as well as the introduction of natural gas to some of our kilns where this fuel was previously considered not economic, and the use of clinker substitutes. CEMEX has also actively participated in the development of carbon capture and storage as a potential long-term solution. In addition, CEMEX has developed a portfolio of offset projects to reduce our exposure to the existing and emerging trading schemes. Finally, CEMEX maintains constant dialogue with policy makers to ensure that they understand our concerns

regarding competitiveness and maintain or improve corresponding legislation. Future opportunities in other markets are not yet included in this estimate.

Cost to realize opportunity

20000000

Comment

The operational cost of activities described above is typically negative; the investment costs vary from almost 0 (improved operational practices) to several million USD. Since 2005 CEMEX has invested more than 230 million USD in alternative fuel projects. The transaction costs for an offset project can reach a million USD over its lifetime. Public affairs activities are estimated to require a total of 2 person-years/y at a full cost of some 400 kUSD. The number shown above is an estimate of average yearly costs.

Identifier

Opp2

Where in the value chain does the opportunity occur?

Customer

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Type of financial impact driver

Better competitive position to reflect shifting consumer preferences, resulting in increased revenues

Company- specific description

A number of studies have concluded that buildings are responsible for around 40% of global energy consumption and a similar percentage of GHG emissions. It is therefore crucial that the energy efficiency of buildings be improved, and the most likely way to achieve this is via more stringent energy efficiency standards for buildings. This will open a number of opportunities for CEMEX: - Significantly lowering total energy consumption of buildings will most likely require an increased replacement of existing buildings, which means more construction activity. - It is widely recognized that concrete's thermal properties make it an excellent structural material for energy-efficient buildings in both cold and hot climates, implying that under more stringent efficiency standards the consumption of concrete per unit is likely to increase. - More stringent building codes are likely to foster the development of new materials and constructive solutions; this will give innovative companies like CEMEX a competitive edge and will allow for higher margins on these new products.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

High

Potential financial impact

2000000000

Explanation of financial impact

A French study ("Carbon Constrained Scenarios" by FONDDRI, http://www.iddri.org/Publications/Rapports-and-briefing-papers/08_Fondri_summary-for-industrial-decision-makers.pdf) finds that demand for cement in 2050 would increase by 4.5% to 16% compared to BAU in scenarios of massive decarbonization of the economy, and energy efficiency in buildings has been identified as one of the major drivers for this increase. Based on these numbers the additional sales volume for CEMEX is estimated to be in the range of several bln USD per year.

Strategy to realize opportunity

In our public and institutional relations efforts, we highlight the large and relatively low-cost potential for emission reductions in the building sector, e.g. in position papers, marketing materials, but also in direct interaction with political and other decision makers. In parallel, CEMEX is developing new products and constructive solutions to address the future challenges. These include, for instance, our recently launched FORTIS concrete that reduces the cost of Insulated Concrete Forms (ICF) and makes this energy-efficient building solution more attractive financially

Cost to realize opportunity

400000

Comment

Public affairs activities are estimated to require a total of 2 person-years/y at a full cost of some 400 kUSD. The cost of developing a new product will depend on a number of circumstances and are difficult to quantify in a generic way, particularly as it is often difficult to distinguish which new product developments are solely (or mainly) driven by climate change (mitigation or adaptation). On top of the R&D there are expenses for e.g. certification and market introduction that are typically higher than the actual development cost. While total cost for a new product can be as low as a few kUSD it can also reach a million USD range if the product is complex and introduced in many markets. The cost mentioned above only refers to the PA activities.

Identifier

Opp3

Where in the value chain does the opportunity occur?

Customer

Opportunity type

Resilience

Primary climate-related opportunity driver

Other

Type of financial impact driver

Other, please specify (Increased revenue from existing products)

Company- specific description

Extreme rainfall as well as tropical cyclones or other extreme weather events can cause significant damage to infrastructure and buildings. More frequent and more extreme weather events will very likely increase demand for our products as both structures for water management (such as dams) as well as more flood- and storm-resistant construction in general are likely to require more concrete. In the case of our current markets we consider that the Southern US, Latin America, and south-east Asia are most likely to be affected by these developments.

Time horizon

Long-term

Likelihood

Very likely

Magnitude of impact

Medium-high

Potential financial impact

250000000

Explanation of financial impact

The potential opportunities related to physical impacts of climate change can only be roughly estimated at the moment. If we take as an example the US: Given CEMEX' presence in those areas that are most likely to be hit by extreme weather events a massive switch from wooden houses to concrete solutions could boost sales of our US operations by more than 10% or 250+ million USD per year.

Strategy to realize opportunity

The methods to manage these opportunities are stakeholder information (about our products) as well as the development of new products and constructive solutions that better cope with physical consequences of climate change. For example, CEMEX has developed low-cost concrete houses that are resilient to disaster.

Cost to realize opportunity

0

Comment

There are virtually no additional climate change-related costs for stakeholder information as this is part of our normal marketing activities. Likewise, more resilient products and solutions are developed to respond to a variety of threats, not only those related to climate change.

Identifier

Opp4

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Markets

Primary climate-related opportunity driver

Other

Type of financial impact driver

Other, please specify (Positive impacts of reputation)

Company- specific description

CX is committed to being a leader in delivering a low carbon economy and developing resilience in the built environment to cope with the increased frequency of weather extremes resulting from climate change. A positive reputational spillover would bring a number of benefits for CEMEX: - Increased demand as a preferred provider: CEMEX perceives that construction professionals around the world increasingly consider sustainability aspects, including the track record and reputation of the provider, when choosing materials. Although this is currently a niche, we see clear signs that the market segments where sustainability credentials in general and a credible and responsible position on climate change are relevant factors is supposed to grow. - License to operate: Companies that manage climate change and sustainability issues well have a better reputation and are more trusted by political policy makers; this can facilitate the dialogue on concrete projects, but also on legislative proposals. - Access to capital: A good reputation will increase attractiveness of

the company for both shareholders and lenders. A growing number of initiatives and activities such as the Carbon Disclosure Project show clearly that the financial community increasingly considers sustainability-related information in the investment process.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

High

Potential financial impact

125000000

Explanation of financial impact

Experience shows that a negative reputation typically has larger financial implications than a positive reputation. We therefore estimate that the opportunity (potential upside in sales) is roughly half of the risk (potential downside in sales) discussed under the reputational risk in 2.3a, i.e. a potential increase of sales by 5% (the equivalent of 125 mln USD per year in a country like the US), with a potential upside if CEMEX manages to develop this opportunity in a wider geography.

Strategy to realize opportunity

All of the elements in CEMEX' climate change strategy are supposed to contribute to the seizure of this opportunity, i.e. technical reduction measures, interaction with stakeholders, information about the life-cycle performance and other characteristics of our products, development of new products and solutions.

Cost to realize opportunity

25000000

Comment

Total cost is the sum of the costs discussed above. However, it is difficult to sum them up as many of the items are not only related to climate change and in addition show significant variability from year to year. A cost breakdown in a TYPICAL year may look like the following: - Investments in new technology (e.g. alternative fuels handling): several tens of million USD - Development of new products and solutions: several million USD - Public Affairs: ca. 400 kUSD

Identifier

Opp5

Where in the value chain does the opportunity occur?

Customer

Opportunity type

Products and services

Primary climate-related opportunity driver

Shift in consumer preferences

Type of financial impact driver

Increased revenue through demand for lower emissions products and services

Company- specific description

A number of studies have underlined the value of concrete as a sustainable material in general; many of them have also found that buildings and structures made of concrete often perform better in terms of GHG emissions over their whole life cycle than alternatives made of other materials. Nonetheless many stakeholders still perceive concrete as an unsustainable construction material. The correction of this misperception would increase demand for our products from environmentally conscious customers the share of which is constantly growing, particularly in developed markets such as the US or Europe .

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

High

Potential financial impact

125000000

Explanation of financial impact

In the absence of a more robust approach we estimate that the positive impact of this opportunity could be of a similar size than that of the reputational opportunity described in the previous line, i.e. some 125 mln USD for the US.

Strategy to realize opportunity

CEMEX is engaged in a number of efforts to provide its stakeholders with factual information about the environmental performance of its products. The most important examples are: CEMEX, as a member of the US Portland Cement Association (PCA) and the National Ready-Mix Concrete Association (NRMCA) Similarly CX supports, via membership of CEMBUREAU, the European Concrete Platform which seeks to 'promote concrete as the material of choice providing building solutions for sustainable development and sustainable

construction.’ CEMEX has started to provide Carbon Footprint data on a cradle-to-gate basis to its stakeholders. In the last year, coverage of our Carbon Footprint has reached 100% of our cement, aggregates, and ready-mixed production.

Cost to realize opportunity

0

Comment

Our financial contribution to the MIT Concrete Sustainability Hub is indirect, via membership in both PCA and NRMCA. In-kind contributions (expertise, data etc.) are immaterial. The one-off cost for the development and implementation of the Carbon Footprint tool was in the range of 200 kUSD. This is not reflected in the number given above as this was several years ago. Please note that while opportunities Opp2, Opp4 and Opp5 seem to be overlapping there are different drivers behind them: - Opp2 is driven by regulatory changes that affect our downstream markets - Opp4 is related purely to reputational issues - Opp5 is driven by a general tendency towards sustainable construction, coupled with the development of new tools that allow the objective selection of materials based on their impact over the full life cycle

C2.5

(C2.5) Describe where and how the identified risks and opportunities have impacted your business.

	Impact	Description
Products and services	Not yet impacted	A number of the risks and opportunities identified above may have an impact on - demand for our products and services, - our portfolio of products and services, particularly Risk 5, Opportunities 2 - 5, with a potential impact of several 100 mln USD of revenue per year. However, actual impacts have not yet been identified.
Supply chain and/or value chain	Impacted for some suppliers, facilities, or product lines	The key impact comes from Risk 3 (increased frequency and magnitude of tropical storms) that can affect our supply with petcoke. In 2005 some of our cement plants in the Americas were affected moderately by the disruption of petcoke supply after hurricane Katrina had hit a number of refineries on the US Gulf coast. While it was possible to keep actual damage to a minimum (by switching to other suppliers, for example) CEMEX has developed a number of measures (such as an adjusted inventory policy for the hurricane season) to avoid potential future impacts. All other parts of the supply chain (mainly other fuels, spare parts, minerals) have not been identified as being subject to material climate change-related risks.
Adaptation and mitigation activities	Impacted	Adaptation: There has not been any impact yet; while both extreme weather events and rising sea levels have been identified as potential risks with a potential damage in the million USD range our analysis indicates that actually climate change has not yet had any material impact. Mitigation: Reputational and regulatory risks and opportunities (Risks 1 and 5, Opps 1 and 4) represent a downside and upside, resp., potential in the 100 mln USD range. These, together with our

	Impact	Description
		conviction that reducing our GHG emissions to the extent possible is 'just the right thing to do', have driven numerous decisions to invest in e.g. alternative fuels projects, renewable electricity supply, energy efficiency, low-carbon clinker substitutes, but also R&D into new processes and products.
Investment in R&D	Impacted	R&D is key for managing a number of risks and opportunities, part. Risk 1, Opp 1, Opp 2, with a typical magnitude in the 100 mln USD range. As a consequence, CEMEX has increased its R&D efforts with a focus on - products with a lower CO2 footprint - products enabling our clients to lower their footprint (avoided emissions) - breakthrough technologies for CO2 reduction such as CCS&U We estimate that around 35-40% of our R&D expenditure is on new developments where environmental benefits are the main driver.
Operations	Impacted	Operations play a key role in Risk 1 and Opportunity 1 which are both in the multi-million USD range. Beyond the measures discussed under 'Adaptation activities' most of our operations are (or at least were) subject to a carbon price signal (e.g. EU ETS for Europe, CDM in non-Annex I countries) which have triggered additional efforts to optimize processes and / or to register emission reduction projects.
Other, please specify	Impacted	COMMUNICATIONS In particular the reputational risk and opportunity (where potentially hundreds of millions of USD are at stake) require an adequate communications effort. Over time CEMEX has improved its communication not only on climate change, but sustainability in general, including but not limited to - regular participation in the CDP, - publication of one of the first integrated reports in the sector, - participation in the World Bank-led Carbon Pricing Leadership Coalition, - publication of position papers detailing our view on key topics related to climate change, - efforts to communicate about the advantages of concrete as a sustainable material in many applications

C2.6

(C2.6) Describe where and how the identified risks and opportunities have factored into your financial planning process.

	Relevance	Description
Revenues	Not yet impacted	Risk 1 and Opportunities 2 - 5 could potentially have a combined impact on our revenues in the range of hundreds of millions of USD. However, we have not identified any material impact yet as the underlying drivers are not yet strong enough in the market. We expect these impacts (particularly the opportunities) to gradually build up over time (at least one decade).
Operating costs	Impacted for some suppliers, facilities, or product lines	The potential cost impact of Risk 1 (cost of allowances under the EU ETS, other trading systems and GHG taxes) is integrated in the short- and long-term financial planning. The worst-case scenario with a yearly cost of 250 - 300 mln USD is considered as one extreme, but the baseline scenario is dominated by free allocation (according to today's visibility) that incurs immaterial costs for the coming years.

	Relevance	Description
Capital expenditures / capital allocation	Impacted	Capital allocation has a role for most risks and opportunities and has therefore an impact - sometimes direct, sometimes indirect - in the range of several hundred million USD. While climate change-related risks and opportunities are relevant for all kinds of capital the main areas where they factor into the planning process are the following: - Financial capital: systematic consideration of costs induced by GHG regulation (e.g. taxes, cost for purchase of allowances) in the evaluation of investment projects; general stress testing of our mid-term financial planning by applying a uniform internal carbon price of USD 30 per metric tonne of CO2 - Human Capital: Increasingly stronger focus on climate change-related topics, e.g. R&D into low-carbon technologies and products; further development of climate management and related processes; investigation of the life-cycle impact of our products and services; transparent communication around the company's carbon strategy, performance, and advantages of our products and services - Natural Capital: evaluation of mineral deposits for raw materials for low-carbon products; evaluation of projects to grow biomass as alternative fuel
Acquisitions and divestments	Impacted	All climate-related risks and opportunities are systematically integrated into the evaluation of acquisitions and divestments. The results will certainly depend on the size of the transaction in question, but may range from negligible to being a substantial part of the overall value. In some cases (e.g. acquisition of MRT in 2003 for around USD 100 mln) climate-related motivations (here: access to sources of low-carbon clinker substitutes and related technologies) were the main driver for an acquisition.
Access to capital	Impacted	Investors, particularly institutional investors, increasingly consider climate-related risks and opportunities in the evaluation of their portfolios. However, as CEMEX maintains an open and transparent dialogue with all interested investors and informs them about the company's strategy and performance this has not yet triggered changes to our financial planning. The one notable exception to this is a green loan by IFC, the World Bank's private sector lending arm, for around USD 117 mln. This credit was awarded in 2016 for projects to improve our GHG footprint and emissions monitoring; a thorough review of all climate change-related aspects was part of the due diligence process.
Assets	Not yet impacted	As mentioned above CEMEX has not identified any material short- to medium-term need to respond at asset level to potential physical risks of climate change. However, in the long run this may change, and in that case proper and timely planning of assets (e.g. moving assets to a less exposed site) will help avoid damage that may be in the 100 mln USD range.
Liabilities	Not impacted	As shown in 2.3a and 2.4a CEMEX has not identified any material climate change-related risks and opportunities that would affect the financial planning of liabilities.
Other	Please select	

C3. Business Strategy

C3.1

(C3.1) Are climate-related issues integrated into your business strategy?

Yes

C3.1a

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

Yes, qualitative

C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b)

(C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b)

Indicate whether your organization has developed a low-carbon transition plan to support the long-term business strategy.

Yes

C3.1c

(C3.1c) Explain how climate-related issues are integrated into your business objectives and strategy.

i. PROCESS

The Corporate Director Sustainability is responsible for coordinating the process of developing and updating the company's Climate Change strategy. The basic strategy was developed some years ago in a series of workshops, based on a thorough analysis of both internal (e.g. mitigation potential) and external (e.g. regulatory developments and market trends) circumstances; all CEMEX operations and key corporate VPs were represented in this process. Proposed changes to the strategy are discussed with the ExCo and the Sustainability Committee (a subset of the Board of Directors, see also our answers on Governance) before they are signed off by the CEO. The Corporate Director Sustainability is supported by the CO2 Coordination Group, formed by a number of local, regional, and corporate experts and executives; this group regularly analyzes both internal (e.g. progress towards our emission target) and external (e.g. regulatory developments) factors and elaborates changes to the strategy that are then formally proposed by the Corporate Director Sustainability. The wide geographical and functional variety of the members of the CO2 Coordination Group ensures that all qualitative developments are adequately addressed; in addition, institutional data management systems for energy and emissions (such as the CO2 protocol) provide the group with powerful quantitative analytical options that allow us to model different scenarios beyond 2030.

ii. MAIN ASPECTS OF CLIMATE CHANGE

The predominant aspects are regulation triggered by climate change policies, e.g. carbon taxes or emissions trading schemes, and our voluntary carbon target. However, other aspects such as reputation and consumer behavior have an increasing importance, particularly for identifying and seizing opportunities.

Physical effects of climate change are not yet considered significant enough to trigger a strategic reaction; dealing with them is part of our normal risk management practices (e.g. insurance).

iii. SHORT-TERM STRATEGY

Particularly the regulatory risks have triggered additional efforts to improve our carbon balance by e.g.

- Technical measures (increased use of alternative fuels, particularly biomass; phase-out of old, inefficient kilns; increased use of clinker substitutes)
- Development of offset projects, both in our own operations and outside, particularly in our electricity supply chain
- Organizational measures such as awareness raising, monitoring and reporting of emissions, development and implementation of a carbon footprint tool
- Reduction of indirect exposure by sourcing low-carbon electricity

iv. LONG-TERM STRATEGY

In our long-term strategy the following elements are directly related to climate change; even more than the short-term strategic impacts they are driven by a number of opportunities:

- Commitment to an emissions reduction goal and subsequently other goals to support this commitment (e.g. percentage of alternative fuels)
- Increased focus on the life-cycle emissions of our products: In order to minimize the GHG emissions from the built environment one has to do an integrated assessment of emissions over the full life cycle of buildings and structures; heavy materials like concrete offer inherent advantages such as extended lifetime, minimum maintenance or the benefits of thermal mass, to name just a few, that can have a significant positive impact on the life-cycle performance. In order to further improve our products we collaborate internally across our company to develop innovative products and solutions that address some of our customers' most significant environmental issues. Other efforts in this field include
 - Communication of the life-cycle advantages of our products
 - Development and dissemination of new products such as insulating concrete forms (ICF) that allow clients to achieve additional emission reductions.
 - Promotion of energy efficiency to local communities, customers, and vendors
 - Sponsorship of contests to promote sustainable and innovative building designs such as the annual CEMEX Building Awards in the U.S.

v. STRATEGIC ADVANTAGE

The short-term measures create a direct and measurable impact; reductions in EU countries or in offset projects translate directly into cost advantages and/or additional revenues.

Our focus on life-cycle emissions allows us to offer products with superior value for our clients and to communicate this advantage in the market place. In addition to those advantages that are directly related to climate change many of the actions have positive side benefits such as a stabilization of our energy costs.

vi. BUSINESS DECISIONS

Some of the key decisions include:

- Development and implementation of a Carbon Footprint methodology and tool for our main businesses (cement, aggregates, and ready-mix concrete) the results of which are regularly communicated to our stakeholders; this marked the start of a new era of transparency regarding our full responsibility for climate change. Through the use of this tool we can provide customers with the CO2 footprint of each one of the products we supply to them, so they in turn can calculate the CO2 footprint of their construction projects
- We have developed new challenging targets for a number of climate change-related KPIs. Our target for the share of climate-friendly alternative fuels is 35% by 2020; in 2017 we reached a share of some 26%. Targets beyond 2020 are currently being developed
- In each of the last years a number of decisions to invest in energy efficiency, renewable energy, clinker substitutes, or alternative fuels have been triggered by our Climate Change strategy and our voluntary goal to reduce emissions (see also C4.3b)
- Climate Change plays an increasingly important role in the selection of suppliers, particularly for electrical energy;
- Our consultancy for sustainable construction that helps to reduce emissions of GHG along the full value chain of construction and buildings is constantly being expanded to new markets;
- An increasing number of CEMEX operations uses our own Ecoperating seal to communicate to their clients which are our most sustainable products, and a lower carbon footprint is the preferred criterion. In 2014 CEMEX introduced Ecoperating for Buildings, a label for our clients' projects that go beyond BAU in terms of sustainable construction, including energy efficiency as a mandatory criterion, and in 2015 decided to expand the scope of this label to building interiors. The Ecoperating for Buildings label has been particularly successful in Mexico.

C3.1d

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

Climate-related scenarios	Details
2DS	<p>The CEMEX scenario analysis uses the 2DS as its central scenario. Other scenarios considered include both more restrictive (B2DS) and less regulated (RCP 4.5, RCP 6.0) scenarios. The geographical scope of the scenarios is global, and the time horizon the year 2050. The four scenarios used are complemented by a concise and consistent narrative that details some of the open topics such as regulatory framework, physical risks, public opinion and particularly the corresponding indicative price of carbon emissions; the latter is informed by official sources (e.g. the IEA ECP scenarios), but may differ from those, particularly as they are rounded. In all scenarios the potential implications for CEMEX are analyzed in a qualitative and sometimes semi-quantitative way. In the area of the physical impacts of climate change the analysis discusses both risks for our assets as well as potential risks and opportunities in our markets; in the area of transitional risks the focus is very much on the consequences of climate change-related legislation, including margin effects, volume effects, stranded assets, and the profitability of R&D into low-carbon processes and products. The main results of the analysis are:</p> <ul style="list-style-type: none"> - Transitional risks and opportunities are far more relevant for CEMEX than physical ones; - The more CO2 emissions are constrained the more relevant are transitional risks; - Transitional risks are not a challenge for the sector (defined as production of mineral binders, not necessary as traditional Portland cement) as a whole (because of a lack of suitable substitutes), but in most scenarios will play a decisive role for the competitiveness of individual companies within the sector - although the profitability of R&D into low-carbon solutions is highest in the most carbon-constrained scenarios they are still attractive in the least constrained one - Particularly in the most constrained scenarios the need to develop new business models becomes apparent <p>The results of this analysis confirm that CEMEX' carbon strategy is in general robust. It underlines the need to integrate further emission reduction options that go beyond the traditional levers (energy efficiency, alternative fuels, and clinker substitutes). These results feed directly into the further evolution of our carbon strategy and targets. As a consequence of the scenario analysis - our new long-term CO2 target will most likely go beyond what can be achieved with traditional levers, - R&D into non-traditional emission reduction options will be further strengthened; for example, the development and roll-out of our new low-carbon clinker (that shows an emission reduction of over 15% compared to traditional Portland cement clinker) was sped up</p> <p>The scenario analysis has not resulted in additional monitoring activities as the existing monitoring processes for CO2 emissions and other KPIs related to climate are considered adequate. The results of the analysis have been reported to the Corporate Sustainability Director and the Executive VP for Sustainability and Operations Development.</p>

C-AC3.1e/C-CE3.1e/C-CH3.1e/C-CO3.1e/C-EU3.1e/C-FB3.1e/C-MM3.1e/C-OG3.1e/C-PF3.1e/C-ST3.1e/C-TO3.1e/C-TS3.1e

(C-AC3.1e/C-CE3.1e/C-CH3.1e/C-CO3.1e/C-EU3.1e/C-FB3.1e/C-MM3.1e/C-OG3.1e/C-PF3.1e/C-ST3.1e/C-TO3.1e/C-TS3.1e)

Disclose details of your organization's low-carbon transition plan.

CEMEX' low-carbon transition plan covers all relevant aspects such as

- minimization of our own carbon footprint,
- development and commercialization of products that support the low-carbon transition,
- collaboration with all stakeholders to develop the framework for a low-carbon and resilient world.

Work on the update of our transition is currently (summer 2018) ongoing. This will include, among other topics, new targets for 2025 and beyond.

Minimization of our own carbon footprint

CEMEX is on track to meet its target of a 25% reduction (compared to our 1990 baseline) of CO₂ emissions per metric tonne of cementitious material in 2020, and work on new targets beyond that date is underway. The key levers to ensure long-term reductions of our own CO₂ emissions include:

- Improvement of energy efficiency of our plants
- Substitution of low-carbon alternative fuels for conventional fuels
- Reduction of our clinker-cement ratio
- Development and roll-out of novel clinker and cement types
- R&D in the capture and subsequent storage or utilization of CO₂ emitted from our processes

Please see also our answer to questions C3.1c, C4.3, C4.3a, and C4.3b.

In addition, CEMEX is aware of its responsibility for the supply chain. As a result we have been trying to reduce our scope 2 emissions for more than a decade by sourcing electricity from renewable sources; the development of the Eurus and Ventika I and II wind farms in Mexico with a combined capacity of more than 500 MW is the most prominent example.

Development and commercialization of products that support the low-carbon transition

Cement and concrete already provide a number of characteristics that are important for a low-carbon transition, such as longevity, resistance, wide availability etc. In fact, most technologies and other solutions currently debated will rely to an important degree on concrete. Nonetheless there is still a significant potential for further developments to e.g. improve the insulating properties of concrete, further increase its strength, or to implement smart functions to increase maintenance intervals and technical lifetimes. As one of the industry leaders CEMEX will continue to be at the forefront of these developments.

Please also see our answer to question C4.5.

Collaboration with all stakeholders to develop the framework for a low-carbon and resilient world

CEMEX is aware of the fact that the challenge of climate change requires collaboration at a number of levels. We are working with stakeholders, particularly governments and authorities, to develop frameworks that allow society to effectively and efficiently transition to a low-carbon world and to adapt to those consequences of climate change that cannot be avoided any more.

Please see also our answers to questions C2.3a, C2.4a, and C12.

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

Scope

Scope 1

% emissions in Scope

99.2

% reduction from baseline year

25

Metric

Metric tons CO₂e per metric ton of cement*

Base year

1990

Start year

2014

Normalized baseline year emissions covered by target (metric tons CO₂e)

0.802

Target year

2020

Is this a science-based target?

Yes, we consider this a science-based target, but this target has not been approved as science-based by the Science Based Targets initiative

% achieved (emissions)

83

Target status

Underway

Please explain

Target covers only emissions from our cement operations. Other operations (concrete, aggregates, asphalt) are not covered by the target but make up less than 1% of our combined scope 1 emissions. Latest calculations indicate that reductions in specific emissions will offset growth in demand for our products.

% change anticipated in absolute Scope 1+2 emissions

-1

% change anticipated in absolute Scope 3 emissions

0

C4.2

(C4.2) Provide details of other key climate-related targets not already reported in question C4.1/a/b.

Target

Other, please specify (Alternative Fuels rate)

KPI - Metric numerator

Amount of alternative fuels (derived from wastes of biomass) in cement plants (in GJ)

KPI - Metric denominator (intensity targets only)

Total fuel consumption in cement plants (in GJ)

Base year

1990

Start year

2014

Target year

2020

KPI in baseline year

0.8

KPI in target year

35

% achieved in reporting year

74

Target Status

Underway

Please explain

Target covers all our cement operations worldwide. Alternative fuels allow us to reduce combustion-related CO2 emissions in the cement manufacturing process.

Part of emissions target

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

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 projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	20	
To be implemented*	3	24000

	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Implementation commenced*	6	45000
Implemented*	6	156000
Not to be implemented	0	0

C4.3b

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

Activity type

Energy efficiency: Processes

Description of activity

Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

1000

Scope

Scope 2 (location-based)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

50000

Investment required (unit currency – as specified in CC0.4)

150000

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment

Power efficiency projects to decrease the energy consumption of the plants, or of equipment/installations of the plants (decrease of Scope 2 emissions). 1 project has been carried out in different plants worldwide. All projects are voluntary.

Activity type

Other, please specify (Fuel Switch: Alternative Fuel projects)

Description of activity

<Not Applicable>

Estimated annual CO2e savings (metric tonnes CO2e)

60000

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

2000000

Investment required (unit currency – as specified in CC0.4)

2200000

Payback period

1-3 years

Estimated lifetime of the initiative

16-20 years

Comment

Fuel Switch: Alternative Fuel projects to increase percentage of substitution. Alternative fuels in our kilns to reduce scope 1 emissions. 3 projects have been carried out in different cement plants worldwide. The expected lifetime of single projects is typically in the range of one to two decades. All these projects are voluntary.

Activity type

Other, please specify (Clinker reduction projects)

Description of activity

<Not Applicable>

Estimated annual CO2e savings (metric tonnes CO2e)

95000

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

1500000

Investment required (unit currency – as specified in CC0.4)

1300000

Payback period

<1 year

Estimated lifetime of the initiative

Please select

Comment

Clinker reduction projects to decrease the amount of clinker consumed in our cements, which implies an associated reduction in the CO2 emissions for clinker production (reduction in Scope 1 emissions). 2 projects have been carried out in different plants worldwide. All the projects are voluntary.

C4.3c

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

Method	Comment
Compliance with regulatory requirements/standards	This includes compliance with emissions trading schemes such as the EU ETS
Financial optimization calculations	These integrate the price of carbon induced by emissions trading schemes and offset programs.
Other	Best practice sharing CEMEX business units share success stories via intranet tools, but also in reunions (e.g. CO2 Coordination Group, meetings of environmental and / or sustainability executives at regional or global level).

Method	Comment
Partnering with governments on technology development	CEMEX constantly participates in a number of R+D projects that are partly funded by governments; many of these projects are related to emission reduction technologies.
Internal incentives/recognition programs	CEMEX sets targets not only for emission intensity, but also for individual key levers such as the percentage of low-carbon alternative fuels in our overall fuel portfolio.

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

Company-wide

Description of product/Group of products

Our main products, cement and concrete, are absolutely indispensable for the transformation to a low-carbon society. The sectors where intelligent use of our products enables improvements in the CO2 intensity range from residential (new, more efficient buildings, use of concrete's thermal mass and inherent long-term air tightness) to transport (rigid road surfaces, railway lines) to energy generation (foundations, towers, buildings for renewable energy systems such as wind turbines or solar power plants). Whether these emission reductions are in scopes 1, 2 or 3 of the third party depends on the circumstances. For example, if a building generates its own heat and/or cold, the energy savings would lead to emission reductions in scope 1 of the building operator; if the building gets heat and cold from a local network the reductions would be in scope 2. CEMEX relies mostly on the tool of Life-Cycle Assessment (LCA) in order to determine net savings related to the use of our products; we both perform in-house analyses and analyze external studies (e.g. recent studies published by the Concrete Sustainability Hub (CSHub) at the Massachusetts Institute of Technology, <http://web.mit.edu/cshub/>); if applicable, GWPs used are those as reported by the IPCC for a 100 year horizon. The potential for reduction and the timescales are highly dependent on the application, design, and local circumstances; however, first internal estimates show that the time in which those reductions offset the initial emissions from the production of our products is typically well below the

lifetime of the relevant buildings and structures. While we currently do not have detailed figures for total emission reductions due to the use of our products, we estimate that the products we sell in one year generate direct savings of at least several million years over the full lifetime of the structures (which is typically several decades). In addition, we include here cementitious products that fulfil certain minimum requirements in terms of CO2-related indicators.

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 (literature research, extrapolations)

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

51

Comment

CEMEX is working with other members of the Cement Sustainability Initiative on a methodology that will allow us to quantify the downstream impacts of our products in a consistent way. We roughly estimate that at least 50% of our product sales lead to emission reductions in the in-use phase compared to potential substitutes. R&D expenses refer to product development, not process development.

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	94
Pre-calcliner	60

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 1990

Base year end

December 31 1990

Base year emissions (metric tons CO2e)

42179761

Comment

Adjusted for recent divestments. Please note this covers only our cement operations as no data available for other business lines in 1990 (in 2017 these represented less than 1% of total scope 1 emissions)

Scope 2 (location-based)

Base year start

January 1 1990

Base year end

December 31 1990

Base year emissions (metric tons CO2e)

3473434

Comment

Adjusted for recent divestments. Please note this covers only our cement operations as no data available for other business lines in 1990 (in 2017 these represented less than 10% of total scope 2 emissions)

Scope 2 (market-based)

Base year start

January 1 1990

Base year end

December 31 1990

Base year emissions (metric tons CO2e)

3473434

Comment

Adjusted for recent divestments. Please note this covers only our cement operations as no data available for other business lines in 1990 (in 2017 these represented less than 10% of total scope 2 emissions) Location- and market-based scope 2 emissions in the base year are the same because at the time there was practically no choice of options.

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions.

WBCSD: The Cement CO2 and Energy Protocol

Other, please specify (Internal tools, see C5.2a)

C5.2a

(C5.2a) Provide details of the standard, protocol, or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions.

For ready-mix & aggregates operations, data for scope 1 and 2 have been extrapolated from data collected with the CEMEX CO2 footprint methodology from 2013 taking the production volume from 2017; this methodology assesses the total GHG footprint on a cradle-to-gate basis and is in compliance with most currently available standards for carbon footprints (PAS 2050, ISO 14040).

C6. Emissions data

C6.1

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

Row 1

Gross global Scope 1 emissions (metric tons CO2e)

42890752

End-year of reporting period

<Not Applicable>

Comment

C6.2

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

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We are reporting a Scope 2, market-based figure

Comment

C6.3

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

Row 1

Scope 2, location-based

3591856

Scope 2, market-based (if applicable)

3747043

End-year of reporting period

<Not Applicable>

Comment

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?

Yes

C6.4a

(C6.4a) Provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure.

Source

Building Product Operations

Relevance of Scope 1 emissions from this source

Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source

Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source (if applicable)

Emissions are not relevant

Explain why the source is excluded

Very small emissions compared to other business lines

Source

Logistics Operations

Relevance of Scope 1 emissions from this source

No emissions excluded

Relevance of location-based Scope 2 emissions from this source

Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source (if applicable)

Emissions are not relevant

Explain why the source is excluded

Emissions from logistics are included in scope 3 due to 1. their relatively small amount (compared to kiln operations) and 2. methodological issues (separating own fleet from third party transportation would be extremely data-intensive). This is in line with WBCSD-CSI guidance on scope 3 emissions in the cement sector.

Source

Offices

Relevance of Scope 1 emissions from this source

Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source

Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source (if applicable)

Emissions are not relevant

Explain why the source is excluded

Very small emissions compared to plant operations

C6.5

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

Purchased goods and services

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

5196928

Emissions calculation methodology

Purchases of clinker and cement from third parties are multiplied with generic emission factors.

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

Explanation

Capital goods

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

Emissions calculation methodology

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

Explanation

Determined as not relevant in assessment by Cement Sustainability Initiative within the World Business Council for Sustainable Development (sector-specific Scope 3 guidance).

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

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

2021319

Emissions calculation methodology

Calculated based on detailed energy consumption figures (taken from the protocol for Scope 1+2 emissions for cement, and from other internal data management systems for other businesses) and emission factors for cradle-to-gate GHG emissions from LCA database.

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

Explanation**Upstream transportation and distribution****Evaluation status**

Relevant, calculated

Metric tonnes CO2e

1833208

Emissions calculation methodology

Calculated from data collected with the CEMEX CO2 Footprint methodology from 2013 taking the production volume from 2017; this methodology assesses the total GHG footprint on a cradle to gate basis and is in compliance with most currently available standards for carbon footprints. Scope is restricted to relevant purchased goods and services (normally purchased clinker and cement).

Percentage of emissions calculated using data obtained from suppliers or value chain partners**Explanation****Waste generated in operations****Evaluation status**

Not relevant, explanation provided

Metric tonnes CO2e**Emissions calculation methodology****Percentage of emissions calculated using data obtained from suppliers or value chain partners****Explanation**

Determined as not relevant in assessment by Cement Sustainability Initiative within the World Business Council for Sustainable Development (sector-specific Scope 3 guidance).

Business travel**Evaluation status**

Not relevant, explanation provided

Metric tonnes CO2e**Emissions calculation methodology****Percentage of emissions calculated using data obtained from suppliers or value chain partners****Explanation**

Determined as potentially relevant in assessment by Cement Sustainability Initiative within the World Business Council for Sustainable Development; however, previous calculations in CEMEX show that business travel is not relevant for us.

Employee commuting

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Determined as potentially relevant in assessment by Cement Sustainability Initiative within the World Business Council for Sustainable Development; however, internal analyses show that emissions from employee commuting are likely to be in the range of 0.1% of our combined scope 1 and scope 2 emissions.

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Determined as not relevant in assessment by Cement Sustainability Initiative within the World Business Council for Sustainable Development (sector-specific Scope 3 guidance).

Downstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO2e

270391

Emissions calculation methodology

Seaborne transportation of clinker and cement by our trading operations, based on total distance traveled and assessment of specific fuel consumption. Emissions from maritime transport of products are calculated by multiplying total fuel oil consumption with the corresponding emission factor. Where fuel oil consumption is not available this is estimated by extrapolating from existing data for similar vessels (i.e. vessels of similar size). Please note that for this reporting cycle we have used a more granular approach that allows

us to better estimate fuel consumption of smaller carriers for local T&D (e.g. Spain, Mexico, Philippines) instead of using the typical fuel consumption (per nautical mile) of large carriers for intercontinental shipping.

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

99

Explanation

Processing of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Determined as not relevant in assessment by Cement Sustainability Initiative within the World Business Council for Sustainable Development (sector-specific Scope 3 guidance).

Use of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Use of sold products is impossible to track, and there is no generally accepted methodology yet for calculating associated emissions. For the purpose of reporting we consider those emissions not relevant; however, we are aware of the potentially positive impact that the use of our products has (see also C4.5).

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Determined as not relevant in assessment by Cement Sustainability Initiative within the World Business Council for Sustainable Development (sector-specific Scope 3 guidance).

Downstream leased assets**Evaluation status**

Not relevant, explanation provided

Metric tonnes CO2e**Emissions calculation methodology****Percentage of emissions calculated using data obtained from suppliers or value chain partners****Explanation**

Determined as not relevant in assessment by Cement Sustainability Initiative within the World Business Council for Sustainable Development (sector-specific Scope 3 guidance).

Franchises**Evaluation status**

Not relevant, explanation provided

Metric tonnes CO2e**Emissions calculation methodology****Percentage of emissions calculated using data obtained from suppliers or value chain partners****Explanation**

Determined as not relevant in assessment by Cement Sustainability Initiative within the World Business Council for Sustainable Development (sector-specific Scope 3 guidance).

Investments**Evaluation status**

Not relevant, explanation provided

Metric tonnes CO2e**Emissions calculation methodology****Percentage of emissions calculated using data obtained from suppliers or value chain partners****Explanation**

Determined as not relevant in assessment by Cement Sustainability Initiative within the World Business Council for Sustainable Development (sector-specific Scope 3 guidance).

Other (upstream)

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Determined as not relevant in assessment by Cement Sustainability Initiative within the World Business Council for Sustainable Development (sector-specific Scope 3 guidance).

Other (downstream)

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Determined as not relevant in assessment by Cement Sustainability Initiative within the World Business Council for Sustainable Development (sector-specific Scope 3 guidance).

C6.7

(C6.7) Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

Yes

C6.7a

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

1909720

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

0.0034

Metric numerator (Gross global combined Scope 1 and 2 emissions)

46482609

Metric denominator

unit total revenue

Metric denominator: Unit total

13672000000

Scope 2 figure used

Location-based

% change from previous year

4.6

Direction of change

Decreased

Reason for change

- Emission reduction activities (please note that the data reported in C4.3 only include projects requiring capex; on top of this there are always efforts to source low-carbon materials and fuels, improve energy efficiency, optimize previously reported projects etc.) - Divestment of comparatively CO2-intensive cement plants in the US

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	0.858	0.805	0.041
Cement equivalent	0.682	0.64	0.058

	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
Cementitious products	0.677	0.636	0.057
Low-CO2 materials	0	0	0

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization have greenhouse gas emissions other than carbon dioxide?

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)
Americas	26468864
Asia, Australasia, Middle East and Africa	3264562
Europe <i>This includes all European operations not reported in individual countries</i>	2335074
United Kingdom of Great Britain and Northern Ireland	1497959
Spain	3043147
Poland	1425623
Germany	1351769
Philippines	3503754

C7.3

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

By business division

By activity

C7.3a

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

Business division	Scope 1 emissions (metric ton CO2e)
CEMEX LatAm Holdings, S.A. ('CLH')	4150194
CEMEX Holdings Philippines, Inc. ('CHP')	3503754
Rest of CEMEX	35236805

C7.3c

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

Activity	Scope 1 emissions (metric tons CO2e)
Cement	42549201
Aggregates	183922
Concrete and asphalt	157629

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	42549201	39748771	Including on-site power generation
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

	Gross Scope 1 emissions, metric tons CO2e	Net Scope 1 emissions, metric tons CO2e	Comment
Electric utility generation 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 (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 in market-based approach (MWh)
Americas	2251597	2414982	5005774	2605394
Germany	252693	252693	295725	0
United Kingdom of Great Britain and Northern Ireland	98691	98691	280723	0
Philippines	91083	91083	489160	0
Other, please specify (Rest of World)	897793	889594	1977098	51563

C7.6

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

By business division

By activity

C7.6a

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

Business division	Scope 2, location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
CEMEX LatAm Holdings, S.A. ('CLH')	262421	70587
CEMEX Holdings Philippines, Inc. ('CHP')	91083	91083
Rest of CEMEX	3238352	3585373

C7.6c

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

Activity	Scope 2, location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
Cement	3299488	3454675
Aggregates	220379	220379
Concrete and asphalt	71989	71989

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

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

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Cement production activities	3299488	3454675	
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
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 (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	100000	Decreased	0.2	Start of operations of Ventika wind farms in Mexico
Other emissions reduction activities	50000	Decreased	0.1	Overall improvement of specific gross CO2 emissions per t of cementitious material. Net emission reduction are around 10 times higher.
Divestment	400000	Decreased	0.9	Divestment of Fairborn cement plant (USA)

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Acquisitions	0	No change	0	No material acquisitions in the reporting scope
Mergers	0	No change	0	No material mergers in the reporting scope
Change in output	740000	Decreased	1.5	Reduction of volume in remaining plants
Change in methodology	0	No change	0	No changes in methodology
Change in boundary	0	No change	0	No changes in boundary
Change in physical operating conditions	0	No change	0	No material changes identified
Unidentified	0	No change	0	No unidentified levers
Other	0	No change	0	No other material impacts identified

C7.9b

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

Location-based

C8. Energy

C8.1

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

More than 30% but less than or equal to 35%

C8.2

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

	Indicate whether your organization undertakes this energy-related activity
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 MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	5573442	50448932	56022373
Consumption of purchased or acquired electricity	<Not Applicable>	1851367	5690501	7541869
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	0	<Not Applicable>	0
Total energy consumption	<Not Applicable>	7424809	56139433	63564242

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)	54742003

	Heating value	Total MWh
Consumption of purchased or acquired electricity	<Not Applicable>	6976563
Consumption of other purchased or acquired energy (heat, steam and/or cooling)	<Not Applicable>	<Not Applicable>
Total energy consumption	<Not Applicable>	61718565

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 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)

Petroleum Coke

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

20973492

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-generation of heat

20973492

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>

Fuels (excluding feedstocks)

Bituminous Coal

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

15047118

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-generation of heat

15047118

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>

Fuels (excluding feedstocks)

Lignite Coal

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

132114

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-generation of heat

132114

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>

Fuels (excluding feedstocks)

Natural Gas

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

1566767

MWh fuel consumed for the self-generation of electricity

536

MWh fuel consumed for self-generation of heat

1566231

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>

Fuels (excluding feedstocks)

Diesel

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

1630781

MWh fuel consumed for the self-generation of electricity

7906

MWh fuel consumed for self-generation of heat

1622875

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>

Fuels (excluding feedstocks)

Alternative Kiln Fuel (Wastes)

This includes all types of alternative, including but not limited to agricultural wastes and other types of biomass, spent solvents, waste oil, processed municipal solid waste

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

14007248

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-generation of heat

14007248

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>

Fuels (excluding feedstocks)

Other, please specify (Gasoline and others)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

3401

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-generation of heat

3401

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>

Fuels (excluding feedstocks)

Fuel Oil Number 6

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

2661452

MWh fuel consumed for the self-generation of electricity

674218

MWh fuel consumed for self-generation of heat

1987234

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>

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)

Petroleum Coke

Heating value

LHV

Total MWh fuel consumed for cement production activities

20793492

MWh fuel consumed at the kiln

20793492

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)

Bituminous Coal

Heating value

LHV

Total MWh fuel consumed for cement production activities

15047118

MWh fuel consumed at the kiln

14974836

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

72282

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

132114

MWh fuel consumed at the kiln

132114

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)

Natural Gas

Heating value

LHV

Total MWh fuel consumed for cement production activities

1566767

MWh fuel consumed at the kiln

1541422

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

24809

MWh fuel consumed for the self-generation of electricity

536

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

350411

MWh fuel consumed at the kiln

112695

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

229810

MWh fuel consumed for the self-generation of electricity

7906

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Fuels (excluding feedstocks)

Alternative Kiln Fuel (Wastes)

This includes all types of alternative, including but not limited to agricultural wastes and other types of biomass, spent solvents, waste oil, processed municipal solid waste

Heating value

LHV

Total MWh fuel consumed for cement production activities

14007248

MWh fuel consumed at the kiln

14007248

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 (Gasoline and others)

Heating value

LHV

Total MWh fuel consumed for cement production activities

3401

MWh fuel consumed at the kiln

0

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

3401

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Fuels (excluding feedstocks)

Fuel Oil Number 6

Heating value

LHV

Total MWh fuel consumed for cement production activities

2661452

MWh fuel consumed at the kiln

1932950

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

54284

MWh fuel consumed for the self-generation of electricity

674218

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

C8.2d

(C8.2d) List the average emission factors of the fuels reported in C8.2c.**Alternative Kiln Fuel (Wastes)****Emission factor**

51.8

Unit

kg CO2 per GJ

Emission factor source

Average emission factor for all alternative fuels in our cement kilns according to the WBCSD CSI protocol. Emission factors at plant level can be default factors (provided by the protocol, based on input from CSI member companies) or plant-specific factors from sampling and testing of fuels.

Comment**Bituminous Coal****Emission factor**

95.5

Unit

kg CO2 per GJ

Emission factor source

Average emission factor for all bituminous coals in our cement kilns according to the WBCSD CSI protocol. Emission factors at plant level can be default factors (provided by the protocol, based on IPCC values) or plant-specific factors from sampling and testing of fuels.

Comment

Diesel

Emission factor

74.3

Unit

kg CO2 per GJ

Emission factor source

Average emission factor for all diesel used in our cement kilns according to the WBCSD CSI protocol. Emission factors at plant level can be default factors (provided by the protocol, based on IPCC values) or plant-specific factors from sampling and testing of fuels.

Comment

Fuel Oil Number 6

Emission factor

77.4

Unit

kg CO2 per GJ

Emission factor source

Average emission factor for all fuel oil number 6 used in our cement kilns according to the WBCSD CSI protocol. Emission factors at plant level can be default factors (provided by the protocol, based on IPCC values) or plant-specific factors from sampling and testing of fuels.

Comment

Lignite Coal

Emission factor

96.5

Unit

kg CO2 per GJ

Emission factor source

Average emission factor for all lignite used in our cement kilns according to the WBCSD CSI protocol. Emission factors at plant level can be default factors (provided by the protocol, based on IPCC values) or plant-specific factors from sampling and testing of fuels.

Comment

Please note that most of the lignite used in our kilns is provided as pulverized lignite that has lower CO2 emission factors than unprocessed lignite.

Natural Gas

Emission factor

56.1

Unit

kg CO2 per GJ

Emission factor source

Average emission factor for all natural gas used in our cement kilns according to the WBCSD CSI protocol. Emission factors at plant level can be default factors (provided by the protocol, based on IPCC values) or plant-specific factors from sampling and testing of fuels.

Comment

Petroleum Coke

Emission factor

93.2

Unit

kg CO2 per GJ

Emission factor source

Average emission factor for all petroleum coke used in our cement kilns according to the WBCSD CSI protocol. Emission factors at plant level can be default factors (provided by the protocol, based on IPCC values and data from CSI members) or plant-specific factors from sampling and testing of fuels.

Comment

Other

Emission factor

68.7

Unit

kg CO2 per GJ

Emission factor source

Average emission factor for all fuels reported as 'gasoline and others' used in our cement kilns according to the WBCSD CSI protocol. Emission factors at plant level can be default factors (provided by the protocol, based on IPCC values) or plant-specific factors from sampling and testing of fuels.

Comment

C8.2e

(C8.2e) 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	493200	465896	0	0
Heat	0	0	0	0
Steam	0	0	0	0
Cooling	0	0	0	0

C-CE8.2e

(C-CE8.2e) 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	493200	465896
Heat	0	0
Steam	0	0

C8.2f

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

Basis for applying a low-carbon emission factor

Power Purchase Agreement (PPA) without energy attribute certificates

Low-carbon technology type

Solar PV

Wind

MWh consumed associated with low-carbon electricity, heat, steam or cooling

18852

Emission factor (in units of metric tons CO2e per MWh)

0

Comment

Wind power projects in two of our US plants and a solar PV plant in our cement operation in San Pedro, Dominican Republic. All these facilities are hosted but not controlled or operated by the company.

Basis for applying a low-carbon emission factor

Power Purchase Agreement (PPA) without energy attribute certificates

Low-carbon technology type

Wind

MWh consumed associated with low-carbon electricity, heat, steam or cooling

839673

Emission factor (in units of metric tons CO2e per MWh)

0

Comment

PPAs with wind power plants in Mexico (EURUS, Ventika I and II) and the Dominican Republic

Basis for applying a low-carbon emission factor

Contract with suppliers or utilities (e.g. green tariff), not supported by energy attribute certificates

Low-carbon technology type

Hydropower

MWh consumed associated with low-carbon electricity, heat, steam or cooling

51563

Emission factor (in units of metric tons CO2e per MWh)

8

Comment

PPA with local utility in Latvia, specifying a generation mix of 98+% hydropower and the balance by NG cogeneration

C9. Additional metrics

C9.1

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

C-CE9.3a

(C-CE9.3a) Report your organization's split between white and grey cement production.

	Percentage of total production (%)
White cement	
Grey cement	

C-CE9.3b

(C-CE9.3b) Report your organization's clinker production and capacity percentage figures by kiln type.

	Percentage of metric tons of clinker production (%)	Percentage of metric tons of clinker capacity (%)	Comment
Dry kiln			
Semi-dry kiln			
Semi-wet kiln			
Wet kiln			
Shaft kiln			
Long kiln			

	Percentage of metric tons of clinker production (%)	Percentage of metric tons of clinker capacity (%)	Comment
Other			

C-CE9.3c

(C-CE9.3c) Report your organization's cement-related production outputs and capacities by product.

	Production (metric tons)	Capacity (metric tons)
Limestone		
Gypsum		
Clinker		
Cement equivalent		
Cementitious products		
Low-CO2 materials		
Lime		

C-CE9.6

(C-CE9.6) Disclose your organization's low-carbon investments for cement production activities.

Investment start date

January 1 2017

Investment end date

December 31 2017

Investment area

R&D

Technology area

Other, please specify (Aggregate number for all technologies)

Investment maturity

Applied research and development

Investment figure

38000000

Low-carbon investment percentage

21 - 40%

Please explain

Investments in research and development have been held stable over the last couple of years. Around 35-40% of all expenses are for projects that are primarily driven by environmental considerations, and the vast majority of those are directly related to climate change.

Investment start date

January 1 2017

Investment end date

December 31 2017

Investment area

Property, plant and equipment

Technology area

Fuel switching

Investment maturity

Large scale commercial deployment

Investment figure

2200000

Low-carbon investment percentage

81 - 100%

Please explain

Please see our answer to question C4.3b for further details.

Investment start date

January 1 2017

Investment end date

December 31 2017

Investment area

Property, plant and equipment

Technology area

Low clinker cement

Investment maturity

Large scale commercial deployment

Investment figure

1300000

Low-carbon investment percentage

81 - 100%

Please explain

Please see our answer to question C4.3b for further details.

Investment start date

January 1 2017

Investment end date

December 31 2017

Investment area

Property, plant and equipment

Technology area

Other, please specify (Electrical energy efficiency)

Investment maturity

Large scale commercial deployment

Investment figure

150000

Low-carbon investment percentage

81 - 100%

Please explain

Please see our answer to question C4.3b for further details.

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 and/or Scope 2 emissions and attach the relevant statements.

Scope

Scope 1

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

[Verification Statement.pdf](#)

Page/ section reference

All (1-3)

Relevant standard

A1000AS

Proportion of reported emissions verified (%)

99

Scope

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

[Verification Statement.pdf](#)

Page/ section reference

All (1-3)

Relevant standard

A1000AS

Proportion of reported emissions verified (%)

93

C10.1b

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

Scope

Scope 3- at least one applicable category

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Attach the statement

[Verification Statement.pdf](#)

Page/section reference

All (1-3), part. 1 (please note that the CSI Cement CO2 and Energy Protocol also includes emissions from purchased clinker, not only scopes 1 and 2)

Relevant standard

AA1000AS

C10.2

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

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

C11. Carbon pricing

C11.1

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

Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.

California CaT

Colombia carbon tax

EU ETS

Latvia carbon tax

Mexico carbon tax

Poland carbon tax

C11.1b

(C11.1b) Complete the following table for each of the emissions trading systems in which you participate.

California CaT

% of Scope 1 emissions covered by the ETS

5

Period start date

January 1 2017

Period end date

December 31 2017

Allowances allocated

Allowances purchased

0

Verified emissions in metric tons CO2e

2190000

Details of ownership

Facilities we own and operate

Comment

Please note that information on allocation is confidential as it allows to calculate clinker production in our facilities.

EU ETS

% of Scope 1 emissions covered by the ETS

22

Period start date

January 1 2017

Period end date

December 31 2017

Allowances allocated

10532000

Allowances purchased

0

Verified emissions in metric tons CO2e

9479000

Details of ownership

Facilities we own and operate

Comment

C11.1c

(C11.1c) Complete the following table for each of the tax systems in which you participate.

Colombia carbon tax

Period start date

January 1 2017

Period end date

December 31 2017

% of emissions covered by tax

0

Total cost of tax paid

13000

Comment

Net taxes after compensation project (see C11.2)

Latvia carbon tax

Period start date

January 1 2017

Period end date

December 31 2017

% of emissions covered by tax

0

Total cost of tax paid

740

Comment

Mexico carbon tax

Period start date

January 1 2017

Period end date

December 31 2018

% of emissions covered by tax

9

Total cost of tax paid

2500000

Comment

Poland carbon tax

Period start date

January 1 2017

Period end date

December 31 2017

% of emissions covered by tax

3

Total cost of tax paid

104300

Comment

C11.1d

(C11.1d) What is your strategy for complying with the systems in which you participate or anticipate participating?

Emissions Reductions: CEMEX implements projects to reduce its emissions (including the use of alternative fuels or clinker substitutes) wherever this is economically justified, considering current and expected future prices of CO2 emission allowances.

Offset projects: In addition to the optimization of emissions in regulated installations CEMEX seeks registration of emission reduction projects that go beyond business as usual and achieve CO2 mitigation at reasonable costs; these projects, primarily registered under the UNFCCC's CDM and the US' VCS, are not only implemented in our own plants, but can be upstream (e.g. wind power for our Mexican plants, fuel switching) or downstream (use of our products for more CO2-efficient buildings or infrastructure; no project registered yet). A particularly good example is the offsetting of all CO2 emissions from our truck fleet in Colombia by investing into eligible reforestation measures in that country.

Trading: CEMEX actively participates in trading in order to optimize its position and ensure compliance.

Monitoring: In addition to the mandatory monitoring, reporting, and verification required by the EU ETS, all cement plants track their CO2 emissions using the CSI protocol (see also Q12). All monitoring activities are subject to internal control and third-party verification.

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 purchase

Project type

Forests

Project identification

CEMEX Colombia is the first company in the country to obtain carbon neutral certification for its fleet of vehicles. This means that for every ton of CO₂ our vehicles emit, we will “give back” to the environment the resources that we took to run our operations. This has been made through a local Colombian initiative called “Proyecto forestal CO₂CERO” (CO₂ZERO Forestry Project).

Verified to which standard

Other, please specify (ICONTEC)

Number of credits (metric tonnes CO₂e)

62391

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

62391

Credits cancelled

Yes

Purpose, e.g. compliance

Compliance

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

Change internal behavior

Stress test investments

Identify and seize low-carbon opportunities

GHG Scope

Scope 1

Application

The carbon price is integrated into our mid-term business planning process to better understand the impacts of carbon pricing on our business, particularly on the profitability of investments. In addition to this global price local prices (for operations subject to carbon taxes or emissions trading) are used.

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

30

Variance of price(s) used

In the global application we currently apply a fix price without any variance. In the analysis of projects that are subject to an ETS we use a central price with a high and a low variant that based on analysts' expectations and are regularly updated.

Type of internal carbon price

Shadow price

Impact & implication

The internal price on carbon allows CEMEX to - identify low-cost reduction opportunities as well as investment projects that are subject to increased risks under a scenario of external carbon pricing - raise awareness among top and middle management for CEMEX' potential exposure to external carbon pricing - drive a culture of constantly reducing our carbon footprint Carbon prices based on external mechanisms (taxes, emissions trading) allow us to better evaluate the profitability of projects and strategies.

C12. Engagement

C12.1

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

Yes, our suppliers

Yes, our customers

C12.1a

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

Type of engagement

Information collection (understanding supplier behavior)

Details of engagement

Collect climate change and carbon information at least annually from suppliers

% of suppliers by number

10

% total procurement spend (direct and indirect)

25

% Scope 3 emissions as reported in C6.5

30

Rationale for the coverage of your engagement

CEMEX understands the responsibility for its products in a wider sense, one that includes the full supply chain. In 2014 CEMEX started to contract AFNOR to evaluate our suppliers with a target of assessing 55% of our procurement spend in 2020. In 2017 we reached 25%.

Impact of engagement, including measures of success

The project has had very good acceptance among our suppliers. For a proper evaluation of yearly results and identification of trends it is, however, too early, considering that much fewer companies were invited in the early years.

Comment

Climate change is one of the key aspects in our supplier evaluation.

Type of engagement

Engagement & incentivization (changing supplier behavior)

Details of engagement

Climate change performance is featured in supplier awards scheme

% of suppliers by number

100

% total procurement spend (direct and indirect)

100

% Scope 3 emissions as reported in C6.5

80

Rationale for the coverage of your engagement

CEMEX' Supplier of the Year program is open to all CEMEX suppliers. It recognizes outstanding contributions in four categories (Health and Safety; Sustainability; Innovation; Excellence).

Impact of engagement, including measures of success

The Supplier of the Year was first awarded in 2018. We expect number and participants and the impact on the sustainability of our supply chain to grow in the future.

Comment

Climate Change impacts are a key metric in the Sustainability category.

Type of engagement

Innovation & collaboration (changing markets)

Details of engagement

Other, please specify (Development of low-carbon supply options)

% of suppliers by number

1

% total procurement spend (direct and indirect)

10

% Scope 3 emissions as reported in C6.5

0

Rationale for the coverage of your engagement

CEMEX constantly engages with its suppliers on low-carbon solutions. This includes, for example: - renewable power supply (e.g. wind power projects in Mexico and other countries) - development of supplies of low-carbon alternative fuels (e.g. sorting and processing facilities for municipal solid waste, contracts and logistics for agricultural wastes) These are project types that are close to CEMEX' core business and where at the same time the potential impact is quite high.

Impact of engagement, including measures of success

The total CO2 reductions generated by the renewable power projects that CEMEX developed together with its suppliers is in the range of 1 mln t per year. The impact of our constant collaboration with (existing and potential) providers of alternative fuels and raw materials is more difficult to assess as it is often impossible to determine whether a project would have gone ahead in a similar way without the involvement of CEMEX. However, we estimate that the combined impact of these projects exceeds 1 mln t CO2 per year.

Comment

Percentages are estimates. The projects mentioned in this category do not materially affect scope 3 emissions, but help us reduce emissions in our scopes 1 (alternative fuels) and 2 (power supply).

C12.1b

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

Type of engagement

Collaboration & innovation

Details of engagement

Other – please provide information in column 5

Size of engagement

0.01

% Scope 3 emissions as reported in C6.5

0

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

Development of a certification for sustainable building projects that is simpler than traditional approaches (such as LEED or BREEAM) and is very heavy on energy efficiency (which in turn is the key parameter driving GHG emissions from the building over the full life cycle). The 'Ecooperating for Buildings' certification particularly targets clients in emerging economies that for a number of reasons shy away from traditional green building certifications (e.g. cost and complexity). CEMEX has selected this market segment because - buildings built today will be in operation (and thus impact the carbon balance of the corresponding countries) for a couple of decades, - a

simple certification coming from a well-known local company significantly lowers the hurdle for a certification and therefore represents a significant incentive to embrace principles of energy efficient design and construction. With the help of this certification CEMEX speeds up the implementation of low-energy (and therefore low-carbon) buildings in emerging economies. In addition, Ecoperating for Buildings paves the way for more sophisticated certifications in which CEMEX also supports its clients.

Impact of engagement, including measures of success

At the end of 2017 CEMEX had completed 10 certification projects (Ecoperating for Buildings and LEED) with a total floor space of approximately 400'000 m2. While we have not made exact calculations we estimate that this represents annual CO2 savings in the range of 3'000 t.

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

Other

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
Other, please specify (EU ETS)	Support	Support principle of market mechanisms; oppose interference in the market in Phase 3 of the EU ETS. Engage in discussion of post 2020 policy and Phase 4 (EU Commission proposals for 2020-2030). In addition ensure continued Carbon Leakage Support principle of market mechanisms; and ensure continued Carbon Leakage Status for Cement Industry. Details of engagement: Direct dialogue with EU Commission officials including in DG CLIMA and DG GROW, EU Parliamentarians and Permanent Representation of several EU Member States including UK, Poland, Croatia, Latvia and Spain. Participate in consultations.	Focus on carbon leakage and competitiveness of EU industry. Maintain carbon leakage status and avoid introduction of a cross-sectoral correction factor. Update benchmarks based on real data, Ensure innovation fund supports CCS and CCU in a wide range of relevant sectors.

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Other, please specify (US legislation, particularly California)	Support	Support principle of market mechanisms; ensure fair burden sharing, particularly a level playing field in trade-exposed sectors. Compensation for increased power prices in trade-exposed sectors. Assessment of GHG emissions over the full life cycle. Acting to build climate resilience and reduce building emissions with concrete construction. Details of engagement: Direct dialogue with state and federal officials.	Complement existing output-based benchmarking for allocation of free allowances by a border carbon adjustment mechanism that minimizes leakage; compensation for increased power prices from auctioning allowances. Adoption of life-cycle analysis (LCA) to determine GHG impact of buildings and pavements, based on latest scientific findings (e.g. Concrete Sustainability Hub at the MIT).
Other, please specify (CCS-related legislation)	Support	Support legislation that enables the development and deployment of Carbon Capture and Storage (CCS) as a potentially crucial technology to limit GHG emissions in the long run.	Policy support and financing for RD&D into CCS. Clear and pragmatic rules for deployment of CCS. Stable political and financial framework to enable timely development.
Other, please specify (US Water Resources Development Act WRDA)	Support	Support principle of adapting to extreme climate related effects by building to resilient construction standards, which are those that allow a structure to resist hazards brought on by a major storm or disaster and continue to perform its primary function after such an event	Resilient construction principles infused into policy of WRDA and all federally funded public infrastructure and housing programs.
Other, please specify (Mexican ETS)	Support	Support principle of market mechanisms; avoid locking in teething problems due to precipitated implementation of the ETS.	Learn from the EU ETS: take sufficient time to monitor installations and thoroughly analyze results before proceeding to the implementation of the ETS, including allocation.

C12.3b

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

Yes

C12.3c

(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

Support principle of market mechanisms; oppose interference in the market in Phase 3 of the EU ETS Encourage discussion of post 2020 policy and Phase 4. In addition ensure continued Carbon Leakage Status for Cement Industry.

How have you, or are you attempting to, influence the position?

Yes; via regular meetings of key TA Task Forces

Trade association

Coalition for Sustainable Cement Manufacturing and Environment (CSCME)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Support principle of market mechanisms; ensure fair burden sharing, particularly a level playing field in trade-exposed sectors

How have you, or are you attempting to, influence the position?

Active participation in CSCME work, including meetings with third parties.

Trade association

California Large Energy Consumers Association (CLECA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Compensation for increased power prices in trade-exposed sectors, e.g. via output-based benchmarking for indirect power-related emissions.

How have you, or are you attempting to, influence the position?

Active participation in CLECA work, including meetings with third parties.

Trade association

California Nevada Cement Association (CNCA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Use of life cycle analysis of GHG emissions associated with different pavement design options. With a price of carbon now in the California market, life cycle GHG emissions can be directly incorporated into a life cycle cost model for making pavement investment decisions.

How have you, or are you attempting to, influence the position?

Active participation in CNCA work, including meetings with third parties.

Trade association

Portland Cement Association (PCA)

Is your position on climate change consistent with theirs?

Unknown

Please explain the trade association's position

PCA is currently assessing the implications of current and potential proposals to regulate the cement industry under existing statutory authorities or new legislative authority.

How have you, or are you attempting to, influence the position?

Actively engaged in this initiative.

C12.3e

(C12.3e) Provide details of the other engagement activities that you undertake.

The most important of our other engagement activities are the following:

- CEMEX has signed the Paris Pledge for Action, by which we commit our full support to the Paris Agreement;
- In 2015, CEMEX has joined the Carbon Pricing Leadership Coalition (CPLC), a World Bank initiative that unites business, governments, and civil society in an effort to promote pricing emissions of GHG; we have shown particular leadership and commitment by accepting the CPLC's invitation to co-chair one of its working groups;
- CEMEX is one of the founding members of the Cement Sustainability Initiative (CSI) ; this sector project within the World Business Council for Sustainable Development (WBCSD) is also working on a number of climate-related topics; the most important ones are
- The global Getting the Numbers Right (GNR) database that is based on a standardized monitoring protocol: this global database has provided accurate and reliable information about the cement sector's energy consumption and GHG emissions for almost a decade now;

- In 2015 the CSI started the cement project within the Low-Carbon Technology Partnerships initiative (LCTPi) and has coordinated it ever since. CEMEX has taken a leading role in this project.

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?

The consistency is ensured by integration, involvement, and clear, transparent communication.

Integration means that the development and update of both our carbon strategy and our communication messages are coordinated by the same function, the Corporate Sustainability Direction, and that the people involved are the same.

Involvement implies that important decisions are prepared by consulting the whole organization. For example, all our operations are routinely participating in the update of our climate change-related position papers.

Clear, transparent communication includes e.g. the publication (both internal and external) of our position papers. In addition, the CO2 Coordination Group, made up of specialists and decision-makers at corporate, regional, and local levels, regularly convenes to exchange latest developments and discuss CEMEX' response.

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 in accordance with TCFD recommendations

Status

Complete

Attach the document

[IntegratedReport2017.pdf](#)

Content elements

Governance

Strategy

Emissions figures

Emission targets
Other metrics

Publication

In voluntary communications

Status

Complete

Attach the document

[CEMEX POSITION on Climate Change.pdf](#)

Content elements

Strategy

Risks & opportunities

Emission targets

C14. 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.

C14.1

(C14.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Chief Executive Officer	Chief Executive Officer (CEO)

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	Public or Non-Public Submission	I am submitting to
I am submitting my response	Public	Investors

Please confirm below

I have read and accept the applicable Terms