

**Module: Introduction****Page: Introduction****CC0.1****Introduction**

Please 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 principal executive offices located at Avenida Ricardo Margáin Zozaya #325, Colonia Valle del Campestre, San Pedro Garza García, Nuevo León, 66265, México. 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.

Except as the context otherwise may require, references herein in this document to "CEMEX," "we," "us" or "our" refer to CEMEX, S.A.B. de C.V. and its consolidated entities.

CEMEX is one of the largest cement companies in the world, based on annual installed cement production capacity as of December 31, 2015, and is also the second largest ready-mix concrete company in the world and one of the largest aggregates companies in the world, in each case, based on CEMEX's annual sales volumes in 2015. CEMEX is also one of the world's largest traders of cement and clinker.

CEMEX, S.A.B. de C.V. is a global building materials company that provides high-quality products and reliable services to customers and communities in more than 50 countries and maintains business relationships in over 100 countries worldwide. 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.

Our company has grown from a local player in Mexico to one of the top global companies in our industry, with approximately 43,000 employees worldwide. Today, we are strategically positioned in Mexico, the United States, Europe, South America, Central America, the Caribbean, Asia, the Middle East and Africa. Our operations network produces, distributes, and markets cement, ready-mix concrete, aggregates, and related building materials to customers in over 50 countries, and we maintain trade relationships in over 100 nations.

Key figures (as of December 31, 2015):

Annual production capacity of approximately 93 million metric tons of cement

2015 annual sales volumes of approximately 53 million cubic meters of ready-mix concrete and 148 million metric tons of aggregates

56 cement plants, plus minority participation in 12 additional cement plants

Approximately 1,608 ready-mix concrete facilities, 346 aggregates quarries, 242 land-distribution centers, and 61 marine terminals

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## CC0.2

### Reporting Year

Please state the start and end date of the year for which you are reporting data.

The current reporting year is the latest/most recent 12-month period for which data is reported. Enter the dates of this year first.

We request data for more than one reporting period for some emission accounting questions. Please provide data for the three years prior to the current reporting year if you have not provided this information before, or if this is the first time you have answered a CDP information request. (This does not apply if you have been offered and selected the option of answering the shorter questionnaire). If you are going to provide additional years of data, please give the dates of those reporting periods here. Work backwards from the most recent reporting year.

Please enter dates in following format: day(DD)/month(MM)/year(YYYY) (i.e. 31/01/2001).

#### Enter Periods that will be disclosed

Thu 01 Jan 2015 - Thu 31 Dec 2015

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## CC0.3

### Country list configuration

Please select the countries for which you will be supplying data. If you are responding to the Electric Utilities module, this selection will be carried forward to assist you in completing your response.

Select country
Austria
Bangladesh
Colombia
Costa Rica
Croatia
Czech Republic
Dominican Republic
Egypt
France
Germany
Guatemala
Hungary
Latvia
Israel
Malaysia
Mexico
Nicaragua
Panama
Philippines
Poland
Puerto Rico
Spain
Thailand
United Arab Emirates
United Kingdom
United States of America

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#### CC0.4

##### Currency selection

Please select the currency in which you would like to submit your response. All financial information contained in the response should be in this currency.

USD(\$)

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## CC0.6

### Modules

As part of the request for information on behalf of investors, electric utilities, companies with electric utility activities or assets, companies in the automobile or auto component manufacture sub-industries, companies in the oil and gas sub-industries, companies in the information technology and telecommunications sectors and companies in the food, beverage and tobacco industry group should complete supplementary questions in addition to the main questionnaire.

If you are in these sector groupings (according to the Global Industry Classification Standard (GICS)), the corresponding sector modules will not appear below but will automatically appear in the navigation bar when you save this page. If you want to query your classification, please email [respond@cdp.net](mailto:respond@cdp.net).

If you have not been presented with a sector module that you consider would be appropriate for your company to answer, please select the module below. If you wish to view the questions first, please see <https://www.cdp.net/en-US/Programmes/Pages/More-questionnaires.aspx>.

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## Further Information

As of mid-June 2016 CEMEX has divested its operations in Austria, Bangladesh, Hungary, and Thailand.

**Module: Management**

**Page: CC1. Governance**

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## CC1.1

**Where is the highest level of direct responsibility for climate change within your organization?**

Board or individual/sub-set of the Board or other committee appointed by the Board

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## CC1.1a

**Please identify the position of the individual or name of the committee with this responsibility**

The highest level of responsibility is with the CEMEX, S.A.B. de C.V. Board of Directors (the “Board”). In 2014, the Board established a Sustainability Committee which is currently comprised of 3 Board members (Armando J. García, President of the Sustainability Committee, Ian Christian Armstrong Zambrano, and Roberto Luis Zambrano Villareal) and a secretary. The Sustainability Committee is responsible for ensuring sustainable development is fully embedded in our strategy; supporting the Board 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 endorse a model of sustainability, priorities and key indicators.

Within the Executive Committee Ignacio Madridejos, former President for CEMEX's operations in Northern Europe and effective as of January 2016, current President of CEMEX's operations in the U.S., has the specific responsibility for Energy and Sustainability on a global basis, which includes Climate Change. This responsibility is managed directly by the corporate Director for Sustainability, Vicente Saisó. The corporate sustainability function is in charge of day-to-day management of topics related to climate change, e.g. definition, monitoring, and reporting of KPIs; portfolio of emission allowances and credits; identification and registration of offset projects; coordination of knowledge sharing and position definition; it also proposes changes to CEMEX' climate change strategy.

## CC1.2

**Do you provide incentives for the management of climate change issues, including the attainment of targets?**

Yes

## CC1.2a

**Please provide further details on the incentives provided for the management of climate change issues**

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator	Comment
Director on board	Monetary reward	Emissions reduction target Other: CC-related KPIs	Part of the variable compensation of at least one of the Directors on Board is directly linked to progress towards our sustainability goals (including our CO2 target).
Business unit managers	Monetary reward	Emissions reduction project Energy reduction project	Examples for individually negotiated targets include progress towards our overall emission reduction targets or KPIs that are related to climate change (e.g. substitution rate of low-carbon alternative fuels) as well as accuracy of monitoring. Effective and timely execution of projects to reduce direct and indirect emissions can also be included, if applicable.

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator	Comment
		Efficiency project Behaviour change related indicator Other: CC-related KPIs	
Energy managers	Monetary reward	Efficiency target Other: CC-related KPIs	Individually negotiated targets typically include progress towards our target for low-carbon alternative fuels. Energy efficiency targets are also found.
Environment/Sustainability managers	Monetary reward	Emissions reduction project Emissions reduction target Efficiency project Efficiency target Behaviour change related indicator Other: CC-related KPI	Individually negotiated targets cover a wide range of climate-change-related activities, including but not restricted to progress towards our overall emission reduction targets or KPIs that are related to climate change (e.g. substitution rate of low-carbon alternative fuels) as well as accuracy of monitoring, development of CC-related projects and projects to raise awareness regarding climate change.
Facility managers	Monetary reward	Emissions reduction project Efficiency project Other: CC-related KPI	Individually negotiated targets typically include progress towards our target for low-carbon alternative fuels. Project-specific targets are set where applicable and appropriate.

**Further Information**

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**CC2.1**

**Please select the option that best describes your risk management procedures with regard to climate change risks and opportunities**

A specific climate change risk management process

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**CC2.1a**

**Please provide further details on your risk management procedures with regard to climate change risks and opportunities**

Frequency of monitoring	To whom are results reported?	Geographical areas considered	How far into the future are risks considered?	Comment
Six-monthly or more frequently	Board or individual/sub-set of the Board or committee appointed by the Board	Global	> 6 years	Regulatory, scientific and other developments are constantly monitored; significant changes trigger a review of the strategy

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**CC2.1b**

**Please describe how your risk and opportunity identification processes are applied at both company and asset level**

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.
- 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 six operating regions that existed within CEMEX as of December 31, 2015, all followed regional developments and collaborated with both Corporate and Country levels. CEMEX's Northern Europe, for example, monitored relevant bodies that are responsible for climate change policy. As of January 1, 2016 CEMEX is now divided into five operating regions. CEMEX also participates in the EU Parliament Intergroup on 'Climate Change, Biodiversity and Sustainable Development', and 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.

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#### CC2.1c

##### **How do you prioritize the risks and opportunities identified?**

#### 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.

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#### CC2.1d



Please explain why you do not have a process in place for assessing and managing risks and opportunities from climate change, and whether you plan to introduce such a process in future

Main reason for not having a process	Do you plan to introduce a process?	Comment
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## CC2.2

**Is climate change integrated into your business strategy?**

Yes

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## CC2.2a

**Please describe the process of how climate change is integrated into your business strategy and any outcomes of this process**

### 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.

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.

### 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 marks 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 new target for the share of climate-friendly alternative fuels is 35% by 2020; in 2015 we have already reached a share of 27%.
- 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 3.3b)
- As a next step to our past activities in renewable electricity CEMEX decided in 2014 to spin off CEMEX Energy, dedicated to the development of low-carbon power projects;
- 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.

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**CC2.2b**

Please explain why climate change is not integrated into your business strategy

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**CC2.2c**

**Does your company use an internal price of carbon?**

No, and we currently don't anticipate doing so in the next 2 years

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**CC2.2d**

Please provide details and examples of how your company uses an internal price of carbon

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**CC2.3**

**Do you engage in activities that could either directly or indirectly influence public policy on climate change through any of the following? (tick all that apply)**

Direct engagement with policy makers  
Trade associations  
Other

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**CC2.3a**

**On what issues have you been engaging directly with policy makers?**

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution
Other: EU-ETS	Support	Support principle of market mechanisms; oppose interference in the market in Phase 3 of the EU ETS, including , early introduction of the Market Stability Reserve (MSR). Engage in discussion of post 2020 policy and Phase 4 (EU Commission proposals on 2020-2030 issued). 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 by the EU Commission on Carbon Leakage, the MSR and the post 2020 design of the EU ETS.	Leave Phase 3 alone, and discuss content of Phase 4 and its operation. Focus on carbon leakage and competitiveness of EU industry.
Other: US legislation, particularly California (AB-32)	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: 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: US Water Resources Reform and Development Act (WRRDA)	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 WRRDA and all federally funded public infrastructure and housing programs.

### CC2.3b

**Are you on the Board of any trade associations or provide funding beyond membership?**

Yes

**CC2.3c**

Please enter the details of those trade associations that are likely to take a position on climate change legislation

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
CEMBUREAU	Consistent	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.	Yes; via regular meetings of key TA Task Forces
Coalition for Sustainable Cement Manufacturing and Environment (CSCME)	Consistent	Support principle of market mechanisms; ensure fair burden sharing, particularly a level playing field in trade-exposed sectors	Active participation in CSCME work, including meetings with third parties.
California Large Energy Consumers Association (CLECA)	Consistent	Compensation for increased power prices in trade-exposed sectors, e.g. via output-based benchmarking for indirect power-related emissions.	Active participation in CLECA work, including meetings with third parties.
California Nevada Cement Association (CNCA)	Consistent	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.	Active participation in CNCA work, including meetings with third parties.

**CC2.3d**

Do you publicly disclose a list of all the research organizations that you fund?

**CC2.3e**

Please 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) and CEMEX's CEO, Fernando A. González Olivieri, was elected one of its co-chairs in late 2014; 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
  - o 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;
  - o 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.

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### CC2.3f

**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.

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### CC2.3g

Please explain why you do not engage with policy makers

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### Further Information

**Page: CC3. Targets and Initiatives**

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### CC3.1

Did you have an emissions reduction or renewable energy consumption or production target that was active (ongoing or reached completion) in the reporting year?

Intensity target

CC3.1a

Please provide details of your absolute target

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions covered by target (metric tonnes CO2e)	Target year	Is this a science-based target?	Comment
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CC3.1b

Please provide details of your intensity target

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Normalized base year emissions covered by target	Target year	Is this a science-based target?	Comment
Int1	Scope 1	99%	25%	Other: Metric tonnes CO2 per metric tonne of cementitious product	1990	0.804	2020	No, but we anticipate setting one in the next 2 years	Coverage is 100% of scope 1 emissions in our cement operations (corresponding to 99+% of all our scope 1 emissions reported under the CDP). As scope 1 represents the vast majority of our emissions there are no targets for scopes 2 and 3. Base year emissions were recalculated following a change in the asset base (divestments and

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Normalized base year emissions covered by target	Target year	Is this a science-based target?	Comment
									acquisitions) taking effect on Jan 01, 2015.

**CC3.1c**

Please also indicate what change in absolute emissions this intensity target reflects

ID	Direction of change anticipated in absolute Scope 1+2 emissions at target completion?	% change anticipated in absolute Scope 1+2 emissions	Direction of change anticipated in absolute Scope 3 emissions at target completion?	% change anticipated in absolute Scope 3 emissions	Comment
Int1	Increase	7.4	Increase	15	Projected growth of production between 1990 and 2020 (close to 44%) more than offsets emission reductions per unit of production. It is estimated that average specific scope 3 emissions are reduced by 20% (due to reduced fuel consumption, significantly higher share of alternative fuels with few upstream emissions, improved CO2 efficiency of purchased goods and services etc.). However, we do not have robust data to establish a scope 3 baseline for 1990.

**CC3.1d**

Please provide details of your renewable energy consumption and/or production target



ID	Energy types covered by target	Base year	Base year energy for energy type covered (MWh)	% renewable energy in base year	Target year	% renewable energy in target year	Comment
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**CC3.1e**

For all of your targets, please provide details on the progress made in the reporting year

ID	% complete (time)	% complete (emissions or renewable energy)	Comment
Int1	83%	87%	We expect to reach the target.

**CC3.1f**

Please explain (i) why you do not have a target; and (ii) forecast how your emissions will change over the next five years

**CC3.2**

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

CC3.2a

Please 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	Description of product/Group of products	Are you reporting low carbon product/s or avoided emissions?	Taxonomy, project or methodology used to classify product/s as low carbon or to calculate avoided emissions	% revenue from low carbon product/s in the reporting year	% R&D in low carbon product/s in the reporting year	Comment
Company-wide	<p>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.</p>	Avoided emissions	Other: Extrapolations based on work by e.g. the Concrete Sustainability Hub at the Massachusetts Institute of Technology	50%	More than 60% but less than or equal to 80%	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.

Level of aggregation	Description of product/Group of products	Are you reporting low carbon product/s or avoided emissions?	Taxonomy, project or methodology used to classify product/s as low carbon or to calculate avoided emissions	% revenue from low carbon product/s in the reporting year	% R&D in low carbon product/s in the reporting year	Comment
	<p>recent studies published by the Concrete Sustainability Hub (CSHub) at the Massachusetts Institute of Technology, <a href="http://web.mit.edu/cshub/">http://web.mit.edu/cshub/</a>); 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).</p>					

**CC3.3**

**Did you have emissions reduction initiatives that were active within the reporting year (this can include those in the planning and/or implementation phases)**

Yes

CC3.3a

Please identify the total number of projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings

Stage of development	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	15	
To be implemented*	1	100000
Implementation commenced*	1	20000
Implemented*	8	203600
Not to be implemented		

CC3.3b

For those initiatives implemented in the reporting year, please provide details in the table below

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
Other	Fuel Switch: Alternative Fuel projects to increase percentage of substitution. Alternative fuels in our kilns to reduce scope 1 emissions. 2 projects have been carried out in different cement plants	150000	Scope 1	Voluntary	3000000	1000000	<1 year	11-15 years	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
	worldwide. The expected lifetime of single projects is typically in the range of a decade. All these projects are voluntary.								
Other	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.	50000	Scope 1	Voluntary	800000	100000	<1 year	11-15 years	
Energy efficiency: Processes	Power efficiency projects to decrease the energy consumption of the plants, or of equipment/installations of the plants (decrease of Scope 2 emissions). 4 Projects have been carried out in different plants worldwide. All projects are voluntary.	3600	Scope 2 (location-based) Scope 2 (market-based)	Voluntary	400000	400000	1-3 years	11-15 years	

CC3.3c

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).
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.

#### CC3.3d

If you do not have any emissions reduction initiatives, please explain why not

#### Further Information

**Page: CC4. Communication**

#### CC4.1

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	Status	Page/Section reference	Attach the document	Comment
In mainstream reports	Complete	4, 22, 60	<a href="https://www.cdp.net/sites/2016/86/2986/Climate Change 2016/Shared">https://www.cdp.net/sites/2016/86/2986/Climate Change 2016/Shared</a>	

Publication	Status	Page/Section reference	Attach the document	Comment
(including an integrated report) but have not used the CDSB Framework			Documents/Attachments/CC4.1/CemexAnnualReport2015.pdf	
In voluntary communications	Complete	7, 12, 15, 17, 18, 21, 46-53	<a href="https://www.cdp.net/sites/2016/86/2986/Climate%20Change%202016/Shared%20Documents/Attachments/CC4.1/CemexSustainableDevelopmentReport2015.pdf">https://www.cdp.net/sites/2016/86/2986/Climate Change 2016/Shared Documents/Attachments/CC4.1/CemexSustainableDevelopmentReport2015.pdf</a>	
In voluntary communications	Complete	all	<a href="https://www.cdp.net/sites/2016/86/2986/Climate%20Change%202016/Shared%20Documents/Attachments/CC4.1/CEMEX_POSITION_on_Climate_Change.pdf">https://www.cdp.net/sites/2016/86/2986/Climate Change 2016/Shared Documents/Attachments/CC4.1/CEMEX_POSITION_on_Climate_Change.pdf</a>	
In mainstream reports (including an integrated report) but have not used the CDSB Framework	Complete	24, 39, 48-53, 90-96, 117-118, 157, 238	<a href="https://www.cdp.net/sites/2016/86/2986/Climate%20Change%202016/Shared%20Documents/Attachments/CC4.1/CEMEX2015_20F.pdf">https://www.cdp.net/sites/2016/86/2986/Climate Change 2016/Shared Documents/Attachments/CC4.1/CEMEX2015_20F.pdf</a>	

#### Further Information

All page numbers refer to the numbering as done by the pdf software; discrepancies with printed page numbers are possible.

### Module: Risks and Opportunities

#### Page: CC5. Climate Change Risks

##### CC5.1

**Have you identified any inherent climate change risks that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply**

Risks driven by changes in regulation

Risks driven by changes in physical climate parameters

Risks driven by changes in other climate-related developments

Please describe your inherent risks that are driven by changes in regulation

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Cap and trade schemes	Cap and trade as such is not necessarily a risk; while it can increase our cost of production in various ways (see below) it also offers opportunities for GHG-efficient companies and (under certain circumstances) the possibility of passing on additional costs to our customers. In fact, CEMEX perceives cap and trade as the preferred policy instrument when it comes to regulation of GHG emissions. However, if a cap and trade scheme is badly designed the consequences can be devastating for both the economy	Increased operational cost	Up to 1 year	Direct	About as likely as not	High	Totals provided are indicative only; emission reduction is discussed under Cost of management: Purchase of EUAs Several scenarios for the EU ETS: 1. Free allocation at current levels: 0 2. No free allocation: 70 mln USD in 2020 The decision on the cross-sectoral reduction factor is pending; using the original factor as a proxy an impact in the higher single-digit million USD range would be likely. Assumptions: - EUA price (6.0 EUR) and	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	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 a total of 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



Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>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). Fortunately, policy maker have</p>						<p>exchange rate (1.13 USD/EUR) as of mid-May 2016 - No significant further reduction of specific emissions in our EU plants (conservative estimate) - no other mitigation measures such as a cost pass-through (which may be possible under certain conditions) or import of clinker from outside the EU Penalties for non-compliance Under the EU ETS this is EUR 100 (ca. USD 110) per EUA not submitted; in the extremely unlikely case that one of the larger CEMEX installations does not submit any EUAs this would amount to some USD 150 - 200</p>	<p>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. The risk of non-compliance is managed by internal processes that include, among others, regular monitoring of emissions and allowances, scenario planning for allocation and emission levels, and detailed provisions to ensure EUAs are</p>	<p>management does not cause additional costs.</p>

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>understood the risks related to carbon leakage, and the cap and trade schemes that will cover CEMEX operations over the next years (European Union, California) have included mechanisms (mainly free allocation) to avoid carbon leakage. However, in the EU the test of whether a sector is subject to international competition only partly reflects economic realities, so in the current review the sector might lose preferential free allocation although it is still subject to competition by imports from countries with less stringent carbon regulation. The resulting need to buy additional European Union</p>						mln.	surrendered on time.	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>Allowances in the market (or alternatively upgrade our technology) would increase our production cost and might reduce demand for our products, the latter primarily due to loss of market share to imports. The exact level of the cross-sectoral reduction factor that will reduce free allocation for the rest of the third phase of the EU ETS is currently being defined. In addition, there is the risk of non-compliance with the cap-and-trade scheme and corresponding penalties. For a more detailed discussion of regulation-related risks please refer to our Form 20-F (see also section 4 of our CDP submission).</p>								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Carbon taxes	Carbon taxes can have a distorting impact on competition if they do not cover all competing goods/services in a similar way. Like with cap and trade this competition is not restricted to different geographies, but also includes potential substitutes and different phases of the life cycle. For a company like CEMEX this could translate into reduced competitiveness vs. e.g. imports or other building materials if those are not subject to similar regulation. In addition, taxes in general do not offer the option to actively manage and reduce compliance costs by e.g. trading or development of offset projects. Our	Increased operational cost	1 to 3 years	Direct	Unlikely	Medium-high	The net implication of a carbon tax without any measure to protect against carbon leakage would be the same as that of a cap-and-trade mechanism without free allocation, i.e. for the case of our EU operations a carbon tax of 6.0 EUR/t CO2 would translate into a financial impact of some 70 mln USD/y	In order to reduce potential exposure 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	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 a total of 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

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	estimates of timeframe, likelihood, and magnitude of impact refer to enactment of carbon taxes for cement plants (our main emitters) at a moderate level in a number of countries. For a more detailed discussion of regulation-related risks please refer to our Form 20-F (see also section 4 of our CDP submission).							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. The methods to manage this risk are practically the same as those related to cap-and-trade.	

**CC5.1b**

Please describe your inherent risks that are driven by changes in physical climate parameters

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
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Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Tropical cyclones (hurricanes and typhoons)	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 (Bangladesh, Philippines)	Increased capital cost	>6 years	Direct	About as likely as not	Low-medium	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. 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.	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	The total annual cost of this protection is 29.7 mln USD. Please note that this insurance covers a wide range of physical risks, not only those related to climate change; detailed estimates for the latter are not available.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								<p>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.</p>	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								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.	
Tropical cyclones (hurricanes and typhoons)	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	Reduction/disruption in production capacity	Up to 1 year	Indirect (Supply chain)	About as likely as not	Medium	Based on work done in Egypt and the Philippines for those two countries the total potential risk was estimated at 250 – 300 mln USD	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,	These activities are included as part of existing operational policies and do not cause additional costs.



Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	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".							during hurricane season	
Sea level rise	Higher sea levels threaten CEMEX operations on the sea board, such as maritime terminals in various countries (e.g. Mexico, US,	Other: Increased capital cost; Disruption of production capacity	>6 years	Direct	Likely	Medium	A common event of hurricane, typhoon and flooding may be in the order of 100-320 kUSD of physical damage, although	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	The total annual cost of this protection is 29.7 mln USD. Please note that this insurance covers a wide range of physical risks, not only those

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>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.</p>						<p>higher damage in the million USD range has been observed. 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.</p>	<p>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.</p>	<p>related to climate change; detailed estimates for the latter are not available.</p>

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								<p>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</p>	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								For more details on FM Global's scoring system please visit their website.	

CC5.1c

Please describe your inherent risks that are driven by changes in other climate-related developments

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Reputation	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	Wider social disadvantages	>6 years	Direct	Unlikely	Medium-high	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	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	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

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>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</p>						<p>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.</p>	<p>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</p>	<p>CEMEX has invested a total of 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. Other activities mentioned do not lead to material additional costs.</p>

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>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.</p>							<p>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. In 2010, CEMEX UK was the first cement producer to present a product carbon footprint that was certified by the Carbon Trust. In the same year CEMEX developed a methodology that is compatible with the most relevant standards for carbon footprint and implemented it in all countries where we are present. Last year, coverage of our Carbon Footprint tool reached 100% of our cement, aggregates, and</p>	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								ready-mixed production.	
Changing consumer behaviour	Increased awareness of climate change, coupled with misperceptions or lack of information regarding the full life-cycle impact of different materials, might drive consumers to substitute other materials that they perceive as more climate-friendly for our products. We see that particularly in markets with a well developed environmental awareness such as Western Europe and the US some of our competitors (typically from other sectors) try to play this card, often neglecting essential phases in the life-cycle of a building or a structure . Such a	Reduced demand for goods/services	>6 years	Direct	Unlikely	Medium-high	We currently estimate that a massive consumer shift could reduce demand for our products by as much as 10% in a specific country operation in the worst case. 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.	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), supports the Concrete Sustainability Hub, a research project at the MIT that, among other topics, analyzes GHG emissions of structures and buildings made of concrete. CEMEX has started to provide	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

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>shift in customer preferences would have direct consequences for the demand for our products. However, given that there are no objective reasons for this shift (for example, a recent study by the MIT shows that concrete houses emit less GHG over the full life cycle than wooden ones) we believe that this is rather unlikely (less than 33% probability) to have a material impact. In theory the potential for such a substitution is significant; however, CEMEX believes that various factors such as price and availability of competing materials as well as the emergence of an enlightened</p>							<p>Carbon Footprint data on a cradle-to-gate basis to its stakeholders. In the meantime, coverage of our Carbon Footprint has reached 100% of cement, aggregates, and ready-mixed production.</p>	



Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	customer who wants to see and understand the facts behind the claims in ads will limit the potential impact to a relatively small fraction of that potential impact.								

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CC5.1d

Please explain why you do not consider your company to be exposed to inherent risks driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

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CC5.1e

Please explain why you do not consider your company to be exposed to inherent risks driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

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CC5.1f

Please explain why you do not consider your company to be exposed to inherent risks driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

## Further Information

Page: **CC6. Climate Change Opportunities**

### CC6.1

Have you identified any inherent climate change opportunities that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

- Opportunities driven by changes in regulation
- Opportunities driven by changes in physical climate parameters
- Opportunities driven by changes in other climate-related developments

### CC6.1a

Please describe your inherent opportunities that are driven by changes in regulation

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Cap and trade schemes	A well designed cap and trade scheme will reward the most	Other: Competitive Advantage	Up to 1 year	Direct	Virtually certain	Medium-high	Our CO2 target implies a reduction of around 200 kg CO2 per metric tonne of product from 1990 to 2020; this means for our operations in Germany (where we produce more than 2.5 mln tonnes of cement per year) a yearly reduction of 500'000 t	In order to improve the carbon balance CEMEX is using all available	The operational cost of activities described above is typically

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	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						CO2 or at the current price of EUAs (6.0 EUR) and exchange rate (1.13 USD/EUR) a positive impact of close to 3.5 mln USD per year; at higher EUA prices the savings will increase accordingly	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	negative; the investment costs vary from almost 0 (improved operational practices) to several million USD. Since 2005 CEMEX has invested a total of 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-

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>(compared to our 1990 baseline). For example, with less GHG-intensive alternative fuels making up some 27% of our kiln fuel needs in 2015, we are the industry leader 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</p>							<p>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 correspondin</p>	<p>years/y at a full cost of some 400 kUSD</p>

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Product efficiency regulations and standards	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	New products/business services	Up to 1 year	Indirect (Client)	Very likely	High	A French study ("Carbon Constrained Scenarios" by FONDDR1, <a href="http://www.iddri.org/Publications/Rapports-and-briefing-papers/08_Fonddri_summary-for-industrial-decision-makers.pdf">http://www.iddri.org/Publications/Rapports-and-briefing-papers/08_Fonddri_summary-for-industrial-decision-makers.pdf</a> ) 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.	g legislation. 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	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. On top of the R&D there are expenses for e.g. certification and market introduction that are typically higher than the actual

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>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</p>							<p>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</p>	<p>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.</p>

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>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.</p> <p>- More stringent building codes are likely to foster the development of new materials and constructive solutions; this will give innovative</p>								

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	companies like CEMEX a competitive edge and will allow for higher margins on these new products.								

**CC6.1b**

Please describe the inherent opportunities that are driven by changes in physical climate parameters

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Change in precipitation extremes and droughts	Extreme rainfall 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	Increased demand for existing products/services	>6 years	Indirect (Client)	Very likely	Medium-high	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	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	There are virtually no additional climate change-related costs for stakeholder information as this is part of our normal marketing activities. The cost of developing a



Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	structures for water management (such as dams) as well as more flood-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 hit by these developments.						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.	physical consequences of climate change. For example, CEMEX has developed low-cost concrete houses that are resilient to disaster.	new product will depend on a number of circumstances and are difficult to quantify in a generic way. On top of the R&D there are expenses for e.g. certification are 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.
Other physical climate opportunities	Every year tropical cyclones and other extreme wind events destroy numerous houses; many of these houses	Increased demand for existing products/services	>6 years	Indirect (Client)	About as likely as not	Medium-high	The potential opportunities related to physical impacts of climate change can only be roughly	The methods to manage these opportunities are stakeholder information (about our products) as well as the	There are virtually no additional climate change-related costs for stakeholder information as this is part of our

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>were built in lightweight construction and would most likely have survived had they been built as a massive construction in concrete. Increased frequency and severity of those events would therefore drive a change in construction patterns and lead to an increased demand for our products. In the case of our current markets we consider that the Southern US, Latin America, and south-east Asia are most likely to be hit by these developments if they materialize.</p>						<p>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.</p>	<p>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.</p>	<p>normal marketing activities. The cost of developing a new product will depend on a number of circumstances and are difficult to quantify in a generic way. On top of the R&amp;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.</p>

Please describe the inherent opportunities that are driven by changes in other climate-related developments

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Reputation	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	Wider social benefits	>6 years	Direct	Likely	High	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 5.1c, i.e. a potential increase of sales by 5% (the equivalent of 125 mln USD per year in a country like the US).	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.	Total cost is the sum of the costs discussed in 6.1. 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

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>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</p>								

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>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.</p>								
Changing consumer behaviour	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	Increased demand for existing products/services	>6 years	Direct	Likely	High	We estimate that the positive impact of this opportunity could be of a similar size than that of the reputational opportunity described in	CEMEX is engaged in a number of efforts to provide its stakeholders with factual information about the environmental performance of its products. The	Our financial contribution to the MIT Concrete Sustainability Hub is indirect, via membership in both PCA and NRMCA. In-kind contributions (expertise, data

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>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 .</p>						<p>the previous line, i.e. some 125 mln USD for the US.</p>	<p>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</p>	<p>etc.) are immaterial. The one-off cost for the development and implementation of the Carbon Footprint tool was in the range of 200 kUSD</p>

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								the last year, coverage of our Carbon Footprint has reached 100% of our cement, aggregates, and ready-mixed production.	

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CC6.1d

Please explain why you do not consider your company to be exposed to inherent opportunities driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

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CC6.1e

Please explain why you do not consider your company to be exposed to inherent opportunities driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

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CC6.1f

Please explain why you do not consider your company to be exposed to inherent opportunities driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

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#### Further Information

**Module: GHG Emissions Accounting, Energy and Fuel Use, and Trading**

**Page: CC7. Emissions Methodology**

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#### CC7.1

**Please provide your base year and base year emissions (Scopes 1 and 2)**

Scope	Base year	Base year emissions (metric tonnes CO2e)
Scope 1	Mon 01 Jan 1990 - Mon 31 Dec 1990	43089528
Scope 2 (location-based)	Mon 01 Jan 1990 - Mon 31 Dec 1990	3598325
Scope 2 (market-based)	Mon 01 Jan 1990 - Mon 31 Dec 1990	3598325

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#### CC7.2

**Please give the name of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions**



**Please select the published methodologies that you use**

WBCSD: The Cement CO2 and Energy Protocol

Other

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**CC7.2a**

**If you have selected "Other" in CC7.2 please 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 2015; 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).

---

**CC7.3**

**Please give the source for the global warming potentials you have used**

<b>Gas</b>	<b>Reference</b>
CO2	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	IPCC Fourth Assessment Report (AR4 - 100 year)
HFCs	IPCC Fourth Assessment Report (AR4 - 100 year)
PFCs	IPCC Fourth Assessment Report (AR4 - 100 year)
SF6	IPCC Fourth Assessment Report (AR4 - 100 year)

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**CC7.4**

Please give the emissions factors you have applied and their origin; alternatively, please attach an Excel spreadsheet with this data at the bottom of this page

Fuel/Material/Energy	Emission Factor	Unit	Reference
Other: Cement Clinker	0.525	metric tonnes CO2e per metric tonne	WBCSD Cement CO2 & Energy Protocol v3

---

**Further Information**

The numbers in CC7.1 differ from previous years as we recalculated them to reflect changes in our asset base. The factor for process emissions for cement clinker (CC7.4) is a robust default factor used by many of our plants; however, some plants, particularly those covered by emissions trading, use plant-specific data. Likewise, some of our operations use emission factors for fuels based on laboratory measurements of chemical composition and heating value.

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**Attachments**

<https://www.cdp.net/sites/2016/86/2986/Climate Change 2016/Shared Documents/Attachments/ClimateChange2016/CC7.EmissionsMethodology/CSI CO2 Emission Factors.xlsx>

**Page: CC8. Emissions Data - (1 Jan 2015 - 31 Dec 2015)**

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**CC8.1**

Please select the boundary you are using for your Scope 1 and 2 greenhouse gas inventory

Financial control

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**CC8.2**

**Please provide your gross global Scope 1 emissions figures in metric tonnes CO2e**

44113781

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**CC8.3**

**Does your company have any operations in markets providing product or supplier specific data in the form of contractual instruments?**

Yes

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**CC8.3a**

**Please provide your gross global Scope 2 emissions figures in metric tonnes CO2e**

Scope 2, location-based	Scope 2, market-based (if applicable)	Comment
3832869	4172251	Market-based emissions are higher as in some markets we purchase electricity from providers with a higher emission factor than the location-based factor.

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**CC8.4**

**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

**CC8.4a**

**Please 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**

<b>Source</b>	<b>Relevance of Scope 1 emissions from this source</b>	<b>Relevance of location-based Scope 2 emissions from this source</b>	<b>Relevance of market-based Scope 2 emissions from this source (if applicable)</b>	<b>Explain why the source is excluded</b>
Building Product Operations	Emissions are not relevant	Emissions are not relevant	Emissions are not relevant	Small emissions compared to other business; however, future reporting envisaged.
Logistics Operations	No emissions excluded	Emissions are not relevant	Emissions are not relevant	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.
Offices	Emissions are not relevant	Emissions are not relevant	Emissions are not relevant	Small emissions compared to plant operations

**CC8.5**

**Please estimate the level of uncertainty of the total gross global Scope 1 and 2 emissions figures that you have supplied and specify the sources of uncertainty in your data gathering, handling and calculations**

Scope	Uncertainty range	Main sources of uncertainty	Please expand on the uncertainty in your data
Scope 1	Less than or equal to 2%	Extrapolation Sampling Other: Emission Factors	The methodology for our cement business is known as robust, calculations are performed at plant level using operational data with high accuracy (e.g. clinker production, fuel consumption). The use of default emission factors is a potential source of uncertainty but is not considered to result in systematic errors. The methodology for our other businesses is much less robust, but contributes on the order of 1% to our total scope 1 emissions.
Scope 2 (location-based)	Less than or equal to 2%	Extrapolation Sampling Other: Emission Factors	The methodology for our cement business is known as robust, calculations are performed at plant level using operational data for electricity consumption. The emission factors for purchased power are in general beyond our control but are in general considered to be reasonably exact. The question of whether the average emission factor is the most appropriate one or whether marginal factors (or those calculated in e.g. some CDM methodologies) better reflect actual impacts is not included in our assessment here. The methodology for our other businesses is much less robust, but contributes typically only some 10 - 13% to our total scope 2 emissions so that even large uncertainties do not have a big impact on the final result.
Scope 2 (market-based)	Less than or equal to 2%	Extrapolation Sampling	Precision of market-based emission factors is in general better than those of location-based emission factors. However, as in our current structure we have market-based EFs for only around 30% of our total power consumption the overall error is still dominated by the location-based approach.

#### CC8.6

**Please indicate the verification/assurance status that applies to your reported Scope 1 emissions**

Third party verification or assurance process in place

#### CC8.6a

**Please provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements**

Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/section reference	Relevant standard	Proportion of reported Scope 1 emissions verified (%)
Annual process	Complete	Limited assurance	<a href="https://www.cdp.net/sites/2016/86/2986/Climate Change 2016/Shared Documents/Attachments/CC8.6a/Final PwC 2015 Assurance Report.pdf">https://www.cdp.net/sites/2016/86/2986/Climate Change 2016/Shared Documents/Attachments/CC8.6a/Final PwC 2015 Assurance Report.pdf</a>	all	ISAE3000	99

#### CC8.6b

Please provide further details of the regulatory regime to which you are complying that specifies the use of Continuous Emissions Monitoring Systems (CEMS)

Regulation	% of emissions covered by the system	Compliance period	Evidence of submission

#### CC8.7

Please indicate the verification/assurance status that applies to at least one of your reported Scope 2 emissions figures

Third party verification or assurance process in place

#### CC8.7a

Please provide further details of the verification/assurance undertaken for your location-based and/or market-based Scope 2 emissions, and attach the relevant statements

Location-based or market-based figure?	Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 2 emissions verified (%)
Location-based	Annual process	Complete	Limited assurance	<a href="https://www.cdp.net/sites/2016/86/2986/Climate%20Change%202016/Shared%20Documents/Attachments/CC8.7a/Final%20PwC%202015%20Assurance%20Report.pdf">https://www.cdp.net/sites/2016/86/2986/Climate Change 2016/Shared Documents/Attachments/CC8.7a/Final PwC 2015 Assurance Report.pdf</a>	all	ISAE3000	90

#### CC8.8

Please identify if any data points have been verified as part of the third party verification work undertaken, other than the verification of emissions figures reported in CC8.6, CC8.7 and CC14.2

Additional data points verified	Comment
Other: Sustainability KPIs not related to climate change	

#### CC8.9

Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

Yes

#### CC8.9a

Please provide the emissions from biologically sequestered carbon relevant to your organization in metric tonnes CO2

2096248

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**Further Information**

**Page: CC9. Scope 1 Emissions Breakdown - (1 Jan 2015 - 31 Dec 2015)**

---

**CC9.1**

**Do you have Scope 1 emissions sources in more than one country?**

Yes

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**CC9.1a**

**Please break down your total gross global Scope 1 emissions by country/region**

Country/Region	Scope 1 metric tonnes CO2e
Americas	27376271
Asia, Australasia, Middle East and Africa	6913525
Europe	2133619
United Kingdom	1467359
Spain	3481331
Poland	1435082
Germany	1306595

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**CC9.2**



**Please indicate which other Scope 1 emissions breakdowns you are able to provide (tick all that apply)**

By business division

By activity

---

**CC9.2a**

**Please break down your total gross global Scope 1 emissions by business division**

<b>Business division</b>	<b>Scope 1 emissions (metric tonnes CO2e)</b>
CEMEX LatAm Holdings, S.A. ("CLH")	4056439
Rest of CEMEX	40057342

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**CC9.2b**

**Please break down your total gross global Scope 1 emissions by facility**

<b>Facility</b>	<b>Scope 1 emissions (metric tonnes CO2e)</b>	<b>Latitude</b>	<b>Longitude</b>
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**CC9.2c**

**Please break down your total gross global Scope 1 emissions by GHG type**

GHG type	Scope 1 emissions (metric tonnes CO2e)
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#### CC9.2d

Please break down your total gross global Scope 1 emissions by activity

Activity	Scope 1 emissions (metric tonnes CO2e)
Cement	43655609
Aggregates	286347
Ready-mix concrete	121233
Asphalt	50592

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#### Further Information

CEMEX Latam Holdings, S.A. ("CLH") is, strictly speaking, not a business division, but a publicly traded building solutions company with operations in Colombia, Panama, Costa Rica, Nicaragua, El Salvador, Guatemala, and Brazil, in which CEMEX, S.A.B. de C.V. indirectly holds a controlling stake. We have decided to report CLH's emissions in CC9.2a in order to provide additional information and transparency to CEMEX and CLH's stakeholders.

**Page: CC10. Scope 2 Emissions Breakdown - (1 Jan 2015 - 31 Dec 2015)**

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#### CC10.1

Do you have Scope 2 emissions sources in more than one country?

Yes

---

**CC10.1a**

**Please break down your total gross global Scope 2 emissions and energy consumption by country/region**

Country/Region	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes 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)
Rest of world	1013689	933273	2564078	92500
Americas	2367993	2804202	5127166	804898
Germany	222951	219047	284466	0
United Kingdom	228235	228235	445162	0

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**CC10.2**

**Please indicate which other Scope 2 emissions breakdowns you are able to provide (tick all that apply)**

By business division  
By activity

---

**CC10.2a**

**Please break down your total gross global Scope 2 emissions by business division**

Business division	Scope 2 emissions, location based (metric tonnes CO2e)	Scope 2 emissions, market-based (metric tonnes CO2e)
CEMEX LatAm Holdings, S.A. ("CLH")	138507	77699
Rest of CEMEX	3694361	4107058

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**CC10.2b**

Please break down your total gross global Scope 2 emissions by facility

Facility	Scope 2 emissions, location based (metric tonnes CO2e)	Scope 2 emissions, market-based (metric tonnes CO2e)
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**CC10.2c**

Please break down your total gross global Scope 2 emissions by activity

Activity	Scope 2 emissions, location based (metric tonnes CO2e)	Scope 2 emissions, market-based (metric tonnes CO2e)
Cement	3434237	3787125
Aggregates	318136	318136
Ready-mix concrete	79496	79496

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**Further Information**

CEMEX Latam Holdings, S.A. ("CLH") is, strictly speaking, not a business division, but a publicly traded building solutions company with operations in Colombia, Panama, Costa Rica, Nicaragua, El Salvador, Guatemala, and Brazil, in which CEMEX, S.A.B. de C.V. indirectly holds a controlling stake. We have decided to report CLH's emissions in CC10.2a in order to provide additional information and transparency to CEMEX and CLH's stakeholders.

**Page: CC11. Energy**

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**CC11.1**

**What percentage of your total operational spend in the reporting year was on energy?**

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

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**CC11.2**

**Please state how much heat, steam, and cooling in MWh your organization has purchased and consumed during the reporting year**

Energy type	Energy purchased and consumed (MWh)
Heat	0
Steam	0
Cooling	0

---

**CC11.3**

**Please state how much fuel in MWh your organization has consumed (for energy purposes) during the reporting year**

56277134

CC11.3a

Please complete the table by breaking down the total "Fuel" figure entered above by fuel type

Fuels	MWh
Petroleum coke	21540433
Bituminous coal	12916945
Lignite	114762
Natural gas	2080625
Diesel/Gas oil	391153
Other: Alternative Fuels	14916418
Shale oil	11329
Distillate fuel oil No 6	4305469

CC11.4

Please provide details of the electricity, heat, steam or cooling amounts that were accounted at a low carbon emission factor in the market-based Scope 2 figure reported in CC8.3a

Basis for applying a low carbon emission factor	MWh consumed associated with low carbon electricity, heat, steam or cooling	Comment
Grid-connected electricity generation owned, operated or hosted by the company, where electricity attribute certificates do not exist or are not required for a usage claim	35827	Waste-heat-to-energy plant in our Solid plant in the Philippines, as well as 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.
Direct procurement contract with a gridconnected generator or Power Purchase Agreement (PPA), where electricity attribute certificates do not exist or are not required for a usage claim	795071	PPAs with wind and hydropower plants in Mexico and Panama, respectively

Basis for applying a low carbon emission factor	MWh consumed associated with low carbon electricity, heat, steam or cooling	Comment
Contract with suppliers or utilities, with a supplier-specific emission rate, not backed by electricity attribute certificates	66500	PPA with local utility in Latvia, specifying a generation mix of 98+% hydropower and the balance by NG cogeneration.

### CC11.5

Please report how much electricity you produce in MWh, and how much electricity you consume in MWh

Total electricity consumed (MWh)	Consumed electricity that is purchased (MWh)	Total electricity produced (MWh)	Total renewable electricity produced (MWh)	Consumed renewable electricity that is produced by company (MWh)	Comment
8420872	7987193	438759	0	0	Own generation only includes plants under our financial control (scope 1), not plants merely hosted by us.

### Further Information

Page: **CC12. Emissions Performance**

### CC12.1

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

Increased

CC12.1a

Please 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

Reason	Emissions value (percentage)	Direction of change	Please explain and include calculation
Emissions reduction activities	0.2	Decrease	In order to provide a consistent and conservative calculation the following approach was followed: In the first step a net impact from emission reduction activities was estimated by subtracting the impacts discussed in the other rows of this table (Acquisitions, Change in output) from the overall emission change from 2014 to 2015 (Scopes 1 and 2). This gives a net decrease of 104 kt CO <sub>2</sub> . In a second step this number was compared with the emission reductions reported in CC3.3b (both in this year and in previous years as many emission reduction activities do not yield full impact in year 1). It turned out that the 104 kt CO <sub>2</sub> was a rather low number and therefore an overestimation of the actual impact of emission reduction activities can be ruled out. Finally, the decrease of 104 kt CO <sub>2</sub> was divided by the total sum of our 2014 emissions in scopes 1 and 2 (in accordance with the formula on p. 152 of the guidance doc), giving a net decrease of 0.2%. Impact of emission reduction activities = -104 kt CO <sub>2</sub> / 47.2 mln t CO <sub>2</sub> = -0.2%
Divestment	0	No change	The impact of an asset swap (simultaneous acquisition and divestment) is discussed under Acquisitions.
Acquisitions	2.9	Increase	With effect Jan 1, 2015 CEMEX swapped a number of cement plants for other plants with higher per-unit emissions. The resulting impact on our average specific emissions has been calculated to lead to additional 1.35 mln t CO <sub>2</sub> within our scopes 1 and 2. Dividing this number by total 2014 emissions within the same scopes (in line with the formula on p. 152 of the guidance doc) yields an increase of 2.9%. Please note that this calculation only discusses the impact of the asset swap on our per-unit emissions. The impact on production volumes is integrated in the line Change in output.
Mergers			
Change in output	1.1	Decrease	Changes in production volumes in our main business activities (cement, aggregates, ready-mix concrete) from 2014 to 2015 are multiplied by average specific emissions per unit of product within scopes 1 and 2. The sum of these emissions is a drop by 515 kt CO <sub>2</sub> . Dividing this number by total 2014 emissions within the same scopes (in line with the formula on p. 152 of the guidance doc) gives a decrease of 1.1%.
Change in methodology			
Change in boundary			



Reason	Emissions value (percentage)	Direction of change	Please explain and include calculation
Change in physical operating conditions			
Unidentified			
Other			

#### CC12.1b

Is your emissions performance calculations in CC12.1 and CC12.1a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

#### CC12.2

Please describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per unit currency total revenue

Intensity figure =	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator: Unit total revenue	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
0.00339	metric tonnes CO2e	14127000000	Location-based	9.9	Increase	The main driver for the increase is the appreciation of the USD - a more expensive USD means that with same physical performance

Intensity figure =	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator: Unit total revenue	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
						and prices (in local currency) the indicator goes up. The asset swap discussed in CC12.1a also adds to the increase. Emission reduction activities dampen the increase by 0.2%-points (which is a conservative estimate, see above).

### CC12.3

Please provide any additional intensity (normalized) metrics that are appropriate to your business operations

Intensity figure =	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator	Metric denominator: Unit total	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
0.728	metric tonnes CO <sub>2</sub> e	Other: metric tonne of cementitious product	64712000	Location-based	2.7	Increase	Main reason is the impact from the asset swap discussed in CC12.1a. Metric only considers scope 1 + 2 emissions related to cement production.
4.71	metric tonnes CO <sub>2</sub> e	Other: 1000 metric tonne of aggregates	148000	Location-based	1.9	Increase	Difference is mainly driven by a shift of production towards regions with higher specific emissions. Metric only considers scope 1 + 2 emissions related to aggregates production.
0.00366	metric tonnes CO <sub>2</sub> e	Other: m3 of readymix concrete	53000000	Location-based	1.3	Increase	Difference is mainly driven by the asset swap. Metric only considers scope 1 + 2 emissions related to readymix concrete production.

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**Further Information****Page: CC13. Emissions Trading**

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**CC13.1**

**Do you participate in any emissions trading schemes?**

Yes

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**CC13.1a**

**Please complete the following table for each of the emission trading schemes in which you participate**

Scheme name	Period for which data is supplied	Allowances allocated	Allowances purchased	Verified emissions in metric tonnes CO <sub>2</sub> e	Details of ownership
European Union ETS	Wed 01 Jan 2014 - Wed 31 Dec 2014	9971891	0	8826186	Facilities we own and operate
European Union ETS	Thu 01 Jan 2015 - Thu 31 Dec 2015	10472244	0	9635640	Facilities we own and operate
California's Greenhouse Gas Cap and Trade Program	Wed 01 Jan 2014 - Wed 31 Dec 2014	1684451			Facilities we own and operate
California's Greenhouse Gas Cap and Trade Program	Thu 01 Jan 2015 - Thu 31 Dec 2015	2270886			Facilities we own and operate

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**CC13.1b****What is your strategy for complying with the schemes 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).

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.

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**CC13.2****Has your organization originated any project-based carbon credits or purchased any within the reporting period?**

No

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**CC13.2a**

Please provide details on the project-based carbon credits originated or purchased by your organization in the reporting period

Credit origination or credit purchase	Project type	Project identification	Verified to which standard	Number of credits (metric tonnes of CO2e)	Number of credits (metric tonnes CO2e): Risk adjusted volume	Credits cancelled	Purpose, e.g. compliance
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**Further Information**

Verified emissions under the CA ETS are considered commercially sensitive information due to the specifics of that ETS.

**Page: CC14. Scope 3 Emissions**

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**CC14.1**

**Please account for your organization's Scope 3 emissions, disclosing and explaining any exclusions**

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
Purchased goods and services	Relevant, calculated	5249470	Calculated from data collected with the CEMEX CO2 Footprint methodology from 2013 taking the production volume from 2015; 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).	0.00%	
Capital goods	Not relevant, explanation provided				Determined as not relevant in assessment by Cement Sustainability Initiative within the World Business Council for Sustainable Development (development of sector-specific Scope 3 guidance).
Fuel-and-energy-related activities	Relevant, calculated	2069307	Calculated based on detailed energy consumption figures (taken from the protocol for Scope 1+2	0.00%	

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
(not included in Scope 1 or 2)			emissions) and emission factors for cradle-to-gate GHG emissions from LCA database.		
Upstream transportation and distribution	Relevant, calculated	1897943	Calculated from data collected with the CEMEX CO2 Footprint methodology from 2013 taking the production volume from 2015; 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).	0.00%	
Waste generated in operations	Not relevant, explanation provided				Determined as not relevant in assessment by Cement Sustainability Initiative within the World Business Council for Sustainable Development (development of sector-specific Scope 3 guidance).
Business travel	Not relevant, explanation provided				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	Not relevant, explanation provided				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	Not relevant, explanation				Determined as not relevant in assessment by Cement Sustainability Initiative within

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
	provided				the World Business Council for Sustainable Development (development of sector-specific Scope 3 guidance).
Downstream transportation and distribution	Relevant, calculated	861149	Seaborne transportation of clinker and cement by our trading operations, based on total distance traveled and assessment of specific fuel consumption	100.00%	
Processing of sold products	Not relevant, explanation provided				Determined as not relevant in assessment by Cement Sustainability Initiative within the World Business Council for Sustainable Development (development of sector-specific Scope 3 guidance).
Use of sold products	Not relevant, explanation provided				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 3.2).
End of life treatment of sold products	Not relevant, explanation provided				Determined as not relevant in assessment by Cement Sustainability Initiative within the World Business Council for Sustainable Development (development of sector-specific Scope 3 guidance).
Downstream leased assets	Not relevant, explanation provided				Determined as not relevant in assessment by Cement Sustainability Initiative within the World Business Council for Sustainable Development (development
Franchises	Not relevant,				Determined as not relevant in assessment

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
	explanation provided				by Cement Sustainability Initiative within the World Business Council for Sustainable Development (development of sector-specific Scope 3 guidance).
Investments	Not relevant, explanation provided				Determined as not relevant in assessment by Cement Sustainability Initiative within the World Business Council for Sustainable Development (development of sector-specific Scope 3 guidance).
Other (upstream)	Not relevant, explanation provided				Determined as not relevant in assessment by Cement Sustainability Initiative within the World Business Council for Sustainable Development (development of sector-specific Scope 3 guidance).
Other (downstream)	Not relevant, explanation provided				Determined as not relevant in assessment by Cement Sustainability Initiative within the World Business Council for Sustainable Development (development of sector-specific Scope 3 guidance).

**CC14.2**

**Please indicate the verification/assurance status that applies to your reported Scope 3 emissions**

No third party verification or assurance

**CC14.2a**



Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 3 emissions verified (%)
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### CC14.3

Are you able to compare your Scope 3 emissions for the reporting year with those for the previous year for any sources?

Yes

### CC14.3a

Please identify the reasons for any change in your Scope 3 emissions and for each of them specify how your emissions compare to the previous year

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
Purchased goods & services	Change in output	1.1	Decrease	
Purchased goods & services	Emissions reduction activities	3.2	Decrease	Mainly efforts to reduce the net clinker content in cement and concrete.
Fuel- and energy-related activities (not included in Scopes	Acquisitions	2.7	Increase	Both average energy consumption and share of alternative fuels (that have very small upstream emissions) are affected by the

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
1 or 2)				asset swap, see also CC12.1a.
Upstream transportation & distribution	Unidentified	0.5	Increase	Change is well within error margin of methodology.
Downstream transportation and distribution	Change in output	1.4	Increase	Increased trading activity.

#### CC14.4

**Do you engage with any of the elements of your value chain on GHG emissions and climate change strategies? (Tick all that apply)**

Yes, our suppliers  
Yes, our customers

#### CC14.4a

**Please give details of methods of engagement, your strategy for prioritizing engagement and measures of success**

CEMEX recognizes that significant emission reductions cannot be achieved by focusing on one link of the value chain only. Therefore CEMEX has played a leading role in the engagement of the full value chain.

The strategy for engaging our value chain is characterized by our goal to get the maximum positive impact out of available resources; some of the key positive impacts considered when prioritizing are:

- Commercial side benefits such as development of low-cost fuels or generation of carbon credits
- Emission reduction potential in the whole value chain
- Other environmental or wider sustainability benefits (e.g. health and safety)
- Potential for roll-out in other business units

A key tool for engaging the whole value chain is our Carbon Footprint calculator; in this context this software serves various purposes:

- Identify hot spots in our supply chain (--> prioritization of engagement)
- Benchmark operations against each other (--> identification of reduction potential)

- Measure progress
- Inform clients about the full carbon footprint of our products (--> optimization of downstream processes)

In addition, CEMEX has defined a KPI for purchases from suppliers that participate in a supplier sustainability evaluation and defined a corresponding target.

Some examples of our activities:

Some of our business units, e.g. Spain, have started sustainability programs for their suppliers; these pilot programs cover a variety of topics, including climate change, and aim at sharing best practices, defining minimum standards etc.

Another success story is the collaboration with (mostly local) companies to source alternative fuels; over more than a decade CEMEX has worked with many of those companies to collaboratively explore markets of e.g. agricultural and municipal wastes, establish and implement quality standards, and develop joint projects.

In order to reduce scope 2 emissions CEMEX has developed and continues to develop (together with supplier Acciona) a number of wind power projects in Mexico that have a combined emission reduction potential of 1.2 mln t CO2/yr.

CEMEX has also started closer collaboration with the downstream value chain. Our consultancy service for sustainable construction enables our customers, among others, to build more energy-efficient buildings.

#### CC14.4b

**To give a sense of scale of this engagement, please give the number of suppliers with whom you are engaging and the proportion of your total spend that they represent**

Number of suppliers	% of total spend (direct and indirect)	Comment
300	25%	Numbers are estimates as a large fraction of our purchases are decentralized; we do track suppliers and spend under supplier sustainability evaluation programs, but a number of our projects and initiatives go beyond the suppliers captured there.

#### CC14.4c

**If you have data on your suppliers' GHG emissions and climate change strategies, please explain how you make use of that data**

How you make use of the data	Please give details
Identifying GHG sources to prioritize for reduction actions	Information (where available) is integrated into our Carbon Footprint Tool that servers, among other purposes, to identify hotspots.

CC14.4d

Please explain why you do not engage with any elements of your value chain on GHG emissions and climate change strategies, and any plans you have to develop an engagement strategy in the future

**Further Information**

**Module: Sign Off**

**Page: CC15. Sign Off**

CC15.1

Please provide the following information for the person that has signed off (approved) your CDP climate change response

Name	Job title	Corresponding job category
Fernando A. González Olivieri	Chief Executive Officer	Chief Executive Officer (CEO)

**Further Information**

**CDP 2016 Climate Change 2016 Information Request**