# building the cities of the future

## 2012 sustainable development report

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GRI REPORT GRI CHECKED


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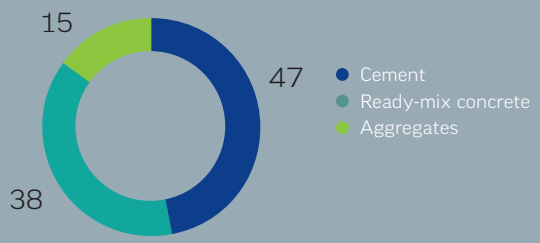
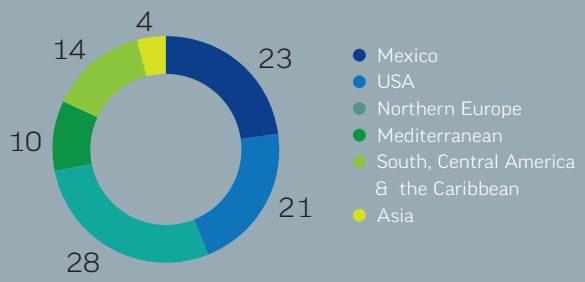
# Company snapshot

Founded in Mexico in 1906, 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 throughout the Americas, Europe, Africa, the Middle East, and Asia. We produce, distribute, and sell cement, ready-mix concrete, aggregates, and related building materials in more than 50 countries, and we maintain trade relationships in approximately 100 nations.

Sales by product (%)




Sales by region (%)




## 2012 global operations

**USA:**
● 17.1 / ● 9.8

**Mexico:**
● 29.3 / ● 9.7

**South, Central America and the Caribbean:**
● 18.8 / ● 5.0

**Other:**
● 3.1
(including Corporate)

**Northern Europe:**
● 11.9 / ● 11.2

**Mediterranean:**
● 12.0 / ● 3.9

**Asia:**
● 5.7 / ● 1.2

● cement production capacity (million metric tons/year) ● employees (thousand)

## CEMEX by the numbers

as of December 31, 2012

CEMEX, S.A.B., de C.V. (NYSE: CX/BMV: CEMEX), a holding company, is a public stock corporation with variable capital (S.A.B. de C.V.) organized under the laws of Mexico.

| 50+ | 43,905 | 94.8 | 55 | 159 |
|---|---|---|---|---|
| countries where CEMEX has presence and trade relations in approximately 100 | employees worldwide | million tons of cement, annual production capacity | million cubic meters of ready-mix concrete, approximate annual production level | million tons of aggregates, approximate annual production levels |

| 57 | 1,899 | 371 | 221 | 69 |
|---|---|---|---|---|
| cement plants plus 12 with minority participation | ready-mix concrete facilities | aggregate quarries | land-distribution centers | marine terminals |

## Financial Highlights

| in millions of US dollars[1], except per-ADS data | 2011 | 2012 |
|---|---|---|
| **Net sales** | 15,215 | 14,984 |
| **Operating Earnings before Other Expenses, net** | 967 | 1,308 |
| **Operating EBITDA** | 2,372 | 2,615 |
| **Controlling interest net income (loss)** | (1,986) | (904) |
| **Earning (loss) per ADS[2]** | (1.78) | (0.80) |
| **Free cash flow after maintenance capital expenditures** | 191 | 169 |
| **Total assets** | 38,800 | 37,258 |
| **Total debt plus perpetual notes** | 17,986 | 16,644 |
| **Total controlling stockholders' equity** | 11,110 | 10,981 |

1 For the reader´s convenience figures are presented in US dollars. For statements of operations accounts, these figures result from translating the local currency amounts into US dollars at the average exchange rate for the year, which approximates a convenience translation of the Mexican peso results for 2012 and 2011 using the average exchange rates of the year of 13.15 MXN/US$ and 12.48 MXN/US$, respectively. For balance sheet accounts, US dollar figures result from translating the local currency amounts into US dollars at the closing exchange rate for the year, which approximates a convenience translation of the Mexican peso amounts at the end of each year using the end-of-year exchange rate of 12.85 MXN/US$ and 13.96 MXN/US$, respectively.

2 Based on an average of 1,117.0 and 1,108.5 million American Depositary Shares (ADSs) for 2012 and 2011, respectively.

## Direct Economic Impacts

| in millions of US dollars | Mex Gaap | | IFRS |
|---|---|---|---|
| | 2010 | 2011 | 2012 |
| **Customers: Net sales[1]** | 14,069 | 15,139 | 14,984 |
| **Suppliers: Cost of sales and operating expenses[2]** | 9,240 | 10,283 | 10,088 |
| **Employees and their families: Wages and benefits[3]** | 2,516 | 2,524 | 2,281 |
| **Investments: CAPEX[4] plus working capital** | 601 | 485 | 820 |
| **Creditors: Net financial expense** | 1,118 | 1,278 | 1,388 |
| **Government: Taxes** | 335 | 287 | 393 |
| **Communities: Donations[5]** As % of pre-tax income | (3.02%) | (0.85%) | (0.55%) |
| **Shareholders: Dividends[6]** | 0 | 0 | 0 |
| **Others** | (156) | 34 | 21 |
| **Free cash flow** | 387 | 237 | (8) |
| **Net income (loss) before taxes** | (946) | (1,271) | (390) |

1 Excludes sale of assets.

2 Excludes depreciation and amortization.

3 Wages and benefits include non-operational and operational employees.

4 Capital Expenditure for Maintenance and Expansion.

5 Donations as percentage of loss before taxes.

6 Dividends paid in cash.

# Product Portfolio

**Cement:**
Cement is the main ingredient in ready-mix concrete. CEMEX offers a portfolio of high-quality branded cement products, including Gray Ordinary Portland Cement, White Portland Cement, Masonry or Mortar, Oil-well Cement, and Blended Cement.

**Aggregates:**
Materials such as stone, sand, and gravel are the primary ingredients in ready-mix concrete. Additional aggregates include asphalt and mortar.

**Ready-mix concrete:**
Made from a mixture of cement, aggregates, water and admixtures, ready-mix concrete is an extremely durable building material that can be cast into many different shapes.

**Other related products:**
Include granulated blast furnace slag, gypsum, fly ash, asphalt, concrete blocks, roof tiles, architectural products, concrete pipes, and other precast products such as concrete floors, box culverts, bridges, drainage basins, barriers and parking curbs.

For more information about our company, brands and financial performance, please visit our corporate website at **www.cemex.com**

**Services and Solutions**
We are increasingly positioning our company as a provider of value-added services and solutions to assist our customers in identifying and addressing trends that affect their industry and in maximizing the sustainability attributes of our products. Among these services are bioclimatic architecture and engineering, modeling of energy performance of buildings, building certification (e.g. LEED, BREEAM, Passive House), development of customized sustainable building solutions and affordable housing solutions.

Our trading network is one of the largest and most widely recognized in the industry. We maintain relationships with more than 100 nations. Additionally we strive to provide customers with top-level technical assistance and creative solutions in a wide range of areas, including financing, communication, branding, and intelligence.

*Long lasting paving solutions*

# building the cities of the future

Lorenzo H. Zambrano
Chairman of the Board and
Chief Executive Officer

## To our stakeholders:

During 2012, CEMEX achieved two important milestones: On one hand, we consolidated our recovery from the crisis that had affected the global building materials industry, and on the other, we significantly strengthened our commitment to sustainability through a wide range of investments, programs and achievements.

"Building the Cities of the Future", the theme of this year's report, illustrates our concept of sustainability. More than half of the globe's population already lives in cities, and the United Nations estimates that by 2050 the world population will be 9 billion people, and 70 percent of them will be living in cities. Unfortunately, many of these people are likely to live in substandard housing. Today, nearly 1 billion people live in urban slums, and that number could grow by as much as half by the end of this decade.

This growth produces other challenges as well. The World Economic Forum estimates that increasing urbanization will require construction of the same amount of housing and infrastructure in the next 40 years as was built over the past 4,000 years. Cities already contribute to roughly 70 percent of greenhouse gas emissions, 75 percent of resource consumption, and two-thirds of energy use. Accelerating urbanization has the potential to cause an environmental disaster if not managed wisely.

CEMEX has an obligation to help create the sustainable housing and infrastructure that society will need in the coming years. Indeed, as this report details, we are already firmly on that path, and I am confident that we will continue to build on this commitment in the years to come.

During 2012 we completed 315 infrastructure projects, contributing to more than 8 million square meters of highways, mass transit projects, airport runways and city streets. We also launched new energy efficient products and services that help builders reduce resource consumption and construction times.

To help customers better understand how these products and solutions can contribute to sustainability, we also introduced a new labeling system that allows builders to identify the emissions associated with the products and services we deliver.

Last year we continued our efforts to improve access to affordable, quality housing by accelerating our Patrimonio Hoy program, which touched the lives of approximately 43,000 new families.

We also created a new initiative to provide people with the financing, materials and expertise needed to build their own homes – the Assisted Self-Construction

CEMEX

has an obligation to help create the sustainable housing and infrastructure that society will need in the coming years.

Integrated Program. This encompasses our Productive Self-Employment Centers, ConstruApoyo and social assistance, and it is already deployed in Mexico, with plans to expand throughout Latin America and, potentially, elsewhere in the world. Since 1998, all of our social initiatives together have benefited more than 2 million individuals.

CEMEX is also taking a leadership role in solving local challenges such as transforming municipal waste into useful resources. During 2012, alternative fuels represented 27.1 percent of our total fuel mix including biomass, tires, RDF, and other materials. We are well on-track to reaching our goal of a 35 percent substitution rate by 2015 and in some countries such as Egypt, we are literally creating the waste recycling market to achieve our substitution objectives.

By necessity, the building industry has a large carbon footprint, but as a leading building materials supplier, CEMEX is determined to do all we can to minimize our contribution, with efforts that have us on track to reduce our specific net $CO_2$ emissions by 25 percent in 2015.

An important component is our increased use of renewable energy sources to power our operations. In 2012, we commissioned our first wind project in the U.S. that will produce energy equivalent to the amount needed to power more than 200 average-sized American households annually. In Mexico, our EURUS wind farm in Oaxaca provides up to 25 percent of the energy needed to run our Mexican operations, preventing almost 600,000 tons of $CO_2$ emissions in 2012.

In addition, we are participating in a Clean Energy Fund that is expected to raise approximately US$300 million through a public offer with proceeds invested in a series of clean energy projects in Mexico. CEMEX will provide its industry-leading technical expertise in clean energy generation to all of the fund's projects.

CEMEX proudly continues with its tradition of working with leading wildlife and nature organizations. One particular highlight is the incorporation of the Biodiversity Action Plan Standard, developed in partnership with BirdLife International, in six pilot projects. We expect to implement similar programs –which are unique in our industry– to preserve biodiversity at all our priority sites by 2015.

Of course at the center of all that we accomplish are the people who interact with our products and operations on a daily basis. While it's a common expectation that industrial companies will experience accidents, at CEMEX that expectation is unacceptable. During 2012 we reduced our lost-time injury (LTI) frequency rate by 13 percent and reduced fatalities related to our operations by 59 percent. Progress in the right direction, but only one goal matters: ZERO.

Sustainability is critical to our business model. As we have worked to make CEMEX leaner, more flexible, and more agile, we have also invested in making our operations more sustainable. The two efforts are intertwined. The effort also includes engaging with global and local partners who share our vision and our commitments.

I want to personally thank the members of our Sustainable Development Advisory Panel for their valuable input to our efforts as well as all the organizations and communities with whom we work on a daily basis. I value those associations and the feedback we receive from them and the rest of our stakeholders.

Finally, on behalf of CEMEX's board, our management and our employees, I also want to thank all of you who contribute to the sustainable development of the company and of our planet.

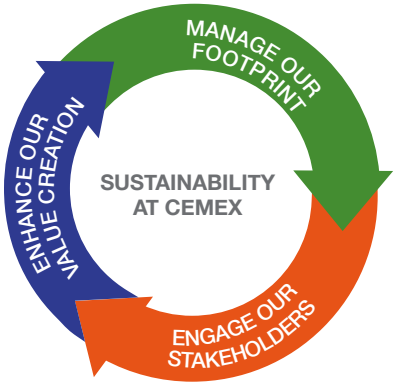
Sincerely,

**Lorenzo H. Zambrano**

Chairman of the Board of Directors
and Chief Executive Officer

# our approach to sustainability

As the world's largest concrete producer and leading supplier of building solutions, CEMEX understands the critical role it can play in addressing the challenges related to world population growth, increased urbanization and the need to protect precious natural resources and ensure quality of life. That is why we are incorporating sustainability practices into all of our day-to-day operations and decision-making processes worldwide.




**CEMEX's Sustainability Model**

We have three main sustainability objectives:

**Enhance our Value Creation:** CEMEX aims to deliver the innovative, high-performing products, services, and solutions that our resource-constrained society requires in order to create a growing and profitable low carbon economy. By fulfilling the needs of the construction sector in its efforts to adopt more sustainable operating practices, we aim to create long-lasting competitive advantages.

**Manage our Footprint:** CEMEX strives to minimize the ecological impacts of its operations in the communities in which we operate. Such impacts are carefully identified and measured so that we can continuously reduce our footprint to the lowest level that is both technically and economically feasible. We also have a robust pipeline of projects that provide carbon offsets to further reduce our net impact.

**Engage our Stakeholders:** CEMEX fosters positive, long-term relationships with key stakeholders to address the pressing needs and concerns of society. With highly committed and empowered employees, CEMEX closely collaborates with a broad variety of institutions that allow us to complement our core competencies and enable us to generate social benefits that contribute to the strengthening of local communities.

**Our Seven Priorities**

The definition of these priorities has followed a structured process of both internal and external consultation where we have measured the impact that the main sustainability issues have on our stakeholders and on CEMEX operations. Our priorities are aligned to each of our three objectives and with our stakeholders' concerns which were identified through materiality analysis exercises.

**Enhance our Value Creation:**

1. Lead in Sustainable Construction
2. Affordable Housing & Infrastructure

**Manage our Footprint:**

3. Enhance Our Carbon Strategy
4. Excellence in Environmental & Biodiversity Management

**Engage our Stakeholders:**

5. High Priority to Health & Safety
6. Strengthen Local Communities
7. Partnership with Key Stakeholders

This stakeholder-centric approach is critical because when our stakeholders prosper, our company prospers. This philosophy forms the basis for our vision to be the company of choice for:

- **Our People:** We aim to be the employer of choice in our markets. We seek to provide the most attractive opportunities for employees' personal and professional development.
- **Our Neighbors:** We are a good neighbor. We participate with communities openly and directly in order to build trust and address their concerns.
- **Our Business Partners:** We work to be the business partner of choice. We seek to help our suppliers and customers build their businesses and to create enduring value for our shareholders.
- **Our World:** As a global company, we work to contribute to international efforts to address some of the world's most complex challenges, including climate change, access to housing and community infrastructure, and the conservation of biodiversity.

By building strong long-term relationships with our key stakeholders, we increase our responsiveness to their needs and concerns, we find new ways to reduce our impacts, we contribute to sustainable development worldwide, and, ultimately, we make CEMEX a more competitive and profitable enterprise.

# progress
## towards our targets

| | 2010 | 2011 | 2012 | Target 2015 | Progress | Independent Assurance |
|---|---|---|---|---|---|---|
| **Lead in Sustainable Construction** | | | | | | |
| Production covered with CEMEX $CO_2$ Footprint Tool (%) | 60 | 87 | 100 | 100 | ✔ | |
| Cement | 100 | 100 | 100 | 100 | ✔ | |
| Aggregates | 50 | 83 | 100 | 100 | ✔ | |
| Ready-Mix | 41 | 83 | 100 | 100 | ✔ | |
| **Enhance our carbon strategy** | | | | | | |
| Specific net $CO_2$ emissions (kg $CO_2$/metric ton of cementitious product) | 629 | 612 | 612 | 594 | ▲ | ● |
| Reduction in $CO_2$ emissions per ton of cementitious product from 1990 baseline (%) | 20.5 | 22.7 | 22.7 | 25 | ▲ | |
| Alternative fuel rate (%) | 20.3 | 24.7 | 27.1 | 35 | ▲ | ● |
| **Excellence in Environmental and Biodiversity Management** | | | | | | |
| Clinker produced with continuous monitoring of major emissions: Dust, NOx and SOx (%) | 74 | 80 | 80 | 100 | ▲ | ● |
| Specific dust emissions (g/ton clinker) (1) | 89 | 101 | 78 | 120 | ✔ | ● |
| Specific NOx emissions (g/ton clinker) (1) | 1,134 | 1,094 | 1,025 | 1,600 | ✔ | ● |
| Specific SOx emissions (g/ton clinker) (1) | 334 | 335 | 257 | 520 | ✔ | ● |
| Active sites with quarry rehabilitation plan (%) | 85 | 89 | 91 | 100 | ▲ | |
| Active sites with high biodiversity value where biodiversity action plans are actively implemented (%) | 38 | 38 | 41 | 100 | ◗ | |
| Operations with an Environmental Management System Implemented (%) | 76 | 86 | 89 | 100 | ▲ | |
| **Health and Safety** | | | | | | |
| Lost-time injury (LTI) frequency rate, employees (per million hours worked) | 2.6 | 2.3 | 2.0 | 0.5 | ◗ | ● |
| Compliance with CSI Driving Safety Recommended Practices (%) | 64 | 79 | 85 | 100 | ▲ | |
| Compliance with CSI Contractor Safety Recommended Practices (%) | 63 | 82 | 90 | 100 | ▲ | |
| Operations with a Health and Safety Management System Implemented (%)(2) | 98 | 99 | 100 | 100 | ✔ | |

✔ Fully achieved target ▲ On track to achieve target ◗ Extra effort required to achieve target

(1) New targets under revision
(2) During 2012 we worked on creating a holistic Health and Safety Management System that integrates our previous safety management system and our health management system - previously reported as separated indicators.

# built to **last**, built to **serve**

As the world population grows and more people choose to live in urban settings, there is an increasing demand for affordable housing and efficient transportation, and an even greater need to manage the interaction between built and natural environments to ensure resources are available to sustain future generations.

CEMEX is focused on delivering solutions to the increasingly complex and inter-connected infrastructure demands of society in a manner that improves quality of life for all citizens and minimizes the environmental impact of urban construction and infrastructure use.

With decades of experience delivering tailor-made solutions for projects in developed and developing economies –from wind farms in North America to highways in China and affordable vertical housing in the Middle East– CEMEX is working with cities around the world to build communities that will thrive today and well into the future.

# smarter and greener buildings

Buildings account for 40 percent of worldwide energy consumption and about 21 percent of all greenhouse gas emissions.

ecoperating

WE INTRODUCED ECOPERATING, A UNIQUE SEAL TO DISTINGUISH OUR MOST SUSTAINABLE PRODUCTS, SERVICES, BUILDING SOLUTIONS AND INITIATIVES

# New Product

As part of our Research and Development efforts to create more sustainable products and solutions, in 2012 we launched Insularis®, a global product that enhances thermal efficiency and energy conservation.

# New Solution

Introduced a new modular, lightweight building system for affordable vertical housing construction in Mexico and the United Arab Emirates (UAE).

# New Services

Launched CEMEX Green Building Consultancy Services in Mexico with a starting portfolio of three LEED Certification projects.

# Urban Development

Led the first project of the World Business Council for Sustainable Development's (WBCSD) Urban Infrastructure Initiative in Latin America, advising the city officials of Guadalajara, Mexico.

According to life cycle and cost analyses by the Massachusetts Institute of Technology (MIT) Concrete Sustainability Hub (CSH), concrete has fundamental attributes that improve the affordability and sustainability of buildings.

- Homes built with insulated concrete forms can see life-cycle energy savings of five to eight percent compared with their wood-frame counterparts – benefits derived from concrete's higher thermal mass which reduces the energy requirements for heating and cooling.

- While concrete-intensive homes may require higher up-front investments than alternatives, MIT's research confirms that the money spent on concrete is a sound investment as better energy efficiency and low maintenance costs result in a lower total cost of ownership over the lifetime of the building.

### Delivering Sustainable Solutions

Project costs and construction time must be balanced with a full understanding of the long-term benefits of building materials, their practicality and impact on quality of life. At CEMEX, we are constantly investing in research and development to produce solutions to construction challenges, establishing a global innovation initiative to create new products and learn how to use our resources better.

| CEMEX Technology Offers | Solutions Addressed |
|---|---|
| **Promptis®**: A rapid hardening/high early strength development concrete designed for fast formwork removal. Unique characteristic: workability retention up to at least 90 minutes. | Land use |
| **Hidratium®**: Significantly reduces water consumption as the need for external curing is eliminated. Ease of application and important savings in labor costs. | Water management, Energy & emissions |
| **CEMEX Fortium ICF**: Designed to reduce the time and material needed to build vertical concrete wall systems, while providing substantial savings in long-term maintenance and energy costs. Incorporates engineered mineralogy and nanotechnology to improve performance. Each home build with CEMEX Fortium ICF reduces building emissions by a total of 170 metric tons of $CO_2$ over the course of 30 years. | Energy & emissions |
| **Insularis®**: Improves energy efficiency of buildings by enhancing thermal insulation of cement wall and floor construction systems. | Energy & emissions |
| **Stormceptor**: A concrete-based system to collect rainwater and treating it to remove sedant and hydrocarbons. Treated water is then re-used in the development. | Water management |
| **Pervious concrete**: Combining alternative mix design approaches and admixture to develop pervious concrete that is very effective in reducing storm water and runoff drainage. | Water management |
| **Cement produced with low energy consumption**: Cements produced with low temperature clinkers, thereby reducing $CO_2$ footprint and fuel usage. Increased reactivity of the clinker can lead to reductions in clinker factor. | Energy & emissions |
| **Self compacting concrete (SCC) with low $CO_2$ footprint**: A concrete that offers all the advantages of conventional SCC, but with lower $CO_2$ footprint (-40%). A combination of special admixtures designed by CEMEX researches and a unique mix design approach. | Energy & emissions |
| **Concrete pavement**: Higher durability and lower maintenance requirements make concrete pavement a sustainable and economic solution. | Energy & emissions |

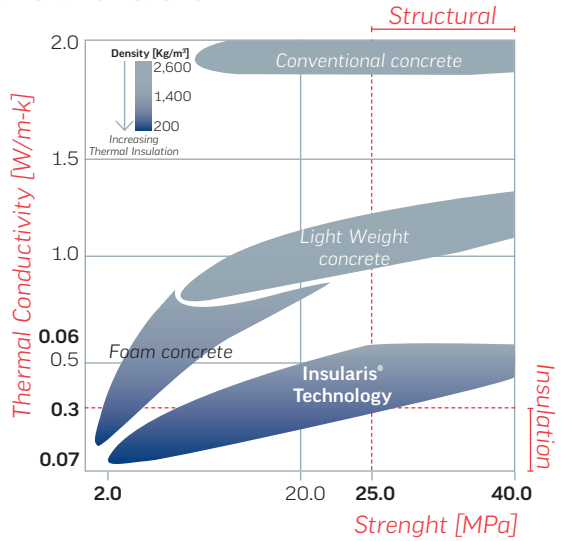
Land use  Water management  Energy & emissions

Our CEMEX Research Group (CRG), strategically located in Switzerland, is responsible for CEMEX Research and Development initiatives, and owning and deploying the resulting Intellectual Property portfolio across our business units worldwide. In CEMEX we believe that solutions are only truly sustainable when everyone can access them, and when they can be delivered in a reliable and reproducible way. That is why CEMEX Research Group strives to create products that lead to the industrialization of its innovations.

*Enhanced Thermal Properties Improve Energy Efficiency*

In 2012 we launched Insularis®, a global product with enhanced thermal properties that improves energy efficiency. This new brand offers a portfolio of construction solutions and ready-mix concrete products designed to improve the energy efficiency of buildings by enhancing the thermal insulation of cement wall and floor construction systems. With a lower thermal conductivity (better insulation properties) than other concrete products, Insularis® can help deliver up to 20 percent in energy savings and significant acoustic insulation.

**Concrete and Thermal Insulation**
*Current Market Offer*




*Building System Enables Low Income Housing to Rise Up*

Issues with land availability and construction infrastructure within urban areas often drive up housing costs, reducing access to affordable housing within city centers and increasing the time and transportation costs for low income residents to commute to work.

CEMEX offers a low cost, lightweight modular building system that allows the construction of a four-story multi-family building in less than half the time and at significant less cost than alternatives. The system consists of lightweight expanded polystyrene (EPS) panels that are easily transported to the construction site using small trucks. Once assembled, the panels are covered onsite with Gunite, a specially formulated cement-based material, to create a sustainable, durable and well insulated structure. An entire four-story residence can be completed in three weeks, as compared to eight weeks for a brick structure, and at significantly less cost. The system was piloted for two-story buildings in Mexico and four-story structures in the United Arab Emirates (UAE) in 2012 and will be rolled out to additional regions in 2013.

**Ecoperating: A Seal of Commitment**

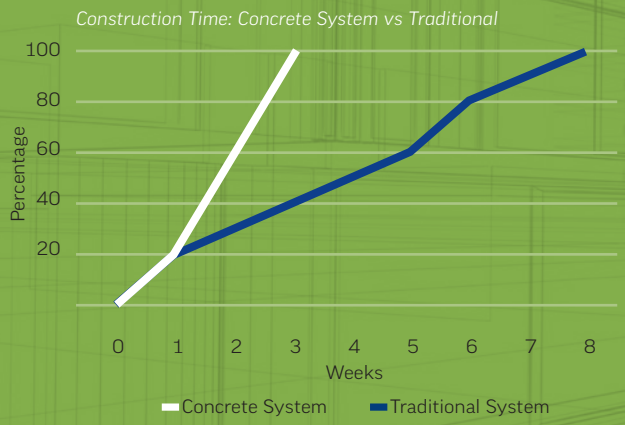
A key to building more sustainable buildings and cities is greater transparency about the materials and techniques used for construction. In 2012, CEMEX launched Ecoperating to aid the construction industry in identifying the most sustainable products, services, solutions and initiatives in our portfolio.

Ecoperating is a unique seal developed through a rigorous internal process that uses a methodology based on global standards to measure the environmental and social impact of our offerings.

CEMEX products and building solutions with the Ecoperating seal help builders optimize the performance

As a leader in delivering concrete building solutions, CEMEX is working with governments and the construction industry to take a holistic look at building materials and practices to design smarter, more livable and greener buildings and cities.

**Low-Cost, Lightweight Modular Building System**



of projects by reducing their ecological footprint or providing particular in-use characteristics that reduce the environmental impact of projects, optimizing the use of natural resources and reducing emissions and waste generation.

In 2012, Ecoperating was launched in Croatia, Philippines, UAE and Egypt. In 2013 we expect to extend it to Germany, Mexico, Costa Rica, Colombia, Panama, France and Guatemala.

To achieve the Ecoperating label, products must meet multiple criteria specific to their product category. Further information on each criteria can be found on our website.

## Promoting Sustainable Building and Urban Design

*Green Building Services*

To meet the increasing demand for sustainability expertise in construction markets, CEMEX is partnering with national and international experts to provide a complete array of services specialized in sustainable construction. Uniting complementary fields such as architecture, engineering and consulting, we are expanding our capabilities by incorporating bioclimatic design, project engineering, energy modeling, project commissioning, energy audits, and LEED certification, among others, to generate added value to our projects. Working collaboratively, we integrate all members of the construction value chain, optimizing results and maximizing profits.

The full set of consulting services offered to facilitate the design and implementation of tailor-made sustainable solutions include:

- Development of bioclimatic architectural designs
- Project engineering and commissioning
- Building-energy modeling
- Energy audits
- Green building certifications (LEED, BREEAM, etc.)
- Renewable energy supply
- Specialized construction solutions development

With this additional support to our clients, CEMEX aims to increase the total value of buildings while creating economic, social and environmental benefits for the entire construction value chain and society. We are currently carrying out three projects in Mexico and are preparing to test the service in the Central European market, after which we can gradually offer it in all countries where green building is poised to become a relevant market segment.

### Urban Infrastructure Initiative

Implementing a multi-company, multi-sectorial approach, CEMEX is collaboratively engaging with cities in the earliest stages of urban planning, to bring the necessary external perspective to help city authorities turn their visions into action.

In collaboration with the World Business Council for Sustainable Development (WBCSD) and a group of global companies, CEMEX co-chaired the Urban Infrastructure Initiative (UII), a project that conducted assessments with city leadership to identify sustainability issues and carried out transformation studies that offered solutions and ways to implement them. CEMEX also participated in the annual WBCSD roundtable on cities in Seoul, Korea.

**Ongoing Green Building Projects**

| Project | Sofia Residential Tower [NL, Mexico] | Esfera Citelis Shopping Center [NL, Mexico] | San Bernabe Community Center [NL, Mexico] |
|---|---|---|---|
| Building type | Mixed use | Commercial | Education & Recreation |
| Buildable area | 90,000 $m^2$ | 276,925 $m^2$ | 29,150 $m^2$ |
| Certification target | LEED Silver | LEED Platinum | LEED Certified |
| CEMEX Services | LEED Certification | LEED Certification | Architectural Design<br>LEED Certification<br>Project Supervision |

Photos provided by: PCHP architects, Sordo Madalero, 72pi.

In 2012, UII teams worked collaboratively with 10 cities around the world – Guadalajara (Mexico); Philadelphia (US); Yixing (China), Ahmedabad, Rajkot, Surat and Vadodara in Gujarat State (India); Kobe (Japan); Turku (Finland); and Tilburg (The Netherlands). This novel exercise demonstrated the clear potential and capabilities of business to advance the sustainability agenda by serving as strategic partners for cities. It revealed that leading businesses are aware of the challenges and constraints that cities face and can be key players in helping cities find solutions to succeed.

CEMEX assumed the leading role during the assessment in Guadalajara, the first Latin American city to work with the UII. Through a series of workshops held in the city, the UII defined specific boundaries and worked at different levels to properly address key topics that demanded attention in the city in four areas:

- **Mobility & Logistics:** A comprehensive plan addressing inadequate public transport and a roadmap to consolidate and improve the existing road network, including rehabilitation of 70 km of existing roads and construction of more than 45 km of new roads.
- **Buildings & Housing:** A low-cost housing program for the relocation of dwellings in high-risk areas (those prone to natural disasters such as flooding), benefiting 500 to 1,000 families annually.
- **Security & Social Development:** Reinforce and standardize the self-sufficiency training programs in the city's network of community centers, and rehabilitate those community centers that can accommodate larger amounts of people in the communities they serve.
- **Waste Management:** An integrated solution to reduce the volume of waste disposed of in landfills while allowing for larger amounts of materials to be recycled and/or used as alternative fuels by nearby industries.

CEMEX has started to work with local organizations, such as CESPEDES in Mexico, to develop models to address the complexity and dynamics of Latin-American cities. Further studies might take shape in cities such as Queretaro, Torreon, Puebla, and Merida. In 2013, additional partnerships will be established with key organizations to progressively replicate and adapt the urban design methodology to other CEMEX markets.

### Recognizing Excellence

Each year, CEMEX recognizes building projects that make positive impacts through superior innovation. The 2012 winner of the CEMEX Building Award in the Sustainable Construction Category was the Atmosfera building, located in the city of Guadalajara, Mexico. The LEED Silver-certified building takes every measure to optimize the use of energy and to reduce environmental impacts, for example cross-ventilation systems and a rooftop garden that provides insulation. The building is also equipped to provide access for disabled people throughout.

The winner of the Sustainable Infrastructure Category was the Baluarte Special Bridge, the largest cable-stayed bridge in Latin America. Built as part of the Highway Corridor Number 5 that will connect Tampico with Sinaloa, the bridge has a 520-meter central span and reaches a height of 402.6 meters. This massive civil engineering project connects marginalized and isolated communities, reactivating their economies and creating greater opportunity for personal development.

*Atmosfera building*

## Challenges Ahead

> Continue research and development to deliver innovative sustainable building solutions that are accessible to everyone everywhere.

> Have a larger impact by creating new alliances with strategic partners and expand our green building services portfolio to a greater number of countries.

> Educate the marketplace about the Ecoperating seal and how sustainable products can add value to their building projects. A particular challenge is to manage the criteria in a way that they reflect local conditions while still fitting into our global framework.

> Find the right mechanisms to reach more cities through our work with urban initiatives, and provide them with practical sustainable solutions for their urbanization challenges.

# the road AHEAD infrastructure

From a sustainability standpoint, roads are very influential in the use of fossil fuels and emission of greenhouse gasses (GHG), and are one of the main facilitators of efficient mobility in and between cities.

**US $ 15.6 Billion**

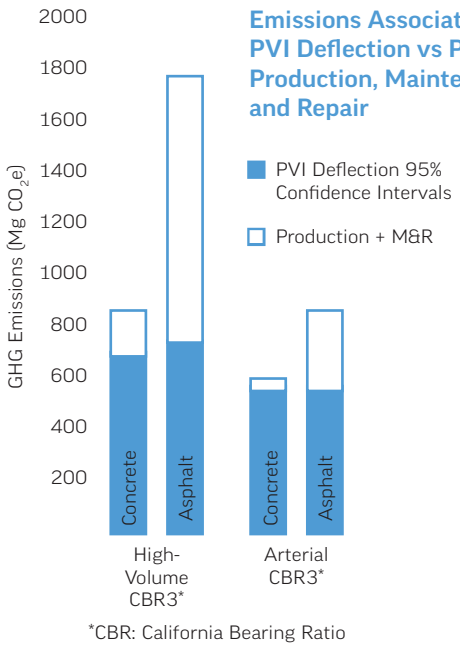
SAVINGS POTENTIAL PER YEAR IN FUEL COSTS FROM CONCRETE ROAD USE IN THE USA

In its third year of Life Cycle Assessment work, MIT's Concrete Sustainability Hub (CSH) found that pavements that are stiffer and more durable, like those made of concrete, can reduce vehicle fuel consumption by as much as 3 percent in the US.

These savings could add up to 273 million barrels of crude oil per year, and result in an accompanying annual decrease in $CO_2$ emissions of 46.5 million metric tons. For drivers, this could collectively translate to a savings of US $15.6 billion per year in fuel costs.

According to Professor Franz-Josef Ulm, director of CSH, the reason concrete can help conserve fuel is due to more efficient pavement-vehicle interaction (PVI). While the effect of pavement roughness on fuel consumption has been understood for quite some time, the MIT researchers for the first time quantified the impact of pavement deflection which is a consequence of road surface elasticity.

Ulm compares deflection to walking on sand —as your feet sink, they create a valley from which you have to emerge to move forward. The same happens when tires contact pavement, albeit on a smaller but no less significant scale. According to the study, tires create less of a "valley" on concrete roads and therefore expend less energy to get up to speed.




*Impact of PVI deflection on GHG emissions is shown for 50 years lifetime of roadways at the 95% confidence interval. Source: Model Based Pavement-Vehicle Interaction Simulation for Life Cycle Assessment of Pavements, MIT, April 2012.*

In fact, on high-volume roadways, the fuel and emissions savings associated with pavement-vehicle interaction (PVI) surpass the impacts from materials, construction, and maintenance phases of the pavement's life-cycle.

**315**
Infrastructure projects completed.

**5 BRTs**
In 2012, CEMEX added new Bus Rapid Transit (BRTs) lines in Acapulco and Puebla, bringing the total number of BRT lines implemented by CEMEX to five.

**+8 Million**
Square meters of pavement for highways, mass transit projects, airport runways, and city streets.

**Overcoming "Short-termism"**
While research shows that concrete infrastructure has many long-term benefits related to cost of ownership and reduced environmental impacts of use, a mindset that values short-term cost savings often must be addressed.

Sustainable development requires a holistic analysis that accounts for all inputs and outputs related to structures; and research shows cement lowers the cost of ownership of roads and buildings and reduces the environmental impact of use compared to popular alternative materials. For example, based on historical data, MIT calculates that over a 50-year time frame, the mean "real price" of asphalt roadways can be expected to increase by 95 percent while the mean "real price" of concrete roadways would decrease by 20 percent.

CEMEX is using research and education to help government officials, designers and construction firms better account for the entire life-cycle of urban infrastructure projects to ensure the most cost effective and sustainable solutions.

To read the full interview with Professor Ulm about PVI and its impact on fuel consumption, visit our website.

If extrapolated to most of the markets where CEMEX operates, stiffer and more durable roads could translate to significant fuel savings and $CO_2$ emissions reductions worldwide.

### Paving the Way to Greener Highways

Concrete is an essential component for the sustainable development and use of infrastructure. In 2012, CEMEX continued to be a supplier of building materials and construction expertise for projects around the world that serve as critical connections between residents, their city and their world.

### Faster Concrete Solution is also Resource Efficient

| | Total Paved Area<br>Thousands of square meters | Projects |
|---|---|---|
| Mexico | 7,839,000 | 189 |
| Nicaragua | 237,529 | 73 |
| Costa Rica | 75,000 | 25 |
| Panama | 70,000 | 4 |
| Colombia | 63,500 | 11 |
| Puerto Rico | 46,500 | 9 |
| Dominican Republic | 6,729 | 4 |
| Total | 8,338,258 | 315 |

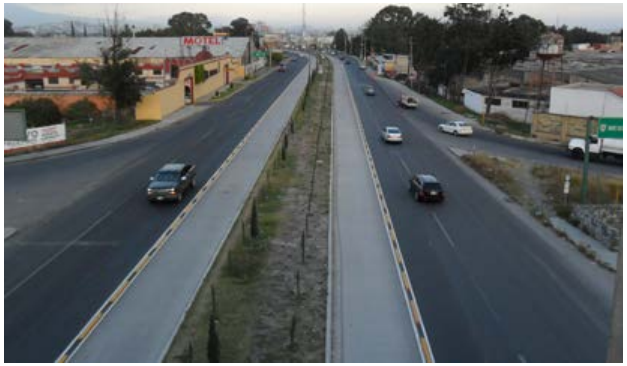
CEMEX began fieldwork in 2012 to validate the promise of Roller-Compacted Concrete (RCC). This technology consists of 100 percent concrete, but it can take less time to lay at a very competitive cost. The application process is similar to asphalt paving; material is delivered by dump trucks or conveyors, spread by specially modified asphalt pavers, and then compacted

*Lowe's Distribution Center*

by vibratory rollers. It requires less cement, (therefore less clinker), water and no steel reinforcement. While not suitable for high speed traffic situations, RCC appears to be an excellent option for residential streets and industrial applications. Our largest project in 2012 was the construction of the Lowe's Distribution Center in Georgia, US. This facility is 279,233 $m^2$ and will be handling 400 trucks per day.

### Cost-Effective, Efficient Mass Public Transport System

For most city residents, public transport is the only practical means to access employment, education, and public services, especially when such services are beyond a reasonable walking or cycling distance.



*BRT Puebla*

*Metrobus Vallejo, Mexico City*

CEMEX is helping to reduce the amount of resources associated with transportation infrastructure by building high-occupancy, affordable, low-emissions concrete Bus Rapid Transit (BRT) systems. These systems combine exclusive express lanes for public busses and comfortable boarding stations to approach the service quality of rail transit while delivering the cost savings and flexibility of bus transit. BRTs are especially important for cities in developing nations where poor public transit service needs must be corrected without causing high municipal debt.

In 2012, CEMEX added new BRT lines in Acapulco and Puebla, bringing the total number of BRT lines implemented by CEMEX to five. These two new dedicated bus lines together benefit more than 300,000 users, reduce the number of motorized vehicles by more than 50 percent in the area of impact and save commuters a valuable amount of time; 35 to 40 minutes in the case of Puebla, for example. With full responsibility for the raw materials, construction, and oversight for these projects, CEMEX is demonstrating its broad range of solutions to become the partner of choice for BRT projects.

**CEMEX BRT's Projects to Date**

| Project | Year | State | Km |
|---|---|---|---|
| Metrobus Vallejo | 2010-2011 | Mexico City | 16 |
| Mexibus Chimalhuacan | 2011 | Estado de Mexico | 15 |
| Ecovia Monterrey | 2011-2012 | Nuevo Leon | 30 |
| BRT Acabus | 2012-2013 | Guerrero | 18 |
| BRT Puebla | 2012 | Puebla | 19 |

## Challenges Ahead

> Change embedded behaviors in the construction industry and government that are barriers to more sustainable and long-term solutions. For example, government authorities need to factor in the long-term cost of ownership when designing bids for roads to fully appreciate the financial and sustainability benefits of concrete versus alternative materials.

> Provide cities with innovative, cost efficient infrastructure solutions that solve mobility problems while conserving resources and improving quality of life.

# delivering more AFFORDABLE housing

By collaborating with individual governments and an international network of developers, CEMEX has been able to help expand the affordable housing market while securing a position as a leading vendor of streamlined, low-cost housing solutions. CEMEX is also working to meet increased demand for direct-to-consumer building services by providing individual home buyers and builders with the materials and technical assistance needed to accelerate their construction projects.

**2,942**

HOMES FOR FAMILIES IN DEVELOPING COUNTRIES

Wherever possible, CEMEX also engages local governments and lending institutions to develop favorable financing options for potential homeowners.

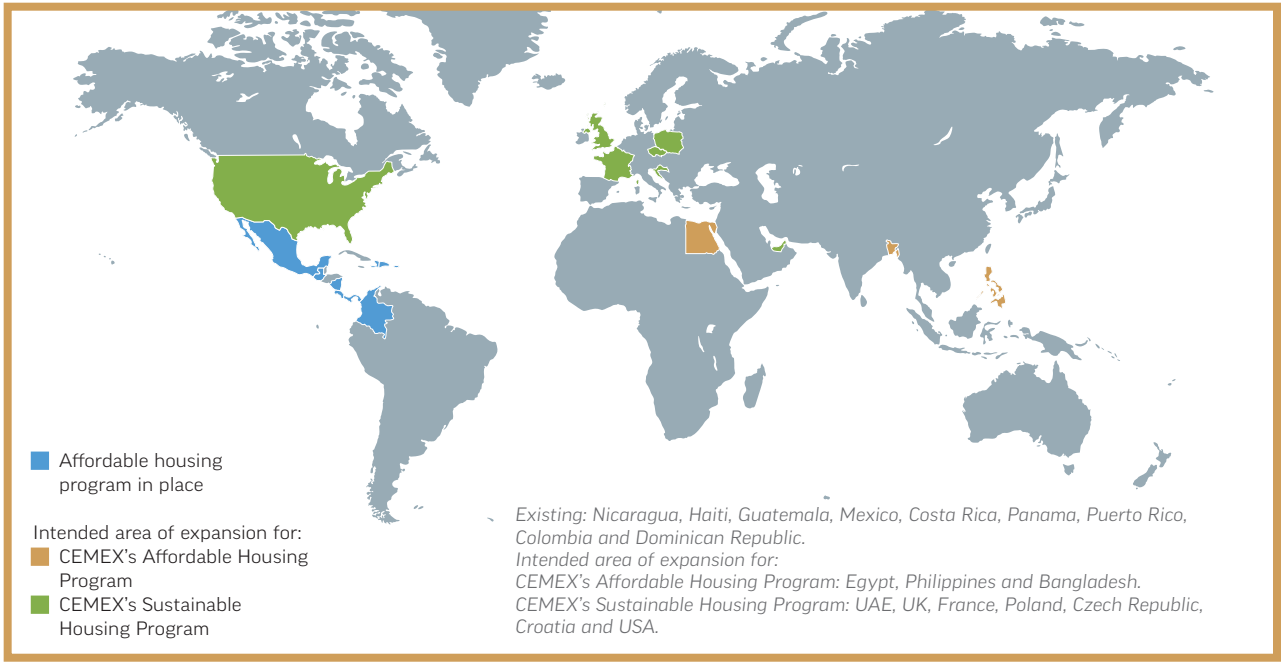
In 2012, we contributed to the construction of 2,942 affordable homes in Latin America, representing more than 131,000 m². This brings the total for the first three years of our Affordable Housing initiative to almost 7,800 units with a surface exceeding 315,000 m². We have expanded the initiative to Dominican Republic, Puerto Rico and Colombia. With a backlog of 8,262 homes, we are well on our way to adding more than 10,000 high quality low-income homes to the global market by 2015.

## +8,000

In 2012 our Affordable Housing Program received more than 8,000 orders for additional houses.

## 3 New Countries

CEMEX's affordable housing solutions were made available in three new countries – Dominican Republic, Puerto Rico and Colombia; expanding its presence to a total of nine countries.




Notable affordable housing projects in 2012 include:

- The start of construction and sales in the multi-year, 700-unit Higuamo project in the Dominican Republic.
- The government of Colombia awarded CEMEX four high rise projects with a total of more than 5,000 units.
- USAID granted CEMEX a project to build 156 brand new units for the victims of the 2010 earthquake that struck Haiti.

*Home beneficiaries in Haiti choosing their home preferences*

**CEMEX Helps Area Recover from Earthquake with Affordable, Sustainable Housing**

In March 2012 a 7.4-magnitude earthquake took place in the States of Oaxaca and Guerrero in Mexico causing damage to more than 13,500 houses across 56 municipalities.

To help get these cities back in working order, CEMEX has engaged in a reconstruction project based on a monolithic structure that provides safety and resistance against future earthquakes and fires.

The structure uses a combination of special concrete products to improve strength and livability of the rebuilt homes, providing better thermal isolation for improved temperature control, comfort and antibacterial properties that improve hygiene and reduces the growth of odor-causing fungi and bacteria.

Products used include: Antibac® concrete for floors, Hidratium® for walls and ceilings, Insularis® for ceilings and our multi-plast system for interior and exterior finishing. These technologies provide the opportunity for the dwellings to be expanded by a "self-construction" system.

Combined with our Productive Centers for Self-Employment initiative, this effort is creating stronger buildings while giving residents the knowledge and skills to build a stronger future. For more information visit our website.

*Finished house*

*Productive Center of Self-Employment Beneficiaries*

## Challenges Ahead

> Close deals with developers in a timely manner and provide governments with solutions for affordable housing that can be easily implemented.

> Develop strategies for expanding the availability of affordable and sustainable housing in 21 countries, and expand product portfolio to help reduce costs and increase efficiency of housing.

> Close the financing gap by finding innovative channels that allow us to reach people who do not have access to formal lending mechanisms.

# EMPOWERING communities

Bringing together economic, educational and people resources, we are creating innovative solutions to social challenges in the developing world and working to create more sustainable communities by supporting people in becoming more self-sufficient. In collaboration with community members, CEMEX strives to identify the needs and concerns of the communities where we operate. Leveraging our strengths and experience, we jointly develop project proposals that are relevant to the unique concerns of each community.

**+2**

MILLION INDIVIDUALS BENEFITED FROM CEMEX's SOCIAL PROGRAMS* SINCE 1998

*Includes Patrimonio Hoy, ConstruApoyo and Productive Centers of Self-Employment

# Enabling Home Ownership and Self-Sufficiency

Empowerment and self-sufficiency springs from access to knowledge as well as physical and financial resources. Through partnerships with private enterprises, governments and academic institutions, CEMEX supports programs that help people in emerging markets gain the knowledge to save money for housing, start a business, build homes and infrastructure and help improve community services.

**453,538**

Latin American families benefited from *Patrimonio Hoy*, *Productive Centers of Self-Employment* and *ConstruApoyo* programs, up to 2012.

**42,989**

Latin American families benefited from *Patrimonio Hoy* in 2012, encompassing more than 1.9 million individuals since 1998.

**39**

New Productive Centers of Self-Employment bringing the total number of centers to 76.

## Employment

CEMEX became founding partner of New Employment Opportunities (NEO), a multilateral initiative to prepare young people, particularly disadvantaged ones, for entry level jobs in Latin America and the Caribbean.

### Patrimonio Hoy

Patrimonio Hoy is our flagship social business that helps low-income families to improve their quality of life through improved and dignified housing, realizing their dream of home ownership through a well-planned savings scheme. Combining the global presence of CEMEX distribution with the power of microcredit, the program offers integral solutions to families by providing financial and technical assistance in the construction of their homes. With more than 100 offices in Latin America, Patrimonio Hoy enables families to build or improve their homes quicker, more efficiently, and with more durable and insulating materials – concrete, cement blocks, and steel – that would otherwise be beyond their means.

During 2012, we reached more than 42,900 families and built more than 447,000 $m^2$ livable space. Since 2011, Patrimonio Hoy has worked together with the Inter-American Development Bank (IADB) and the Kellogg School of Management to enlarge and update its offer, and we expect a significant increase in our market penetration for 2013.

*Patrimonio Hoy beneficiaries*

**Expansion of the Patrimonio Hoy Program**

| | Dom. Rep. | Mexico | Colombia | Nicaragua | Costa Rica | Total |
|---|---|---|---|---|---|---|
| New partners 2011 | 168 | 41,692 | 2,520 | 998 | 167 | 45,545 |
| New partners 2012 | 226 | 38,099 | 3,762 | 821 | 81 | 42,989 |
| Total partners (# accumulated) | 493 | 373,964 | 15,145 | 6,434 | 809 | 396,845 |
| Total square meters built (# accumulated) | 2,866 | 2,919,980 | 94,027 | 21,643 | 1,974 | 3,040,490 |

### Productive Centers of Self-Employment (PCS)

Enabling self-sufficiency is the main focus of our Productive Centers of Self-Employment (PCS). These are community spaces where individuals manufacture concrete blocks and other precast forms, keeping half of their production for personal construction purposes while selling the other half to state and municipal governments. The program helps participants improve the quality of their housing while also realizing income.

In 2012, we added 36 new PCS in Mexico and three in Colombia. There are now a total of 76 PCS serving these countries and we plan to expand the program to Nicaragua in 2013.

*The card is proving to be a more efficient way for governments to fulfill their promises of increased housing*

### ConstruApoyo

Building upon its history of collaborating with governments and private enterprise, CEMEX is helping to increase the transparency of financial schemes for housing. Through its ConstruApoyo program, CEMEX facilitates the distribution of funds for the construction, repair or extension of homes with a prepaid debit card system, creating a transparent process through which aid recipients are able to purchase the building materials they need.

In 2012, 1,053 families in Mexico benefited from this program and there are plans to expand it into Colombia in 2013.

### Assisted Self-Construction Integral Program

In order to provide people all the necessary tools to build their own homes (financing, materials and expertise), CEMEX has created the Assisted Self-Construction Integral Program. This is an umbrella initiative that integrates PCS, ConstruApoyo and social assistance. The program is currently being implemented in Mexico and Colombia made its first investment in order to start an Assisted Self-Construction Integral Program in 2013. CEMEX plans to expand the program throughout Latin America to every place a PCS exists.

### CEMEX-BANAMEX Partnership

A highlight in 2012 was our new partnership with BANAMEX, a subsidiary of Citigroup and one of Mexico's largest banks, to build a curriculum for our community centers that will foster a savings culture in the communities surrounding our cement plants in Mexico. The program consisted of three courses:

- How to Start a Business
- How to Save Money
- How to Use Credit

This program was delivered to eight of our community centers in 2012 and will be expanded in 2013 to include more. Some participants have been motivated to create micro-businesses as a result of the courses and all are better equipped to be more self-sufficient. In 2012, 439 people benefited from the curriculum.

### New Employment Opportunity Initiative

A community can only be sustainable when its residents are gainfully employed. To help increase the number of youth prepared for entry-level jobs in the Latin American and Caribbean region, CEMEX co-founded New Employment Opportunity (NEO), a multi-stakeholder, region-wide initiative dedicated to increasing job entry by disadvantaged young people.

Created in 2012, NEO is bringing together key private, public, and civil society leaders to provide youth with high-impact, market-relevant job training and placement services on a large scale. In addition to CEMEX, founding partners include the Multilateral Investment Fund (MIF), the International Youth Foundation (IYF), the Inter-American Development Bank (IADB) Social Sector, Caterpillar, Microsoft and others.

NEO's strategy for reaching one million youth on a region-wide scale calls for governments, companies, civil society, and youth themselves to agree to a common strategic agenda and to act collectively, through multi-stakeholder partnerships based in each of the participating countries.

## NEO

Is a multi-stakeholder, region-wide initiative dedicated to increasing job entry by disadvantaged young people.

*"Without this program I would be the typical housewife, in her home cleaning and taking care of household duties only. Now I have a better future. I can help more at home, not just with finances, but in all aspects. Personally, this has given me a lot of confidence and I feel better about myself. I feel more useful."*

### Empowering Community Entrepreneurs

Lenny Guadalupe Paredes believes that in a household, "if mom is doing well, everyone at home is doing well." Thanks to the CEMEX community center in Merida, Yucatan, Mexico, the 37-year-old mother of two is doing well as a mom and as an entrepreneur. Despite no previous business training, she brought her ambition and dreams to the community center and became an instrumental leader in creating a local micro-company.

Through the BANAMEX financial curriculum, Lenny and other area women learned the financial and personal skills necessary to start and manage a business and opportunities to sell their products. The program helps improve self-confidence and the personal finances of women in the community.

**NEO's 10-Year Goals:**

- **Train** one million disadvantaged youth, ages 16–29, using models that incorporate best practices of job training programs
- **Achieve** job placement rates of at least 50% for its graduates
- **Ensure** that 50% or more of the youth trained are girls and young women
- **Promote** the adoption of high-impact training models in the government programs of at least 10 countries in the region
- **Mobilize** 1,000 companies to offer internships and employment opportunities for youth
- **Strengthen** the capacity of 200 job training providers

## Supporting Community Heritage and Education

In all the markets CEMEX does business throughout the world, we work with local communities to identify ways to contribute to the development and quality of life of residents. These include promoting education and the preservation of history. For example:

**Poland's Educational Program for Young People**

In late 2012, we began offering a series of educational trips for high school students from the city of Chełm, Poland, to help them better understand cement production, the importance of alternative fuel use and the principles of sustainable development. CEMEX Poland organizes the program which includes interactive presentations, factory tours and knowledge competitions.

Upon completion, the students have a better understanding about the entire cement production process and the initiatives undertaken by CEMEX Poland to contribute to sustainable development and the success of their city.

*Students visiting CEMEX Chełm Plant in Poland*

**CEMEX Germany Reconstructs a Piece of Celtic History**

The remains of a wooden bridge from the La Tene period (which occurred from 450 BCE to 1st Century BCE) were discovered at the Kirchhain-Niederwald quarry in Hesse, Germany. CEMEX took the area where the preserved relics were found out of the gravel mining process so that reconstruction of the "Jochpfahlbrücke", which represents important archaeological evidence of the late Iron Age Celtic history in Germany, was possible.*

**For further information:*
*Meiborg, C, 2012. p.p. 49-59*
*ISBN: 978-3-941171-47-3*

*The remains of a wooden bridge from the La Tene period*

## Challenges Ahead

> Expand the scope of our programs in order to reach and impact more people and strengthen more communities around the world.

> Uncover innovative mechanisms that allow people to finance their own homes without causing economic distress so home ownership can be realized by more people faster.

# from waste to VALUE

Cities of the future will need to be closed looped systems, mimicking ecosystems where waste for one entity delivers value for another. That is why our carbon strategy is not only designed to help reduce the environmental impacts of our own operations, but also to drive the development of a low-carbon economy.

**27.1%**

CEMEX's USE OF ALTERNATIVE FUELS INCREASED TO 27.1 PERCENT OF THE TOTAL FUEL MIX FROM 20.3 PERCENT IN 2010 AND 24.7 PERCENT IN 2011

76.5

Clinker content in our cement has been reduced to 76.5 percent, down from 84.3 percent in 1990.

Nine

Plants burning alternative fuels surpassed a 50 percent alternative-fuel rate.

Two

Plants achieved a rate above 75 percent.

Five

Plants increased their rate more than 10 percent.

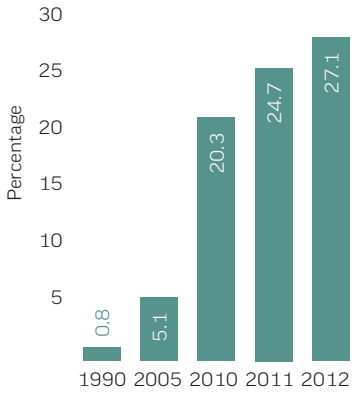
One key effort is the diversion of solid wastes from landfills to fuel our cement facilities. These solids which contain recoverable energy are predominantly residues or byproducts from industrial, domestic, agricultural, and forestry processes including:

- Used tires
- Spent solvents and waste oils
- Processed municipal solid waste
- Household wastes
- Agricultural wastes such as rice, peanut shells and coffee husks and animal meal
- Sewage sludge

The process reduces our reliance on fossil fuels while also alleviating the burden on municipal landfills to accommodate these solid wastes.

**Alternative Fuel Substitution Rate**

*for cement operations*




*CEMEX has significantly increased its usage of alternative fuels as a percentage of total fuel, companywide by investing more than US$182 million since 2005.*

### Leading Industry in Use of Alternative Fuels

CEMEX is the leading user of alternative fuels in the cement industry, with a goal to reach an alternative fuel substitution rate of 35 percent by 2015. In 2012, 96 percent of our cement plants burned alternative fuels, avoiding the use of 2.3 million tons of coal and eliminating the equivalent of 1.8 million tons of $CO_2$ from entering the atmosphere. Nine of the plants burning alternative fuels surpassed a 50 percent alternative-fuel rate, with two achieving a rate above 75 percent. Five cement plants located in the US, Spain and Colombia increased their rate more than 10 percent in one year.

Because there are a number of issues involved with diverting solid wastes for fuel use – including community education, permitting and transportation – CEMEX has developed a model of engagement to help city leaders understand the logistical, technical and financial variables involved with our sourcing of alternative fuels. All waste-to-fuel programs are monitored and CEMEX leaders are held accountable for their engagement efforts.

### Recycling Aggregates

Additionally, in order to comply with state-of-the-art legislation in some countries and green building standards such as LEED and BREEAM, CEMEX strives to replace primary aggregates with other discarded materials (e.g. glass and demolished concrete) and reusing and recycling, as much as possible, the fresh concrete returned from construction sites. From country to country, the scope and potential for the use of recycled aggregates depends on many factors ranging from regulatory frameworks to material availability. The most representative examples within CEMEX are our Northern Europe operations with demolition wastes recycling in Germany, Austria, and France and coal shale trading in Poland. CEMEX is undertaking many actions across the globe to increase the use of recycled aggregates and make it a substantial part of our business. To learn more about our position on aggregate recycling, please visit our website.

**Clinker Reduction**

Waste streams from industrial processes also help us reduce our reliance on fossil resources* for clinker. In 2012, our overall clinker factor (the ratio of clinker content to total cement production) was 76.5 percent – down from 84.3 percent in 1990. This is a result of our continuous effort to increase the use of alternative cementitious materials, many of which are derived from the waste streams of other industries. Materials that are replacing clinker include: fly ash from power plants, blast furnace slag from pig iron production and volcanic ash.

**Though we strive to maximize our usage of alternative raw materials, the reduction of our clinker factor depends largely on market demand for our products—some of which require higher clinker content than others. Additionally, the supply of high quality clinker alternatives is generally lower than the market demand for cement.*

### Industrial Ecology: Uncovering Environmental and Economic Synergies

Throughout the world, CEMEX takes significant strides to find innovative solutions that allow us to recover and reuse waste resources and drive out costs.

*Ready-Mix Washout Decreases Costs, Increases Aggregate Recovery*

CEMEX UK has implemented systems that help to reduce concrete wastes and related costs while maximizing the recovery of aggregate for reuse. The first method uses GINCO, our comprehensive ready-mix operations software platform, to provide a recipe of stone, water and Truckclear® Admixture which delays the setting of returned concrete. The wash out mix is left on the truck overnight or between batches and the GINCO software deducts the amount of waste from the next batch of aggregate. The result is reduced washout costs and increased use of aggregate.

However, the technique cannot be used when temperatures are below freezing. As an alternative, CEMEX UK has developed a washout and scrape up method where trucks are washed out into a wedge pit and the material is recovered the next working day and blended with fresh aggregate.

These waste reduction efforts have helped CEMEX UK reduce costs from US $912,000 in 2010 to US $623,000 in 2012.

*Reusing Neighbor's Waste Water Reduces Costs*

Morata, a CEMEX ready-mix plant in Bogota, Colombia, was purchasing the majority of its water from the local municipality. However, it was located next to an ice cream factory that was paying for the treatment of wastewater that could safely meet the needs of the ready-mix plant. Seeing an opportunity to reduce costs and reuse water rather than extract potable water from the community supply, local CEMEX leaders created a symbiotic relationship with the ice cream factory. Today, more than 30 percent of the water required by the CEMEX ready-mix plant is supplied by the neighboring factory's grey water, reducing the cost of water for CEMEX from US $3/m$^3$ to US $0.5/m$^3$ while reducing the ice cream factory's treatment costs as well.

*Turning Heat Waste into Megawatts*

In the Philippines, CEMEX reached an agreement in 2012 with Sinoma Energy Conservation Ltd. to develop a six-megawatt waste-heat-to-energy facility to produce usable electricity from captured waste heat from our cement plant in Antipolo City in the province of Rizal.

## Challenges Ahead

> Reduce the clinker factor in our cement products is a never-ending effort; we must strive to challenge the limited market acceptance of concrete products using clinker substitutes as well as the high costs associated with the transportation of alternative raw materials.

> Continue increasing our alternative fuels substitution rate by securing suppliers that provide us with the right amount and quality of materials as well as by identifying new materials that could potentially be used as alternative fuels.

> Spot opportunities for resource optimization, reutilization and waste reduction.

> Raise awareness among stakeholder groups about the societal benefits of incorporating waste streams into our production process.

# managing **today** for **tomorrow**

Excelling in our performance as an employer, business partner and corporate citizen makes for a sound foundation for long-term business success. Therefore, sustainability at CEMEX is embedded in our business strategy, our day-to-day operations and our interactions with the communities in which we operate.

Committed to collaboration within our global operation and externally with a wide variety of stakeholders, we are identifying and addressing critical environmental and social issues while also helping to educate others about leading positive change in their own businesses and communities.

# CARBO$_2$N strategy

CEMEX operates in an energy-intensive industry that accounts for around five percent of the world's carbon emissions. Our carbon strategy is designed to help reduce the environmental impacts of our operations, create economic value, advance new solutions and drive the development of a low-carbon economy.

**7.2**

MILLION TONS OF $CO_2$ AVOIDED IN 2012 DUE TO A 22.7 PERCENT REDUCTION IN SPECIFIC NET $CO_2$ EMISSIONS FROM OUR 1990 BASELINE

# $300 million

Participating in a Clean Energy Fund that is expected to raise approximately US$300 million to implement projects in Mexico.

# -2 million tons

Registered five new projects under the Clean Development Mechanism (CDM) and one new Verified Carbon Standard (VCS) project in the US. The overall portfolio now includes 14 registered initiatives, with the combined potential to reduce $CO_2$ emissions by more than 2 million tons annually.

# Best in Disclosure

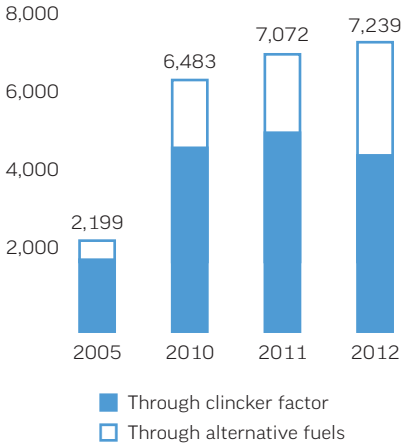
Carbon Disclosure Project recognized CEMEX for Best Disclosure and as a Top Ten Performer in its 2012 Latin America Climate Change Report.

# 5 Energy Star® Plants

Five CEMEX USA cement plants earned ENERGY STAR® certification from the US Environmental Protection Agency (EPA).

As a result of our initiatives to reduce our clinker factor and increase the use of alternative fuels we avoided 7.2 million tons of $CO_2$ direct emissions when compared to our 1990 baseline.

**Avoided Direct $CO_2$ Emissions vs. 1990 Baseline**
Thousand tons




Our combined efforts to reduce direct emissions, and indirect emissions through the use of renewable sources of electric energy, represent more than 7.8 million tons of avoided $CO_2$ emissions compared with our 1990 baseline -including emissions avoided through the Eurus wind farm in Mexico.

That's equivalent to offsetting the average annual emissions of 1.5 million passenger vehicles.

| Carbon Strategy Progress | 1990 | 2005 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|
| Clinker factor (%) | 84.3 | 81.4 | 75.9 | 75.1 | 76.5 |
| Alternative fuels rate (%) | 0.8 | 5.1 | 20.3 | 24.7 | 27.1 |
| Direct emissions | | | | | |
| $CO_2$ emissions avoided from clinker factor (tons) | - | 1,943,054 | 4,909,144 | 5,316,862 | 4,717,703 |
| $CO_2$ emissions avoided from alternative fuels factor (tons) | - | 256,468 | 1,574,212 | 1,755,724 | 2,521,083 |
| Total $CO_2$ emissions avoided vs. Business-as-usual 1990 baseline (tons) | - | 2,199,522 | 6,483,355 | 7,072,586 | 7,238,786 |
| Indirect emissions | | | | | |
| $CO_2$ emissions avoided from Eurus Project (tons) | - | - | 440,939 | 489,169 | 581,953 |

*CEMEX Louisville Cement Plant*

**Five US Plants Recognized for Energy Efficiency**

Cement plants in the states of Florida, California, Ohio and Georgia were recognized in 2012 by the US Environmental Protection Agency (EPA), earning ENERGY STAR® certification.

All of the recognized plants improved their energy performance using the ENERGY STAR® guidelines for Energy Management developed by the EPA. Throughout the year, these plants invested in energy conservation and monitoring technologies, and ranked among the nation's top 25 percent of cement plants with regards to energy performance. The plants also participated in Utility Demand Response and Load Shedding programs to help prevent blackouts and boost local grid stabilization in cases of emergency.

The ENERGY STAR® program is an EPA initiative that focuses on strategic energy management and emphasizes the importance of demonstrating environmental leadership for future generations.

## Alternative Energy Powers Operations

CEMEX continues to increase its use of renewable sources of energy, such as wind, to power its operations. In 2012, CEMEX commissioned its first wind project in the US at its Cache Creek Quarry located in Madison, California. The one megawatt (MW) wind turbine will produce energy equivalent to powering more than 200 average-sized American households annually. The turbine, which has zero emissions, will prevent more than 1,500 tons of $CO_2$ emissions each year. Additional wind projects are being developed in California that will be available in 2013 and reduce indirect emissions even further.

The EURUS wind farm in Oaxaca, Mexico, generates 250 MW of electricity, providing 25 percent of the energy needed to run our Mexican cement operations. In 2012, approximately 582,000 tons of total $CO_2$ were avoided by this project.

CEMEX is also participating in a Clean Energy Fund that is expected to raise approximately US$300 million through a public offer of Certificados de Capital de Desarrollo (CKDs, or Capital Development Certificates) on the Bolsa Mexicana de Valores (Mexican stock exchange). The proceeds from this offering will be invested in a series of energy projects in Mexico, beginning with the construction of the Ventika wind-powered energy park in the northern state of Nuevo Leon. With a minority equity stake not exceeding 10 percent, our primary role will be to provide technical expertise for the development of projects sponsored by the Fund.

## Valuing Carbon Reductions

CEMEX has been particularly successful in developing projects that generate Certified Emission Reductions (CERs). Issued under the Clean Development Mechanism (CDM) scheme, a provision of the Kyoto Protocol for emissions-reduction projects in developing countries, CERs can be sold on the open market to offset emissions in those countries with obligations to mitigate carbon emissions. Structured in this fashion, the CDM plays an important role in supporting the sustainable development of participant nations by rewarding projects that go above and beyond basic efforts to manage direct emissions. In 2012, five new initiatives were accredited as Clean Development Mechanisms including projects located in Dominican Republic, Mexico and Colombia. Our full CDM portfolio now includes 13 projects officially registered with a total potential to mitigate around 1.76 million tons of $CO_2$ per year.

| Project | Registry Year | CERs/ Year |
|---|---|---|
| EURUS Wind Farm | 2007 | 599,571 |
| Costa Rica Alternative Fuels | 2008 | 42,040 |
| Ibague Alternative Fuels | 2008 | 169,565 |
| Zapotiltic Alternative Fuels | 2010 | 47,043 |
| Egypt Alternative Fuels | 2011 | 416,528 |
| Panama K1 Alternative Fuels | 2011 | 29,212 |
| Tepeaca Alternative Fuels | 2011 | 103,359 |
| Merida Alternative Fuels | 2011 | 41,513 |
| Dominican Republic Alternative Fuels | 2012 | 99,797 |
| Tamuin Biomass | 2012 | 47,853 |
| Huichapan Biomass | 2012 | 51,357 |
| Cucuta Biomass | 2012 | 42,307 |
| Atotonilco Alternative Fuels | 2012 | 68,579 |
| **Reduction Potential ($tCO_2$/year)** | **2012** | **1,758,724** |

**CEMEX UK First to Label Cement Products to Recognized Standard**

CEMEX UK is using the results from the $CO_2$ Footprint Tool to generate the information required to achieve a certified carbon label for cement to the standard PAS2050. This is the first and only instance globally where a company has labeled its cement products to a recognized standard.

CEMEX also pursues Verified Carbon Standard (VCS) initiatives in the US with four projects currently underway. We registered our first project at our cement plant in Louisville, Kentucky. The initiative aims to substitute fossil fuels with alternative fuels and has the potential to reduce emissions by as much as 300,000 tons of $CO_2$ per year.

## Carbon Footprint Tool

A key pillar of our $CO_2$ reduction efforts is our Carbon Footprint Tool (CFT) that helps us to quantify the direct and indirect amount of $CO_2$ emitted during the production process of cement, concrete and aggregates up until the product leaves our facilities. Embedded carbon dioxide in raw materials and contributions by suppliers are included in the tool's calculations.

Developed in accordance with international protocols, the tool and its methodology have been verified by DNV, an independent foundation and one of the world's leading assessment and certification organizations that provides services for ensuring the protection of life, property and the environment.

Implementation of the CEMEX CFT has grown from 29 percent of our sites in 2010 to 100 percent of cement, aggregate and ready-mix sites under our operational control in 2012. Through this effort we are now in a position where we can provide $CO_2$ footprint information on all of our cement, concrete and aggregate products to customers in all countries where CEMEX operates.

## Transportation Strategy

We recognize the need to pay special attention to the potential impacts that our transportation activities may have on the environment and society. Therefore, we strive to have a sustainable transportation strategy that helps us increase our fuel efficiency by creating well-

designed routes with the largest loads possible and find innovative solutions to reduce fossil-fuel consumption.

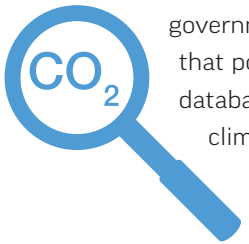
We operate more than 16,000 mobile equipment units around the world that use diesel; approximately 12,000 on-road and 4,000 off-road. CEMEX has started pilot tests in eight countries with a fuel additive that potentially reduces diesel consumption by approximately four percent. The use of this additive will allow CEMEX to reduce its $CO_2$ emissions and achieve cost savings, even when international fuel prices increase.

According to the US Environmental Protection Agency, burning one gallon –3.78 liters– of diesel fuel emits 10.18 kg of $CO_2$. Through this initiative, CEMEX looks to reduce transportation-associated $CO_2$ emissions by around 35,000 tons per year.

### Carbon Disclosure Project Recognizes CEMEX for Excellence

In 2012, CEMEX was named by the Carbon Disclosure Project (CDP) as the best Latin American company in terms of climate change data disclosure, and one of the top ten in overall carbon emissions performance.

The rankings were announced during the launch of the "CDP Latin America Climate Change Report 2012", which disclosed data on the emissions of greenhouse gases from 32 major companies in Argentina, Brazil, Chile, Mexico, and Peru. The CDP is a UK-based independent non-governmental organization (NGO) that possesses the world's largest database on corporate impact on climate change.




### Complying with the Cement $CO_2$ and Energy Protocol, Third Version

In 2012, we aligned our reporting with the third version of the CSI Cement $CO_2$ and Energy Protocol which incorporated additional key performance indicators (KPIs), and improved accounting including:

- KPI based on equivalent cement production
- A new definition of kiln fuels
- An accounting for climate-neutral $CO_2$ emissions from the biomass content of mixed fuels
- More thorough accounting standards for on-site power generation

## Challenges Ahead

> Find innovative solutions to diminish our carbon emissions through clean and efficient energy alternatives.

> Better inform our clients about the value of the information in our carbon footprint tool and in this way contribute to reducing the footprint of the projects incorporating our building materials.

> More accurately understand, account for and mitigate the impact of our transportation activities.

# environmental management and BIODIVERSITY

CEMEX continues to create a culture of environmental awareness, both internally and externally. By systematically monitoring, managing, minimizing and mitigating the impacts of our activities and sharing best practices we help ensure natural resources are used efficiently and that biodiversity is preserved.

## EMS

IMPLEMENTED THE GLOBAL ENVIRONMENTAL MANAGEMENT SYSTEM (EMS) WITH ALL COUNTRY OPERATIONS COMPLETING IMPLEMENTATION ROADMAPS TO ENSURE FULL COMPLIANCE BY 2015

# Incident Tracking

Implemented a global, web-based incident reporting system to track all major and minor environmental incidents as well as complaints.

# -74.8%

Reduction of specific dust emissions vs our 2005 baseline.

# Water Footprint

Monitoring and reporting of water withdrawals and discharges, completing six pilot programs to evaluate methodology and costs of metering.

# Biodiversity Action Plan

Carried out six pilot tests, one in each CEMEX Region, to implement our Biodiversity Action Plan (BAP) Standard in collaboration with BirdLife International, completing two projects and creating work plans for the other four.

In 2012, CEMEX launched a new Environmental Management System (EMS) to facilitate the consistent, complete implementation of risk-based environmental management tools across our global operations. Centrally developed, but locally implemented, the system focuses on increasing awareness, collaboration and alignment in the reporting and management of environmental risks.

The EMS is fully compatible with the ISO 14001 standard and the EU Eco-Management and Audit Scheme (EMAS) and is designed to ensure full legal and regulatory compliance in the countries in which CEMEX operates.

Implementation of the EMS consists of identifying gaps between existing regional or country systems with the Corporate EMS and developing roadmaps to close any gaps identified to ensure full compliance with the new EMS by 2015. In 2012, all countries completed EMS training, gap analyses and implementation roadmaps. Implementation is faster in countries where a mature regulatory environment exists; emerging markets require more assistance.

A critical component of the CEMEX EMS is the Global Incident Reporting System. This web-based reporting tool is designed to help leaders identify and remove, reduce or mitigate environmental risks in their operations. All Category 1, 2, 3 Incidents and Registered Complaints are collected and shared monthly in a report to the Executive Board and country leaders. Providing statistically accurate data about the location, type, nature and cost of environmental incidents, this reporting system is helping to reduce the overall numbers of incidents and reducing the severity of those that still occur.

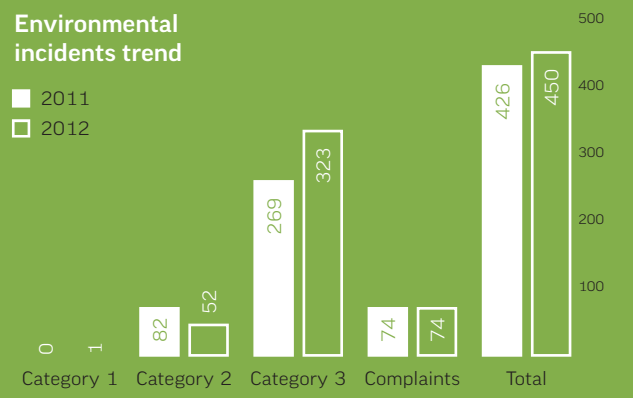
The next stage of the incident reporting system is creating a searchable knowledge library that includes good practices and feedback on operational reports. As the severity of incidents is reduced, we are beginning to incorporate near-miss reporting and root cause analyses on a country-by-country basis to help improve environmental risk identification and incident prevention even further.

### Reporting & Analysis Leads to Action

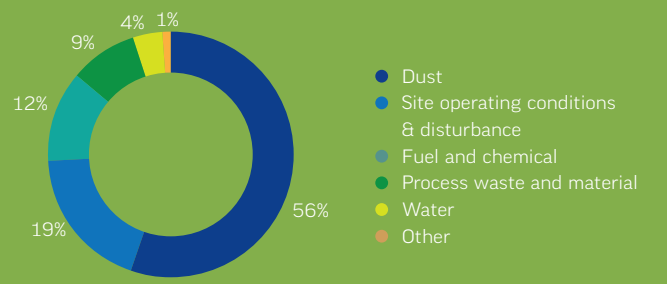
Incident reporting in CEMEX in the UK showed an increase in Category 3 Incidents involving minor releases of cement during deliveries to ready-mix plants. While the releases were small in nature, they were increasing in number. An analysis revealed that the increase in incidents coincided with deliveries being changed to night time to improve logistics efficiency and avoid traffic congestion during peak travel times. Subsequently, CEMEX implemented a driver training program to address the night time related incidents.

The root cause analysis demonstrated the value of data transparency in helping CEMEX UK learn and adapt before the repetition of minor incidents turned into larger concerns.

**Environmental incidents trend**




**Incidents by type**




### Managing our Air Emissions

The cement-manufacturing process involves significant releases of atmospheric pollutants, including nitrogen oxides (NOx), sulfur compounds (SOx), and dust. Other pollutants, released in very small or negligible quantities, include dioxins, furans, volatile organic compounds, poly-aromatic hydrocarbons (PAH) and heavy metals (including mercury).

With continuous monitoring of NOx, SOx and dust at all of our cement sites in 2012, we began developing a monitoring-and-control tool for all particulate emissions from our kilns, including mercury, PAH, hydrogen chloride and hydrogen fluoride.

### Improved Monitoring

In 2012 we developed a new tool to record and benchmark all the different types of atmospheric emissions produced by our kilns. This tool is similar to the one already developed by the European Cement Association (CEMBUREAU) and serves as a recording mechanism for kilns to upload data so we can identify gaps in the parameters being recorded and create a plan for capturing additional data in the future, allowing us to have a complete picture of kiln stack emissions.

| Emissions | 2010 | 2011 | 2012 | Target 2015* | 2012 reduction vs. 2005 baseline (%) |
|---|---|---|---|---|---|
| Dust specific emissions (g/ton of clinker) | 89 | 101 | 78 | 120 | 74.8 |
| NOx specific emissions (g/ton of clinker) | 1,134 | 1,094 | 1,025 | 1,600 | 35.9 |
| SOx specific emissions (g/ton of clinker) | 334 | 335 | 257 | 520 | 50.6 |

*New targets under revision*

We have made several investments to improve our performance as well. For example, in the U.S. and several other countries we have invested in:

- Installing active carbon injectors to fix mercury in kiln exhaust gases and reduce release of dioxins, furans and PAH
- Building new clinker silos to avoid fugitive dust when opening storage
- Reducing chlorines with lime injections
- Installing bag filters to reduce dust emissions
- Installing non-catalytic reduction systems (injection of ammonia) to reduce NOx

**$139 million**

In 2012 we invested US$139 million in sustainability related projects at our operations all over the world.

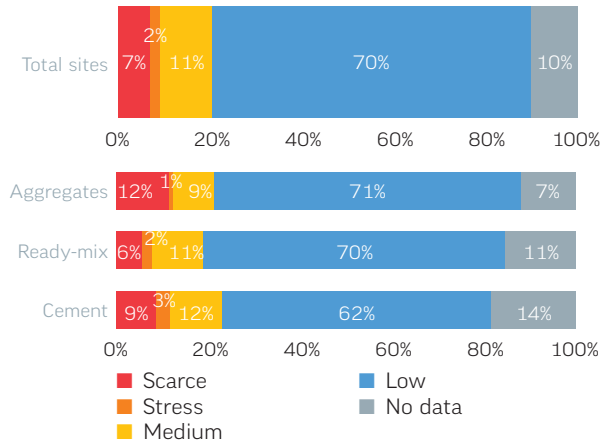
## Standardizing and Aligning Water Footprint Calculation

In 2012, we marked the second year of a three-year engagement with the International Union for Conservation of Nature (IUCN). As part of our materiality analysis, we sought to better understand the water availability context in which CEMEX operates. We first looked to benchmark the water use of our industry against others. We discovered that while the cement industry is typically perceived as a high water impact sector, in reality we are relatively low consumers of water compared to other industries such as power and chemicals and compared to other building materials such as iron and steel. In fact, our analysis found that water demand of the concrete value chain (cement, concrete and aggregates) represents around one percent of the total industry demand for water and 0.2 percent of global water demand.

We also discovered that the context of water availability varies widely from location to location across our operations. Currently, nine percent of CEMEX operations are located in officially designated water stressed zones, based on data processed by the World Business Council for Sustainable Development (WBCSD) Global Water Tool.

**Relative Water Stress Index (WSI) for CEMEX Operations**

*Source: UNH, 2000*




Although the cement industry is not, relatively speaking, a high consumer of water, CEMEX is committed to reducing its impact on water resources. In 2012 we focused on gaining a better understanding of water flows within our operations, developing a protocol to standardize water measurement and management. Starting this year, the methodology will be rolled out to our cement operations and then to all countries in which CEMEX operates. The methodology contains a set of key performance indicators (KPIs) and their definitions, which are in line with those being currently agreed to within the Cement Sustainability Initiative (CSI). It also defines operational boundaries, four levels of accuracy for water measurement, guidance on how to report the information and recommendations for meter calibration and maintenance.

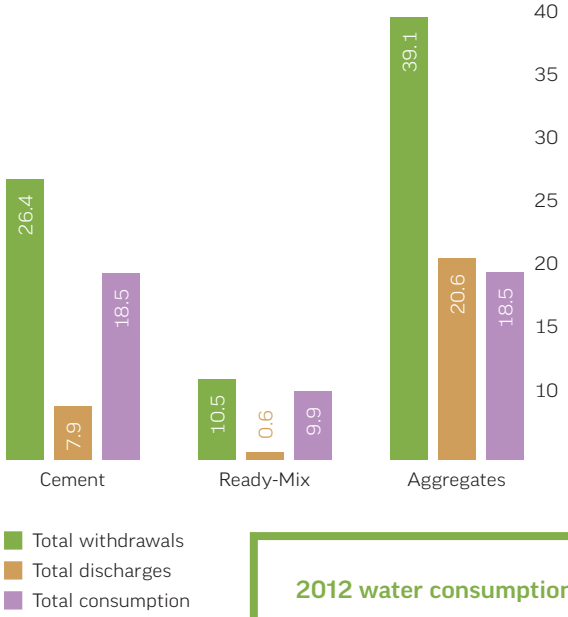
We pilot-tested our water protocol in Spain and the UK, using a cement, aggregates and ready-mix site in each country for a total of six pilot projects. These pilot projects helped illustrate the water protocol with real examples, as well as defined technical requirements and costs for improving existing monitoring techniques and identified CEMEX's good practices on water management that were already in place.

In 2013, we aim to:

- Roll out CEMEX Water Protocol to all sites (giving priority to cement operations)
- Identify sensitivities to water and gaps in data and measurement
- Improve the quality of our KPIs
- Create a Corporate Water Strategy for CEMEX, to gradually reduce water consumption

**2012 Water Footprint**

Million cubic meters




**2012 water consumption**

305 l/ton Cement

184 l/m³ Concrete

139 l/ton Aggregates

### Clearly Defined KPIs for Waste Management

Our processes generate waste that is classified and disposed of according to our own standards and the requirements of local regulations. To help ensure that waste-related KPIs are clearly understood throughout the organization, in 2012 our Environmental Council made revisions to more clearly define waste streams for cement-kiln dust and ready-mix waste.

*Kiln Waste Streams:*

- Volume reused as raw material in the kiln
- Volume recovered (e.g., in production of cement)
- Volume recycled ( e.g., sold as agriculture soil amendment to improve soil fertility)
- Volume to waste (e.g., landfill)

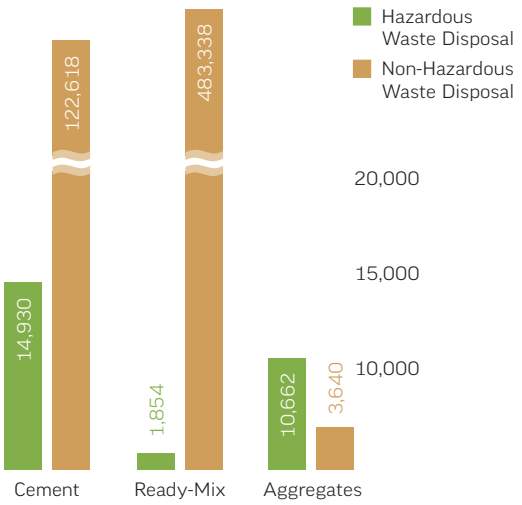
*Ready-Mix Waste Streams:*

- Volume reused in plant for manufacture of new concrete
- Volume recovered (e.g., separated into components with water and aggregates recycled)
- Volume recycled (e.g., secondary material to produce a secondary recycled aggregate)
- Volume to waste (e.g., landfill)

In both cases, waste is then classified according to its disposalmethod: Internal or external and as hazardous or nonhazardous as defined by local country regulations.

The volume of returned concrete material as a percentage of the total volume we delivered was 0.95 in 2012, compared to 0.76 percent in 2011. Secondary and recycled aggregate used as a direct replacement of primary aggregates as a percentage of the total volume sold was 0.33 percent in 2012, compared to 0.27 percent in 2011.

**2012 Waste Disposal**
Tons




### Implementing Biodiversity Action Plans

In 2011, CEMEX and BirdLife International created a standard for the development of biodiversity action plans (BAPs) to ensure individual operations are able to thoroughly and systematically produce their own BAPs tailored to the particular biodiversity values they possess, and challenges they face.

In 2012, the BAP standard was piloted in a quarry within each of the six CEMEX regions: South America and the Caribbean, Asia, Northern Europe, the Mediterranean, Mexico, and the US. This process followed the CEMEX–BirdLife Scoping Study recommendations where practicable, meaning that the majority of CEMEX sites selected were proximal to areas of high biodiversity value.

CEMEX funded a dedicated BirdLife International Program Manager to coordinate national BirdLife Partners and to help with implementation and evaluation. The pilot projects will allow CEMEX to apply the BAP methodology to a cross-spectrum of sites in real world situations to assess challenges associated with implementation, the value of the process and the time required for execution.

### Transparent Communications Address Biodiversity Concerns

The Society for the Protection of Nature in Israel (SPNI), the country's BirdLife Partner and an IUCN member, approached CEMEX about concerns regarding the potential for non-native invasive plant species disrupting the delicate balance of the biodiversity around our Modiin quarry in Israel. CEMEX had a long history of managing the presence of invasive alien species at the site and invited SPNI to tour the quarry. The open and transparent communication led SPNI to commend our significant efforts to eradicate the invasive species at the site and to begin encouraging other Israeli companies to follow CEMEX's model in preserving biodiversity.

*Little Grebe (Tachybaptus ruficollis) in the SotoPajares quarry (photo: Luis Martinez, SEO/BirdLife)*

**Success through Collaboration – SotoPajares, Spain**

The Spanish BirdLife Partner (SEO/BirdLife), a local NGO (Grupo Naumanni) and CEMEX Spain are collaborating on a conservation project informed by the CEMEX–BirdLife Biodiversity Action Plan Standard developed in 2011.

In 2012, the project partners developed a biodiversity baseline for SotoPajares, a CEMEX quarry that delivers aggregates to the market in Madrid, Spain, identifying and prioritizing habitats and appropriate measures to protect or enhance priority species.

SEO/BirdLife and Grupo Naumanni then teamed-up to review risks and opportunities and develop priority actions for implementation at the site in 2013.

Actions range from measures to control invasive species, steps to increase inter-lake connectivity of an on-site reed bed, and educational activities for the promotion of wildlife to local communities.

CEMEX national operations played a key role in the BAP process, coordinating both partners as well as reviewing and agreeing on actions and next steps with them. CEMEX will continue to support and encourage the project as it enters the next exciting stage of action implementation.

## Overview of 2012 progress with CEMEX regional BAP pilots

| Region | Country | BirdLife Partner | BirdLife Partner Input | Project Plan | BAP Process Initiated |
|---|---|---|---|---|---|
| South America and Caribbean | Dominican Republic | | ✔ | ✔ | ▲ |
| Asia | Malaysia | | ✔ | ✔ | ✔ |
| Northern Europe | United Kingdom | RSPB | ✔ | ✔ | ✔ |
| Mediterranean | Spain | SEO/BirdLife | ✔ | ✔ | ✔ |
| Mexico | Mexico | pro natura | ✔ | ✔ | ✔ |
| USA | USA | Audubon | ✔ | ✔ | ✔ |

▲ Actions underway ✔ Target achieved

### 2012 BAP Implementation Progress

- Ninety-one percent active quarries with rehabilitation plan in place
- Ninety-four active quarries identified within or adjacent to high biodiversity value areas, of which 41 percent have a BAP in place

Overall, CEMEX is on track to further advance the BAP KPIs during 2013 and we look forward to continuing to work with BirdLife Partners in national relationships, and initiating new partnerships, particularly in home countries of "high priority" CEMEX sites as identified by the 2010 CEMEX–BirdLife Scoping Study.

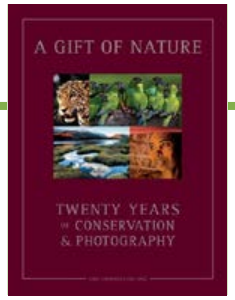
*Osprey (Pandion haliaetus) in the SotoPajares quarry (photo: Luis Martinez, SEO/BirdLife)*

### Creating a Culture of Conservation

El Carmen, a private trans-boundary conservation area owned and managed by CEMEX, serves as a living laboratory for better understanding environmental services and biodiversity. With a motto of "everything we learn can be shared," the El Carmen staff are dedicated to helping train the next generation of conservation scientists, providing university students opportunities to study wildlife ecology and the environmental services that El Carmen provides, such as $CO_2$ sequestration and watershed recharge. For more information please visit our website.

### Conservation Book Celebrates 20 Years

In 2012, CEMEX commemorated 20 years of publishing its Conservation Book series as part of its commitment to promoting a culture of biodiversity awareness and conservation. For two decades the books have illustrated strategies and diverse approaches to foster the protection of our natural world, complemented by powerful images from the world´s best nature photographers. Since 1993 we and our partners have distributed more than 200,000 books to a great variety of stakeholders, including businessmen, NGOs, government representatives, academics and leaders around the world, who have also used them as valuable reference for decision making.




The 2012 CEMEX Conservation Book, A Gift of Nature, is a synopsis of the last 20 years of the groundbreaking series. This title gathers the most prestigious scientific authors and world-renowned photographers to create an engaging book that encapsulates inspirational messages and advanced conservation thinking that our innovative books have highlighted.

CEMEX is greatly honored to have collaborated with a number of highly-respected organizations in the publication of this book, including Conservation International, International Union for Conservation of Nature, The Wild Foundation, BirdLife International, among others. The book is available in electronic and printed versions.

## Challenges Ahead

> Fully embed the Environmental Management System across all of our operations by 2015.

> Continue to reduce and better monitor our air emissions.

> Implement and comply with our new global water protocol throughout our operations.

> Implement Biodiversity Action Plans in all of those active quarries that overlap with high value biodiversity areas across our operations by 2015.

> Reduce waste produced by our operations and increase its recycling and reuse.

# health & SAFETY

Leadership, collaboration and the sharing of good practices are the keys to building a culture that puts health and safety at the forefront.

## GLOBAL

HEALTH AND SAFETY MANAGEMENT SYSTEM IMPLEMENTED IN ALL CEMEX OPERATIONS

In 2012, CEMEX continued to implement a new global Health and Safety Management System (HSMS) to bring alignment and structure to health and safety (H&S) activities while empowering leaders to choose solutions that work best locally.

13%

Our employee Lost-Time Injury rate (per million hours worked) decreased to 2.0, a 13 percent reduction vs. 2011.

21

Countries achieved a zero Employee LTI Frequency Rate.

75%

Of countries implemented Visible Felt Leadership training course.

To strengthen the collaboration and exchange of information globally, CEMEX embedded an initiative to promote and share the good practices relating to H&S that our operations have implemented. To date, more than 200 global good practice examples have been circulated.

**Incidents: Lost-Time Injuries and Fatalities**

Ensuring the safety, health, and well-being of our employees, contractors, and the third parties affected by, or interacting with, our operations is a core commitment for CEMEX and an ongoing challenge that we work to address in the moment-to-moment decisions we make each day.

In 2012, we saw a decrease in Lost-Time Injuries (LTIs) and fatalities. While we are extremely saddened that any loss of life occurred in association with our operations and cannot be satisfied until there are no fatalities to report, we are encouraged that in 2012 we achieved a 59 percent reduction versus 2011. Of the 18 fatalities recorded in 2012 -1 employee, 11 contractors, and 6 third parties- 13 were related to driving.

In total, there were 214 Employee LTIs in 2012 compared to 236 in 2011, an 9 percent decline. Contractor LTIs were reduced by 17 percent, with 103 recorded in 2012 versus 124 in 2011. Overall, the 2012 CEMEX Employee LTI Frequency Rate improved 13 percent compared to 2011. Twenty-one countries achieved a zero Employee LTI Frequency Rate in 2012 and 18 improved on their 2011 rate.

There was also an eight percent improvement in the 2012 CEMEX Total Recordable Injury Frequency Rate compared to 2011, with a rate of 6.0 compared to 6.5 the year before. However, the Sickness Absence Rate for CEMEX increased from 1.8 to 2.5 when compared to 2011.

8%

improvement in the 2012 CEMEX Total Recordable Injury Frequency Rate compared to 2011.

### Leadership Drives Commitment

CEMEX finds that leadership driven initiatives are having the greatest impact on our H&S performance with most countries seeing significant improvement in their KPIs.

LEGACY, our H&S leadership training course, has continued to be a success across our worldwide operations with courses being run on a regular basis for managers at all levels. The seven leadership behaviors that are promoted during the training are helping to continually develop our health and safety culture in a positive way and we are seeing that reflected in our day-to-day H&S performance.

### LEGACY Seven Key Leadership Behaviors

- Personally manage safety every day
- Know your processes and your people
- Communicate with your employees
- Hold yourself and your employees accountable
- Train and motivate your employees to work safely
- Apply discipline equitably and consistently
- Lead by example and actively care

We have also continued to run a Visible Felt Leadership (VFL) training course, which is designed to provide leaders with methods they can use to successfully transmit their sincere commitment to health and safety in a way that can influence behavior within our operations. This training has been made available to all CEMEX operations with almost 75 percent of countries implementing the VFL program so far.

### Relevant Employee Training

Training for our general workforce is mainly developed and provided at a local level to ensure it is correctly tailored for the target audience and their work tasks. A wide range of courses are provided by our operations on a daily basis following regular training-needs assessments. Some training takes place through e-learning, but many are in a more formal training room environment and we have an increasing number of "toolbox talk" programs taking place which are simple, shortened versions of training and are usually provided locally by managers.

**PROMOTING A HEALTHY WORK ENVIRONMENT**

**96%** Of operations have a qualified health professional onsite or have access to an external health provider

### Improving H&S Among Contractors

Contractors disproportionally represent the greatest number of fatalities related to CEMEX operations, mainly involving transportation services.

CEMEX expects all contractors working across our worldwide operations to perform to the same high H&S standards we expect from our own employees. To help embed this mindset into contractors, we are implementing the Cement Sustainability Initiative (CSI) Driving and Contractor Safety Initiative across all regions. In 2012, all regions completed gap analyses and action plans for driving and contractor safety and management teams are continuing to work at closing gaps that may currently exist. Our progress by region is being reported back to CSI as part of our ongoing commitment to the initiative.

### Bee Careful

The value of global collaboration and good practice sharing is that inventive, easily implemented health and safety procedures often surface what would otherwise be a novelty at one specific location.

One example is the use of large stone "bees" by a CEMEX aggregate quarry in Poland to improve traffic management – such as keeping material delivery trucks segregated from loading shovels until the point of loading. The staff at the quarry painted oversized stones in black and yellow stripes. The stones, which resemble gigantic bumblebees, are highly visible to drivers. This inexpensive solution that improves traffic safety and site appearance can be easily implemented at other quarries and the practice is being adopted in other CEMEX countries of operation.

*Our countries continued with their health surveillance measures, which include periodic medical examinations. These are carried out based on workplace hazards and managed locally.*

Additionally, we have our Driving Essentials code of conduct for drivers, which consists of 12 safe driving behaviors to adopt and we are promoting those behaviors among drivers, holding them accountable for adherence to the requirements. We have also developed common guidance for leadership to assist them when engaging contract drivers and help raise awareness on the good practices required.

### Recognizing Performance

CEMEX recognizes and rewards positive H&S performance. This might be for an improvement in statistics or for an innovative practice that helped eliminate a hazardous situation. Country Senior Management Teams hold celebratory events, for example when a local operation achieves 12 months without an injury, recognizing the important group achievement. In addition, some operations also recognize individuals who make a positive personal contribution to health and safety. For example, in Mexico an employee is greeted by his/her family at work as a surprise when that person has achieved something special in H&S. Some of our operations are also recognized by external authorities and bodies. For example, our operations in Poland received a prestigious national award for their approach to H&S leadership and our operations in the UK received industry awards for specific innovations in the area of health and safety.

### Safety Awards

CEMEX cannot think of a greater priority than ensuring the safety and well-being of our employees, contractors, and communities we come in contact with in our daily activities. For this reason we are glad to recognize those operations that are excelling in health and safety, as well as those that are making the most significant improvement. Our annual Global Awards program has seen a record number of entries, with 138 submissions; therefore, it was agreed that an additional Third Place Award would be introduced to increase the number of operations being recognized. Learning from their outstanding example and good practices, we look forward to continually improving our safety performance in the coming years.

## Challenges Ahead

> Achieve zero fatalities by ensuring all employees and contractors understand, embrace and apply H&S control measures across our entire worldwide operations.

> Make further significant advancement in reducing all types of injury as we continue to strive towards the ultimate zero-target, by continuing to develop a positive H&S culture through ongoing training and effective leadership.

> Hold all contractors accountable to the same high H&S standards we expect from our own employees.

| Country Award | Best Safety Performance | Most Improved Performance |
|---|---|---|
| 1-500 Employees | Austria | Latvia |
| 500+ Employees | Poland | Spain |
| **Country Award** | **Best Safety Performance** | **Most Improved Performance** |
| Cement | Ensenada, Mexico | Assiut, Egypt |
| Aggregates | Western Arizona, USA | Southern Region, Poland |
| Concrete | Ready-Mix Operations, UAE | Ready-Mix Southern Region, UK |
| Road Transportation | Logistics Aggregates Northern, UK | New Line Transport, USA |
| Others | Houston Pipe, USA | Paving Solutions, UK |

# STAKEHOLDER engagement

Building infrastructure requires the collaboration of many parties to achieve success. We use a similar model of risk assessment, collaboration and best practice sharing as we interact with stakeholders to identify and address opportunities for, and challenges to, sustained growth and responsible performance.

**97%**

OF SITES HAVE COMMUNITY ENGAGEMENT PLANS IN PLACE

# Engagement

Redesigned Human Resources development offer to better align it to key performance measures, while fostering employee engagement.

# Leadership in Sustainability

Launched online training tool to help top and middle management gain a solid understanding of key sustainability issues.

## 89%

Of CEMEX countries conduct regular customer satisfaction surveys.

## +2,000

Suppliers surveyed on their sustainability practices.

# New Collaboration Agreement

With the Earth Engineering Center at Columbia University.

In all our relationships, we strive to have respectful and honest interactions that allow us to contribute to the development of our communities; maintain a good reputation with all of our stakeholders; and develop infrastructure projects and social initiatives that contribute to the growth and prosperity of our company and society.

**Employee Development**

The framework for our employee development efforts focuses on three strategic priorities:

- Building organizational capabilities
- Establishing a "value mindset" among employees on how to contribute better to the company and create value
- Continued dedication to compliance

During 2012 we launched our engagement survey, 27,415 employees were invited to participate and we reached a 75 percent participation rate. The survey results communicate what employees value most and lead to more informed actions to address local concerns or needs. Central to empowering managers is sharing the results of our employee engagement survey with local business leaders and HR professionals. As a result of key findings we implemented 358 employee engagement initiatives that reached approximately 26,000 employees worldwide.

CEMEX also supported more than 250 employees with various scholarship opportunities to further their academic studies and we invested more than US$5.5 million to continue developing employee awareness about topics related to health and safety, human rights and environmental awareness.

Nearly 10,000 of our executives and employees have access to a formal online system to register evaluations, and 96 percent report receiving feedback. For

employees and operators not registered in the global tool, case managers provide career development and performance reviews.

*Developing Leaders of Today and Tomorrow*

Leadership development is essential to achieving our engagement and business goals. In 2012, we redefined our Leadership Development and Training for Performance programs to foster a collaborative environment where effective behaviors are identified and shared to help improve employee engagement, company performance, reduce attrition and create a seamless line of leadership succession.

One key program is Leader-to-Leader, a mentoring program for newly named directors where senior executives serve as "faculty" and share their insights about effective leadership. We also developed ACHIEVE, a managerial program that helps ease the transition from a manager role to director so new leaders have a shorter learning curve and more productive relationships. Fifty-seven employees went through both programs in 2012 and 28 additional employees participated in the Leader-to-Leader program in 2012. The goal is to have 600 leaders complete the program within five years.

A key focus in 2012 was to help CEMEX employees better understand and measure how they bring value to the company and how the company delivers value to its employees, customers and communities.

Creating this "value mindset" helps improve the emotional connection employees have with CEMEX, making for a more rewarding relationship and productive environment while at the same time setting the tone related to critical areas to focus our efforts.

Acknowledging that an immediate supervisor impacts engagement and employee retention the most, CEMEX is enabling managers to better support the development of their teams and foster engagement of employees. A key program is our Manager Training Program that helps managers learn how to lead more effectively and develop talent. First delivered in 2011, the program is intended to reach 4,000 employees by 2015.

Planning for succession is also critical to leadership development and consistent business operations. To help spot the leaders of the future, we identify key talent based on a performance matrix. Special career plans are designed for identified individuals to ensure retention and skill development.

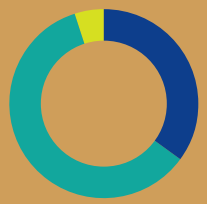
### *Embedding Sustainability*

CEMEX has developed a user-friendly online learning tool to help top and middle management gain a solid understanding of sustainability and key issues that have an impact on executives' decisions, the sector in which CEMEX operates and the implications for how we manage and run our operations and provide value to customers. Called Leadership in Sustainability Training Program, the tool enables participants to:

- Acquire knowledge of relevant issues affecting the world and the competitive environment in which CEMEX operates
- Be able to discuss the theory and practice of sustainability with colleagues and key external stakeholders
- Understand the sustainability attributes of our products and processes
- Communicate how CEMEX initiatives address the social needs of communities

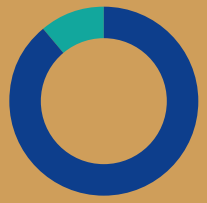
In 2012 the program received more than 38,000 visits and completed its roll out in four countries.

## Our Global Workforce



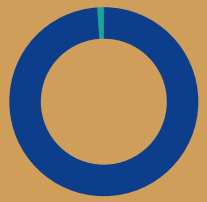
*Workforce by level (%)*

| | |
|---|---|
| Operational | 60% |
| Non-Executive | 35% |
| Executive | 5% |



*Workforce by gender (%)*

| | |
|---|---|
| Male | 89% |
| Female | 11% |



*Workforce by type of contract (%)*

| | |
|---|---|
| Full time | 99% |
| Part time | 1% |

*Workforce by seniority (%)*

| | |
|---|---|
| Less than 1 year | 21% |
| 1-5 years | 20% |
| 5-10 years | 21% |
| Over 10 years | 38% |

*Workforce by age (%)*

| | |
|---|---|
| Under 30 | 16% |
| 31-40 | 31% |
| 41-50 | 29% |
| 51 & over | 24% |

**iHouse Project: Employee Input Drives Community Development**

In the Philippines, CEMEX leaders recognized that a shortage of quality housing was a threat to employee quality of life, their productivity and the company's ability to retain staff. With most employees traveling approximately two hours each day just to reach their workplace and a chronic shortage of affordable, dependable housing in the Philippines, plant leaders engaged the CEMEX Research Group in Switzerland to develop a customized housing solution based on input from the employees about their living preferences.

The result was the Las Casas de Naga iHouse pilot project. Serving as the community developer, CEMEX is coordinating all aspects of planning, development and construction of 180 homes in a community that will feature playgrounds, urban agriculture, multipurpose buildings and sports courts, sound roads, efficient water and waste management, a grocery store and transportation to and from the cement plant.

The customer-centric urban planning model will deliver a more livable urban environment for employees while helping to lower the costs of housing by approximately 12 percent and reducing the overall carbon footprint of the community.

CEMEX broke ground on the Las Casas de Naga community in 2012 and expects to turn the community over to employees in late 2014. With affordable housing shortages existing throughout the developing world, this pilot project will help guide future endeavors where CEMEX combines customer input with world class construction ingenuity to plan and design affordable housing that improves quality of life.

### Connecting with Customers

Customer engagement is critical in our development of products and services as well as our drive to create a low-carbon economy. We tailor our products and services to suit our customers' specific needs, from home and commercial construction, improvement, and renovation to infrastructure, agricultural, industrial and other specialty applications.

We strive to create value for our customers by focusing on more vertically integrated building solutions rather than separate products and we constantly adapt to our customers' needs through innovative products and financing arrangements, ensuring that sustainable choices make sound business sense.

In addition to our many in-person touch-points with customers, 89 percent of our countries conducted a customer satisfaction survey in 2012 to identify needs and concerns.

We continue to focus on improving the satisfaction of customers in our industry through the following:

- Making construction easier for customers to plan for, execute, and manage
- Providing knowledge that gives customers and trades people the confidence to build
- Enabling an open and transparent platform for matching skilled help with construction projects

### Promoting Supply Chain Excellence

By listening to our supply chain partners, we gain valuable local perspectives and unique industry expertise that helps us improve the sustainability of our sourcing and procurement practices. In turn we provide our suppliers with the feedback they need to improve the sustainability of their operations and to ensure consistency with our expectations.

## Code of Conduct

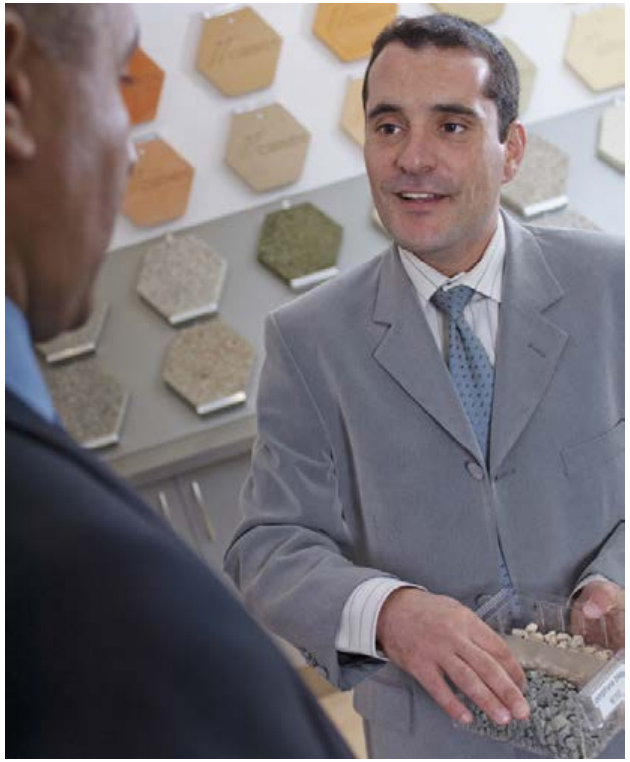
The Code of Conduct When Doing Business with Us was rolled out on a schedule defined by each of the different CEMEX countries during 2012.

In 2012, we have promoted the third phase of our Supplier Sustainability Program by issuing our Code of Conduct When Doing Business with Us. Based on the result of a benchmark study analyzing industry best practices, the 10 UN Global Compact principles, and the procurement clauses contained in the Company´s Code of Conduct, the guidelines were rolled out to all countries in 2012. Sustainability clauses consistent with the Code of Conduct When Doing Business with Us are also being included in supplier contracts and purchase orders. These clauses include requirements regarding confidentiality, anti-bribery, human rights, labor, health and safety, and environmental practices.

All procurement employees worldwide were invited to inform their own suppliers in their local languages to facilitate a clear understanding of the Code.

**Supporting SMEs**

In partnership with the Monterrey Institute of Technology and Higher Education (ITESM) CEMEX Mexico has developed Empresarse, an internet platform that transfers our Corporate Social Responsibility knowledge to small-to-medium-sized enterprises (SMEs) inside and outside our supply chain. Empresarse makes available different resources and tools that allow Spanish speaking users to evaluate, assess, train and inform themselves about sustainability issues. The site also offers documents, background information and auto-diagnostics that allow them to improve their performance in different business areas such as accounting and finance, marketing and sales, quality, corporate governance, among others. (www.empresarse.com)



We are also implementing the fourth phase of our Supplier Sustainability Program by introducing a supplier scorecard, which is already in use in Colombia and Spain. The scorecard guides sourcing decisions by taking into account sustainability considerations specific to each country.

Specific content of the scorecards vary from country to country to be consistent with local needs and requirements, but generally they take into consideration: Industrial safety, environmental protection, risk coverage, employee recruitment principles, sustainable practices and promotion of the principles of the UN Global Compact.

In early 2013, Global Procurement, CEMEX Germany and CEMEX France will be working with a third-party evaluator to conduct a pilot test with their suppliers to assess their environmental, social and ethical performance via a customized questionnaire. We will review the results against our scorecard and provide feedback to the suppliers about how they can improve their performance.

**Using Procurement as a Catalyst for Improvement**

CEMEX embraces local sourcing as a catalyst for sustainable improvements in the economic wellbeing of communities and the life-cycle impacts of our products. By sourcing locally, we help create jobs and promote the development of new skills among local workers, stimulating economic activity and making the community more attractive to other companies in need of skilled labor.

95%

of our purchases were made from national and local suppliers in 2012.

While some of our national suppliers are large companies, our procurement teams participate regularly in events to identify new local suppliers, especially small-to-medium-sized enterprises with revenues of less than US$50 million. We also provide training and development programs to help suppliers strengthen their business practices and integrate sustainability into their business processes.

## Strengthening Partnerships

We leverage our knowledge and resources and promote our sustainability priorities and vision through strategic relationships with global and local organizations, including NGOs, trade associations, educational institutions, and intergovernmental organizations such as the United Nations. These include:

## 2012 Partnerships

| Partner | Objective | Activities in 2012 |
|---|---|---|
| **BirdLife International** | To address biodiversity challenges in CEMEX's sites worldwide. | Implemented a Biodiversity Action Plan (BAP) Standard in collaboration with BirdLife International at six pilot sites throughout the world, completing two key project stages and creating work plans for the other four. We have also continued to work in our partnership at a national level in those countries where we have an established collaboration with the local BirdLife Partner (e.g., France and UK). |
| **Clinton Global Initiative** | Network and collaborate with other companies/industries on social programs that are aligned to our objectives and operations, strengthen our own social programs and initiatives, create new opportunities and provide access to advisors about effective corporate social responsibility and programs. | Actively collaborated and shared best practices related to Inclusive Business. |
| **Conservation International and Earth in Focus** | Publishing Partnership for the Conservation Book Program. | Launched 20th Anniversary edition of the CEMEX Conservation Book: A Gift Of Nature. Twenty Years of Conservation and Photography. |
| **MIT Concrete Sustainability Hub**[1] | Analyze and improve sustainability of concrete. | Main achievement was the development and publication of a new mathematical model that allows to quantify the fuel use and emissions of vehicles using concrete pavements compared to less rigid alternatives. |
| **United Nations Global Compact** | Shape global business practices, particularly in the field of climate change and human rights, beyond the scope of our own organization and sector. | Our CEO and Chairman Lorenzo Zambrano recently renewed our commitment to UNGC and its principles.<br>Active member of the Steering Committee of the Caring for Climate initiative and the Advisory Group on Supply Chain Sustainability. |
| **Cement Sustainability Initiative (CSI) – World Business Council for Sustainable Development (WBCSD)** | Exchange best practices and develop sustainability-related management and policy tools among leading cement companies. | Creating guidance for a Biodiversity Management Plan; completed and shared draft with stakeholder groups. Working on developing a protocol for water accounting and on defining the relevant water KPIs. Guidance on good practices for water accounting.<br>Published the Product Category Rules (PCR) for concrete in the International EPD System. |
| **Urban Infrastructure Initiative (UII) of the WBCSD** | Develop and employ new models of public-private partnership in order to make the world's cities more sustainable. | In addition to acting as co-chair of the initiative, CEMEX participated in the work with selected cities and took the lead in the collaboration in Latin America. |
| **International Union for Conservation of Nature (IUCN)** | Identify CEMEX's water-related material issues in order to define a corporate strategy, work to close identified gaps, mitigate risks, and share water-related best practices. | Standardized monitoring and reporting of water consumption and discharge, completing six pilot programs in two countries for our three main businesses to evaluate methodology and cost of metering. |
| **Wildlife Habitat Council** | Give students an exciting opportunity to learn in a setting that is far from traditional, with hands-on environmental education for its employees, students from local schools, and members of the community that demonstrates how industry and nature can successfully coexist to benefit people and wildlife. | In 2012, seven of CEMEX USA's sites received recertification through the Wildlife Habitat Council's (WHC) Wildlife at Work Program, and one of our sites received its first certification in WHC's Corporate Lands for Learning program. Our East Aggregate Division currently has 6 classrooms in Florida that are certified through WHC's distinguished Wildlife At Work and Corporate Lands for Learning Programs. |
| **Earth Engineering Center at Columbia University and City College of New York** | Will conduct a year-long study of the life cycle effects of alternative fuels in cement kilns. This study will result in a better understanding of the role that alternative fuels play in society and the environment. | Signed collaboration agreement. |

[1] *Through the Portland Cement Association and The Ready Mixed Concrete Research and Education Foundation*

### Contributing to the Global Conversation

As an active member of the UN Global Compact's Steering Committee of the Caring for Climate initiative and the Advisory Group on Supply Chain Sustainability, CEMEX shares insights about common issues and best practices and also learns from the practices of others. For example, in November 2012 we participated in a meeting in Berlin, Germany where several initiatives were reviewed related to human rights, anti-corruption and traceability. We informed the discussion by sharing how CEMEX analyzes business practices in relation to human rights in the supply chain when contract workers are employed.

### Informing Public Policy

CEMEX participates in regional and international policy discussions in connection with its business activities with the objective of sharing the company's experiences on the attributes of its products and solutions, and promoting sustainable construction practices and production processes.

CEMEX promotes fair and well-designed environmental regulations that address key stakeholders' considerations, leveraging the best regulation and policy practices across all the countries in which we operate. We also provide independent research and experienced guidance to inform the creation of public-private partnerships for the development of efficient and cost-effective infrastructure projects.

In the European Union, CEMEX is active in discussions about the best way to evolve The European Union Emissions Trading Scheme (EU ETS) and the Clean Development Mechanism (CDM) platforms for emissions trading to ensure these market-based programs allow companies to meet the standards through projects that make economic sense. CEMEX is also providing members of the European parliament with a vital industry perspective on climate change and other environmental issues through participation with GLOBE EU and the European parliament intergroup on climate change, biodiversity and sustainable development.

CEMEX is sharing information gathered from studies by the Cement Sustainability Initiative and MIT Concrete Sustainability HUB with governments in North America to guide decisions about infrastructure improvement. In the US and Mexico, in particular, CEMEX is working to increase the understanding of the long-term cost savings and environmental benefits of concrete to better inform discussions about fiscal, social and environmental responsibility around infrastructure projects.

CEMEX Mexico also produced documents for newly elected political leaders with ideas for improving the country through sustainable urban development, education and democratic processes. For further information on CEMEX Position Papers please visit our website.

### Promoting Transparency with Investors

We hold ourselves to high standards of integrity and transparency, engaging our investors and industry analysts through a variety of communications channels. For example, in November 2012, CEMEX USA hosted a half-day audio webcast presentation in which members of CEMEX USA's management team discussed the US market, its commercial strategy and cost management practices. Our 2012 financial results, corporate strategy and business outlook, as well as an update on our various regional operations, were shared during a CEMEX Day investor event held in New York February 14, 2013. Approximately 101 analysts, investors and bankers attended the event and more than 500 people followed it via webcast. For further information on our CEMEX Day please visit our website.

## Challenges Ahead

> Continue to improve employee engagement.

> Surpass our customers' needs and expectations.

> Help our suppliers learn how they can improve their sustainability practices.

> Engage in constructive dialogue with our stakeholders to receive and internalize their feedback.

# our business

**Materiality analysis highlights**

- Distributed more than 11,000 surveys to stakeholders across all six CEMEX Regions
- Translated survey into seven languages
- Received positive feedback from specialized external analysts regarding structure, content and depth of the survey

### Aligning our strategy through materiality assessment

CEMEX faces a range of challenges related to our business and its impacts on society. To ensure we focus our attention on the most important issues, we regularly conduct a materiality analysis. This analysis helps to reduce any gaps between business strategy and sustainability by demonstrating the significance of environmental, social and governance (ESG) issues. It is a rigorous and replicable process which enables us to prioritize issues, risks, and opportunities using stakeholder inputs and company insights Our materiality assessment is conducted according to the methodology developed by the Global Reporting Initiative and consists of three primary stages:

### Identification

Identification of the material topics taking into account internal and external factors such as key opportunity areas identified by analysts, challenges for our sector, main risks for CEMEX and key organizational values, policies and targets. The final list included 20 issues which were framed within the three objectives of our Sustainability Model.

### Prioritization

Analyze the degree of concern that each of these items have for our stakeholders and evaluate them accordingly to their importance to our business in terms of risk and opportunities for our Top Managers. We partnered with a leading global research firm to distribute more than 11,000 surveys to a variety of stakeholder groups in more than 26 countries where CEMEX operates.

### Validation

Compared to our past assessments, four new issues have been designated as highly material in 2012: Human Rights, Economic Value Creation, Customer Engagement and Satisfaction; and Lifestyle in Cities. We are analyzing these results further, evaluating how they may impact our priorities and strategy and their potential for inclusion in our Sustainability Model. A comprehensive analysis will be provided in our 2013 Sustainable Development Report and on our webpage when this evaluation is completed.

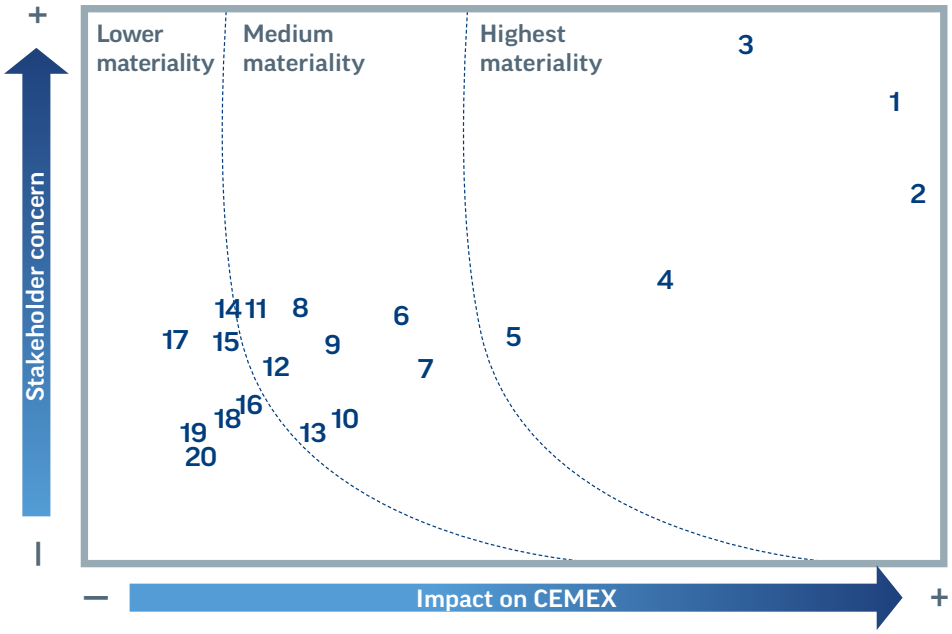
### Stakeholders' Representation (%)

1500 completed interviews

| | |
|---|---|
| CEMEX Top Managers | 6% |
| Employees | 13% |
| Clients | 19% |
| Suppliers | 43% |
| Analyst/Investor/Shareholder | 1% |
| Community/ Communication leader | 6% |
| Government/Administration | 3% |
| NGO/Association/ Foundation/Universities | 9% |

*Results weighted according to 4 main stakeholders categories (25% each one): clients, suppliers, employees and community & others*

### Materiality Matrix




1. Economic value creation
2. Customer engagement & satisfaction
3. Health and safety for our employees, contractors & clients
4. Climate change & $CO_2$ emissions management
5. Renewable & alternative energy sourcing
6. Corporate governance & transparency
7. Employees relations & engagement
8. Products, services and solutions to improve lifestyle in cities
9. Air quality management (SOx, NOx and other emissions)
10. Human rights & ethics in business
11. Products, services and solutions for high energy efficiency
12. Community engagement and development
13. Risk management
14. Quarry rehabilitation, biodiversity preservation and ecosystems management
15. Responsible and sustainable management of the supply chain
16. Products, services and solutions for low income families
17. Water use and recycling
18. Waste generation, disposal and recycling
19. Transport and logistic optimization
20. Environmental incidents management

**The CEMEX Code of Ethics addresses:**

*Relations with Stakeholders*
- Employee and Human Rights
- Fair Dealing with Customers and Suppliers
- Government Relations
- Community Relations

*Operations and Activities*
- Antitrust Compliance
- Anti-Bribery
- Conflicts of Interest
- Gifts, Services and Other Courtesies
- Environmental Responsibility
- Political Contributions and Activities

*Safety & Security*
- Workplace Safety and Health
- Handling Confidential Information
- Financial Controls and Records
- Preservation of Assets

### Embedding Ethical and Responsible Behaviors

Through the CEMEX Code of Ethics and Business Conduct ("Code of Ethics"), we seek to ensure that all employees understand and share CEMEX's high standards of conduct. In 2012, almost 15,000 employee trainings were delivered in proper ethical behaviors relevant to their position within the company and we launched approximately 250 campaigns throughout the company to foster expected behaviors. In addition, new employees are required to sign the Code of Ethics as part of their orientation, and have access to it around the clock through our website and intranet.

### Clearly Stated, Accessible Company Policies

In addition to our Code of Ethics, we further communicate our expectations and set global standards through the following company-wide policies, which can be found on the CEMEX website:

- Health and Safety
- Environment
- Biodiversity
- Anti-bribery
- Antitrust
- Insider Trading Policy

### Accountability Hotline

ETHOSline is our safe and confidential tool where our employees may ask questions and report potential violations related to ethics, governance and compliance. ETHOSline can be accessed either online (intranet), or by telephone. The service is managed by a third party that gathers information from any reported incident, documents concerns, and relays the information to CEMEX. For more about our ethics and compliance policies, please visit our Ethics and Compliance page.

### Ongoing Training

To help ensure that even inadvertent violations do not occur, we provide regular training on human rights issues and our policies. In 2012, we delivered 4,344 trainings about CEMEX's Code of Ethics and Business Conduct and more than 5,000 related to anti-trust and global competition, bribery and corruption; among other topics. Additionally, we conducted a significant number of internal audits with our executives in Mexico, Europe, Asia, South America and the Caribbean region on antitrust and anti-bribery issues. This is a Global Annual Compliance Program that will continue to be implemented in future years, covering all relevant geographic regions where CEMEX operates. We also launched communication efforts focusing on: Antitrust, anti-bribery, customer relations, insider trading, workplace environment, giving/receiving gifts and information security.

| Topics | Instructor Led | Online training | Total |
|---|---|---|---|
| CEMEX's Code of Ethics and Business Conduct | 4,193 | 151 | 4,344 |
| Antitrust & Global Competition | 852 | 3,338 | 4,190 |
| Preservation of Assets | 2,937 | 0 | 2,937 |
| International Bribery and Corruption | 528 | 549 | 1,077 |
| Workplace Harassment [1] | 1,044 | 10 | 1,054 |
| Confidential Information | 484 | 114 | 598 |
| Conflict of Interests | 461 | 26 | 487 |
| Others [2] | 155 | 9 | 164 |
| Total | 10,654 | 4,197 | 14,851 |

1 The course covers harassment based on gender, race, ethnicity, age, disability, and other characteristics.
2 SOX (9) Leading by Example (155).

**CEMEX Israel Respects Oslo I Accord**

After being mentioned by U.N. Special Rapporteur Richard Falk in his "Report of the Special Rapporteur on the situation of human rights in the Palestinian territories since 1967," CEMEX issued the following detailed explanation, addressed to Mr. Falk regarding CEMEX's operations in the Occupied Territories:

"CEMEX is a global building solutions company extremely concerned with sustainability, environmental protection and respect for human rights. Since 2004, CEMEX has been a signatory member of the "UN Global Compact Group, and as such the company embraces, supports and complies with the 10 principles and values of this group.

CEMEX strictly applies a policy of awareness of, and compliance with, international and local laws including those on human rights as well as all regulations, standards, and other legal provisions in every country in which operates.

Particularly, CEMEX Israel strictly applies and respects all relevant international and local laws, regulations and other legal provisions as well as the contents of the existing agreements between Israel and the Palestinian Liberation Organization (PLO) regarding the Occupied Territory, namely the treaty signed in Oslo in 1993.

CEMEX Israel ready-mix operations located in Occupied Territories (Mishor Adumim, Mevoh Horon and Atarot) operate in accordance with the relevant permits and licenses and much of their concrete production is delivered to the city of Jerusalem and is used for residential and infrastructure projects meeting the demands of all local communities – Jews, Christians, Muslims, Palestinians and Israelis.

Projects recently supplied with ready-mix concrete include two schools for the Arab residents of East Jerusalem as well as residential and water infrastructure projects in the same area. In addition, CEMEX Mishor Adumim plant supplied materials in the city of Jericho to the United Nations Relief and Works Agency (UNRWA) for Palestinian Refugees in the Near East.

Through Lime & Stone CO, CEMEX participates in a partnership with Kfar Giladi Quarries which exclusively operates the Yatir quarry. The CEMEX subsidiary is not involved in the operation or management of the quarry where production, operations, logistics, sales, etc. are managed exclusively by the local partner. The quarry operates under the permits issued by the Civil Administration in Judea and Samaria and royalties on the quarrying activities are paid to these authorities. Much of the quarry's production is sold to Palestinian building contractors and to customers living in the Judea and Samaria area."

## Human Rights

We are committed to supporting and respecting the protection of internationally proclaimed human rights as outlined in the International Bill of Human Rights and the ILO Core Conventions on Fundamental Human Rights, proactively ensuring we are not complicit in any human rights abuses. Our CEO and Chairman has reinforced this ongoing obligation by recently renewing our commitment as a signatory to the United Nations Global Compact. We are also members of the Soria 21 Forum for Sustainable Development (Foro de Soria 21 para el Desarrollo Sostenible), an international organization focused on social ethics and values; and we embrace the UN "Protect, Respect and Remedy" Guiding Principles on Business and Human Rights, also referred to as the Ruggie Framework.

Our commitment goes beyond local employment laws and our direct activities. We prohibit all forms of discrimination and we respect the economic, social and cultural right to human dignity and free development of each individual's personality. For example, in countries like Israel, Egypt, UAE and Malaysia where workers from different religions and sectors of the population are employed, CEMEX respects their right to embrace and practice their uniqueness by allowing the observance of their religious holidays, dress code and language.

Moreover, to ensure that human rights are respected by suppliers and contractors, we are including explicit references to the Code of Ethics and our human rights commitments in vendor and supplier agreements. We are also enhancing the systems we use to screen suppliers' social and environmental performance.

5,398 hours

In 2012, a total of 5,398 one hour-long training sessions were conducted with employees regarding policies and procedures related to human rights, harassment and Code of Ethics.

## Labor

### *Freedom to Associate*

We promote the right to freedom of association in all our operations and have around 20,000 employees (46 percent of all employees) represented by a union or covered under a collective bargaining agreement. We also engage employees through a variety of forums for them to share opinions and help improve our operations. These include: Collective bargaining, quarterly meetings with the board of directors, departmental meetings, surveys, ETHOSline, open dialogues and town hall meetings. For example, in CEMEX Philippines the active involvement in employee councils and representation are encouraged. This is manifested through transparency in the communication of meetings as well as projects initiated by the councils.

### *Equal Opportunity and Just Compensation*

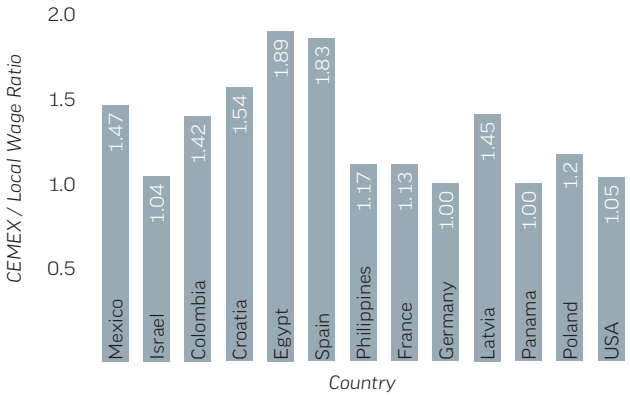
We have a Job Opportunity Policy in place to ensure that all employees are made aware of and have the opportunity to apply for open positions to support their professional growth. Hiring decisions are made regardless of race, color, age, religion, mental or physical disability, sex or national origin of any employee.

Our compensation packages are based on the responsibility level of the position and not related to race, gender, religion, age or any other protected traits. They are based on the responsibility level of the position, and designed to consider:

- The representation of the labor markets in which a given CEMEX Business Unit competes for talent
- Data from independent, professional, third party surveys
- Market base-pay and total cash compensation of comparable companies

**Comparative Wage Rate**

*CEMEX entry level wage vs local minimum wage*




### *Child Labor*

We do not tolerate the use of child labor by anyone associated with our business and we are strongly committed to protecting the rules regarding child labor in every country where we operate. We require government-issued identification of contract workers in developing economies. For example, in Egypt applicants must submit a university degree or a government-issued ID, depending on job grade, which are registered and subject to review and validation by human resources. This is in addition to strict incumbent local policies and Egyptian laws that prevent child labor. We extend this verification requirement to our suppliers in Mexico, Dominican Republic and other countries as well.

**Anti-Corruption**

CEMEX abides by principles of fair trade and competition, and we do not tolerate price-fixing, market allocation, predatory pricing, or other illegal market practices. We also have zero tolerance for bribery in any form.

In 2012, there were no reported incidents of corruption or bribery to government officials. More than 1,000 hours of training were provided for employees to understand and identify behavior that does not comply with our principles. ETHOSline is offered as a safe and confidential tool for employees to ask questions and report potential violations related to market practices (the option to remain anonymous is available, except in France due to local legal requirements).

*Forced Labor & Safe Work Environment*

We do not require anyone to perform tasks against their will or that are detrimental to their health or wellbeing. We provide industry-leading safety programs, including driving safety and safety training for contractors and managers, to minimize workplace hazards and to raise awareness of safe and healthy living practices among our people and contractors, inside and outside the workplace.

We also ensure employees do not fall into debt bondage through company loans. All employees are free to leave the company at anytime and we never use benefits as leverage to force labor. For example, in Brazil loans cannot exceed 30 percent of salary and in Colombia we offer loans only through the employee fund, analyzing the worker's borrowing capacity and guaranteeing a minimum wage. Also, in Israel the company pays compensation for dismissal even in cases where the employee leaves the company by his own free will, even though the company is not legally required to do so.

## Risk Management

We use sophisticated systems and tools to gather information from a range of sources, analyze data, identify and assess potential risks, and to develop plans for mitigation at each facility.

We have several processes that test the robustness of our systems, evaluate compliance across all business units, and encourage continuous improvements. These processes include compliance training for employees, periodic reviews of our policies and procedures, and regular internal audits.

The risk management department is structured into national, regional and global levels. Each country is responsible for identifying all potential risks and creating a risk agenda. Regional risk agendas are constructed from the consolidation of relevant countries' information and the global agenda is determined by the consolidated regional agendas.

Risks are constantly identified and investigated and a weekly report is issued and circulated to key people throughout the organizations regarding identified risks.

*Work-Life Balance*

Our operations are regulated by policies that provide guidance to employees regarding over-time. Our system process allows each country to monitor and control over-time work, plus we comply with local laws regarding over-time. A good example is France where we have implemented a timesheet that collects the number of working hours per day. In case of over-time a notice is sent to the manager, assuring each employee is treated fairly regarding over-time work. Any issues are quickly resolved between employee and supervisor.

We also actively promote initiatives such as flexible work-schedule, sport fests, and outdoor activities. In 2012 we implemented 127 work-life balance initiatives in 27 countries, reaching about 14,000 employees.

Risks are evaluated according to three factors: Probability of occurrence, velocity (length of occurrence) and impact to EBITDA.

The company's sustainability-related risks are addressed by our Enterprise Risk Management System, which is ultimately supervised by our Board of Directors and the management team. The day-to-day responsibility for risk management at CEMEX has been delegated to the Executive Vice President of Finance and Administration, whose function in turn, has been left in charge of the departments that have the relevant skills and expertise such as the Process Assessment Department, the Global Risk Department, the Global Legal Department, and the Internal Control Department, among others. Also, the Global Ethics Committee and the ETHOS committee reported regular meetings to review trends and plan actions to mitigate identified potential risks. The ETHOS committee supports the operative functions of the Global Ethics Committee and includes representatives from Legal, Process Assessment, Internal Control, Human Resources and Corporate Security Departments.

To standardize efforts and share best practices for emergency response, CEMEX has created a Business Resilience and Crisis Management Program (BR&CM) to prepare operations to rapidly respond in case a contingency or crisis occurs by:

- Protecting the safety of employees and members of the community
- Preserving CEMEX's image and reputation
- Safeguarding our assets
- Protecting the environment
- Ensuring operational continuity
- Complying with laws and regulations

The BR&CM requires business units to create and train Rapid Response Teams (RRT), integrate a communication and response system, develop specific response protocols and perform risk assessments and business impact analyses.

CEMEX Mexico began implementation in late 2011, creating an active and trained network of 21 RRT consisting of 225 members. Nineteen workshops for contingency management and natural disaster response were provided in 2012. As a result, contingencies declared and managed increased 70 percent in the first year of the program and those controlled within the first four hours increased to 75 percent.

Panama, Guatemala, Nicaragua and El Salvador began BR&CM implementation in mid-2012 and Puerto Rico, Costa Rica, Dominican Republic and Colombia will begin implementation in 2013. The rest of the countries where CEMEX operates have already created their first RRT.

## Governance

Led by our Chairman and CEO, Lorenzo H. Zambrano, the CEMEX Board of Directors is responsible for supervising the overall direction and operation of the company.

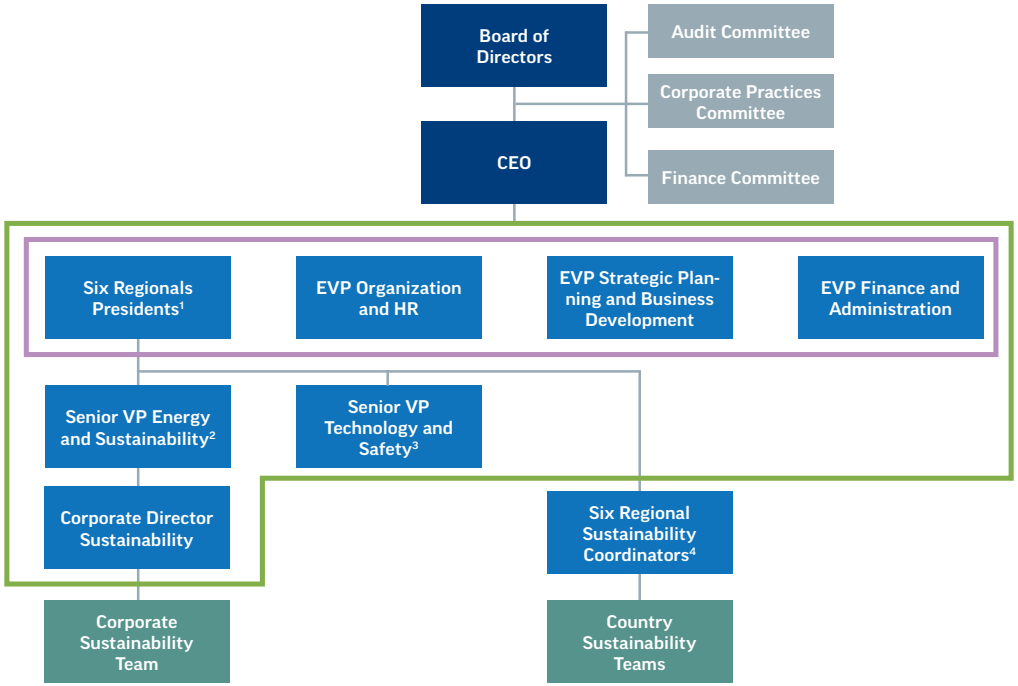
Our financial culture and management style are open and transparent. Through regular meetings, reports, guidance, conference calls, and personal interactions, we vigorously work to keep our investors fully and fairly informed of our activities and to ensure our financial disclosures meet the highest ethical standards.

As of December 31, 2012 the board was comprised of 11 directors, eight of whom qualify as independent directors, according to criteria specified under Mexican Securities Law (Ley del Mercado de Valores). On March 21st, 2013 CEMEX's General Shareholder's Meeting appointed 10 directors to the board, seven of whom qualify as independent directors according to criteria specified under Mexican Securities Law. The board is responsible for determining and overseeing our efforts to advance our seven sustainability priorities performance, which is critical to our ability to execute our business strategy.

### *Sustainability Committee*

The Sustainability Committee is comprised of 12 members: nine members of our management team that report to the chairman and CEO, the Senior Vice President of Energy and Sustainability, the Senior Vice President of Global Technology, and the Corporate Director of Sustainability. This committee meets quarterly to assess and guide CEMEX in its sustainability efforts. Through their work, sustainability priorities are defined and resources allocated to initiatives that have the highest impact and provide the most significant improvement opportunities.

Decisions made by the Sustainability Committee and validated by the CEO, the management team and the Board of Directors are swiftly executed by the Senior VP of Energy and Sustainability in coordination with the different regional/country presidents and leaders of other relevant corporate functions.




- Define sustainability guidelines and priorities
- Suggests and defines global sustainability initiatives through Sustainability Committee
- Executes global sustainability initiatives
- Management Team
- Sustainability Committee

1. Six regions: South, Central America and the Caribbean; Mediterranean, Asia, Mexico, Northern Europe and USA.
2. Reports to President of CEMEX Northern Europe.
3. Reports to President of CEMEX Mexico.
4. Reports to corresponding Regional President.

# our performance in detail

| Lead in Sustainable Construction | 2010 | 2011 | 2012 |
|---|---|---|---|
| Production covered with CEMEX $CO_2$ Footprint Tool (%) | 60 | 87 | 100 |
| Cement | 100 | 100 | 100 |
| Aggregates | 50 | 83 | 100 |
| Ready-Mix | 41 | 83 | 100 |
| Sites covered with CEMEX $CO_2$ Footprint Tool (%) | 29 | 88 | 100 |
| Cement | 100 | 100 | 100 |
| Aggregates | 42 | 84 | 100 |
| Ready-Mix | 22 | 89 | 100 |
| $CO_2$ Footprint - Annual Average | | | |
| Cement (kg $CO_2$e per ton cement) | 798 | 798 | 770 |
| Aggregates (kg $CO_2$e per ton aggregates products) | 5.3 | 4.9 | 5.0 |
| Ready-Mix (kg $CO_2$e per $m^3$) | 298 | 275 | 277 |

| Affordable Housing and Infrastructure | 2010 | 2011 | 2012 |
|---|---|---|---|
| Number of houses built under CEMEX Affordable Housing Program | 1,572 | 3,259 | 2,942 |
| Square meters of concrete paving completed | 7,907,968 | 8,045,350 | 8,338,258 |

| Carbon Strategy | 2010 | 2011 | 2012* |
|---|---|---|---|
| Absolute gross $CO_2$ emissions (million metric tons) | 43.5 | 43.1 | 42.6 |
| Absolute net $CO_2$ emissions (million metric tons) | 41.0 | 40.0 | 39.4 |
| Specific gross $CO_2$ emissions (kg $CO_2$/metric ton of cementitious product) | 667 | 660 | 661 |
| Specific net $CO_2$ emissions (kg $CO_2$/metric ton of cementitious product) | 629 | 612 | 612 |
| Reduction in $CO_2$ emissions per ton of cementitious product from 1990 baseline (%) | 20.5 | 22.7 | 22.7 |
| Thermal energy efficiency of clinker production (MJ/ton clinker) | 3,696 | 3,757 | 3,876 |

** Historic data shall remain unchanged because the previous protocol was closely aligned with the simple methods for reporting of the calcination $CO_2$ emissions.*

| Fuel Mix (%) | 2010 | 2011 | 2012* |
|---|---|---|---|
| Total alternative fuels | 20.3 | 24.7 | 27.1 |
| Coal | 25.3 | 26.9 | 22.3 |
| Petroleum coke | 45.0 | 38.5 | 37.2 |
| Fuel oil | 8.8 | 9.4 | 8.9 |
| Natural gas | 0.6 | 0.5 | 4.5 |

** Historic data shall remain unchanged because the previous protocol was closely aligned with the simple methods for reporting of the calcination $CO_2$ emissions.*

| Alternative Fuels Rate (%) | 2010 | 2011 | 2012* |
|---|---|---|---|
| Alternative fossil fuels rate | 15.7 | 20.1 | 20.7 |
| Biomass fuels rate | 4.6 | 4.6 | 6.4 |

** Historic data shall remain unchanged due to that the previous protocol was closely aligned with the simple methods for reporting of the calcination $CO_2$ emissions.*

| Waste Types Used as Alternative Fuels (%) | 2010 | 2011 | 2012* |
|---|---|---|---|
| Industrial and household waste | 60.8 | 65.3 | 66.2 |
| Tires | 16.5 | 16.2 | 14.2 |
| Animal meal | 4.2 | 3.6 | 3.1 |
| Agricultural organic waste | 13.9 | 10.0 | 9.7 |
| Other biomass | 4.7 | 4.9 | 6.7 |

** Historic data shall remain unchanged due to that the previous protocol was closely aligned with the simple methods for reporting of the calcination $CO_2$ emissions.*

| Other Carbon Strategy Indicators | 2010 | 2011 | 2012* |
|---|---|---|---|
| Alternative raw material rate | 11.8 | 12.0 | 12.5 |
| Clinker/Cement factor (%) | 75.9 | 75.1 | 76.5 |
| Indirect energy consumption (GWh) | 7,108 | 7,164 | 7,460 |
| Specific energy consumption, cement (kWh/ton cement) | 118 | 118 | 117 |
| Specific energy consumption, ready-mix concrete (kWh/cubic meter) | 3.3 | 3.3 | 3.1 |
| Specific energy consumption, aggregates (kWh/ton) | 6.0 | 6.9 | 6.2 |
| Direct energy consumption (TJ) | 195,043 | 191,323 | 195,505 |

** Historic data shall remain unchanged due to that the previous protocol was closely aligned with the simple methods for reporting of the calcination $CO_2$ emissions.*

| Air Quality | 2010 | 2011 | 2012 |
|---|---|---|---|
| Clinker produced with continous monitoring of major emissions (Dust, NOx and SOx) (%) | 74 | 80 | 80 |
| Clinker produced with monitoring of major and minor emissions (Dust, NOx, SOx, Hg, Cd, Tl, VOC, PCDD/F) (%) | 69 | 82 | 81 |
| Absolute dust emissions (tons/year) | 4,421 | 4,978 | 3,759 |
| Specific dust emissions (g/ton clinker) | 89 | 101 | 78 |
| Absolute NOx emissions (tons/year) | 56,239 | 54,182 | 49,396 |
| Specific NOx emissions (g/ton clinker) | 1,134 | 1,094 | 1,025 |
| Absolute SOx emissions (tons/year) | 16,556 | 16,601 | 12,385 |
| Specific SOx emissions (g/ton clinker) | 334 | 335 | 257 |

| Water Management | 2010 | 2011 | 2012 |
|---|---|---|---|
| Total water withdrawals by source (Million cubic meters) | | | 76.0 |
| Surface Water | | | 26.6 |
| Ground Water | | | 39.3 |
| Municipal Water | | | 8.5 |
| Rain Water | | | 1.0 |
| Sea Water | | | 0.0 |
| Other | | | 0.7 |
| **Cement** | | | 26.4 |
| Surface Water | | | 10.8 |
| Ground Water | | | 14.0 |
| Municipal Water | | | 0.8 |
| Rain Water | | | 0.2 |
| Sea Water | | | 0.0 |
| Other | | | 0.6 |
| **Ready-Mix** | | | 10.5 |
| Surface Water | | | 0.7 |
| Ground Water | | | 2.8 |
| Municipal Water | | | 6.8 |
| Rain Water | | | 0.0 |
| Sea Water | | | 0.0 |
| Other | | | 0.1 |
| **Aggregates** | | | 39.1 |
| Surface Water | | | 15.1 |
| Ground Water | | | 22.4 |
| Municipal Water | | | 0.9 |
| Rain Water | | | 0.7 |
| Sea Water | | | 0.0 |
| Other | | | 0.0 |

| Water Management | 2010 | 2011 | 2012 |
|---|---|---|---|
| Total water discharge by destination (Million cubic meters) | | | 29.1 |
| Surface Water | | | 21.3 |
| Ground Water | | | 6.7 |
| Municipal Water | | | 0.7 |
| Sea Water | | | 0.1 |
| Other | | | 0.3 |
| **Cement** | | | 7.9 |
| Surface Water | | | 6.2 |
| Ground Water | | | 1.2 |
| Municipal Water | | | 0.2 |
| Sea Water | | | 0.1 |
| Other | | | 0.2 |
| **Ready-Mix** | | | 0.6 |
| Surface Water | | | 0.0 |
| Ground Water | | | 0.0 |
| Municipal Water | | | 0.5 |
| Sea Water | | | 0.0 |
| Other | | | 0.1 |
| **Aggregates** | | | 20.6 |
| Surface Water | | | 15.1 |
| Ground Water | | | 5.5 |
| Municipal Water | | | 0.0 |
| Sea Water | | | 0.0 |
| Other | | | 0.0 |
| Total water consumption (Million cubic meters) | | | 46.9 |
| Cement | | | 18.5 |
| Ready-Mix | | | 9.9 |
| Aggregates | | | 18.5 |
| Total water consumption per unit of product* | | | |
| Cement (l/ton) | 277 | 257 | 305 |
| Ready-Mix (l/cubic meters) | 202 | 213 | 184 |
| Aggregates (l/ton) | 199 | 182 | 139 |
| Operations with water recycling systems (%) | 75 | 79 | 88 |
| Cement | 75 | 77 | 78 |
| Ready-Mix | 86 | 89 | 89 |
| Aggregates** | 65 | 71 | 86 |

**Under the framework of the CEMEX´s Water Project, in 2012 we developed our own methodology to standardize the reporting of our water KPIs. In addition, our water definitions have been updated according to the discussion that we are having within CSI, and that is trying to set common definitions for water KPIs in our industry.*

*** Considering sites where aggregates are washed as part of the production process.*

| Waste Management | 2010 | 2011 | 2012* |
|---|---|---|---|
| Hazardous waste disposal (tons) | 50,868 | 39,904 | 27,446 |
| Cement | 14,164 | 15,492 | 14,930 |
| Ready-Mix | 1,272 | 1,784 | 1,854 |
| Aggregates | 35,433 | 22,628 | 10,662 |
| Non-Hazardous waste disposal (tons) | 385,977 | 414,600 | 609,596 |
| Cement | 66,139 | 96,372 | 122,618 |
| Ready-Mix | 313,515 | 315,476 | 483,338 |
| Aggregates | 6,322 | 2,752 | 3,640 |
| Volume of returned ready-mix concrete material from total delivered | | | |
| % | 0.73 | 0.76 | 0.95 |
| Cubic meters | 279,909 | 284,910 | 516,846 |
| Secondary and recycled aggregates used as a direct replacement of primary aggregates (tons) | | | |
| % | 0.25 | 0.27 | 0.33 |
| Tons | 284,356 | 312,276 | 245,541 |

** The results for 2012 have increased due to an increase scope.*

| Biodiversity Management | 2010 | 2011 | 2012 |
|---|---|---|---|
| Active sites with quarry rehabilitation plans (%) | 85 | 89 | 91 |
| Cement | 82 | 87 | 89 |
| Aggregates | 86 | 90 | 92 |
| Number of active quarries within or adjacent to high biodiversity value areas | 105 | 103 | 94 |
| Cement | 12 | 14 | 11 |
| Aggregates | 93 | 89 | 83 |
| Active sites with high biodiversity value where biodiversity action plans are actively implemented (%) | 38 | 38 | 41 |
| Cement* | 58 | 43 | 45 |
| Aggregates* | 35 | 37 | 41 |

** We have updated our 2011 figures according to the definitions currently agreed by the Cement Sustainability Initiative. This modification does not affect the total number of sites.*

| Environmental Management | 2010 | 2011 | 2012 |
|---|---|---|---|
| Operations with an Environmental Management System implemented (%) | 76 | 86 | 89 |
| Operations with ISO 14001 Certifications (#) | 367 | 448 | 586 |
| Operations with ISO 14001 Certifications (%) | 18 | 23 | 30 |
| Sustainability Investment (US Million) | 93 | 95 | 139 |
| Major environmental incidents (#) | 2 | 0 | 1 |
| Environmental non-compliance cases (#) | 65 | 129 | 131 |
| Associated fines (US million) | 1.4 | 1.5 | 2.3* |

** Puerto Rico will pay a US 2.1 million dollar fine to an Environmental Protection Agency due to violation Multi Sector General Permit in 2012.*

| Health and Safety | 2010 | 2011 | 2012 |
|---|---|---|---|
| Total fatalities | 46 | 44 | 18 |
| Employees, total | 2 | 5 | 1 |
| Cement | 2 | 2 | 0 |
| Ready-Mix | 0 | 3 | 1 |
| Aggregates | 0 | 0 | 0 |
| Other businesses | 0 | 0 | 0 |
| Contractors, total | 15 | 24 | 11 |
| Cement | 7 | 10 | 10 |
| Ready-Mix | 7 | 4 | 1 |
| Aggregates | 1 | 8 | 0 |
| Other businesses | 0 | 2 | 0 |
| Third-parties, total | 29 | 15 | 6 |
| Cement | 7 | 7 | 5 |
| Ready-Mix | 7 | 7 | 1 |
| Aggregates | 0 | 1 | 0 |
| Other businesses | 15 | 0 | 0 |
| Fatality rate, employees (per 10,000 employed) | 0.43 | 1.21 | 0.22 |
| Cement | 1.71 | 1.75 | 0 |
| Ready-Mix | 0 | 1.95 | 0.64 |
| Aggregates | 0 | 0 | 0 |
| Other businesses | 0 | 0 | 0 |

| Lost Time Injuries (LTIs) | 2010 | 2011 | 2012 |
|---|---|---|---|
| Employees, total | 268 | 236* | 214 |
| Cement | 52 | 44 | 48 |
| Ready-Mix | 125 | 121 | 130 |
| Aggregates | 18 | 22 | 16 |
| Other businesses | 73 | 49 | 20 |
| Contractors, total | 123 | 124 | 103 |
| Cement | 32 | 50 | 56 |
| Ready-Mix | 27 | 38 | 24 |
| Aggregates | 12 | 8 | 4 |
| Other businesses | 52 | 28 | 19 |
| Lost-time injury (LTI) frequency rate, employees (per million hours worked) | 2.6 | 2.3 | 2 |
| Cement | 2.1 | 1.7 | 1.6 |
| Ready-Mix | 3.3 | 2.9 | 3.4 |
| Aggregates | 1.7 | 2 | 1.6 |
| Other businesses | 2.4 | 1.9 | 0.7 |
| Compliance with CSI Driving Safety Recommended Practices (%) | 64 | 79 | 85 |
| Compliance with CSI Contractor Safety Recommended Practices (%) | 63 | 82 | 90 |
| Operations with a Health and Safety Management System implemented (%) | 98 | 99 | 100 |
| Cement | 98 | 99 | 99 |
| Ready-Mix | 99 | 100 | 100 |
| Aggregates | 97 | 99 | 99 |
| Operations certified with OSHAS 18001:2007 (Occupational Health and Safety Management System)(%) | 9 | 8 | 9 |
| Cement | 32 | 34 | 35 |
| Ready-Mix | 7 | 5 | 7 |
| Aggregates | 16 | 15 | 12 |
| Sickness Absence Rate (%) | 2.5 | 1.8 | 2.5 |
| Operations with a qualified health professional onsite or with access to an external health provider | 96 | 96 | 96 |

** Following detailed review exercise, the number of LTI's in 2011 has been adjusted, this did not impact the overall CEMEX LTI Frequency Rate.*

| Corporate Governance | 2010 | 2011 | 2012 |
|---|---|---|---|
| Reports of alleged breaches to the Code of Ethics received by local ethics committees (#) | 184 | 221 | 325* |
| Reports related to employee relations | 31 | 29 | 53 |
| Reports related to a form of harassment | 46 | 40 | 53 |
| Reports related to discrimination | 11 | 9 | 7 |
| Disciplinary actions taken as a result of reports of non-compliance with the Code of Ethics, other policies or the law (#) | 77 | 119 | 140 |
| Countries with local mechanisms to promote employee awareness of procedures to identify and report incidences of internal fraud, kick-backs, among others (%) | 90 | 100 | 100 |
| Investigated incidents reported and found to be true related to internal fraud, kick-backs among others corruption incidents to government officials (#) | 0 | 0 | 0 |

** The results for 2012 have increased due to an increased scope.*

| Partnership with Key Stakeholders | 2010 | 2011 | 2012 |
|---|---|---|---|
| Workforce | 46,533 | 44,104 | 43,905 |
| Mexico | 11,409 | 10,333 | 9,697 |
| United States | 8,860 | 8,322 | 9,791 |
| Northern Europe | 15,054 | 11,679 | 11,162 |
| Africa, Middle-East, Asia | 3,646 | N/A | N/A |
| Mediterranean | N/A | 4,404 | 3,946 |
| Asia | N/A | 1,319 | 1,199 |
| South/Central America and Caribbean | 4,317 | 4,501 | 4,977 |
| Others (including Corporate and Neoris) | 3,247 | 3,546 | 3,133 |
| Breakdown of workforce by type of contract (%) | | | |
| Full time | 99 | 99 | 99 |
| Part time | 1 | 1 | 1 |
| Breakdown of workforce by level (%) | | | |
| Executive positions | 5 | 5 | 5 |
| Non-executive positions | 36 | 37 | 35 |
| Operational positions | 59 | 58 | 60 |
| Breakdown of workforce by age (%) | | | |
| Under 30 | 19 | 17 | 16 |
| 31-40 | 32 | 31 | 31 |
| 41-50 | 27 | 29 | 29 |
| 51 and Over | 22 | 23 | 24 |
| Breakdown of workforce by gender (%) | | | |
| Male | 87 | 89 | 89 |
| Female | 13 | 11 | 11 |
| Female employees by level (%) | | | |
| Executive positions | 13 | 13 | 13 |
| Non-executive positions | 24 | 23 | 25 |
| Operational positions | 6 | 4 | 2 |
| Male to female wage ratio | 1.02 | 1.04 | 1.04 |
| Engagement level | 83 | N/A | 88 |
| Participation rate in engagement survey (%) | 64 | N/A | 75 |
| Empoyee turnover rate (%)* | 6.0 | 5.0 | 6.6 |
| Employees represented by an independent union or covered by a collective bargaining agreement (%) | 54 | 54 | 46 |
| Notice to employees regarding operational changes (average days) | 30 | 40 | 40 |
| Countries with practices to promote local hiring (%) | 76 | 76 | 76 |
| Training provided by operations (average hours) | | | |
| Executive positions | 20 | 20 | 42 |
| Non-executive and operational positions | 22 | 15 | 20 |
| Online courses through CEMEX Learning (#) | 1,036 | 1,121 | 1,260 |
| Employees with access to CEMEX Learning (#) | 19,002 | 18,767 | 18,317 |

| Partnership with Key Stakeholders | 2010 | 2011 | 2012 |
|---|---|---|---|
| Sites conducting social impact assessments (%) | 67 | 68 | 68 |
| Cement | 75 | 75 | 75 |
| Ready-Mix | 61 | 67 | 67 |
| Aggregates | 67 | 70 | 70 |
| Sites with community engagement plans (%) | 97 | 97 | 97 |
| Cement | 96 | 96 | 96 |
| Aggregates | 97 | 97 | 97 |
| Operation with employee volunteering programs (%) | 41 | 43 | 54 |
| Countries that conduct regular customer satisfaction surveys (%) | 84 | 86 | 89 |
| Purchases sourced from locally-based suppliers (%) | 93 | 94 | 95 |
| Countries with a process to screen suppliers in relation to social and environmental aspects (%) | 84 | 86 | 89 |

** Voluntary turnover.*

| Strengthen Local Communities | 2010 | 2011 | 2012 |
|---|---|---|---|
| Number of families participating in Patrimonio Hoy in Latin America Initiative (# accumulated) | 308,311 | 353,856 | 396,845 |
| Number of individuals benefited from Patrimonio Hoy (# accumulated) | | | 1,921,731 |
| Total square meters built in Patrimonio Hoy Initiative (# accumulated) | 1,984,500 | 2,593,094 | 3,040,490 |
| Total number of families participating in Inclusive Businesses (Construapoyo y PCS) * | 8,475 | 44,013 | 56,693 |
| Total number of families participating within all social initiatives * | | | 453,538 |
| Total number of individuals benefited from all social initiatives * | | | 2,188,289 |

** Accumulated years from all our social initiatives: Patrimonio Hoy since 1998, Construapoyo since 2005 and, PCS since 2006.*

# awards & recognitions

### AFNOR Certification
CEMEX in France was the first company in its sector of activity to obtain the "Maturity" level by the AFNOR Certification Organization. The certificate recognizes the social responsibility of companies in relation to the ISO 26000 standard.

### CDP Outstanding Carbon Disclosure in Latin America
CEMEX ranked number one in the Carbon Disclosure Project's (CDP) report on 32 major companies throughout Latin America in terms of climate change data disclosure and was one of the top ten in overall carbon emissions performance.

### Energy Star® Certification
Five of CEMEX'S sites in the USA have earned ENERGY STAR® certification with the U.S. Environmental Protection Agency (EPA) for superior performance in energy efficiency. The five sites are cement manufacturing plants in California, Florida, Georgia and Ohio.

### French Ministry for Ecology Recognition
CEMEX in France received official recognition by the French Ministry responsible for ecology for its environmental commitment to certify 183 quarries and ready-mix concrete production units, in line with ISO 14001 standard.

### Golden Pillar of Construction Sector Award
CEMEX in Poland won the Golden Pillar of Construction Sector award at the "Your House" International Construction Trade Show in southern Poland. The award acknowledged CEMEX's innovative approach to the reduction of $CO_2$ in concrete production and its commitment to high product quality.

### Latvian Sustainability Index 2012
CEMEX in Latvia won a silver award in the Sustainability Index 2012 and received the "Power of the Region" prize for environmental agency in the sustainable development of society and the region.

### Mundo Ejecutivo Social Responsibility Award
CEMEX was awarded for its high social responsibility score in Mexico's Universidad Anahuac del Norte survey of sustainability. The award recognizes environmental, social and human rights efforts.

### National Biodiversity and Sustainable Development 2012
CEMEX's SotoPajares gravel quarry in Spain was honored by the Federation of Aggregates with the highest award in the category of "Biodiversity and Sustainable Development" for 2012. The award recognizes CEMEX's efforts to preserve the environment in the midst of mining and industrial development.

### PCA's Overall Environmental Excellence Award
CEMEX's Louisville, Kentucky plant, the Kosmos Cement Company, was named the recipient of the Portland Cement Associations Overall Environmental Excellence Award for 2012 in recognition for its wide range of innovative initiatives in land stewardship, energy efficiency, community outreach and overall environmental excellence. The plant also received recognition in the Energy Efficiency, Innovation and Land Stewardship categories.

### The Council for a Beautiful Israel "Stars of Beauty" Awards
CEMEX in Israel's Modiim aggregates quarry was awarded the maximum five "stars of beauty" and the Golani quarry received four stars by the Council for a Beautiful Israel. The award recognizes companies that encourage quality of life, ecological preservation and sustainability within the Israeli industrial sector.

### Wildlife Habitat Council Certification
Five of CEMEX's sites in the USA have earned certification with the Wildlife Habitat Council for superior management of wildlife enhancement and land conservation projects. The five sites are cement manufacturing plants in Fairborn, Ohio; Louisville, Kentucky; and the FEC Quarry, 474 Sand Mine, and Brooksville Quarry in Florida.

### Wildlife Habitat Council for Education
Eight of CEMEX's sites in the USA have received certification through the Wildlife Habitat Council's Corporate Lands for Learning and Wildlife at Work Programs. The company's operations in Knoxville, Tennessee; Lyons, Colorado; and in Brooksville, Miami, Clermont, Davenport, Lake Wales and Center Hill, Florida, received recognition for creating, conserving, and restoring their habitat with the involvement of employees and members of the community.

# advisory panel members and statement

We are pleased to note the continued commitment of CEMEX to sustainability and how integral sustainability has become to its business strategy, including seeking leadership in sustainable construction and cement production. This report is a reflection of the significant progress being made by CEMEX.

### Scope of our Review

We reviewed an advanced draft of the CEMEX 2012 Sustainable Development Report. We shared with management our detailed comments and specific suggestions for improvement. Given the nature of the process, some of our comments can be immediately incorporated in the final report, others must wait for the development of the policies, processes and information. Given the experience of the last few years, we remain confident that CEMEX will progressively incorporate our suggestions in future editions of the report. We list here our general observations and concentrate on those aspects that will further enhance the company's reporting in the future.

### Completeness and Clarity

The panel is pleased to observe the considerable progress achieved in focusing the report on the major sustainability issues facing the company and tightening its content to increase the relevance to the major stakeholders. The continuous reduction in size is also likely to enhance its effectiveness. Its readability has also been enhanced through its conciseness and its agile design, eschewing unnecessary pictures.

The use of the theme "Building the Cities of the Future" for the sustainability report was risky as it could lead to the perception that the major concern of CEMEX is the built environment. Nevertheless the theme has worked rather well and CEMEX has been able to weave its general approach to social and environmental sustainability within the broad concept of cities, without neglecting the impact on biodiversity, the sustainability of its products and the concern for its employees and the community.

We like the use of the seven priorities as a reporting structure and are pleased to see its further development in the 2012 report. The report covers the important topics defined as material by CEMEX and the extensive exercise initiated in this period to assess materiality is welcomed and should be progressively refined to ensure representativeness of all stakeholders. The panel feels that it will lead to further enhancement of the effectiveness of CEMEX's sustainability actions and their reporting and hopes that it will lead to more effective stakeholder engagement.

We encourage CEMEX to find ways to help the reader understand better how it is implementing its sustainability strategy and to provide more evidence of the effects. While the report includes the required GRI indicators, the text still contains many general assertions and should include more evidence and discussion of performance, even though progress over the previous report must be recognized. While this is a complex subject, CEMEX should consider collecting information and performing analysis on the contributions of its operations to society, to report a more integrated and comprehensive view in the medium term.

We are also encouraged by the clearer highlighting of challenges and look forward to learning in future reports how these were managed.

The report describes the processes that CEMEX has in place to enhance its sustainability. However, it would also be desirable to develop the information and data collection systems necessary for reporting on the results of those processes. This would be especially useful in areas like the results of training and awareness of sustainability issues, implementation of the code of ethics, compliance of suppliers with CEMEX sustainability policies and the consequences of violations.

### Human Rights

We are pleased to learn that CEMEX has started to broaden its approach to Human Rights along the suggestions of the UN's Ruggie report and that in the coming years it will produce an assessment of its policies and processes to respect all human rights, which will in turn lead to a more comprehensive action plan and its corresponding report.

### Safety

While 2012 saw an improvement in the number of fatalities and lost time, the number of fatalities still remains a major concern. The number of fatalities, especially among contractors, is still unacceptable as the President's letter emphasizes.

Monitoring and reporting of incidents are very well taken, but the report should incorporate the processes, procedures and actions taken to manage the incidents and avoid recurrence. In particular the panel welcomes the UK example and hopes it can replicated in other locations.

### Emissions

We would encourage CEMEX to report on indicators and comment on the evolution of actual $CO_2$ emissions in recent years, not just avoided emissions, reporting on two of the three traditional scopes (direct and purchased emissions). The early achievement of targets for dust, NOx and SOx emissions seem to indicate the need to update and strengthen them for future years.

### Biodiversity

The report should note the future challenge posed by the target of implementing biodiversity management at 100 key sites by 2015. The number of active sites with high biodiversity value where biodiversity action plans are actively implemented remains rather low. We reiterate the call we made last year for CEMEX to develop a biodiversity strategy with additional clear and quantifiable impact (not just process) targets, based on an overall commitment to Net Positive Impact on biodiversity across the company's operations.

### Water

Water is becoming an increasingly important environmental issue and we are pleased that CEMEX reports on its use of water. We look forward to more information in future reports on how it intends to improve its performance and report on efforts to recycle water or use water not suitable for human consumption.

### Sustainable Construction

We note CEMEX efforts to develop more sustainable products and to promote sustainability labeling. We welcome its integral approach to sustainability, to move beyond being a sustainable cement provider to being an actor in sustainable construction. In future editions of the report we would like to see how CEMEX adapts its strategies, structures and actions to address the challenges of sustainable construction services and systems.

In the meantime, given that the major product of CEMEX is concrete it would be desirable for the company to consider, in the short and medium-term, measures to enhance the recyclability of cement to reduce waste.

### GRI Reporting

The panel encourages CEMEX to analyze the implications for its information systems of the extensive y complex reporting changes implied by the new G4 GRI reporting guidelines and to prepare for their eventual adoption, starting in 2014.

Overall we are pleased with progress being made by CEMEX in their sustainability and its reporting and the positive trends we are observing. We hope the company will continue to make progress in its contribution to sustainable development.

### Advisory Panel Members

*Irma Gomez*
Undersecretary for Management, Ministry of Environment and Natural Resources of Mexico

*Felipe Pich*
Founding Director of Pich-Aguilera Architects and President of GBCe, Spanish Chapter of the World Green Building Council

*Leon Bennun*
Director of Science, Policy and Information, BirdLife International

*Antonio Vives*
Consulting Professor, Civil and Environmental Engineering Department, Stanford University

For more information on our Advisory Panel please visit our webpage.

# pwc's limited assurance report

**Independent Limited Assurance Report on the $CO_2$ emissions, safety, environmental incidents and other emissions Key Performance Indicators reported by CEMEX for the year 2012**

**To the Board of Directors of CEMEX**

At the request of CEMEX, we have carried out an independent limited review of $CO_2$ emissions, safety, environmental incidents and other emissions Key Performance Indicators ("the KPI's") reported by CEMEX for the year 2012. This assurance process covers the KPI's disclosed in the 2012 Sustainable Development Report identified with the symbol ☑:

- $CO_2$ emissions, as calculated according to *"The Cement $CO_2$ and Energy Protocol"* (version 3.0, May 2011):
  - Absolute gross and net $CO_2$ emissions
  - Specific gross and net $CO_2$ emissions
  - Alternative fuels rates (alternative fossil and biomass fuels)
  - Total indirect $CO_2$ emissions
- Safety indicators, as calculated according to the guidelines *"Safety in the cement industry: Guidelines for measuring and reporting"* (version 3.0, updated October 2008):
  - Fatality rate for directly employed
  - Lost Time Injury Frequency rate (LTI FR) for directly employed
  - Lost Time Injury Severity rate (LTI SR) for directly employed
- Number of Environmental Incidents category 1, as defined by CEMEX Corporate in its operational and administrative procedure *"Environmental Incident Reporting"*.
- Other emissions indicators (dust, $NO_x$ and $SO_x$), as calculated according to the WBCSD-CSI *"Guidelines for Emissions Monitoring and Reporting in the Cement Industry"* (version 1, March 2005):
  - Overall coverage rate
  - Rate of clinker generated with continuous monitoring of dust, $NO_x$ and $SO_x$
  - Absolute and specific emissions data of dust
  - Absolute and specific emissions data of $NO_x$
  - Absolute and specific emissions data of $SO_x$

The KPIs have been prepared by, and are the responsibility of, CEMEX Management. Our responsibility consists of issuing conclusions about their consistency and reliability based on our review work and scope described in the next paragraph.

**Bases, objective and scope of the verification**

Our work was performed based on verification standards established by the International Federation of Accountants, under the International Standard for Assurance Engagement ISAE 3000 pertaining to limited assurance. We planned and performed the procedures set out below to obtain limited assurance as to whether the KPIs are free of material misstatements. A higher level of assurance would have required more extensive procedures.

- We assessed CEMEX reporting procedures for The KPIs with regard to their consistency with *"The Cement $CO_2$ and Energy Protocol"*, the *"Safety in the cement industry: Guidelines for measuring and reporting"*, the internal corporate procedure on *"Environmental Incident Reporting"* and the *"Guidelines for Emissions Monitoring and Reporting in the Cement Industry"*, respectively;
- At corporate level, we conducted interviews with the individuals responsible for the preparation and execution of the reporting procedures as well as for the consolidation of data. At this level we performed analytical procedures and verified, on a sample basis, the calculations and consolidation of data;

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- At regional coordination level, we conducted interviews with the individuals responsible for the KPIs reporting and performed analytical tests;
- We selected a sample of operations in order to perform site visits, for which we performed the following :
  - we reviewed site organization and procedures, especially those regarding KPIs reporting;
  - we assessed control procedures on key parameters, and
  - We performed reconciliation of reported data with the supporting documentation and verified o a sample basis the arithmetical accuracy of calculations.
- We analyzed the consolidated KPIs reported by CEMEX in the 2012 Sustainable Development Report to verify the coherence with the results of our work.

**Conclusions:**

Based on the results of our review, and taking into account our recommendations above, nothing has come to our attention that causes us to believe that:

- The KPIs have not, in all material respects, been prepared in accordance with *"The Cement $CO_2$ and Energy Protocol"*, the *"Safety in the cement industry: Guidelines for measuring and reporting"*, the *"Environmental Incident Reporting"* procedure and the *"Guidelines for Emissions Monitoring and Reporting in the Cement Industry"*.
- The KPIs contain material misstatements.
- The $CO_2$ emissions, safety, environmental incidents type 1 and other emissions contain material misstatements.

Mexico, March 27th, 2013

Enrique Alejandro Bertran Sánchez
Partner
Sustainability Business Solutions
PricewaterhouseCoopers, S.C.

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# A+ statement

## gri application level check

Global Reporting Initiative™

## Statement
## GRI Application Level Check

GRI hereby states that **CEMEX** has presented its report "Building the cities of the future" (2012) to GRI's Report Services which have concluded that the report fulfills the requirement of Application Level A+.

GRI Application Levels communicate the extent to which the content of the G3 Guidelines has been used in the submitted sustainability reporting. The Check confirms that the required set and number of disclosures for that Application Level have been addressed in the reporting and that the GRI Content Index demonstrates a valid representation of the required disclosures, as described in the GRI G3 Guidelines. For methodology, see www.globalreporting.org/SiteCollectionDocuments/ALC-Methodology.pdf

Application Levels do not provide an opinion on the sustainability performance of the reporter nor the quality of the information in the report.

Amsterdam, 2 April 2013

Nelmara Arbex
Deputy Chief Executive
Global Reporting Initiative

GRI REPORT
GRI CHECKED

The "+" has been added to this Application Level because CEMEX has submitted (part of) this report for external assurance. GRI accepts the reporter's own criteria for choosing the relevant assurance provider.

*The Global Reporting Initiative (GRI) is a network-based organization that has pioneered the development of the world's most widely used sustainability reporting framework and is committed to its continuous improvement and application worldwide. The GRI Guidelines set out the principles and indicators that organizations can use to measure and report their economic, environmental, and social performance. www.globalreporting.org*

***Disclaimer:*** *Where the relevant sustainability reporting includes external links, including to audio visual material, this statement only concerns material submitted to GRI at the time of the Check on 25 March 2013. GRI explicitly excludes the statement being applied to any later changes to such material.*

# about this report

### Reporting History and Cycle

CEMEX began publishing annual environmental, health, and safety reports in 1996, and then in 2003 published its first Sustainable Development Report. The company has been engaged in annual sustainability reporting since then and published its most recent report in April 2011. This, the company's full 2012 Sustainable Development Report, is our tenth such report that covers the broad range of our environmental, social, and governance issues and performance.

We applied the Global Reporting Initiative (GRI) G3 Sustainability Reporting Guidelines – Mining & Metals Sector Supplement to produce the full report, which meets an application level of A+ for the fifth consecutive year.

### Boundary and Reporting Period

This report covers our global cement, ready-mix concrete, and aggregates operations, presenting our sustainability performance, progress, achievements, and challenges for the 2012 calendar year, which is also the company's fiscal year. We have emphasized those issues identified as high-priority through both our materiality analysis and our sustainable development strategic planning process, as reflected in the seven priority areas of our Sustainable Development Model. For more information as well as updates throughout the year, please visit the Sustainable Development section of our website.

Unless otherwise indicated, the information provided in this report is for the company as a whole. We have included information for the operations in which we have financial and operative control. If a plant is sold, its information is no longer included in our data or considered in our targets. If we have restated certain data sets from previous years because of improvements to our data-collection systems or changes to our business, each case is clearly marked. All monetary amounts are reported in US dollars. All references to "tons" are to metric tons.

The information for this report came from several sources, including internal management systems and performance databases and our Sustainable Development Report Survey, a questionnaire sent to all countries where we have operations. Data from this survey is then aggregated. This approach has enabled us to report progress on our key performance indicators for the company as a whole.

We aim to improve the transparency and completeness of each report that we produce while streamlining our processes and the way in which we provide information. We include a statement from PricewaterhouseCoopers, which verified our data on greenhouse gas emissions; atmospheric emissions; alternative fossil and biomass fuels rates; environmental incidents; and safety indicators for our cement, ready-mix, and aggregates operations.

In addition, we engaged with our Sustainable Development Reporting Advisory Panel, which provides feedback on our reporting.

### Data Measurement Techniques

We employ the following protocols and techniques for measuring the key performance indicator (KPI) data that we report:

- $CO_2$ Emissions. CEMEX reports absolute and specific $CO_2$ emissions following the latest version of the CSI Protocol, denominated: The Cement $CO_2$ and Energy Protocol, version 3.0, published in May 2011. As defined in the protocol, it considers direct emissions excluding $CO_2$ emissions from biomass fuels and purchased electricity. Historical data shall remain unchanged given that the previous protocol is closely aligned with the simple methods for reporting of the calcination $CO_2$ emissions.

- Dust, NOx and SOx emissions. Absolute and specific figures are calculated based on kiln emission measurements taken from Continuous Emissions Monitoring Systems (in those sites where kilns are equipped with such technology) or spot analysis. These methods fully comply with the CSI Guidelines for Emissions Monitoring and Reporting. All information is reported to CEMEX databases, processed, calculated, and validated to provide a final group value. The values are calculated in Standard for 0ºC, 1 atmosphere and 10% Oxygen ($O_2$) content at measuring point.

- Energy. Fuel consumption indicators are reported to internal CEMEX databases in which "conventional," "alternative," and "biomass fuels" are classified according to the CSI Cement $CO_2$ protocol spreadsheet. Heat values are obtained from on-site analysis (where applicable), value provided by supplier or standards from the CSI Guidelines for the Selection and Use of Fuels and Raw Materials in the Cement Manufacturing Process.

- Clinker factor and alternative fuels. All material consumption is reported to internal CEMEX databases in which "alternative materials" are defined following the standards from the CSI Guidelines for the Selection and Use of Fuels and Raw Materials in the Cement Manufacturing Process. The "clinker/cement factor" is calculated using the procedures from the CSI Cement $CO_2$ protocol spreadsheet with information obtained from the databases.

- Safety. An internal CEMEX safety database collects all related safety information from each site and automatically provides the appropriate information to calculate the indicators. The database is configured using the WBCSD / CSI definitions.

### Deviation from Protocols

We have adhered to the GRI Protocols where applicable and feasible. As our data-collection systems are still in development, however, there are instances in which we have not applied GRI protocols. In such cases the data we have is the best manner in which we can currently communicate our performance.

### United Nations Global Compact Communication on Progress

This report constitutes our Communication on Progress toward the commitments of the United Nations Global Compact (UNGC). As a signatory to the Global Compact, we work to align our company's operations and strategies with its ten principles. We are also committed to helping the world meet the targets of the Kyoto Protocol and Millennium Development Goals.

The GRI index is cross referenced to the UNGC principles; it can be found on our website and is available for download on our website.

We welcome your feedback on our sustainability reporting and performance. Please send your comments and suggestions to sd@cemex.com, or write to us at:

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