

# 2009 sustainability report



bringing materials to life m

#### Lafarge's presence in the world

The world leader in building materials, Lafarge holds top-ranking positions in Cement, Concrete, Aggregates and Gypsum with nearly 78,000 employees in 78 countries. As a producer of materials that are vital to economic and social development, Lafarge's growth is linked to demographics and the need for housing and infrastructure.

#### Cement

Worldwide market position: World Leader - Cement, hydraulic binders and lime for construction, renovation and public works

Employees: 46,468

Sales: 9.477 billion euros Countries: 48

Production sites: 160

#### Aggregates & Concrete

#### Worldwide market position:

N°2 for Aggregates and N°3 for Concrete -Aggregates, ready-mix and precast concrete products, asphalt and paving for engineering structures, roads and buildings

Employees: 23,552 Sales: 5.064 billion euros

Countries: 36 Production sites: 1,773

#### Gypsum

#### Worldwide market position:

N° 3 - Plasterboard systems and gypsum-based interior solutions for new construction and renovation

Employees: 7,974 Sales: 1.334 billion euros Countries: 30

Production sites: 80

Sales (in million euros)

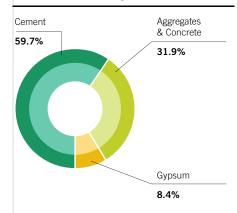
15,884

Net income (in million euros)

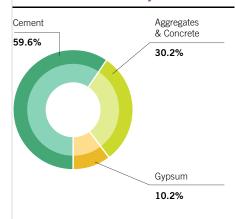
736

For more information: http://sustainabilityreport.lafarge.com

#### Sales breakdown by business line



#### Workforce breakdown by business line



Salety day at Matozinhos plant, Brazil. © Lafarge Medialibrary - Carol Reis

Vancouver Convention Center, Canada, a construction using Chronolia concrete. © Lafarge Medialibrary - Ignus Gerber

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#### The essence of our 2009 report

As you will see this year's Lafarge Sustainability Report differs in format to the previous ones. You can read about the new report's structure in the section *What we considered in writing this report* on page 49. Throughout this report we have tried to demonstrate the six following principles:

- Lafarge identifies which issues are really important (Materiality)
- Lafarge is in dialog with society; we listen and endeavor to respond (Responsiveness)
- Lafarge does not hide difficult issues or when it fails (Transparency )
- Lafarge delivers against its goals, worldwide (Sustainability Ambitions 2012)
- Lafarge works in partnership with others to deliver sustainability (Partnership)
- Lafarge demonstrates what it says through examples and testimonials (No greenwashing)

If you are convinced of this demonstration, please let us know which parts of the report proved most compelling. If not, or if you have doubts, please challenge us. We don't pretend to always get it right. We can only learn and progress in dialog with others.

#### Olivier Luneau

SVP Sustainable Development and Public Affairs

#### The year at a glance

#### Health and safety

Health and safety remains our number 1 priority as a Group. Despite significant progress on our Lost Time Injury Frequency Rate (LTIFR), we deeply regret that we suffered fatalities during 2009 and are determined to continue to drive improvements until these are eliminated altogether.

#### Responding to economic crisis

We have acted to ensure the sustainability of our business, maintaining investment in emerging markets and have focused closely on our social agenda and provide support to employees affected by restructuring.

#### The climate change conference in Copenhagen

We consider the Copenhagen Accord as an invitation for business to develop and promote policy proposals to enable further  $CO_2$  emission reductions in developed and developing countries. Lafarge, within the Cement Sustainability Initiative (CSI), is committed to lead our sector. By end of 2009, we have achieved our  $CO_2$  objective one year ahead of schedule with a 20.7% reduction between 1990 and 2010.

#### Moving partnerships forward

During 2009, we signed new partnership agreements with WWF and CARE that extend our work with these NGOs into important new areas.

#### Mapping our water footprint

We launched our efforts to map and manage Lafarge's water footprint, in partnership with WWF.

#### CHAIRMAN AND CEO INTRODUCTION

### Health & safety is our Number 1 priority



aking health and safety Lafarge's top priority is the decision I am most proud of as Chairman and CEO. Our goal is to be world class in this area, although there is still a long way to go to achieve this. The Board of Directors and myself deeply regret that we continued to suffer fatalities in 2009, particularly related to road transport. However, we are moving in the right direction. In 2009 we brought our Lost Time Injury Frequency Rate (LTIFR) below 1 for the first time, a good level of performance for our employees' safety, and our Excellence Club, which recognizes business units delivering world class performance on safety, reached 25 members in early 2010 (compared to 11 in 2009).

### Responding to economic crisis

For Lafarge, like most other businesses and individuals, the global economic crisis had a significant impact on 2009. We have acted to adapt as quickly as possible through economic and financial measures, but also to ensure that our broader sustainability agenda does not suffer as a result of the economic downturn. This was particularly true of our efforts to help employees affected by employment problems. Our businesses adopted strategies such as short-time working, temporary transfers and early retirements to limit or postpone the effects of restructuring, and the 29 business units concerned went beyond legal requirements in their assistance to affected employees.

Lafarge's performance, clear innovation program and the continuation of our sustainability

#### "Our Group can make a positive contribution to local communities, emerging markets and the global fight against climate change."

agenda through the economic downturn could not have been achieved without the outstanding contribution of our employees. I would like to thank each and every one of them for their efforts. Moving on from The Copenhagen conference on climate change was an important event in 2009. As a very Copenhagen active member of the Cement Sustainability Initiative (CSI), Lafarge contributes to design policies adapted to national and régional situations and to mobilize industry towards sustainability. Our Group is pleased to have met, one year in advance, its commitment taken in 2001 to reduce its net CO<sub>2</sub> emissions per ton of cement produced by at least 20% over the 1990-2010 period. Extending our Our partnership with WWF, which we renewed until 2012, is central to our efforts on CO<sub>2</sub> emispartnerships sions, as well as to confronting issues such as persistent pollutants, water and biodiversity. Similarly, our partnership with CARE, renewed in 2009 for three years, is fundamental to our community role. We are also signatory to the UN Global Compact, communicating regularly on our progress, and continue our on-going dialog with labor unions. We are proud of our progress and are concentrating on achieving our targets so as to remain a model for the cement industry. Given our presence in many different areas of the world, our Group is in a position to make a significant, positive contribution to local communities, emerging markets and the global fight against climate change. All the above illustrate how sustainability is integral to the future of Lafarge.

**Bruno Lafont** *Chairman & Chief Executive Officer of Lafarge* 



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### **progress** continues in 2009

			WUV IS LAFARGE DURGUNG THIS AMPLITION? WHAT WILL CHANGE?	
Deadline	Performance	Performance	WHY IS LAFARGE PURSUING THIS AMBITION? WHAT WILL CHANGE? HOW ARE WE PROGRESSING AGAINST THIS AMBITION?	
2010	1.57	0.98 🗹	Every year since 2006 we have targeted an injury frequency rate reduction. Our aim is to reach as soon as possible zero injuries and to join the "best in class" industrial companies. 2009 showed strong progress. The target was achieved with the employee frequency rate reduced by over a third. A new target of 0.94 is set for 2010.	
2010	50%	65% EY	Free markets and open competition always benefit in the long term the overall economy and population, and the long term viability of performing companies. We have a portfolio which has expanded in many areas, including in economies that have not always operated in free markets, and by doing this, we will ensure tha all our units are aligned and operating under the highest competitive standards. Solid progress was made towards our goal with the completion of verifications in nine further countries. We have to accelerate in 2010 to meet our target.	
2012	N/A	35.4% <i>E</i> Y	To measure Lafarge's commitment on stakeholder relations, benchmarked data is reported for the first time this year on the three KPIs: training on Group methodology, meetings with communities and development of local action plans. Meetings with communities include formal and informal events designed to bring the site into contact with its neighbouring communities. This includes community open events as well as formal liaison committees. Local action plans demonstrate planning on stakeholder relations, focusing the actions of a site to its surrounding communities. For cement plants, this is known as Community Engagement Plans under the Cement Sustainability Initiative.	
2009	N/A	Not yet achieved		
2009 2009	N/A N/A	Done Done		
2009	N/A	Done		
2012	€1.5 bn	€1.8 bn	We constantly innovate to meet customer need. Our target was to achieve €1 billion annual sales from products that have been developed in the last five years by 2008. In fact we exceeded this target achieving €1.5 billion annual sales in 2008. Spurred by this success we set ourselves a new and more stretching 2012 target.	
2012	12.0%	12.77% 🗹	The female population in senior management in Lafarge is far too low and therefore we have set a target of one-fifth of senior and executive management being women by 201 We made some progress during 2009. We recognize that the current rate of progress insufficient to meet our 2012 goal. The Group is developing further initiatives to cor close to our goal.	
2010	On track	On track	An effective workforce is a healthy workforce. Lafarge operates in countries rangir from those with comprehensive health provision provided by the state to those with no public health provision. Therefore our ambition is to establish by 2010 a comprehensive Group-wide occupational health program with regular medical examination. A full account of our progress is given on page 14 showing that w are well on track to a good initial program.	
2010	On track	On track	Lafarge's interests are equally balanced between the developed and developing world. In the developing world HIV/AIDS and malaria can be major killers. The challenge is greatest in Sub-Saharan Africa. Here we have acted already. By end 2010 Lafarge will have extended its best practice from Africa to other major developing countries where it operates. We will do this with respect to local legislation and culture. <b>We are making</b>	
	2010 2012 2009 2009 2009 2009 2012 2012	Performance           2010         1.57           2010         1.57           2010         50%           2012         N/A           2009         N/A           2009         N/A           2012         N/A           2009         N/A           2009         N/A           2009         N/A           2009         N/A           2012         12.0%           2012         0n track	Performance       Performance         2010       1.57       0.98 E1         2010       50%       65% E1         2010       50%       65% E1         2012       N/A       35.4% E1         2009       N/A       Done         2009       N/A       Done         2009       N/A       Done         2009       N/A       Done         2009       12.0%       E1.8 bn         2012       12.0%       12.77% E1         2010       On track       On track	

Our Sustainability Ambitions 2012 set targets for the material sustainability issues that we face. They were developed through consultation with internal and external stakeholders. Internally we consulted with each Business line and twice reviewed the emerging priorities with the Group Executive Committee. Externally we engaged with our Stakeholder Panel and a number of other key individuals and institutions. Formally approved by the Board, they were launched by Bruno Lafont at the Lafarge Shareholder General Meeting on May 6, 2007. The Sustainability Ambitions 2012 are a practical tool to help us achieve stretching goals. We are finding them to be both a practical help and an ever-present challenge. We deal purposefully with many other sustainability issues outside the framework of these Ambitions. Water is a good example here. These are important issues too but through stakeholder dialog we have identified the most material factors and included them in our Sustainability Ambitions 2012.

TARGET	Deadline	2008 Performance	2009 Performance	WHY IS LAFARGE PURSUING THIS AMBITION? WHAT WILL CHANGE? HOW ARE WE PROGRESSING AGAINST THIS AMBITION?
ENVIRONMENT				
Have 100% of our sites <b>audited</b> <b>environmentally</b> within the last four years.	Permanent	83%	86% EY	One of our challenges is that we have 1,980 sites in total all over the world. We have grown by acquisition in places where environmental practices are not yet at Lafarge standards. In order to deliver these standards, we need to make sure that we regularly cover 100% of our sites. We made further progress during 2009 and are looking at how we can make changes in our way of working to reach the target more quickly.
By end 2010 reach a rate of 85% of <b>quarries with a rehabilitation plan</b> complying with Lafarge standards.	2010	79%	79% et	Ten years ago Lafarge decided to formalize a global commitment to develop rehabilitation plans from the outset on all active quarries. The pace of development of the Group makes it very challenging to keep up with our 85% of quarries up to date with a demanding standard. The disappointingly stagnant result of 2009 must not hide the effectiveness of actions developed to meet the 2010 target.
By end 2010, all our quarries will have been screened according to criteria validated by WWF International. Those with realisable potential will have developed a site <b>biodiversity</b> program by 2012.	2010 2012	50% 38%	64% 35%	Biodiversity has been on the Lafarge agenda for some time, and even more since our partnership with WWF, which started in 2000. <b>Further progress has been made</b> <b>on quarry screening in 2009.</b> For a fuller insight into our developing biodiversity activities see pages 26-28. The decrease in percentage of sensitive sites having a biodiversity management program is caused by the significant increase in the number of sites identified as sensitive.
<ul> <li>By end 2010:</li> <li>cut our worldwide net CO<sub>2</sub> emissions per ton of cement by 20% as compared to 1990*.</li> <li>cut our absolute gross emissions in the Cement Business in industrialized countries by 10% as compared to 1990.</li> <li>cut our absolute net emissions in the Cement Business in industrialized countries by 15% as compared to 1990.</li> </ul>	2010 2010 2010	-18.4% -12.5% -16.3%	-20.7% EY -37.7% EY -41.3% EY	In 2001, within the framework of our partnership with WWF, we committed to $CO_2$ emission reduction objectives to contribute as Lafarge to the overall objective to limit the Earth temperature increase to 2°C. The first objective (- 20% net $CO_2$ emissions per ton of cement worldwide) was met in 2009, one year ahead of schedule, thanks to our continuous performance improvement in all our business units. The two other objectives (absolute emission reductions in developed countries) were already met end of 2008, thanks to our industrial performance but in the contex of the economic downturn, which has significantly impacted our production volumes. We intend to continue our efforts to reduce our $CO_2$ emissions.
Cut our <b>dust emissions</b> in our cement plants by 30% over the period 2005-2012.	2012	-21.1%	-26.1% 🕅	Our activities generate dust. Although we are already within local regulations, our voluntary undertaking is to reduce our dust emissions worldwide by 30% by end 2012 compared to 2005. This will considerably reduce nuisance for our neighbors. Achieving this aim will necessarily involve capital investment. <b>Considerable progress was made in 2009. We are confident of meeting our target ahead of the 2012 target date.</b>
Cut our <b>NOx emissions</b> in our cement plants by 20% over the period 2005-2012.	2012	-15.5%	-21.7% 🗹	Any combustion releases NOx into the atmosphere. Beyond local regulations, Lafarge is voluntarily committing to a worldwide 20% reduction of NOx generated per ton of clinke over the period 2005 - 2012. This will add to Lafarge's efforts for a cleaner world. It will require capital investment and operating expenses. The target has been achieved three years ahead of schedule and we will continue our efforts to control emissions.
Cut our $SO_2$ emissions in our cement plants by 20% over the period 2005-2012.	2012	-32.9%	-44.2% EY	$SO_2$ results from kiln processes; the sulphur comes mainly from the local raw materials, like limestone, that are used. Consequently the levels of $SO_2$ emitted by plants can vary considerably. Beyond local regulations, Lafarge is voluntarily committing to a worldwide 20% reduction of $SO_2$ generated per ton of clinker over the period 2005 - 2012. Significant capital investment and operating expenses are being made to mitigate the impact of these emissions. Lafarge exceeded this target four years ahead of schedule in 2008, made progress in 2009 and will continue in 2010.
By end 2010 have a baseline for <b>persistent</b> <b>pollutants</b> in our cement plants for 100% of kilns and reinforce our Best Manufacturing Practices to limit emissions.	2010	53.5% of kilns analyzed	69.2% <b>E</b>	<ul> <li>Persistent pollutants can be found in inputs and at the kiln stack. Progressing towards alignment with the methodology of CSI and working with WWF, Lafarge is voluntarily undertaking:</li> <li>1 - To complete the measurements of the persistent pollutants for all its kilns by end 2010.</li> <li>2 - To develop suitable KPIs and report on progress.</li> <li>3 - To implement Best Manufacturing Practices to reduce emissions on top emitter plants in 2010.</li> <li>4 - To integrate into standard management practices the lessons learnt that contribute to limi emissions of persistent pollutants.</li> <li>Lafarge continued to make progress in 2009 and plans to complete the work in 2010.</li> </ul>

ET Indicators verified by Ernst & Young (2009 data). N/A: Not applicable.

\* Net CO<sub>2</sub> emissions are the gross emissions less the emissions that come from burning waste.

@ F

#### **GOVERNANCE & PUBLIC POLICY**

# Our values & governance

First published in 1977, Lafarge's Principles of Actions define our Group's commitment to sustainability. As the Group expands internationally, with an increasing presence in emerging markets, our commitment to respect our Principles is more important than ever. We are working to establish good governance procedures and structures at all levels of the Group, measuring our progress through regular assessments. We aim to set a leading example for governance in our sector.

### Extract from the Chairman & CEO's letter to a newly appointed business unit manager

...We expect you to lead by example: in practicing our principles of action (commitment, focus, teamwork, while building on our values), in implementing our business code of conduct...

Languages into which our Code of Business Conduct has been translated



#### BRINGING VALUES TO LIFE EVERYWHERE

Lafarge's Principles of Actions comprise three elements:

1. Our vision to be the undisputed world leader in buildings materials

- 2. Our commitments to:
- Generating value for our customers
- Giving our people every opportunity to contribute and develop their talents
- Contributing to building a better world for our communities
- Delivering the value creation that our shareholders expect.
- **3.** The Lafarge Way, which defines our approach to business:
- Making our people successful,
- Focusing on performance improvement,
- With a multi-local organization.

In 2009, we focused on our Code of Business Conduct, which provides rules and guidelines based on our Principles of Action and the Lafarge Way. We translated the Code into 24 languages to increase accessibility and continued to roll out our Code of Business Conduct training, which has been developed in partnership with Transparency International (<u>www.transparency.org</u>) and the Anti-Corruption Commission of the International Chamber of Commerce (<u>www.iccwbo.org</u>), and reviewed by our Stakeholder Panel. In all, 5,860 of our employees, an average of 146 people per business unit, received Code of Business Conduct training during 2009. Ensuring engagement with our Code of Business Conduct and our Lafarge values is an absolute priority as we expand our Group in emerging markets. Our recently acquired businesses in Iraq, Algeria and Pakistan have provided Code of Business Conduct training for their executive committees and management, while our business unit in Egypt has extended training beyond this to process leaders, works directors and sales teams. Our Indian business unit did not run Code of Business Conduct training in 2009, but has committed to providing training in 2010.

#### SHAREHOLDER MEETINGS

Two meetings of Lafarge shareholders were held in 2009. At an Extraordinary General Meeting on March 31, 2009, shareholders approved all proposed resolutions, including a capital increase of  $\leq 1.5$  billion with preferential subscription rights. Total orders were approximately  $\leq 2.6$  billion, a subscription rate of 172%. Further information on the vote can be found online @.

At the Annual General Meeting on May 6, 2009, shareholders approved the 2008 financial statements and all 27 resolutions put before them. The rate of approval ranged between 84.06% and 99.78%. <u>Full details of the votes can be found online</u> **(**.



#### BOARD STRUCTURE AND OPERATIONS

The effectiveness of our Board's operations was reviewed at the end of 2008 through a survey that all Board members were required to complete. Directors considered that the organization and practices of the Board and its committees were very satisfactory. Areas identified for potential improvement in the future include a possible reduction in the number of Directors and written updates to keep the Board informed on particular topics between meetings. Our Board has 18 members. It carries out its duties in line with our published Director's Charter and follows the guidelines of the French employers' associations MEDEF and AFEP in all areas apart from the 12-year limitation on length of service. This exception is due to the long-term nature of our industry. In this context we believe that longer directorships offer valuable stability, continuity and experience, all of which reinforce the effectiveness of our directors. 10 of the 18 directors fulfill the criteria of independence set down by AFEP and MEDEF. You can find the full MEDEF and AFEP guidelines online at <u>http://archive.medef.com</u>. Sustainability issues are addressed through the Strategy, Development and Sustainable Development Committee.

Bruno Lafont is both CEO and Chairman of the Board. Mr. Lafont's remuneration is reviewed annually in line with the recommendations of AFEP-MEDEF. The Vice Chairman of the Board is an independent director and chairs discussions on the Chairman's performance and remuneration.

#### CHALLENGES ON HUMAN RIGHTS

Lafarge supports the Universal Declaration of Human Rights and the international human rights standards defined by the ILO, OECD and UN Global Compact. In 2009, we extended our commitment by joining Entreprise pour les Droits de l'Homme (EDH), a group comprising seven other French companies, which was inspired by the Business Leaders Initiative on Human Rights (BLIHR - <u>www.blihr.org</u>). Members of EDH are committed to developing management training on human rights, as well as sharing experiences and establishing best practice in the area. Our operations are complex, localized and diverse. The human rights issues are equally complex and diverse. Lafarge's expansion in emerging markets means a growing presence in countries that are considered to have human rights issues. We are determined to respond to the challenges that this creates, and we are developing a human rights training package to complement our existing training packages on the Code of Business Conduct and local stakeholder relations.

#### COMPETITION

Cement markets are often served by a limited number of suppliers and for this reason anticompetitive behavior is a potentially significant issue for our sector. For further details on the main competition litigations affecting Lafarge at the end of 2009, please refer to our 2009 Annual report (<u>www.lafarge.com</u>). We have been pro-active in addressing these potential issues through voluntary tightening of our own regulations and compliance procedures, and this has been a significant area of focus during 2009. This issue was addressed at the Stakeholder Panel meeting in November 2009, with the Group Executive Committee.

We have created a Group Competition Network with representatives in 50 countries, to increase engagement with our Competition Compliance Program. A revised version of our internal legal portal was launched in 2009 to enable better sharing of training materials and best practice on competition. In addition, hundreds of employees, distributors and other business partners worldwide have been trained during live workshops that took place last year, with 638 key employees having received competition training in 2009 by using the interactive e-learning tool developed by Lafarge. See more information on our competition policy online @.

#### POLITICAL CONTRIBUTIONS

In 2009, the Lafarge North America Inc Cement Political Action Committee (PAC) made contributions of \$58,000 to United States Federal candidates and United States Federal candidate leadership committees. The full list of beneficiaries can be found online by logging onto: www.fec.gov/finance/disclosure/norcomsea.shtml and entering Lafarge as the committee name.

Our Competition Compliance Program is included in Lafarge's Sustainability Ambitions 2012, reflecting its importance to the Group.

Countries in which the Group Competition Network has representatives



#### **GOVERNANCE & PUBLIC POLICY**

## Sustainability management

Sustainability is integral to the future of Lafarge and to our business strategy. We are organized to meet this vision.

#### THE SUSTAINABILITY AMBITIONS 2012

Our *Sustainability Ambitions 2012* are a set of targets that we are committed to achieving by 2012. Several of these have been achieved ahead of schedule in 2009 such as reducing our Lost Time Injury Frequency Rate (LTIFR) below 1, and cutting our  $CO_2$  and  $SO_2$  emissions. In these cases, our goal is now to drive further improvements and develop new measures of success. On other targets there is still work to be done.

The *Sustainability Ambitions 2012* were developed with our Stakeholder Panel, approved by the Executive Committee and announced by Bruno Lafont, Chairman and CEO, at the Shareholders Annual General Meeting on May 6, 2007. You can find a full list of our Sustainability Ambitions, targets and results, most verified by Ernst & Young, on pages 4-5.

#### SCOPE OF SUSTAINABILITY

Through our Stakeholder Panel and community engagement we have identified our most significant sustainability issues. Addressing these issues is essential for maintaining our legitimacy to operate. In areas such as emissions control, industrial ecology and recycling, sustainability also helps drive efficiency and competitiveness.

Our Sustainable Development and Public Affairs organization identifies new sustainability risks and develops new systems to manage them. In 2009, we allocated new resources to manage persistent pollutants and our water footprint.

#### **DEVELOPMENTS IN 2009**

Health and safety is our top priority and our organizational structures are adapted to this priority, knowing that the line managers are in charge of health and safety and must drive aggressively this priority. Our central Group health and safety organization releases advisories and standards as well as compliance audits to give clear guidance on safety practice, and the remuneration of all managers is linked to safety performance. In 2009, we also reorganized our industrial ecology support structure. Central management of alternative materials now complements our business units' initiative in taking advantage of locally available resources.

#### **OUR SUSTAINABILITY MANAGEMENT SYSTEMS**

The Group-wide Sustainable Development and Public Affairs organization, liaises with stakeholders, identifies risks, develops policies and KPIs, and reports our progress against the *Sustainability Ambitions*. Board responsibility for sustainability rests with the Strategy, Development and Sustainable Development Committee. The Group Executive Committee considers sustainability issues throughout the year and meets annually with the Stakeholder Panel.

The Senior Vice President, Sustainable Development and Public Affairs has functional responsibility for sustainability, chairing the Sustainable Development Operational Committee. This Committee meets twice a year with the purpose of integrating sustainability ever more fully into the Group's operations.

Focusing the employee agenda on social and environmental issues

Engaging employees and managers is essential to deliver real progress on these issues. The agenda of all-employee meetings at our headquarters in Paris reflect this commitment to engagement: during 2009, 50% of these meetings were devoted to social and environmental issues. In 2010, it is our goal for all such meetings to focus on these topics. Our annual Group Operations meeting, which brings together our 200 business unit managers and executives, was mainly dedicated to sustainability topics in 2009: an entire day focused on sustainable construction.



# Public **policies**

Lafarge actively lobbies governments for high quality environmental, social and technology standards and for strict enforcement of regulations. Launched in early 2010, the Lafarge Lobbying Charter sets down guidelines for doing so in an open and transparent way.

#### LOBBYING PRINCIPLES

In early 2010 we published our Lafarge Lobbying Charter. It marks our commitment to transparency and openness when it comes to our activities in the public sphere. The Charter defines how we consider our lobbying activities and aligns our public positions with our sustainability objectives. It has been enriched through comments from our Stakeholder Panel and Transparency International. <u>You can read the Charter online</u> **@**.

#### WORKING WITH OUR TRADE ORGANIZATIONS

Lafarge is a member of trade associations at international, national and local levels and seeks to encourage the engagement of our industry as a whole with external stakeholders. We seek to act together wherever possible, producing coordinated action on sustainability and other issues. We are an active member and support Cembureau, the EU cement association, which voted 95% in favor of a clinker benchmark for Phase 3 of the EU-ETS (2013-2020).

#### MAIN PUBLIC POLICY POSITIONS

Since 2005 Lafarge has published its main public policy positions through a number of channels, including this report. Our main public policy positions for 2009 are as follows:

#### Revision of the Industrial Emissions Directive (IED, formerly IPPC)

The IED directive providing for an integrated approach to prevention and control of emissions into air, water and soil, is being discussed by the European institutions (second reading) and cement plants are governed by this directive. We support the Common Position of the member states and promote a flexible approach in order to have a proportionate, balanced and integrated implementation of the directive and also allowing derogations from the emissions limits, only when this is justified, considering specific location and needs.

#### The revised EU Emissions Trading Scheme (ETS) directive, adopted in 2008

Lafarge welcomes the adoption of the climate and energy package in December 2008; the  $CO_2$  emissions reduction target set for 2020 (-21% since 2005) is very challenging since Lafarge, as a leader in its sector, has already significantly reduced its emissions. We also welcome the recognition that our sector is at risk of "carbon leakage" as long as no worldwide agreement is in place. As the competitiveness of European industry is at stake, we consider that no further unilateral commitments should be made until other major economies make substantial and binding commitments. We strongly support the use of clinker as the benchmark baseline for our industry.

#### Climate change post Copenhagen

We intend to continue our sector-based approach to reducing  $CO_2$  emissions, within the framework of the CSI (Cement Sustainable Initiative) of the WBCSD (World Business Council for Sustainable Development). The CSI has designed and promoted a new CDM (Clean Development Mechanism) methodology, better adapted to our sector. It is currently under study by the UN Executive Board in charge of these projects.

#### Joint commitment on sustainable development in China

We co-organized the China Top Cement Enterprise CEO Roundtable with the China Cement Association, bringing together CEOs from 12 of China's top cement manufacturers. The leaders all signed the China Top Cement Enterprise Declaration on Sustainable Development, the first joint commitment on sustainable development made by the Chinese cement industry. Following this meeting, five major Chinese cement producers joined the WBCSD CSI.

#### Organized to influence policy

Responsibility for public policy and lobbying lies with the Senior Vice President, Sustainable Development and Public Affairs. In Europe, the Group's lobbying efforts are coordinated through a network of 20 correspondents. In the United States, this role is taken on by the Environment and Public Affairs Committee, which meets regularly. Other regions have specific individual roles with the responsibility for public policy engagement. In China, the dedicated public affairs officer reports directly to the CEO of Chinese operations. Both the US and Chinese lobbying activities are coordinated at Group level.

#### **STAKEHOLDERS**

### Our stakeholder **panel**

Our Stakeholder Panel provides Lafarge with expert advice, acting as a critical friend to guide priorities, strategy and action on sustainability issues.

#### HOW OUR PANEL WORKS

Between them, the ten members of our Stakeholder Panel provide us with expert guidance on the material issues that we face. Our newest member is Dr. Frank Rose, who joined the panel on the recommendation of WWF to strengthen its expertise regarding persistent pollutants and health issues.

The role of the panel is to consult, not merely to inform. Our work with the panel is guided by terms of reference, under which Lafarge seeks to incorporate panel recommendations into our policy development. The terms of reference are available online **@**.

The panel's formal work with Lafarge consists of three meetings a year, each of which has a different format and purpose.

The first is a full-day meeting with the Group executive committee and Bruno Lafont, Lafarge Chairman and Chief Executive Officer, which provides an opportunity for the panel to input into Lafarge's sustainability agenda. The panel and Lafarge agree jointly to the agenda and the panel receives papers on the major issues for discussion before the meeting. This year, the issues included our approach to the Copenhagen conference, sustainable construction, persistent pollutants, the health road map and competition policy.

At the second meeting we consult with the panel on the final draft of our sustainability report. They challenge us on where we have got things right, where things have not gone well and on which priorities and long term trends we need to address. For Lafarge, this meeting plays an important role in guiding and improving the report. The panel also provides us with their individual and collective comments for inclusion in the report. The collective comment can be found on page 11 of this report. These comments form a basis for action in the year ahead.

The third meeting takes the form of a visit to a Lafarge site: the Lafarge Central Research Laboratory, a concrete plant in France, the Dunbar cement plant in the UK and a plasterboard site at Lippendorf in Germany have been visited so far.

Over and beyond this we have regular, informal contact with the panel throughout the year.

#### EVALUATING THE EFFECTIVENESS OF THE RELATIONSHIP

The challenge that the panel brings to us is vital and we trust that engaging with Lafarge also provides challenge and growth for panel members. To ensure that the relationship is meeting its objectives and continuing to be productive, we asked an external agency (Utopies) to survey the panel members. 71% strongly agree that the work achieved together has helped building trust between panel members and Lafarge executives. The results can be found online **@**.

#### **Panel visit to Lippendorf**

In July 2009, the Stakeholder Panel joined several local stakeholders at our plasterboard site at Lippendorf, close to Leipzig in former East Germany. The panel was interested by the level of local stakeholder engagement and the fact that 100% of the site's raw material is by-product from the neighboring power plant, delivered by conveyor belt. The panel asked that next year's meeting take place at a site where improvement action plans are needed.



For more information: http://sustainabilityreport.lafarge.com

#### MEMBERS OF THE PANEL COMMENTING ON THE REPORT

- Éric Brassart (European Works Council)
  Marion Hellmann
  - (Building and Wood Workers International)
- Jean-Paul Jeanrenaud (WWF)
- Philippe Lévêque (CARE)
- Karina Litvack (F&C Asset Management)
- Alastair McIntosh
- (Centre for Human Ecology)
- Frank Rose (Independent)
- Livia Tirone (Architect)
- Cornis van der Lugt (UNEP)Simon Zadek (Also member of the panel,

he has a policy of not commenting on the report).

### Stakeholder Panel 2009 **Comment**

The panel's purpose is to offer a frank, critical yet constructive review of the strengths and weaknesses of Lafarge's approach to sustainability. We welcome Lafarge's undiminished commitment to sustainability and determination to take a leadership role despite the current economic downturn, and the fact that principles of commercial, environmental and social sustainability are becoming more deeply intertwined in shaping the company's corporate strategy. This report serves a very diverse range of stakeholders. As such, per our advice, Lafarge has produced a more succinct document that combines breadth with depth, through the inclusion of detailed technical information as well as comprehensive web information.

#### SETTING NEW SUSTAINABILITY AMBITIONS

Lafarge has met some of its 2012 Sustainability Ambitions targets early – a reflection of both impressive success in several areas and the global economic slowdown. We look forward to playing an active role in shaping the next set of Sustainability Ambitions – and to confronting the particular challenges posed by the Group's geographic and economic shift eastward following the acquisition of Orascom Cement.

#### **HEALTH AND SAFETY**

We strongly welcome Lafarge's commitment to achieving best practice in Health & Safety management. We note this year's reduction in lost-time injury frequency rate and improvements in contractor incidents, but remain concerned by the deterioration in direct employee fatalities. Beyond transparency and top-level commitment, we expect proactive efforts to create a strong, participatory safety culture focused on anticipating and preventing incidents. The Occupational Health program is a good start, but needs more focus on Risk Assessment and control of workplace exposures to prevent work-related illness.

#### **CLIMATE CHANGE**

The disappointing outcome of the Copenhagen Climate Summit in December 2010 has confronted business with a vacuum of political leadership, even as scientific data continue to point to the need for urgent concerted action. With 5% of worldwide greenhouse gas emissions (GHGs), the cement industry must take a lead role in shaping the solution to this challenge. Lafarge has led its industry, not only by wringing efficiencies out of its operating processes, but by engaging with its peers, business partners and political decision-makers to play their part in this effort.

Still, despite steady progress in reducing its carbon intensity, Lafarge faces constraints posed by the geological and chemical properties of cement manufacture. We would therefore welcome a clearer definition of the company's strategy with respect to both breakthrough technologies and innovative products that enable customers to save energy.

#### PERSISTENT POLLUTANTS

Lafarge has achieved substantial reductions in plant emissions, and shown transparency in dealing with the Ravena mercury emissions controversy in the US – including responding to our requests for full technical information. We welcome Lafarge's partnership with WWF to monitor reductions in persistent pollutants, and will watch for evidence of progress in phasing in best-available technology wherever necessary. This commitment, which we think leads the industry, demonstrates Lafarge's effort to respect both the natural and the social environments in which it operates.

#### **BIODIVERSITY MANAGEMENT**

Lafarge has established important expertise on how to conserve and restore biodiversity, and has led its industry through its co-chairmanship of the Cement Sustainability Initiative (www.wbcsdcement.org). The challenge is now to address biodiversity in the wider context of ecosystems services, and develop and refine practical tools to measure their economic value. Lafarge should also embrace the opportunities brought by biodiversity in the built environment, through development of innovative products (green roofs, pervious concrete etc.) that build on biomimicry techniques to learn from nature.

#### SUSTAINABLE CONSTRUCTION

Given that the built environment generates 85% of its environmental impact through building occupancy, Lafarge can arguably make a greater contribution to the fight against climate change by focusing on construction solutions. This is hampered by the poor public perception of concrete, which Lafarge should address proactively by showcasing a portfolio of good construction solutions and recycling options, taking account of differing climatic situations. Thanks to its key expertise in the innovative uses of concrete, Lafarge has an opportunity to disseminate its knowledge so as to demonstrate the efficiency of its products and help to raise standards generally across the construction industry.

#### SOCIAL DIALOG AND FREEDOM OF ASSOCIATION

While Lafarge has rightly focused on job preservation and skills retention in the face of the global economic crisis, we have been concerned by signs of increasing strike actions. We urge Lafarge to implement standardized measures for monitoring industrial action, in accordance with recognized ILO standards. We would also welcome additional reporting on Lafarge's approach to resolving industrial conflicts. While we appreciate the need for country-specific practices, we expect Lafarge to adopt a stance of neutrality and non-interference when Lafarge employees associate with independent trade unions. Moreover, we note Lafarge's very high reliance on outsourced employees, and have requested, as a matter of urgency, a best-practice policy on outsourcing.

#### **EMERGING MARKETS**

In view of Lafarge's growing presence in countries with weak records on human rights and corruption, the panel had asked for stronger policies and reporting, which has been addressed through the adoption of a new Group Security Policy. We remain concerned about worker rights and freedom of association in countries in these locations, and encourage further reporting on this topic.

#### **COMMUNITIES**

We are pleased that Lafarge has appointed a dedicated team to handle community relations, and would especially encourage engagement with the emerging debate surrounding prior informed consent and/or consultation over major new developments. We believe that best practice in this area is essential to safeguard Lafarge's reputation with the communities that host its operations.

#### **ANTI-COMPETITIVE BEHAVIOR**

Following certain high-profile incidents involving breaches of competition laws, the panel met with Lafarge's senior executives, and had an opportunity to review the group's much-strengthened internal training and controls procedures. This is an area of ongoing risk that will require us to be kept informed of further developments.

#### LOBBYING CHARTER

The panel has played a robust and challenging role in strengthening Lafarge's lobbying policy, which is to be published on its website. While there may be room to go further, we consider it to be on the leading edge of good practice and commend Lafarge's willingness to adopt most of the panel's recommendations.

### Health & Safety Lafarge's number 1 priority

Health and Safety is Lafarge's number 1 priority and we were pleased that 2009 saw us making progress on safety and public health. Despite this progress, we deeply regret that we still suffered fatalities in 2009. 2009 was the starting point of our occupational health program.

### Employee Lost time injury frequency rate (LTIFR)\*

0.98

Employee and sub-contractor fatalities in 2009

32

From a safety perspective, Lafarge has one very clear goal: reach zero accidents and rank among the safest companies in the world. Our objective is to have a low total injury frequency rate over the long term across all our units, with contractors working to the same standards as employees. Ultimately, we want to be recognized by safety professionnals and the business community as a world leader in safety. Since late 2005, Lafarge has greatly improved its safety performance, with over half its business units not having recorded any employee LTIs (Lost Time Injury) for over a year.

#### LARGE REDUCTION OF LOST TIME ACCIDENTS

Lafarge has halved its employees' Lost Time Injury Frequency Rate (LTIFR)\* over the last three years. The rate went from 2.57 at the end of 2006 to 0.98 in 2009, taking it below 1 for the first time. Significant progress was also made on safety within the contracted workforce, reducing the number of lost time injuries from 173 to 119.

This improvement was achieved by having management teams at all levels focus on safety and implement clear worldwide standards and advisories throughout the Group.

#### **BUT WE STILL HAVE FATALITIES**

We deeply regret the level of fatalities, and cannot be satisfied until we have eliminated all such accidents. In 2009, the Group recorded 32 fatalities (7 employees and 25 sub-contractors) in our industrial areas and during the transport of our products (20 on site and 12 in road transport), representing a 20% decrease on 2008. Changing day-to-day behavior at all levels of the business is essential for progress

BU Safety Events Around the World (June 2009), working at height demonstration, at Karsdorf plant, Germany. © DR Lafarge Medialibrary





Safety guidelines at Dujiangyan plant, China. © DR Lafarge Medialibrary

in safety. In 2009 we focused on safety around conveyors and "lock out, tag out, try out" advisories, which set down behaviors for minimising the risk of machinery-related accidents. We continued to implement our "work at height" standard and our contractor safety management procedures. Our executive committees were trained in a program that reinforces key safety messages by increasing the contact between managers and employees.

To bring about lasting change and to make sure that we can track our improvements, a Health and Safety Management System (HSMS) is being developed and will be implemented in 2010. This HSMS will have an internal audit process and will drive continuous improvement in health and safety. To emphasize the fact that safety is a top priority for the Group, all Lafarge managers, including the Group Executive Committee, have 30% of their personal bonus linked to health and safety objectives and the Group Senior Vice President in charge of Health and Safety reports directly to the Chairman and CEO. Lafarge's Excellence Club acknowledges business units that deliver a good performance in health and safety and help to foster a stronger health and safety culture.

There are several membership criteria, amongst which the business unit should have no fatality over the past two years among staff and contractors, should have a LTIFR for employee below 1 over the last year or the last 1 million hours and have a TIFR\*\* of less than 10 for the past year or the last 1 million hours. In 2009, there were 11 members of the Excellence Club, 4 each in our Cement and A&C divisions and 3 in our Gypsum division. By early 2010, the number of business units in the club had increased to 25. These business units prove that our ambition to hold a place among the safest companies in the world is achievable.

#### WORKING WITH THE CEMENT SUSTAINABILITY INITIATIVE

In October 2008, the Cement Sustainability Initiative (CSI), which is co-chaired by Lafarge and then had 18 members, decided to develop an industry standard. In 2009, after a year's work they approved industry-wide safety guidelines on driver and contractor safety, the main causes of fatalities in the cement industry. In 2008, 47% of all CSI company fatalities related to transport and mobile plant, while 60% of fatalities were among contractors.

#### A NEW GROUP SECURITY POLICY

The continuous changes in security levels and our presence in some areas with significant security risks needs management. In 2009 we instituted a Group security approach addressing the threats posed by terrorism, organized and everyday crime, political risk and natural disasters. Throughout 2010 we will develop detailed standards for the issues.

The work is overseen by the Group's security committee, which has 11 members and is chaired by Eric Olsen, Executive Vice President, Human Resources.

\* The Lost Time Injury Frequency Rate (LTIFR) is the number of accidents, including fatal accidents, leading to loss of time by million hours work. The Group allows a period of two years for acquisitions to catch-up with the health and safety standards and advisories. For a period of two years, lost time injuries for employees and contractors are not counted. However all fatalities are recorded from the day after an acquisition. This rule was applied for Orascom and L&T.
\*\* TIFR: Total Injury Frequency Rate.

**Detailed numbers** see page 41

For more information: http://sustainabilityreport.lafarge.com

#### Our road safety program in East Africa continued in 2009

Our business unit in Uganda has set up a program to analyze and improve road safety, working against the local cultural belief that "accidents cannot be prevented, they are bad luck". We joined the National Road Safety Council and in December 2009, the Minister of Transport came in person to launch our Road Safety Campaign. Immediately following this launch, the Kenyan police themselves introduced a similar program. Changing deeply rooted cultural beliefs remains a significant challenge, and despite our efforts there is still work to be done to reduce the number of road accidents. More information online @.



Kenya, Institute of advanced driving, training on a model cars track. © Lafarge Medialibrary - Olivier Coulange

#### 98% fewer road accidents in Heracles Group, Greece

Heracles Group fitted its tanker trucks with a GPS system. The purpose of the system was to provide better customer service, optimize routes, decrease costs and reduce carbon emissions. However Heracles quickly realized that the information provided could be used to change driver behavior to improve road safety. By analyzing the information available on speeding and other unsafe behavior, Heracles was able to bring about a 97% cut in speeding offences and a 98% decrease in accidents over a six-month period. Replication within the Group is being considered. <u>More information online</u> **@**.



Lafarge Cement WAPCO Shagamu plant, Nigeria, cross section of peer educators. © Lafarge Medialibrary -Ignus Gerber

#### ••• Laying Foundations

FOR OCCUPATIONAL HEALTH In February 2009, we appointed an experienced doctor as our Head of Occupational Health. During the year we further developed the health side of our Health and Safety Roadmap, based upon the three pillars of our approach: prevention of health hazards from our processes, enabling staff reintegration and the earliest possible return to work following health problems, and supporting public health initiatives to promote good health.

In particular we have developed a protocol for health assessment Group-wide in order to meet our Sustainability Ambition to establish a Group-wide occupational health program. At the end of the year we carried out a survey of occupational health provision across our business units, which revealed variable levels of understanding.

In 2010 we will roll out the Health Roadmap across the business, identifying the needs of

each business unit and developing specific health standards to support them.

#### PROGRESS ON HIV/AIDS AND MALARIA

We continued to make progress implementing our commitments in Sub-Saharan Africa and full details of our program in this region can be found online @. It is one of our Sustainability Ambitions to extend the HIV/ Aids and Malaria program to major developing countries where we operate. In 2009, we identified Russia. Ukraine and China as countries where we will extend our HIV program in 2010. Building on our African experience, we have developed a methodology guide for training purposes. This guide was reviewed in depth by CARE France and GBC\*\*\*. GBC has offices in the targeted regions and will help our business units to identify committed local organizations to work with on implementing the program.

#### Lafarge Mauritius addresses a major public health issue

Lafarge Mauritius has been working with APSA (a health promotion charity) to launch a health campaign within the workplace and wider community. Surveys conducted in 2007 and 2009 showed a soaring number of diabetics who did not receive regular medical attention. Lafarge's management reacted by helping to fund the first healthcare center in the Indian Ocean designed to treat diabetics.Find out more about the work of APSA online at <u>www.apsainternational.net</u>

\*\*\* The GBC: Global Business Coalition, is an association of global companies dedicated to the fight against HIV, Tuberculosis and Malaria.

#### © DR Lafarge Medialibrary



#### PANEL

ERIC BRASSART European Works Council, Lafarge

Lafarge has made Health & Safety its top priority. Although results are encouraging, we still have to improve further, walking the line that separates goodness from excellence. This challenge, that the Group has to take up, lies in the commitment of all employees to the Health & Safety approach. In this regard, addressing hierarchic relationship issues will be key in the further strengthening of our Health & Safety Policy. Lafarge has succeeded in solving more complex issues than the one it faces here; I am convinced that it will dedicate all necessary means to overcome remaining obstacles.



Construction of the Tanger plant, Morocco. Work at height. © DR Lafarge Medialibrary

# and sub-contractors

In 2009 our global purchases totalled  $\in 8.15$  billion. We are engaged in a process to ensure that our external sourcing of goods and services properly reflects our sustainability principles. The significant role played by local suppliers in Lafarge's operations enables the Group to have a positive impact on the economies of countries where we operate.

#### Sub-contracted labor represents (in percentage of the workforce)



#### PROGRESS IN 2009

Ensuring that our standards are clear and accessible is a vital first step in working with our suppliers. In 2008, we produced a supply chain brochure based on the principles of the United Nations Global Compact and stressing our commitment to health and safety. In 2009 we translated this brochure into Arabic, Chinese, Spanish, Portuguese and French for greater accessibility, and we estimate that we have actively discussed the brochure with 20%-25% of our large regional and worldwide suppliers. We also added information reflecting our supply chain commitments to our standard contracts for the Asia region. In 2009 we used the services of EcoVadis (www.ecovadis. <u>com</u>), a well-respected company, to check that a representative sample of 50 suppliers, chosen from across different Lafarge markets, were consistent with our standards and princi-

Supporting local economies in India and China

Our supply purchasing shows a strong commitment to local suppliers. For instance in our Cement business, Lafarge India Pvt. spent €155.5 million on supplies in 2009, 91.7% being from Indian suppliers. In our Gypsum business the story was the same with 92% of Lafarge Gypsum China's purchases being from Chinese suppliers.



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For more information: http://sustainabilityreport.lafarge.com ples. We are working with the 20% who were found to have room for improvement, to help them comply with Lafarge's standards. We will apply the lessons learned across Lafarge suppliers and will continue to review supplier contracts in 2010. <u>Go to for an extract of</u> <u>EcoVadis' work for Lafarge.</u>

#### IMPROVING SAFETY STANDARDS AND RESULTS FOR CONTRACTORS

Sub-contracted labor represents 28% of the Lafarge workforce. In 2009, our Safe Around You program sought to raise awareness of safety issues amongst sub-contractors. The Group aims to offer the same safety conditions to contractors as it does to its own employees. "The Contractor Safety Management (CSM) standard and the related implementation program is focusing our efforts on this critical task", states the Group's Contractor Health & Safety Manager. In 2009, 72% of business units checked that subcontractors respect and implement fundamental social rights, while 92% ensured that subcontractors respect and implement Health & Safety procedures. The number of lost time injuries amongst our contractors declined from 173 in 2008 to 119 in 2009. We regret deeply that there were 25 fatalities amongst our contractors during 2009. Any level of fatalities is unacceptable and we are dedicated to eliminating them altogether.

# Making **partnerships work**

Contractual partnerships with Non-Governmental Organisations (NGOs) are a central aspect of Lafarge's sustainability strategy. These formal agreements empower experts from NGOs and social organizations to influence Lafarge's policies and challenge the Group on its approach to sustainability issues. In 2009 we extended and expanded two of our most important partnerships.



In 2009, Lafarge participated in the WWF Climate Savers campaign aimed at decision makers at the Copenhagen summit.



#### MOVING FORWARD ON THE ENVIRONMENT WITH WWF



In 2009, we signed a new partnership agreement with WWF, extending the work that we have carried out together since our first contact in 2000 and applying our partnership to new areas of Lafarge's sustainability agenda. This is the second occasion that we have extended our agreement with WWF. The new partnership agreement formalizes five key areas of Lafarge's sustainability strategy:

- Climate change: pursue the program of CO<sub>2</sub> emission reductions based on the targets defined in 2001 with WWF and develop a new set of targets in 2010 to confirm our leadership position addressing climate change;
- Persistent pollutants: improve monitoring and reporting practices within the Group and implement best practices to significantly reduce persistent pollutants emissions;
- Water consumption: improve Lafarge's understanding of its water consumption and define concrete action plans to reduce it;
- Biodiversity: apply on a number of sites the biodiversity indicator and the management system for quarry rehabilitation that were developed in the previous phases of the partnership;
- **Sustainable construction:** promote sustainable construction products and systems all along the construction chain.

#### EXTENDING OUR COMMUNITY ROLE THROUGH CARE



Under our partnership with CARE, which was first established in 2003, we have defined a strategic direction concerning the fight against HIV/ AIDS. In 2009, we signed a three-year extension to this partnership on three themes: © Alain Le Breton



#### PANEL

#### PHILIPPE LÉVÊQUE Executive Director of CARE France

I have provided a free comment on a part of the Lafarge sustainability report for the seventh time, and CARE has monitored the Group's progress for the seventh consecutive year. Reviewing the road travelled so far as regards partnerships, one has to acknowledge the growing recognition of two core issues that are crucial to CARE's expectations and Lafarge's societal challenges in emerging countries: relationships with surrounding communities and access to decent housing for low-income populations (Bottom of the pyramid markets). Lafarge's current comprehensive geographical presence obviously leads to further significant investments (as they have already done safetywise) in long-term socio-economic development towards local communities. The answer is therefore to allocate human and financial means reflecting these challenges in order for operational teams to be in a position to integrate such principles in their roadmap. of principles and partnering intentions - is over and behind them, Lafarge has entered a methodical and reasoned action phase. The Group will then have to explore further how to systematically embed impact measurement and demonstration based on evidence into business practice.

 Distribution to other countries of the knowhow developed by Lafarge in terms of programs to combat HIV/AIDS and malaria, at present mainly implemented in Africa;

 Development of a system to assess the social and economic footprint on local communities of actions carried out by Lafarge in developing countries, in order to draw lessons from the programs in place and to define a long-term strategic action plan;

 Launch of a program aimed at helping poor people in developing countries to have a higher quality of housing. A pilot initiative has been launched in Indonesia to develop access to microcredit for improving housing along with the training of masons in partnership with local organizations.

#### LABOR UNIONS

Lafarge's agreement on Corporate Social Responsability and Industrial Relations, which we signed with three international unions in 2005, remains an active and challenging partnership, and is considered a major asset for the Group when it comes to social dialog. You can find more details of the agreement online **@**.

#### NEW OPPORTUNITIES FOR EXISTING PARTNERSHIPS

Lafarge's partnership with Habitat for Humanity dates back to 2005. We are working towards developing this partnership and applying it to a larger number of countries.



Rehabilitation of the Presque Isle quarry, USA. © DR Lafarge Medialibrary

#### Reviewing Ecosystem services at our aggregates Presque Isle quarry, Michigan, US

The Presque Isle quarry in the United States is currently partnering with the WWF in measuring the value of the biodiversity on site using the Natural Capital (NatCap - www.naturalcapitalproject.org) Project's InVEST model in the World Resources Institute/WBCSD (www.wbcsd.org) framework for ecosystem services review. It will provide a method for understanding the environmental and economic costs and benefits of changes in land-use. Of the 330 acres that are available for wildlife management, 63 are actively managed providing valuable ecosystem services such as salmon spawning grounds, wild turkey habitat, community education and pollinator species protection. More information online @.

#### Fusea, Romania: rehabilitation and biodiversity

The Fusea aggregates quarry, within a Natura 2000 protected area, has partnered with local stakeholders to respond to the complex and sensitive challenges involved in the site's rehabilitation. One of the first projects to be developed under the new partnership between Lafarge and WWF, the Fusea project is focused on developing biodiversity and ecological enhancement as well as ensuring a community based program for conservation and potential national training center for conservation. More information online ©.

# Strengthening long-term relationships with **Communities**

Working closely with local stakeholders is fundamental to Lafarge. At a time when relationships between operations and surrounding communities are evolving, Lafarge remains focused on its vision: understanding and partnering with communities to bring long-term benefits to surrounding areas and reinforcing the presence of its value-adding operations.



Children's Home Heritage of Faith and Hope, Kenya. © Lafarge Medialibrary - Olivier Coulange

### Cement plant managers formally trained on stakeholder relations



#### PROGRESS IN 2009

The Group's vision for working with communities is established in the Principles of Actions and Sustainability Ambitions. As part of these commitments, the Group attaches importance to the contribution that its operations make locally and highlights the importance of acting responsibly, through listening and interacting permanently with communities. Around the world, Lafarge undertakes many actions, programs and partnerships that positively contribute to communities in four main domains: education of young generation, local economic development, health & safety and environment. Typically, these examples are driven by employees who understand and live within neighboring settlements. At the same time, it is clear that relationships with communities are evolving, with expectations growing. As a result, Lafarge promotes a consistent, flexible approach to anticipate and incorporate community needs and expectations alongside company priorities in local action plans.

The company's methodology is designed to ensure that initiatives remain locally driven, whilst providing a process that allows for more community interaction and increased benchmarking. Interaction promotes greater transparency from all parties involved; benchmarking can help provide guidance, in some cases, on the appropriate approach to be adopted.

Work in three key areas of community relations is now measured: training on the methodology; meetings held by sites with surrounding communities; and the development of community action plans based on dialog and understanding of community development needs. This data can be found on page 45 and reflects the progress made in the last few years thanks to a specialized team at Group level promoting a common approach.

Systematic workshops are organized in specific sessions or as part of Lafarge professional development programs. In addition, guidance booklets and best practices are available; a dedicated intranet site was launched in November 2009 to further support their use and share best practices. © Alain Le Breton



#### PANEL

#### ALASTAIR MCINTOSH Visiting Professor of Human Ecology, Centre for Human Ecology / University of Strathclyde, Scotland

As stated on page 27 of this report, after the Lorient sand-dredging proposal was rejected on account of the French navy, I met with Lafarge staff to discuss "communication and engagement around sensitive applications." My interest here is the question of how extractive industries can optimize their relationships

with local communities. This matters because, unlike other industries that might be here today and gone tomorrow, modern quarrying is typically planned over a fifty-year time horizon. This raises questions such as seeking "prior informed consent" with local communities and seeking to create win-win scenarios.

These questions have become pivotal in the mining industry worldwide. I see it as an emerging one for quarrying too. I would therefore welcome Lafarge building on its strengths to become an industry leader in developing best practice for community relations.

Gypsum plant managers formally trained on stakeholder relations

12%

Aggregates & Concrete area/regional managers formally trained on stakeholder relations

22%

#### THE TASK AHEAD

Further promotion of the Group's methodology through workshops and training, especially to key personnel in all of Groups' divisions, encompassing small-scale operations. In addition, continue establishing the internal benchmarking of work in this area to better share best practices and better assess their impact on the socio-economic development of local communities.



#### Improving relations in Slovenia

Some local stakeholders have a negative view of Lafarge's only cement plant in Slovenia, especially in relation to its use of alternative fuels. In fact, a national media environmental award was withheld due to this perception. The plant has worked hard to address these concerns, including publishing monthly environmental reports and hosting open events, with over 500 visitors. Improved relations can now be measured in more balanced media coverage and a number of national innovation awards.

#### Bearing fruit in Ecuador

In Otavalo, Ecuador, Lafarge works with its local communities to develop sustainable agricultural systems, after concerns were expressed about the operational impact on the land. Following analysis by an agricultural engineer, Lafarge sponsors the growth of blackberries, which are an ideal sustainable crop for the area due to its longer yield cycles. Over 230 people have benefited from this partnership scheme, promoting revenues for local families. More information online **@**.

Owners of a small farm near Otavalo plant, Ecuador, where Lafarge assists them to grow berries. © Lafarge Medialibrary -Diego Giudice

#### Laying foundations in Geology

In Oklahoma, USA, Lafarge supports an academic program promoting understanding of the native rock and mineral deposits around the area. The program takes place near the business unit's Tulsa site with the participation of plant team members. Over 100 students have been certified as 'Junior Miners' following the completion of the program. See more examples of our relationships with our communities online .



**Detailed numbers** see page 45



# Social situation in 2009

The responses of our business units to economic pressures are guided by three underlying principles: the need to structure businesses for efficiency and excellence, the importance of finding solutions to restructuring problems, and solidarity with employees, who should not be left alone to deal with employment issues.



*Employees in the PPE-free zone of the plasterboard plant, Shanghai, China.* © *Lafarge Medialibrary - Ignus Gerber* 

#### Decline in headcount in 2009

4.8%

Business units which have expatriates and more than one nationality in their Executive Committee in 2009



The Group Employment Policy is not about setting targets for headcount, but offers a framework for assistance to employees. This is critical at a time of global economic downturn, but our efforts go beyond responses to immediate issues.

Further information on our employees and employment practices can be found in our GRI Index online @.

### SOCIAL ACTION IN THE ECONOMIC DOWNTURN

Compared to the drop in sales of 17%, Lafarge's overall employee base remained relatively stable during 2009, with a 4.8% decline, like for like, in global headcount to 77,994 people. In some mature markets (notably Spain, Germany, United Kingdom and North America) headcount was significantly reduced.

Lafarge business units adopted many strategies to limit and postpone headcount reductions: short-time working (Germany), temporary transfers (North America, France and the UK), early retirements (Spain) and reductions in overtime throughout the Group. In Zambia, the 114 job cuts were offset by the creation of 159 internal and external jobs, through a local economic development initiative. The 29 business units that implemented reorganizations went beyond legal requirements in their assistance to affected employees.

In Jordan for example, Lafarge helped its former employees to undertake new career paths by setting up job / mobility units. <u>See the video</u> <u>online</u> **@**.

In many developed economies, the younger generation is highly impacted by the downturn, facing greater challenges than ever in finding work. In France, we responded in 2009 by doubling the number of apprenticeships that Lafarge offers to students from 2% to 4% of the total workforce. In North America, the Lafarge Leadership Development program, launched in 2009, provides mentoring and work experience places for post-graduate applicants in the Aggregates & Concrete Division. The placements run for 18-24 months.

#### **INVESTING IN TRAINING**

Despite the temptation to cut costs in the face of the downturn, Lafarge has moved to increase its investment in employee development during 2009. The Lafarge University budget, our center for people development, increased by 15% from 6.6 million euros in 2009 to 7.6 million euros in 2010. We also launched a new e-learning program, available in 3 languages, which surpassed 3,000 users in its first year. Other training programs advanced during 2009 included the Cement Division's Plant Operating Model (POM), which identifies best practice for cross-functional training programs at all levels. © DR Lafarge Medialibrary



#### PANEL

#### MARION HELLMANN BWI

Lafarge are not covered by the sustainability report 2009. This includes workers on Lafarge sites and transporters, who are outsourced. The Stakeholder Panel is concerned with the situation of outsourced employees and would appreciate Lafarge to provide more evidence on its reporting on the issue as well as to develop, as soon ing. Outsourcing very often means cost savings. In India for example the cement Industry has seen a tremendous growth and good profits. On the other side in past few years, the workforce pattern in cement companies including Lafarge witnessed a dramatic change. Contract workers are taking over more and more physical jobs such as cleaning, maintenance work, loading and unloading and similar. In general a contract worker in the Indian cement industry receives a lower wage than a permanent worker, some have no health and safety equipments and no job security further worsens the situation for these workers. We welcome that Lafarge is trying to address these issues in the "Supply Chain & sub-contractors" section of the report.

#### DIVERSITY

We believe that diversity within the Group creates competitiveness and innovation. We set out to increase it through many initiatives launched in 2009:

 The Aggregates & Concrete Diversity Project initiative in North America included a mentorship program with 76 mentor/mentee pairings, and four "Gender and Leadership" conferences.

 The Deauville Women's Forum offered an opportunity for the Group to sponsor a delegation of 50 Middle-Eastern women.

 The Group is the partner of the Boat "Défi Intégration", which will run the Spice Route in 2010, with half of its crew made up of people with disabilities.

• In addition to local initiatives, the Group requires all entities to include a female candidate for job interviews above a certain level. In order to drive development and diversity, our target is for each business unit executive committee to have at least one expatriate member. At the end of 2009, 84% of business units met this goal. Lafarge's *Sustainability Ambitions* called for 20% of the Group's senior and executive management roles (Lafarge Hay grade 18+) to be filled by women by 2012. We fell short of this target, achieving 12% in 2008 and 12.7% in 2009.

#### WORKING WITH UNIONS

Social dialog is fundamental at all levels. The European Works Council meets at least seven times a year in various workshops and the Plenary Meeting. When we were faced with reorganizations in 2009, a Sub-Group Committee was set up in our Aggregates & Concrete business in France to pursue local social dialog. Meanwhile, in Lafarge Cement UK, the "Way Ahead" agreement implemented with social partners ensured the flow of critical information. Lafarge is determined to support implementation of the Framework Agreement signed with International Unions in 2005. For more details on business units with strike actions, see page 47.

#### 5<sup>™</sup> EMPLOYEE SHARE OWNERSHIP CAMPAIGN

Employee ownership is a key element of our social strategy. Participation in our 2009 LEA share ownership campaign increased to 53% versus 49% in 2005. We are particularly proud of the high participation rates achieved in some countries: 88% of employees subscribed in Romania, over 90% in Brazil, Zambia and Malaysia, over 80% in Egypt. Emerging markets represented 60% of total subscribers.

#### Setting people development standards in China

On December 4, 2009, Lafarge Shui On, our Cement business in China, received the award for the best training program in China from 51 Job, a leading Chinese HR agency. The training program developed by Lafarge Shui On to respond to the challenges of a growing business unit drew on programs developed by Lafarge at Group and Division level, adapting them to local requirements. Main examples include: a program designed for plant directors, one for recent graduates, training provided by our technical centers, a Marketing and Sales program, and a specific program dedicated to cash and costs. Lafarge Shui On also opened "plant schools", focusing on on-the-job experience.



**Detailed numbers** see pages 46-47





Jianchuan cement plant, China. © Lafarge Medialibrary - Xinping Zhang

# Managing our **emissions**

Responsible manufacturing involves three steps: measuring, monitoring and managing emissions. Lafarge uses detailed measurement and auditing, progressing towards reporting methodologies, to ensure delivery of action plans to reduce emissions. We also seek to maintain open communication with communities on this issue. All of Lafarge's Sustainability Ambitions 2012 commitments on emissions are voluntary targets that are applied across the Group worldwide, regardless of whether or not they are required under local regulation.

Cut in dust emissions 2005-2009

26%

Cut in NOx emissions 2005-2009



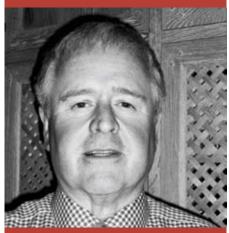
Our commitment to reduce emissions is taken voluntarily according to the CSI Agenda for Action. The standard applied worldwide within the Cement division is to comply with the local regulations and to follow internal standards for emissions for any new equipment or kiln line.

#### DECLINING EMISSIONS LEVELS

Both Lafarge's absolute level of NOx and SOx emissions and the emissions per ton of our product fell during 2009. NOx emissions declined by 7.9% in 2009, compared to 2008, achieving a 22% drop since 2005. SOx emissions were reduced by 12.8% last year, and by 44% since 2005. The level of emissions per ton of our product has been declining for 3 years. These reductions in the intensity are a result of our investments (7 new kiln lines, performance improvements and dismantling of 25 obsolete kilns in the last two years). The absolute levels are reduced even further (NOx by 15.8% and SOx by 20,3% from 2008), with the combination of reduced activity in the global economic downturn. In 2009, we reduced our level of stack dust emissions per ton of product by 14.4% from last year and by 26% since 2005; and decreased by 21.7% in total released quantity compared to 2008. This reflects our continued investments in more efficient plant equipments and dust capture mechanisms, which help to control stack dust emissions. Our objectives of reduction for 2012 are almost reached, but we recognize that the slowdown of activity has contributed to this.

We have been working with WWF for some time to address the issue of persistent pollutants (see definition page 23) and implement an agreed program to control them. This program commits Lafarge to control persistent pollutants in all aspects of its processes, to make significant improvements in performance on emissions and to publish data annually to demonstrate these. We have designed a measurement program to assess the level of emissions of persistent pollutants at least once at all Lafarge kilns by 2010. Following progress

© DR Lafarge Medialibrary



#### PANEL

#### DR. FRANK ROSE Independent, formerly Group VP Sustainability ICI plc

I continue to value the meaningful discussions we have and the receptive and trusting manner in which Lafarge listens to and responds to the panel input.

In 2009 overall environment performance continued good improvement against existing targets. In particular targets for climate change impact, NOx and SOx emissions have been achieved well ahead of schedule. Reduction of dust emissions in cement plants is on track to achieve the target by the 2012 commitment. Lafarge has shown that it can perform on emission reductions and should now proceed with its commitment to set further challenging targets for the period after 2010. The panel welcome this commitment and look forward to contributing to this process.

Progress against existing commitments on Persistent Pollutants is on track and the renewed partnership agreement with WWF, which has a particular focus in this area is welcomed and endorsed by the panel. The panel look forward to further updates as this program is implemented and, as last year, emphasize the importance of stakeholder engagement, particularly local communities at cement kiln sites.

Lafarge has shown leadership in reducing emissions, particularly in the current economic climate, and is strongly encouraged to maintain this. in 2009, 69% of kilns\* worldwide have now been measured. We are targeting 100% by the end of 2010. However our measurement program experienced a number of delays due to factors beyond our control.

#### PROGRESS TOWARDS MEASURING PERSISTENT POLLUTANTS AT 100% OF OUR KILNS BY 2010\*

Our measurement program in Africa depends upon transporting specific measurement equipment from plant to plant. Civil disturbances in Nigeria caused delays and forced us to reschedule the measurement program in this and other countries. Measurement in Nigeria is now planned for mid-2010. In Russia, we also experienced delays organizing the sub-contracting for the measurement program. In 2010 we will begin implementing a program of best manufacturing practices to reduce emissions from our top emitting kilns. We will also implement the lessons learned from our work so far into our standard management practices.

#### SETTLEMENT WITH EPA IN THE US

A settlement agreement has been concluded with US-EPA to close an investigation in 2003 linked to the increase of SOx and NOx emissions in a certain number of plants. As a consequence, our subsidiary in North America will pay a fine of 5 M\$ (3.6 M€) and is committed to implement abatement equipments for a total of 170M\$ (121M€) over the next 5 years.

\* The % of kilns analyzed is adjusted to the scope of consolidation with newly acquired kiln lines and sold or closed entities.

### What are the emissions produced during cement manufacture?

• Nitrogen oxides (NOx) are a by-product of the combustion process in the kiln, where the clinker is produced. The level of NOx emitted depends on the efficiency of the combustion process.

• Sulphur dioxide (SO<sub>2</sub> or SOx) is released by the same chemical reaction that produces clinker, mainly from raw material. The level of emissions depends mainly upon the chemical composition of the limestone used.

• Dust is released at the stack through the combustion.

• Persistent pollutants include dioxins and furans and heavy metals, such as mercury. Our Sustainability Ambitions 2012 include a 20% reduction in specific emissions of NOx and SO<sub>2</sub>, a 30% reduction in dust emissions for the end of 2012, and measuring 100% of kilns for mercury and dioxins/furans and implementing emissions reduction at high emitting plants from 2010. You can find details in our Sustainability Ambitions 2012 section on page 4 of this report.

Cut in SO<sub>2</sub> emissions 2005-2009

44%

#### Community involvement at Ravena, New York, USA

There has been considerable media coverage concerning mercury emissions at our plant in Ravena, New York State, with town hall meetings and the involvement of highprofile law firms raising public awareness of the issue. We responded with on-site meetings, community updates and a local newsletter, all keeping the community informed about our plans for monitoring and controling emissions and for modernizing the plant. You can read additional information about the local community organization "Friends of Hudson": www.friendsofhudson.com/news.html



**Detailed numbers** see page 44



# Industrial **ecology**

The sustainability of natural ecosystems comes from their equilibrium, with optimum consumption of material and resources that are constantly recycled. Industrial Ecology applies this principle to human activity, making the most efficient possible use of by-products and waste.



Left: Canada, Spy Hill Aggregates Quarry, Calgary, old waste water cleaning and recycling installation. © Lafarge Medialibrary - Ignus Gerber. Right: Matozinhos plant, tire recycling, Brazil. © Lafarge Medialibrary - Erik Barros Pinto

### Bringing in new sources of biomass

Lafarge's Khantan plant in Malaysia dramatically increased its use of alternative fuels in 2009 by adding new forms of locally available biomass to its fuel mix, in addition to the palm shell and SBE\* fuels previously burned at the plant. In all, 80,400 tons of alternative fuel were used in 2009, up from 24,900 tons in 2008. At this plant, alternatives now account for 11% of the fuel mix, compared to 0.7% in 2007, saving 26,000 tons of oil equivalent in 2009. \* SBE: Spent Bleaching Earth



Detailed numbers see page 43

For more information: http://sustainabilityreport.lafarge.com

#### ORGANIZING FOR THE CHALLENGE AHEAD

In 2009, we reorganized our Industrial Ecology support structure with the ambition to transform the Group's approach to alternative fuels and alternative raw materials. Alternative fuels such as waste and biomass now represent almost 11% of the fuel used by the Group. Our goal is to increase this percentage significantly by 2012. Fly ash and slag, which can be used as alternative materials to reduce the carbon intensity of concrete, also have

#### Alternative fuel rate in 2009

10.9%

an important role to play at Lafarge. Under the reorganized structure, a new central unit takes responsibility for sourcing and developing alternative fuels and materials through a network of local subsidiaries, while fuel processing remains the core competence of our Cement business units. This strategy allows our businesses to respond to local resources as they become available, whilst retaining strict centralized guality control to ensure that all fuels are non-harmful and meet local regulations. Although Industrial Ecology is a global phenomenon, and by-products such as fly ash, slag and municipal waste are available on a global scale, locally available alternative fuels have an important potential role for many of our business units.

The rapid growth in our recovery of oily sludge in the Emirates, the successful development of sewage sludge disposal in Chongqing, and the agro-development creating a local market for biomass as an alternative fuel in Nigeria, all illustrate our ability to cope with local context and local opportunities, while bringing a robust solution to local challenges.

### Tires and other by-products drive fuel substitution in Slovenia

At the Trbovlje plant in Slovenia, the rate of fuel substitution has accelerated from 0% to 35% in only 7 months, saving 3,500 tons of oil equivalent, thanks to the use of waste and by-products such as used tires, solid shredded waste and used oil under EU standards.



Recycled asphalt products help spare virgin aggregates. Concrete Highways, Buffalo/Rochester, New York, USA. © Lafarge Medialibrary - K.C. Kratt - GPA - New York State Department of Transportation Region 4 - Authority New York State Thruway -Transportation Parson - Ressel Howard (architect)

# Saving natural resources: recycling

Within Lafarge, recycling policies have traditionally been formed on a market-by-market basis. This is changing. In 2009 we decided to establish clear strategies, working with leading partners to enable the Group to recycle more of its products.

### Total number of recycled products in the Aggregates & Concrete Division in 2009



#### Taking advantage of an urban context: Les Pontreaux, Nantes

Les Pontreaux quarry near Nantes in western France has become, a few years before stopping all extraction activity, a platform for recycling asphalt products and crushed demolition concrete. Materials extracted in demolition works or road renewal are collected, screened and crushed, then they are sold to roadworks for the concrete and to asphalt plants for the recycled asphalt products (RAP). This site, operated by Lafarge, has been able to spare up to 80 kt/year of virgin aggregates from nearby quarries.



**Detailed numbers** see page 48

For more information: http://sustainabilityreport.lafarge.com

#### A CLEAR STRATEGY FOR AGGREGATES

Concrete from demolition is re-used when broken up, providing an alternative to virgin aggregates that can help to preserve natural resources. Lafarge generally has a share of the recycled market that remains lower than our overall market share. During 2009, we decided to establish a clear recycling strategy for our aggregates business, reviewing our recycled demolition waste markets on a systematic basis, and working with leading partners towards recycling more of our products.

Unlike concrete, gypsum is a wholly recyclable material. Lafarge already recycles reject material from our own operations, and several years ago began to recycle waste from the market (construction and demolition job sites). All of the recycled material used by Lafarge is subject to strict quality control criteria, ensuring that it is safe for use or re-use, non-harmful and compliant with all relevant regulations.

#### THE CHALLENGES FOR RECYCLING

The strength of the market for both recycled aggregates and recycled gypsum varies between countries, as it depends to a large extent on landfill costs. Other main parameters are the quality of waste available, which should not be contaminated, and the network of waste processing facilities, which need to be close to waste generation sites in order to minimize the carbon footprint of the recycling operation and transportation. Four markets (Korea, Netherlands, Thailand and the UK) account for 95% of Lafarge's gypsum waste recycling. Our ambition is to work through partners to remove blocks to recycling and embed best practice across the Group.

#### **Recycling Plasterboard in Korea**

In 2009, Lafarge Plasterboard Korea (LPK) recycled 100% of production waste and 55% of waste generated during construction, amounting to 40,000 tons, which represents 4% of the total raw gypsum consumed in its 3 plants. LPK intends to double the amount of waste collected from job sites in 2012.

# **Biodiversity** in quarries

Lafarge extracts over 450 million tons of material, more than 90% of the raw material used by the Group, from 730 quarry sites worldwide. Most of these quarries are operated by Lafarge itself. Our ambition is to manage biodiversity at each stage of the quarry's life: during extraction as well as towards the end of its life with monitoring tools. Present developments will allow to increase the number of quarry sites which have a positive impact on biodiversity and ecosystem services.



Memorial Forest tree dedication ceremony at Lafarge Meadows, a reclaimed Lafarge gravel pit which is now part of a provincial park in Calgary, Canada. © DR Lafarge Medialibrary

### Percentage of quarries with a rehabilitation plan in 2009

79%

### Percentage of quarries with a biodiversity program in 2009

35%

### KNOWLEDGE, ASSESSMENT, MANAGEMENT

These are the three pillars of Lafarge's biodiversity strategy. They are included in our Sustainability Ambitions 2012: to check all active quarries to assess their importance as conservation sites; to develop site biodiversity programs for all environmentally sensitive locations; and to ensure rehabilitation plans are in place for each quarry. In all of these areas Lafarge operates closely with WWF. The indicators developed with them and used for Ambitions 2012, have now been reviewed and have inspired common key performance indicators for the CSI (WBCSD) reporting.

#### INCREASED BIODIVERSITY CHECKS IN 2009

In 2009, biodiversity checks on active quarries have strongly progressed by 11%. Our target is to have biodiversity programs for all sites located in a sensitive area or presenting real potential for wildlife. As a result of these programs, several sites are now clearly demonstrating a higher conservation interest than the past record of their environment.

#### DIFFICULTIES RAISING AWARENESS ON REHABILITATION PROJECTS

Our progress on the completion of our rehabilitation plan target is naturally slow as the

# Sample of 644 active quarriesGroupSites within a protected area or containing a protected (redlisted) species<br/>(this data has been collected on a shorter sample)23%Site next to a local or national protection28%Site next to an international protection area (Natura 2000, RAMSAR...)12%Sites close to interesting conservation areas51%Quarries having identified local opportunities for habitat enhancement or education31%Sites engaged in formal partnerships with NGOs14%

© WWF international/elma okic



#### PANEL

#### JEAN-PAUL JEANRENAUD WWF

Overall, Lafarge is progressing very well during this 3<sup>rd</sup> Phase of the Partnership and work of the Stakeholder Panel. There are several achievements on some of the workstreams worth highlighting, such as persistent pollutants, where we now have a framework to address the highest emitters and a list of first kilns to be treated. Meanwhile, Lafarge continues to progress towards having a measurement of persistent pollutants from all kilns. Also worth noting that Lafarge has successfully reached its objective of reducing CO<sub>2</sub> emissions per ton of cement produced by 20.7% versus 1990 levels. The new workstream on water management is also off to a very good start. The action plan is ambitious but we are confident that Lafarge has the capacity to deliver it successfully. We are also delighted to see the partnership taking shape at the local level in various regions across the globe.

For the future, we would like to see Lafarge continue to take more commitments to bring them to the forefront of the construction material sector and signal a new area of leadership for the company. Defining the future  $CO_2$  emissions reduction target and implementing strong plans in the emerging markets to reduce  $CO_2$ , persistent pollutants emissions and water usage will be a way of reinforcing this leadership and lead the path to a more sustainable construction material industry.

creation of one plan on an existing site is a process easily extending over more than a year. In Indonesia, where the quarry had been inactive since the 2004 tsunami, starting to work on the rehabilitation helped us to realize that biodiversity was not only great outside the quarry limits but that a lot of possibilities existed on the different areas of the site. We need to select local experts along with reputable consultants to develop a new rehabilitation plan in a context where opposition is vocal. There is a need to raise awareness among local teams to the fact that rehabilitation, even if its final aim is to prepare the future use, has to be integrated into everyday work and meet local communities' needs and aspirations.

#### ECOSYSTEM SERVICES EVALUATION

Lafarge decided this year to resolutely engage in the process of understanding its use of natural resources in the global context of ecosystem services. The Presque Isle quarry in Michigan will be the Group pilot for an Ecosystem Services Review in partnership with World Resources Institute and WWF US (see page 17).

#### LEVERAGING MILESTONES TO RAISE AWARENESS

Lafarge is seizing the opportunity presented by the International Year of Biodiversity in 2010 to raise awareness amongst employees and managers of the business case for biodiversity,

### Leading the way on rehabilitation

Over the last 30 years, the former Bamburi Cement plant in Kenya has been transformed into one of the country's leading nature reserves: an indigenous coastal forest that brings economic benefits to the local community through tourism, aquaculture and timber, while supporting a spectacular range of species including several that are critically endangered. Of the more than 150,000 visitors annually, almost 50% are students and other educational groups, learning about the transformation of degraded land into functional ecosystems. The award-winning expertise of Lafarge Ecosystems, the subsidiary that manages the reserve, is of great potential value as we seek to embed best practice on biodiversity throughout the Group. You can find more detail of the work of Lafarge Ecosystems online at www.lafargeecosystems.com



Haller Park in Mombasa, Kenya, a former quarry rehabilitated into a natural and scenic ecosystem. © Lafarge Medialibrary -Olivier Coulange

#### **Resolution of controversy in Lorient**

In previous reports we have described the objections received to our application to dredge for sand off the coast of Lorient in Brittany, France. Although Lafarge is no longer pursuing this application owing to extended projects of the French Navy, we will use the lessons learned on stakeholder relationship issues to guide future planning. A meeting with Alastair McIntosh from our Stakeholder Panel has taken place to review the communication and engagement around sensitive applications.



**Detailed numbers** see page 45



and the risks and opportunities that result from the impact of our quarries on nature. Our initiatives include a biodiversity workshop at our top management conference and exercises aimed at raising understanding amongst business managers. This year is also the 10th anniversary of our cooperation with WWF on this topic.

#### INVESTIGATING ENVIRONMENTAL IMPACTS IN UGANDA

In Uganda the Dura quarry located within the Queen Elizabeth National Park, where operations started in 2009, has been fully investigated through an initial baseline biodiversity survey lead by the Uganda Wildlife Authority, NGOs, and scientists. The survey brings more details on the settlement and migratory patterns of large mammals including the endangered African elephant and chimpanzees which continue to use the land just outside the quarry. A full monitoring and remediation program is the next phase of the environmental plan.



Her Majesty The Queen Elizabeth II on the steps of the Armed Forces Memorial in Alrewas, UK. © Photo courtesy of Driftwoodimages.net

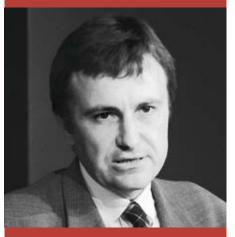
Percentage of quarries screened according to WWF criteria in 2009



#### Sharing the benefits

The rehabilitation of the Alrewas quarry in the UK to create the National Memorial Arboretum showed the value of biodiversityfocused projects to communities. The Arboretum is home to the Armed Forces Memorial, which recognizes the sacrifice of those who have given their lives while serving their country since the end of the Second World War. It provides a space for reflection, surrounded by trees, rehabilitated marshland and ponds. The rehabilitation won the Mineral Products Association's first prize for rehabilitation projects; our projects at Cauldon quarry and Charing sand pit also received distinctions. You can read more about the National Memorial Arboretum online at www.thenma.org.uk.

In Canada, the Emerald award of the Alberta government went to the rehabilitation of the new "Lafarge meadows" complex, which mitigates several interests thanks to a diverse project offering flood alleviation wetlands, a golf course and housing complex. <u>See more case studies online</u> **@**. © DR Lafarge Medialibrary



#### PANEL

#### CORNIS VAN DER LUGT UNEP

In the last year the TEEB\* report warned that our annual loss of natural capital is greater in monetary value than the losses suffered due to the global financial crisis. Businesses of all sectors need to pay closer attention to measuring and valuing their impacts and dependencies on biodiversity and ecosystem services. This includes resource use associated with mining and other phases of the building materials value chain. I welcome the commitment of Lafarge to addressing biodiversity in a strategic manner, and undertaking work to review their broader use of ecosystem services. It is also good to see their new collaborative work on emerging water footprinting methodologies with a focus on plants in areas that face water scarcity. The next step may very well be an integrated strategy on ecosystems services, signalling a new look on how they approach environmental management, efficient resource use and industrial ecology. It would be important to accompany this with use of relevant indicators from the GRI Guidelines, ones related to biodiversity (EN11-EN15), ecosystem provisioning and other services that are material from a short and longer term sustainability point of view.

#### Challenges over water management in the US

The system for managing and reporting storm water discharge monitoring at certain US operations is under scrutiny from the EPA after a series of inspections during 2006. We are working cooperatively with EPA and expect to resolve the issue in the near future.

\*The Economics of Ecosystems and Biodiversity



Medgidia plant in Romania is one of the pilot plants for measuring the water footprint. © DR Lafarge Medialibrary

# Water footprint

Through its partnership with WWF, Lafarge is making progress towards mapping sites located in areas of water scarcity and measuring their water footprint.

#### Total water withdrawal (in million m<sup>3</sup>)

230

Sites with water recycling system



#### DEVELOPING AN ASSESSMENT FRAMEWORK

Water supply is a global social, economic and environmental issue. However solutions can only materialize through local action. By comparing a site's water footprint with the local water situation we can assess the site's impact on freshwater availability, implement appropriate best practices from across the Group to reduce these and, where appropriate, work with local communities to offset the remaining impact.

The Water Footprint provides precise information on the impact of a site on freshwater, as it encompasses both water withdrawal and

#### Designing facilities around the water cycle

The design of the Lafarge Dalsan's Gebze facility in Turkey, which opened in 2009 and is located in an area of extreme scarcity, was guided by the water concern. Underground storage tanks with a capacity of 5,000 cubic meters collect rainwater and vapor evaporated by on-site processes for use in plasterboard production. water discharge along the whole life cycle of manufactured goods. For the time being, we will focus on measuring and mitigating the water footprint of our own operations. In the long-term we will seek to assimilate the water footprint of our raw materials and the impact that our finished products may have in reducing water consumption into a global water footprint for the Group.

#### APPOINTING GLOBAL CHAMPIONS AND IDENTIFYING PILOT SITES

In 2009, after becoming a member of the Water Footprint Network, we completed the appointment of high-level global champions for the management of our water footprint in each of our four main activity areas: Cement, Aggregates, Concrete and Gypsum.

We have also identified seven pilot plants, in areas with water scarcity, where we will be conducting detailed measurement of water footprints throughout 2010. Each activity is represented amongst these pilots: Cement by the Medgidia plant in Romania, Gypsum by the Bristol plant in the UK, Aggregates by the Gravel operation in Morocco and the Almenara plant in Spain, Concrete by the Cairo festival, Abo Rawash and Suez sites in Egypt. The actions taken at these pilot sites will form the basis of best practice guidelines and management standards that will be progressively implemented at all sites, within a robust Group water strategy framework.





Lafarge opened a new plant at Bazian, in Iraqi Kurdistan. © Lafarge Medialibrary - Vincent Capman

# **Emerging** markets

Emerging markets are an essential element of Lafarge's future and they must play an equally significant role within our sustainability strategy. We are committed to grow in a manner that respects our values, local culture and economic development.

Sales of the Group in 2009 (in million euros)

# 15,884

Group's sales in emerging markets

51.6%

#### Rebuilding in the Sichuan Province, China

Lafarge's Dujiangyan plant was severely damaged by the earthquake that struck the Sichuan Province on May 12, 2008. Following a major program of investment and reconstruction, the plant re-opened in 2009, and plays a major role meeting the demand for cement to rebuild the region's infrastructure.

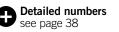
#### A PLATFORM FOR SUSTAINABLE GROWTH

Emerging markets are increasingly important to Lafarge's business, representing 51.6% of Group sales in 2009, an increase of 12% over the previous year. During 2009, we continued to increase our investment in emerging markets despite the effects of the economic downturn. Our Cement Division has opened new plants or extended the existing plants in Iraq, South Africa and Ecuador while our Gypsum Division has established new operations in China and Colombia and extended its activities in South Korea. Our Aggregates business is also growing in emerging markets, for instance through the opening of a new quarry near Mumbai, India.

This investment brings benefits to local communities through quality products, employment, infrastructure and state-of-theart technology, and to Lafarge's own business in the shape of new revenue streams, insights and management talent.

#### Supporting reconstruction in Iraq

Opened by Bruno Lafont in April 2009, Lafarge's new cement plant in Bazian, Iraqi Kurdistan, has an annual production capacity of 2.7 million tons and is playing a major role in the reconstruction of Iraq through the supply of cement for projects such as the extension of the Baghdad Airport.



### Climate change & sustainable construction

Building on its  $CO_2$  industrial emission reduction commitments and achievements, Lafarge has developed and is implementing a comprehensive strategy contributing to the overall objective to limit the Earth temperature increase to maximum 2°C. This strategy includes leadership actions within the Cement Sustainability Initiative to engage further our sector on  $CO_2$  emission mitigation actions and policies, as well as an approach to sustainable construction.

### Reduction of our net CO<sub>2</sub> emissions per ton of cement

20.7%

Reduction of our absolute level of CO<sub>2</sub> emissions in industrialized countries

# 37.7%

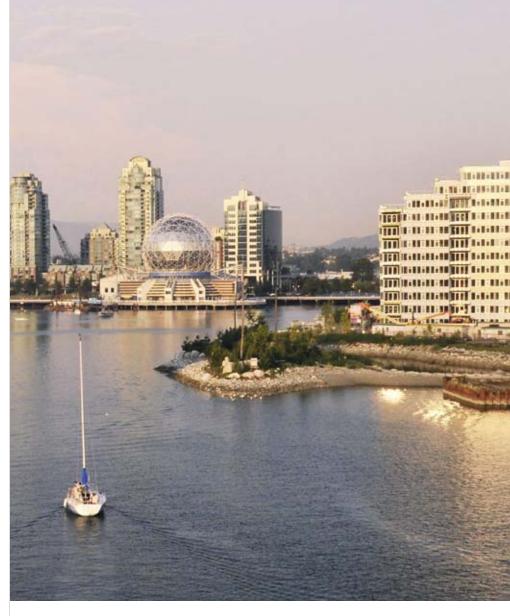
From our contribution to the EEB (Energy Efficiency Building) project to the development of Lafarge internal trainings and low carbon and eco-efficient product innovation, we want to act all along the construction chain towards energy efficiency in buildings.

### MEETING OUR $\text{CO}_2$ REDUCTION TARGETS

We have fulfilled our objective of a 20% reduction in net CO<sub>2</sub> emissions per ton of cement produced worldwide, one year ahead of schedule. This target is part of our *Sustainability Ambitions 2012* program and a key objective in our partnership with WWF.

Our second key climate change objective (to reduce by 10% our absolute level of  $CO_2$  emissions in industrialized countries over 1990 levels) was achieved at the end of 2008, two years ahead of schedule, thanks to our industrial performance but in the context of the economic downturn, which has significantly impacted our production volumes.

In 2009, we began the process of building on these achievements through the detailed planning of new Sustainability Ambitions relating to climate change. Vancouver Olympic Village building site, LEED (Leadership, Energy and Environment design) certified, Canada. A sustainable construction, using Agilia® concrete. © Lafarge Medialibrary - Ignus Gerber



### We work all along the construction chain to reduce our CO<sub>2</sub> footprint at each step

#### **PROMOTING A SECTORAL** APPROACH

As the world leader in building materials, we work with other members of the World BusinessCouncilforSustainableDevelopment's (WBCSD) Cement Sustainability Initiative (CSI), to reduce the cement industry's environmental footprint. The CSI promotes a sectoral approach to accelerate CO<sub>2</sub> mitigation in the cement industry worldwide, recommending policies and measures to reduce greenhouse gas emissions across our industry sector and encouraging similar actions by host governments. All CSI core members have set voluntary individual  $CO_2$  reduction targets. In 2009, the CSI actively contributed to the Cement Technology Roadmap prepared by the IEA (International Energy Agency). This Roadmap identifies the CO<sub>2</sub> emission reduction potential in our industry worldwide and the necessary policies and measures. The CSI has also designed and promoted a new CDM (Clean Development Mechanism) methodology, better adapted to our sector: it is currently under study at the UN Executive Board in charge of these projects. In 2009, we celebrated another step towards a more sustainable cement industry by securing the involvement of five major Chinese cement plavers in the CSI, which is co-chaired by Bruno Lafont. As a result, the world's largest cement market, accounting for 50% of total production, is now represented in the CSI for the first time.

#### CO-CHAIRING THE WBCSD'S **ENERGY EFFICIENCY IN BUILDINGS (EEB) PROJECT**

Lafarge, together with United Technologies Corp., co-chaired the most successful project in the history of the WBCSD: the "Transforming the Market" report, the result of three years' research into energy efficiency in buildings. It includes a detailed roadmap covering short and medium-term actions for every actor in the value chain, but proposes that a stronger signal to the market is required to trigger the necessary urgent transformation in energy efficiency. This report was downloaded more than 22,000 times from the WBCSD website alone (<u>www.wbcsd.org</u>). During 2009, the conclusions were presented to high-level

#### Where do emissions come from?

60% of the CO<sub>2</sub> is released from limestone and 40% from fossil fuels used in the combustion process.

#### What are we doing to reduce them?

- increasing the energy efficiency of our plant kilns and
- using locally available alternatives to fossil fuels such as biomass, used tires, coffee husks and industrial waste.

What is the carbon footprint of clinker? 820 kg CO<sub>2</sub>/ton of clinker\*

AGGREGATES

CEMENT CONCRETE

#### What are we doing to reduce our concrete footprint?

We design innovative concretes:

- Ductal<sup>®</sup>, an ultra-high performance concrete requiring less cement to provide the same levels of strength and resistance, delivers a 35% saving in raw materials and a 53% saving in  $CO_2$  emissions.
- Thermedia<sup>™</sup> 0.6B, a new generation of ready-mix concrete to reduce heat losses in buildings.
- The Ductal® thermal breaker to reduce thermal bridges by up to 70%.

What is the carbon footprint of concrete? 180 kg CO<sub>2</sub> / m<sup>3</sup> of concrete\* 80 kg CO<sub>2</sub> / ton of concrete\*

#### An opportunity to influence

New standards and building regulations help ensure that new buildings are more energy efficient than existing stock. In addition Lafarge works in partnership with other companies, NGOs and governments to foster sustainable construction through organizations such as the United Nations Environment Program (UNEP) Sustainable Building and Climate Initiative

CONSTRUCTION MODES

**CLINKER** 

#### BUILDINGS

The single largest challenge relating to CO<sub>2</sub> emissions and building is improving the energy efficiency of the existing building stock and new buildings.

#### Lafarge has two priorities:

- reduce its CO<sub>2</sub> emissions
- contribute to energy efficiency in buildings built with its products

#### Where do emissions come from?

The CO<sub>2</sub> emissions associated with cement depend upon its clinker content.

What are we doing to reduce them?

- using industrial by-products such as fly ash and slag to reduce the amount of clinker required and lower the carbon intensity of cement.
- using naturally occurring local products such as the volcanic rock Pozzolan.

Today, 60% of cement products sold by Lafarge are blended cements.

What is the carbon footprint of cement? On average:  $610 \text{ kg CO}_2$ /ton of cement\*

#### GYPSUM PLASTERBOARD

The Gypsum Division has launched a wide range of actions to decrease its energy consumption and in the long run its carbon emissions.

Plasterboard plants have worked on several levers all along the production process:

• to optimize boards average weight to reduce stucco usage, and therefore the calcination energy consumption

• to improve equipment efficiency: 1. on drying equipment owing to optimized and standardized dryer management practices

2. by investing in heat recovery systems on several calcination equipments

\* These figures intend to give rough estimates of the carbon footprint of each element manufactured. They can vary according to market conditions, to the specific use of each product, to the type of kiln used to produce the clinker, etc. representatives of the European Parliament, the European Commission, the US Department of Energy and the Ministry of Construction in China. The report also received special attention from the governments and construction sectors of Japan and South Korea. The Financial Times covered it on April 27, one of over 140 press articles around the world. The report is available in English, French, Japanese, Chinese, Korean, Russian, Spanish and Portuguese, The significance of our work inspired the Peterson Institute for International Economics, a leading US-based think tank, to produce a policy brief (reference 09-17) on the global economics of buildings' energy efficiency. Authored by Trevor Hauser, it was published in August 2009 and is available at <u>http://piie.com</u>

#### Saving energy in Lafarge's own buildings

The WBCSD EEB project concludes that only a large-scale mobilization can unleash the huge energy and  $CO_2$  saving potential in buildings. The WBCSD EEB project also includes a manifesto that calls on companies to commit to low energy buildings in their own building stock. Lafarge, together with 48 other multinational companies, signed the manifesto in 2009, pledging the Group to:

1. Creating a baseline of the company's commercial buildings and setting time-based energy and/or  $CO_2$  reduction targets in line with transformative change.

2. Publishing a company policy for minimum energy performance levels in the company's commercial buildings.

**3.** Defining and carrying out the company's audit program and implementation strategy to meet energy targets for its commercial buildings.

**4.** Publishing annually buildings' energy use, CO<sub>2</sub> emissions and progress against reduction targets in the companies' respective CSR or other report.

5. Further promoting building energy efficiency among suppliers, employees, and other stakeholders through advocacy, marketing activity, R&D, education and training.

#### A new range of fly ash-based cement in South Africa

We have become the first South African cement producer to offer a full range of lower carbon cements in a market with an evergrowing awareness of environmental issues. These fly ash-based cements have helped to reduce Lafarge South Africa's  $CO_2$  emissions by 150,000 tons between 2007 and 2008.

### The Ductal® based thermal breaker

This thermal bridge breaker is a major innovation. Providing perfect insulation and a mechanical link between the concrete slab and the external wall, the breaker reduces thermal bridges by up to 70%.

#### Recyclable plasterboard composite panel that brings high thermal insulation

Light and flexible, made from plasterboard lined with elastified polystyrene, the brand new **Prégymax™ 29.5** boasts exceptional thermal and acoustic performance. Since no metal frame is used to install it, it does not create thermal bridges. For an equivalent thickness, **Prégymax™ 29.5** provides higher thermal insulation than other polystyrenes or mineral wool. Moreover, **Prégymax™ 29.5** is affordable and easy to install. Last but not least, the panel is 100% recyclable after separating the board from the polystyrene panel.

#### Prégymax<sup>™</sup> 29.5. © DR Lafarge Medialibrary.



### PROMOTING SUSTAINABLE CONSTRUCTION

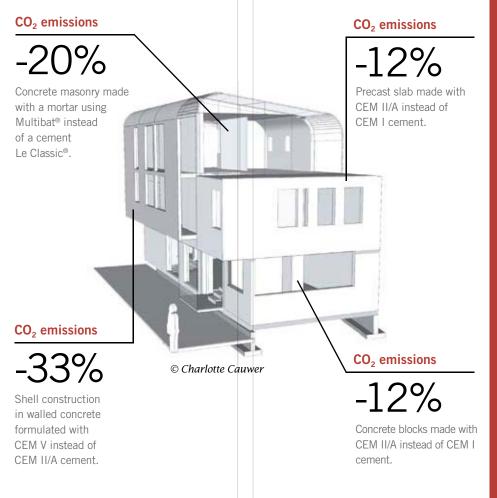
...

Besides reducing the carbon footprint of its products, Lafarge developed a campaign of internal education on sustainable construction throughout 2009, launching a new e-learning tool and carrying out a series of training sessions at various levels of the organization. More than 50% of our R&D budget is dedicated to issues relating to sustainable construction such as energy,  $CO_2$ , natural resources efficiency, health and safety as well as comfort and quality of life, while most of the remaining is dedicated to fundamental research.

Our strategy also involves launching new products that reduce the footprint of a construction over its lifetime. Launched in France in 2009, **Thermedia™ 0.6B** is a new

generation of ready-mix concrete, which Lafarge has developed in partnership with Bouygues Construction to reduce heat loss from buildings. **Thermedia™ 0.6B** reduces the effect of thermal bridges, points in a building's envelope through which heat is transferred at a substantially higher rate than through the surrounding envelope area. Typical thermal bridges are found at the junction of an internal and external wall, where slabs join the external wall, or at cantilevered balconies. Thermedia™ 0.6B has the same compressive strength as traditional concrete (25MPa) but with a level of thermal conductivity that is 66% lower. This means a higher insulation capacity, and a 30% achievement in energy savings compared to traditional concrete.

#### Developing lower carbon cements in France



#### © Alain Le Breton



#### PANEL

#### KARINA LITVACK F&C Asset Management

With cement production generating up to 900kg of carbon dioxide for every ton of output, the fact that Lafarge has invested successfully in squeezing this ratio down by a third is impressive. Further rolling out best-available technologies group-wide will bring yet more such efficiencies. But faced with the collective imperative of meeting the 2°C cap and the opportunity to capitalize on galloping growth in Asia's fast-urbanising markets, will these incremental improvements be enough to transform cement production and enable Lafarge to deliver both growth and climate stability? The answer lies in two areas where Lafarge must deliver massive technological breakthroughs:

1) by developing advanced building materials that enable building occupants to achieve dramatic improvements in energy efficiency; this will rightly shift attention to the 85% of building emissions that occur post-the construction phase, curbing emissions from the built environment, the world's number two source of GHGs. And 2) by shifting to alternative materials – possibly non-cement-based – that are not constrained by the chemistry of limestone. If Lafarge doesn't invent a better, cleaner alternative to cement, someone else will, and its traditional product, and ultimate business survival, will risk going the way of the buggy whip.



Duraclime<sup>™</sup> allows up to 30% reduction in energy consumption and in greenhouse gas emissions over a 5-year lifecycle. © DR Lafarge Medialibrary

### An innovative asphalt reduces carbon emissions in North America

**Duraclime**<sup>™</sup> can be produced and used at lower temperatures than traditional asphalt (130°C instead of 150°C for standard asphalt), consuming less energy during mixing and application stages and thus reducing both greenhouse gas emissions and fumes. The product's viscosity allows a higher proportion of recycled aggregates to be added and delivers exceptionally hard-wearing roads and sidewalks. **Duraclime**<sup>™</sup> sales increased by 209% in 2009, from 44kt to 136kt.

### Developing lower carbon cements in France

Replacement of increasingly large proportions of clinker with naturally sourced or industrial cement additives has led to a generation of lower carbon cements, with a reduction in  $CO_2$ emissions of up to 30%, equating to 50 tons of  $CO_2$  saved in the construction of a threestorey building. See the illustration on page 34.

**Detailed numbers** see pages 42-43



For more information: http://sustainabilityreport.lafarge.com

### 2009 PROGRESS



© Charlotte Cauwer

### **Exemplary sustainable building**

Sustainable constructions can take many forms, and no single solution exists. Influencing factors are climate, location, size, orientation, program requirements, layout, local skills and construction methods, costs, know-how, tradition, esthetics, regulations, comfort levels, behavior, etc. Many parameters need to be taken into account and trade offs have to be made in order to reduce the environmental footprint over the entire defined service life time of a construction. Lafarge is able to offer innovative and efficient solutions to the main areas that characterize sustainability. These are typically energy efficiency, low carbon footprint (both in materials and during building's operation), efficient use of natural resources, health and safety, comfort, quality of life, affordability and extended service life. These contributions are shown in this exemplary sustainable building.

#### ● PRÉGYMÉTAL™ CEILINGS

A false ceiling made of a sheet of decorative Synia® and Prégyméta<sup>TIM</sup> S47 ceiling rails to create a smooth surface without visible joints allowing any type of finish. Benefit: esthetics.

### PRÉGYMAX<sup>®</sup> 29.5

With the lowest thermal conductivity in its category, this insulating wall lining provides exceptional thermal and acoustic performances. Benefits: energy savings and comfort.

#### **OUCTAL® BASED** THERMALBREAKER

Providing insulation at the same time as a mechanical link between the concrete slab and external walls, this element reduces heat losses through thermal bridges by up to 70%. Benefit: energy savings.

#### **4** WAB<sup>®</sup> PARTITION

PRÉGYWAB are the only plasterboards that can be used as partition walls for very humid areas such as bathrooms. They are also suitable for external sheltered ceilings. Benefit: lower embodied energy compared to traditional solutions.

#### 9 PLATEC<sup>®</sup>

3D designed made-to-measure plasterboards to create high quality interior decorative finishes. Benefits: less waste due to reduced cut offs and cost efficient compared to onsite production.

### O UNIMAT<sup>®</sup> SOL ULTRA

Unimat<sup>®</sup> Ultra Floor is a range of insulated floor products made from PSE. It is particularly well suited to insulating under floor heating systems. Benefit: energy savings.

### 🕖 SYNIA®

With its four tapered edges, this plasterboard is ideal for very high ceilings and partitions. It is easy to use, reducing fitting time. Benefit: esthetics.

#### **1 THERMEDIA® 0.6 FACADE**

Thermedia® 0.6 has the same compressive strength as traditional concrete (25MPa) but has a 66% lower thermal conductivity. This higher insulation capacity leads to 30% energy savings in thermal bridges. Benefit: energy savings.

#### OUCTAL®

It is a complete new generation of ultra-high strength fiberreinforced concrete. As a consequence, structural elements require far less material quantities to carry identical loads. Benefit: natural resources efficiency.

#### PERVIOUS CONCRETE

Pervious concrete is a mechanical resistant concrete with high water permeability lending itself to numerous environmental benefits such as fewer storm-water runoffs, reduction or elimination of traditional storm-water management systems such as retention ponds and sewer tie-ins, and allows percolation of rain water into the groundwater.

#### ARTEVIA®

Is a range of decorative concretes for indoor and outdoor uses that combines freedom of colors, designs, low maintenance and superior durability. For thermal mass to work and to deliver indoor comfort and energy savings, buildings need to have exposed concrete inside the building. The designer is more likely to go for exposing concrete when using the decorative Artevia<sup>®</sup>. Benefits: energy savings, extended service life, esthetics.

### UNIMAT® FLOOR INSULATION

This is a rigid expanded polystyrene panel to insulate the ground slab. Benefit: energy savings.

### LOW-CARBON CEMENT

The clinker is replaced by high proportions of natural or industrial by-products cement additions. Benefit: lower embodied energy and carbon footprint. © DR Lafarge Medialibrary



### PANEL

### LIVIA TIRONE Architect

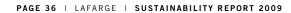
As incredible as it may seem, most of the built environment's failure to satisfy expected function and falling short of achieving required levels of energy environmental performance, are due to the fact that the relevant actors (promoter, design team, solution suppliers, contractors and even the end user) don't have the required know-how.

In cities, concrete is an important ingredient of sustainable construction and is a product that requires being an integral part of the holistic construction solutions, adapted to every cultural, geophysical and climatic context. Lafarge can be instrumental in defining these solutions, in quantifying their energy and environmental performance and in communicating this important information, including the intrinsic benefits, to the relevant actors, giving special attention to the end user.

One of the continuous challenges Lafarge takes on is the development of new materials that help resolve the many needs of our urban contexts. I look forward to robust sustainable construction solutions; for well performing green roofs, which will be an important contribution for increasing biodiversity in our cities, for pervious urban surfaces, which will reduce run off and increase absorption of rainwater, among others.

Both professional and non-professional actors welcome these developments and the image of concrete will solidly improve.

For more information: http://sustainabilityreport.lafarge.com

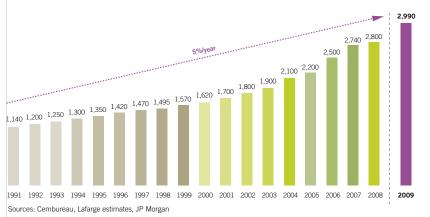


# Understanding **the industry**

Our industry manufactures building materials. Our products meet basic human needs. Economic growth drives demand for our product. To be sustainable our industry needs to meet demand while leaving a lighter environmental footprint and positive social outcomes.

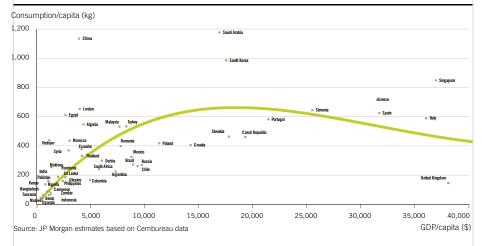
### GETTING AN UNDERSTANDING ABOUT CEMENT MARKETS

Average annual growth rate of cement demand: approximately 5%/year in the last twenty years (in million tons)



World cement consumption has significantly increased with an average rate of growth of +5% per annum, the mid and long term prospects remain favorable, especially in emerging markets, where the demography, the urbanization, the needs in housing and in infrastructure are powerful.

### Cement consumption per capita in 2009



Population growth drives demand for our products. It grows as economies develop, particulary as they urbanize. Within developing economies demand for cement increases substantially when national income reaches US\$ 3,000 per head. At around US\$ 15,000 per head consumption slows and, once a country's infrastructure is modernized, it may start to decline.

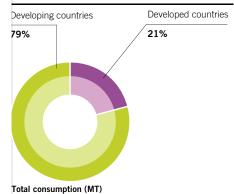
### Sales growth in emerging markets

(Cement sales by value - split of sales in percentage)



The balance of our cement sales continues to shift reflecting global trends and our declared strategy. Over two-thirds of cement sales in 2009 were in emerging markets.

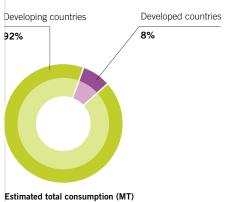
### 2005 cement consumption



Developed countries: 455.1 Developing countries: 1,761.5

Source: Cembureau and J.P. Morgan estimates. Over the next two decades the balance of cement consumption between developed and emerging countries will continue to shift with further growth in developing countries.

### 2025 cement consumption (estimate in %)



Developed countries: 407.6 Developing countries: 4,508.1

Source: Cembureau and J.P. Morgan estimates. Over the next two decades the balance of cement consumption between developed and emerging countries will continue to shift with further growth in developing countries.

### OUR INDUSTRY

An explanation of:

- the processes involved in our operations,

- how a cement plant works, and

- the lifecycle of a quarry can be found at <u>http://sustainabilityreport.lafarge.com</u>.

Detailed information about our business is given in Section 3.3 Business Description in our 2009 Annual Report (<u>www.lafarge.com</u>). This includes information of the cost structure of our products.

### Who benefits from our operations

(Cash value added)

	€ million	%
Sales Cost of goods sold	15,884 9,948	
Cash value added (1)	5,936	100
Taxes to be paid to governments	373	6.3
Paid to investors for providing capital	536	9.0
Paid to lenders as a return on their borrowings	827	13.9
Retained for growth	1,731	29.2
Paid to employees for their services	2,458	41.4
Community investment (2)	11	0.2

1 | Figure adjusted to take account of estimate for community investment 2 | Estimate

Employees are the single biggest beneficiary group from our cash value added.

### UNDERSTANDING THE REGIONAL IMPACTS OF OUR BUSINESS

Sales by region

and	by	busi	iness	line	(in %)
-----	----	------	-------	------	--------

By region	2009
Mature markets	48.4
Western Europe	29.3
North America	19.1
Emerging markets	51.6
Central & Eastern Europe	6.6
Middle East & Africa	25.3
Latin America	5.0
Asia	14.7
By business line	2009
Cement	59.7
Aggregates & Concrete	31.9
Gypsum	8.4

Mature markets have declined from 66.2% of sales in 2005 to 48.4% in 2009. This reflects both acquisitions, notably that of Orascom Cement, and organic growth. Over the same period the percentage of sales from cement has grown from 52.3% to 59.7%

### Shareholders by type and geography (in %)

By type	2009
Institutional (France)	19.4
Institutional (other countries)	70.3
Individual (non Group employees)	8.5
Group employees	1.7
Treasury	0.1
By geography	2009
France	29.6
United States	16.0
Belgium	21.9
Luxembourg	14.2
Rest of the world	13.3

As of 31 December 2009 Groupe Bruxelles Lambert held 21.1% of total shares issued and NNS Holding SARL 13.9%. A further 7 institutional shareholders held between 1% and 4%, of these: 4 held between 1% and 2% of our shares, two held between 2% and 3% of our shares and 1 held between 3% and 4%.

### Assets\* by region

and by business line (in %)

By region	2009
Mature markets	41.2
Western Europe North America	22.5 18.7
Emerging markets	58.8
Central & Eastern Europe Middle East & Africa Latin America Asia	6.1 38.6 2.3 11.8
Capital employed by business line	2009
Cement Aggregates & Concrete Gypsum Other	78.3 16.0 4.5 1.2

\* Non current assets which include goodwill, intangible assets, property, plant and equipment and investments in associates.

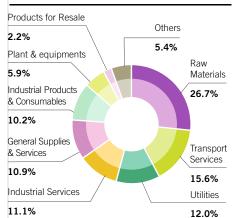
### Employees by region and by business line (in %)

By region	2009
Mature markets	35
Western Europe	21
North America	14
Emerging markets	65
Central & Eastern Europe	9.9
Middle East & Africa	25.3
Latin America	3.3
Asia	26.5
By business line	2009
Cement	59.6
Aggregates & Concrete	30.2
Gypsum	10.2

At year-end 2005 we had 80,146 employees 51% of whom were based in Western Europe or North America, by 2009 this percentage had declined to 35%. At year end 2005 just over half of employees were in the Cement Division. At end 2009, the Cement Division accounts for three-fifths of our employees.

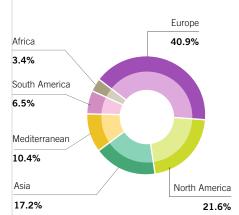
### UNDERSTANDING OUR SUPPLY CHAIN IMPACTS





The breakdown of the supplies sourced is broadly consistent on a year to year basis. The reporting covers 66 business units.

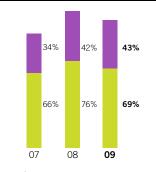
### Supply spend by region



The distribution of our supply spend varies relatively little year by year. The key fact is that most of our supply spending is local spending, see examples on page 15. Reporting covers 66 business units.

### ENVIRONMENTAL MANAGEMENT

Environmental management systems, of which ISO 14001 (as % sales)



Lafarge internal management system Of which ISO14001 certified systems

2009 witnessed an increase in our use of ISO14001 certified systems. In 2009, figures were 73% for Cement, 55% for Aggregates & Concrete and 100% for Gypsum.

Sites audited environmentally within the last 4 years (in %)



EY

This indicator showed an increase in 2009 with the best result to date. The figures for the businesses are: Cement 88%, Aggregates & Concrete 85% and Gypsum 100%.

Environmental and safety investments

amounts committed (million Euros)

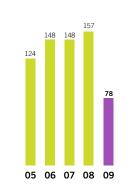
### UNDERSTANDING OUR ENVIRONMENTAL EXPENSES

Increased focus on Sustainability within R&D (in %)

	2007	2008	2009
Reduction of CO <sub>2</sub> emissions	- 25%* -	18%	16%
Energy efficiency	- 20/6 -	13%	15%
Natural resources	10%	10%	8%
Safety & security	5%	6%	5%
Comfort & quality of life	7%	6%	5%
Others	52%	47%	51%

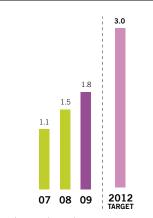
\* covers both CO2 and energy

Approximately half of R&D in the past three years has been focused on sustainability. We expect this to increase to three-fifths in 2010.



After being on an upward trajectory for a number of years. environmental and safety investments were reduced in 2009 as a result of the economic downturn. The €78 million breaks down between businesses: Cement €62m, Aggregates & Concrete €6m and Gypsum €10m.

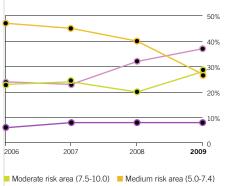
### **Customers new product sales** over time (in bn euros)



Our commitment to innovation to meet customer need is bearing fruit with 64% growth between 2007 and 2009.

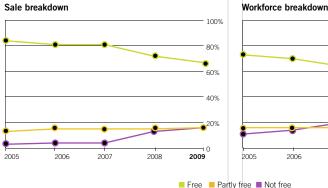
### MONITORING CORRUPTION RISKS AND HUMAN RIGHTS CHALLENGES

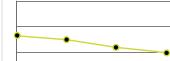
Breakdown of sales by country risk according to Transparency International (in %)



High risk area (2.5-4.9) Very high risk area (< 2.5)

Breakdown of activities in countries of concern regarding human rights' (in %)





100%

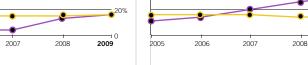
80%

60%

40%

20% 0

2009



As a result of changing group structure and growth an increasing proportion of our business is conducted

An increasing proportion of our business is carried out in countries with higher corruption risks.

in countries with human rights concerns.

\*Based on Freedom House's Freedom in the World 2008 Index, which rates countries on their levels of civil and political rights.

# Cement Sustainability Initiative **Common reporting**

The WBCSD Cement Sustainability Initiative is a global effort by 23 major cement producers with operations in more than 100 countries who believe there is a strong business case for the pursuit of sustainable development. Collectively these companies account for over 40% of the world's cement production and range in size from very large multinationals to smaller local producers.

### SHARING AND BENCHMARKING

Key to the success and development of the initiative is sharing a set of common measures. The use of these measures has grown over time with more of the members reporting against an increased number of the measures. The adjacent table shows where you can find Lafarge's performance for this year against each measure. The graphs showing these measures are marked with an icon like this **CSII**.

As is our custom, to help give some idea of Lafarge's relative performance we have benchmarked ourselves against competition on a number of the measures. The companies included are Cemex, Cimpor, CRH, Heidelberg, Holcim, Italcementi, Siam Cement and Titan. We have used 2008 as the base year as this is the most recent available data that we have for the other companies. The data available does not always enable us to benchmark the full group of nine **B**.

With regard to:

- LTIFR we were 2<sup>nd</sup> of 8;
- Fatality rate we were 2<sup>nd</sup> of 6;
- Net CO<sub>2</sub> emissions we were 1<sup>st</sup> of 8;
- SO<sub>2</sub> emissions we were 8<sup>th</sup> of 8;
- NOx emissions we were 8<sup>th</sup> of 8;
- Stack dust emissions we were 5<sup>th</sup> of 8;
- Alternative fuels we were 2<sup>rd</sup> of 5;
- Alternative materials we were 3<sup>rd</sup> of 9.

With regard to quarry rehabilitation the reporting basis varies, but it would seem that Lafarge is in line with peer performance.

More information about CSI can be found at <u>www.wbcsdcement.org</u>.

ELEMENT	PAGES	RESULTS
CLIMATE CHANGE MANAGEMENT		
<b>1</b> Number of facilities and % using WBCSD $CO_2$ protocol <b>2</b> Company wide total $CO_2$ emissions gross + net tons/year <b>3</b> Company wide gross and net $CO_2$ emissions per ton of cementitious product	42 42 42	100%
FUELS AND MATERIAL USE		
<ul> <li>4 Specific heat consumption of clinker production, MJ/ton clinker</li> <li>5 Alternative fossil fuel rate: consumption of alternative fuels, as % thermal consumption</li> </ul>	43 43	
<ul> <li>6 Biomass fuel rate: consumption of biomass, as % of thermal consumption</li> <li>7 Alternative raw materials rate: consumption of alternative raw materials, as % of total raw materials for cement and clinker production</li> </ul>	43 43	
8 Clinker/cement factor: ratio between clinker consumption and cement production calculated according to cement protocol	43	
HEALTH AND SAFETY		
<ul> <li>9 Number of fatalities and fatality rate per 10,000 for directly employed</li> <li>10 Number of fatalities indirectly employed (contractors and sub-contractors)</li> <li>11 Number of fatalities involving 3<sup>rd</sup> parties (not employed)</li> <li>12 Lost time injuries and injury frequency rate (per 1 million man hours directly employed)</li> <li>13 Number of lost time injuries for indirectly employed</li> </ul>	41 41 41 41 41	
EMISSION MONITORING AND REPORTING		
14 % of clinker produced by kilns covered by a monitoring system, either continuous or discontinuous for main and other pollutants	44	91%*
15 % of clinker produced by kilns which have installed continuous measurements for the main pollutants	44	61%
16 Company-wide specific (g/ton of clinker) and total (tons/year) releases for: NOx SOx Dust	44 44 44	
LOCAL IMPACTS		
<ul><li>17 Percentage of sites with community engagement plans in place</li><li>18 Percentage of active sites with quarry rehabilitation plans in place</li><li>19 Number of active sites where biodiversity issues are addressed</li></ul>	45 45 45	

\* 91% refers only to main pollutants

### OVERVIEW OF DIFFERENCES IN SCOPE

Company profiles (Base year 2008)	Sales (M€)	Employees (Number)	Production (Mt)	Production capacity (Mt)	Countries (Number)
Cemex	21,700MUS\$	56,791	95.6	100	> 50
Cimpor	2,089	5,997	26.8	31	12
CRH	20,887	93,500	16.5		28
Heidelberg	14,187	60,841	89	100	42
Holcim	23,294 MUS\$	86,343	143.4	194	> 70
Italcementi	5,776	22,243	62.6	70	22
Lafarge	19,033	83,438	165.1	-	79
Titan	1,578	6,504	17.2	16	-
Siam Cement (cement only)	358	-	-	-	-

Audited by Ernst & Young (2009 data)
 GRI
 Sustainability Ambitions 2012
 CSI
 Benchmark

# Health and **Safety**

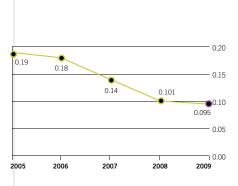
2009 is a continuation of the trend of recent years reflecting the number 1 priority Lafarge is giving to this subject. Our *Sustainability Ambition* for 2009 was to reduce the LTIFR below 1.35. This was exceeded and the rate was reduced to below 1. Our challenge now is to keep the LTIFR below 1 and to reduce it further.

### A CONTRASTED YEAR

Traditionally we have benchmarked our previous year's performance against a number of our CSI peers. For 2008 we were able to do this against five other companies and Lafarge was second out of the group surveyed. Time losing injuries fell by 92 (39%) among employees and 54 (31%) among contractors. We are determined to see a continuing decline in future years. We still have fatalities associated with our business, which is not acceptable. Contractor and third party fatalities decreased but employee fatalities rose from 5 to 7. We remain committed to an improved performance in all aspects of health and safety in 2010.

### Halving days lost over five years

(Lost time injury severity rate: number of calendar days lost as a result of accidents by thousand hours worked)



The Group allows a period of two years for acquisitions to catch up with the health and safety standards and advisories. For a period of two years, lost time injuries for employees and contractors are not counted. The injury severity rate for Cement and Aggregates & Concrete was 0.089 and for Gypsum 0.158.

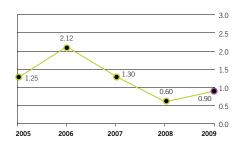
### Further information on our safety record

🚱 LA7 CSI 9, 10, 11, 12, 13		Total	Cement	Aggregates & Concrete	Gypsum
	2008	2009	2009	2009	2009
Number of lost time injuries among Lafarge employees	234	142	64	49	29
Number of lost time injuries among contractors' employees	173	119	81	22	16
Lafarge employee fatalities on site	2	6	3	2	1
Lafarge employee fatalities - transport	3	1	0	1	0
Third party fatalities on site	3	1	1	0	0
Third party fatalities - transport	7	6	5	1	0
Contractor employee fatalities on site	21	14	12	1	1
Contractor employee fatalities - transport	14	11	10	1	0

25 contractors fatalities in 2009: 14 on site + 11 transport.

### **Group Fatality Rate**

(Number of fatal accidents per 10,000 employees)

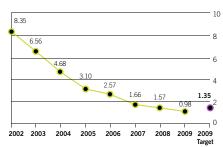


All fatalities are included from the moment of any acquisition, consequently the figures above include fatalities occurring in former Orascom and Larsen & Toubro operations.

### **Drastic reduction of LTIFR**

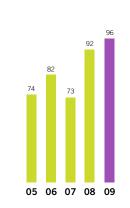
(Lost time injury frequency rate: number of accidents leading to loss of time by million hours worked)





Lost time injury is a work related injury causing absence for one or more scheduled workdays (or scheduled shifts), counting from the day after the injury occurs to the day before the individual returns to normal or modified working. The 2009 LTIFR for Cement is 0.76, for Aggregates & Concrete 1.04 and for Gypsum 2.12. In the benchmark group, Lafarge was 2nd out of 8.

### Increasing organized engagement with health and safety (Total workforce represented in H&S committees, in %)



The percentage of staff represented on health and safety committees has grown from three quarters five years ago to just short of 100%. Staff involvement is key to delivering our safety performance.



## Climate change management

At Lafarge we are acting to reduce the carbon intensity of our products and our processes. This does not come from any one single factor. It is the result of a number of different actions and requires us to measure, improve and set targets for a range of factors.

### HOW WE ACHIEVED OUR 20% CUT IN NET EMISSIONS

Lafarge has reduced net emissions per ton of cementitious product from 774 in 1990 to 614 in 2009. The single biggest contributor to this change has been the reduction in our clinker/ cement factor. In 1990 clinker composed 84% of our cement; by 2009 we had reduced this to 75%. Just over half of the increase in net emissions per ton is due to this factor. The second biggest factor is the improved Specific heat consumption of our plants. This has come through investment : building and opening new plants, closing old and inefficient plants and improving some other plants. This accounts for 35% of the overall improvement made. The remainder of the improvement comes from increased use of alternative fuels.

### REDUCING GROSS ABSOLUTE EMISSIONS IN INDUSTRIALIZED COUNTRIES

Over the period 1990 to 2007 our production of cement in industrialized countries increased by 7% but our commitment to increasing our efficiency led to a 5% drop in our gross absolute emissions. Since 2007 we have continued to increase our efficiency but the greater part of our 38% reduction over 1990 is due to decreased demand resulting from the economic crisis.

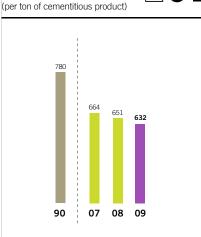
### MANAGING OUR CARBON EMISSIONS (SCOPE 1)

Lafarge total gross CO<sub>2</sub> **FY** 🔁 🚳 EN16 emissions (millions of tons/year) CSI 2 106 105 95 76 52 50 46 33 24 56 59 1990 2007 2008 2009 Emerging markets Industrialized countries

Our gross emissions declined in 2009, mainly due to the impact of the recession. Overall our gross emissions have grown by a quarter over 1990. Gross emissions in industrialized countries have seen a reduction of 38%, emerging markets have more than doubled.

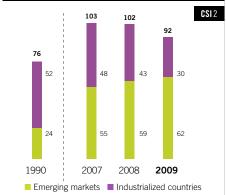
EY SA CSI13

### Gross CO<sub>2</sub> emissions



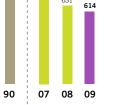
Our gross emissions per ton were 19% down on 1990 levels.

Lafarge total net CO<sub>2</sub> **EY (b) (c)** EN16 emissions\* (millions of tons/year)



Net emissions decreased in 2009 mainly due to the recession. Over 1990 net emissions rose by 22%. Industrialized countries saw a 42% decline while emerging economies net emissions are just over two and a half times higher than in 1990.

Net CO<sub>2</sub> emissions\* (per ton of cementitious product)



Our net emissions per ton were 20.7% down on 1990 levels, achieving our Sustainability Ambition for this measure one year ahead of target. For 2008 we were able to benchmark ourselves against seven other companies and Lafarge was first out of the group surveyed.

\*Net CO<sub>2</sub> emissions are the gross emissions less the emissions that come from burning waste.

### **INCREASING THE USE OF NON-FOSSIL FUELS**

Alternative fuel rate CSI5 (Consumption of alternative fuels, as % thermal consumption)

### **Biomass fuel rate**

(consumption of biomass, as % thermal consumption)



### Using alternative raw materials

(consumption of alternative raw materials, as % of total raw material for cement and clinker production and gypsum)

CSI 7

CSI4 B

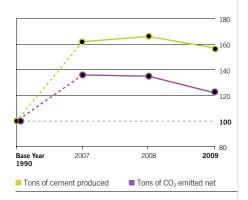
🚱 EN3



Our use of non-fossil fuels has increased by more than 25% over 2007. We are planning to increase usage in future years. For 2008, Lafarge was 3rd out of 8 companies surveyed.

### Increasing the carbon efficiency of our operations

(Trend of net emissions against tons of cement produced)

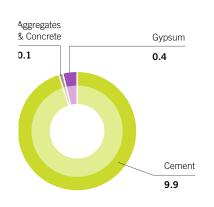


Our operations are becoming ever more carbon efficient. In 2009 we produced 57% more cement than in 1990 but our  $CO_2$  emissions increased by only 22% over the same period.

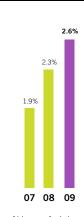
🚱 EN3



MTOE (Million tons of oil equivalent)



Our total energy consumption declined by just short of 12% in 2009 (10.4 MTOE). Just under 95% of our energy consumption is in the Cement business.



Specifically our use of biomass fuels is growing too. Our 2009 level was over a third higher than the level for 2007. For 2008, Lafarge was in 5th position and still has room for improvement.

### Cutting the clinker/cement factor csis

77%

(ratio between clinker consumption and cement production calculated according to cement protocol)

76%

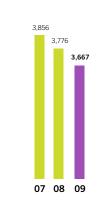
75%



Our use of alternative raw materials broadly held steady through 2009.

### Cutting our specific heat consumption

(clinker production, MJ/ton clinker)



We are steadily reducing the clinker proportion of our cement. In 2008, Lafarge was 4th out of 8 companies who reported on this indicator.

07 08 09

The specific heat consumption of our plants is improving. Though product produced has increased by 59% since 1990, specific heat consumption has fallen by 19% over the same period. In 2008, Lafarge was 6th out of the 8 companies who reported on this indicator.

### Fuel mix evolution in the cement business (% of total)

	1990	2007	2008	2009
Coal	56.1%	44.1%	44.6%	43.8%
Coke	7.6%	22.0%	18.9%	19.8%
Oil	13.5%	5.9%	7.5%	8.3%
High viscosity fuels	2.1%	1.5%	0.7%	0.1%
Gas	18.1%	17.7%	17.8%	17.1%
Waste*	1.9%	6.9%	8.2%	8.3%
Biomass	0.7%	1.9%	2.3%	2.6%

Since 1990 use of alternative fuels has grown while coal and oil has declined. Gas has remained flat while our use of coke has almost doubled. We have virtually eliminated the use of high viscosity fuels. Used oils, solvents, tires, solid shredded waste, impregnated sawdust.

- see one, contento, treo, conte arreduce waste, impregliditeu

SUSTAINABILITY REPORT 2009 | LAFARGE | PAGE 43

### Curtailing ir emissio

As part of our overall commitments and progressing towards alignment with CSI guidelines we are making improvements measuring our kilns, developing KPIs and working towards limiting our emissions of persistent pollutants. We have already achieved our Sustainability Ambitions 2012 for NOx and SO<sub>2</sub>. We are making strong progress on dust. We are pleased to report a higher coverage on persistent pollutants this year.

### NOx, SO<sub>2</sub> AND DUST EMISSIONS

In 2009 we emitted a total of 218,233 tons of NOx, 57,309 tons of SO<sub>2</sub> and 17,996 tons of stack dust. Our emissions decrease in absolute value this year.

### MORE INFORMATION ON PERSISTENT POLLUTANTS

This year we are pleased to be able to give three years worth of measurements for persistent pollutants based on test of a growing number of kilns.

### MAKING PROGRESS ON PERSISTENT POLLUTANTS

Progress on percentage of kilns analyzed		EY	<b>CSI</b> 14
	2007	2008	2009
Total number of kilns	211	216	172
Number of persistent pollutants kiln analysis performed at main stack for mercury	49.3%	53.7%	69.2%
Number of persistent pollutants kiln analysis performed at main stack for D/F	40.3%	47.7%	66.9%
Number of persistent pollutants kiln analysis performed at main stack for VOC	-	26.4%	65.7%

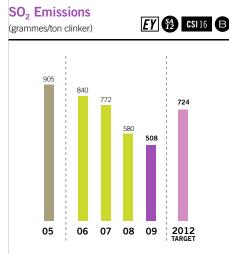
The number of kilns analyzed corresponds to 66.3% of clinker production.

### Persistent pollutants

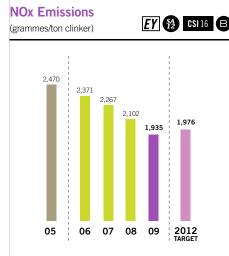
	Analyzed kilns (nb)		Quanti	Quantity (g TEQ/year)		Specific (µg/T Cem)		Specific (µg/T Ck)			
	2007	2008 2009	2007	2008	2009	2007	2008	2009	2007	2008	2009
Dioxins/ Furans	85	103 <b>115</b>	6.78	11.82	8.72	0.047	0.071	0.057	0.061	0.094	0.077
	Analyz	ed kilns (nb)	Qua	<b>ntity</b> (T/)	year)	Specif	<b>ic</b> (mg/T	Cem)	Spec	ific (mg/	T Ck)
Mercury	104	116 <b>119</b> *	3.95	4.133	4.653	27.1	25.2	30.41	35.5	33.2	41.3
	Analyz	ed kilns (nb)	Qua	ntity (T/)	year)	Spec	ific (g/T (	Cem)	Spe	cific (g/T	Ck)
voc	-	57 <b>113</b>	-	6.980	5.241	-	42.0	34.21	-	55.6	46.5

Measurements collected and reported according to the WBCSD-CSI guidelines. Data reported on the three most recent measurements. \* One additional kiln not included is in the process of being measured in priority.

### ACHIEVING LONG-STANDING SUSTAINABILITY AMBITIONS IN EMISSIONS



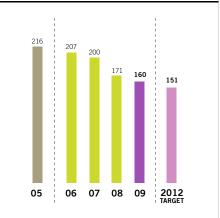
Since 2005, the progress made shows a reduction of 44%. more than expected. Nevertheless, Lafarge is a high emitter compared to other cement companies and remains in 8th position within the benchmarked group. The total amount of SO<sub>2</sub> emitted in 2009 was 57,309 tons



The graph shows a very constant and consistent improvement of the level of NOx emissions. In spite of this, Lafarge remains in 8th position within the benchmarked group. The total amount of NOx emitted in 2009 was 218,233 tons.



EY SA CSI16 B



The renovation program in China is delivering results and the average emissions decreased again in 2009. Lafarge is in the middle of the pack (fifth position out of eight) and still has progress opportunities in several plants. The total amount of stack dust emitted in 2009 was 17,996 tons

# Progress in measuring our local impacts

Our activities have significant impacts upon the local communities and environments where we operate. We want these impacts to be positive. That is why we have set ourselves Sustainability Ambitions for engagement with local stakeholders, rehabilitating our quarries and fostering biodiversity.

### 3 new community KPIs

SA 12 CSI 17

	Cement	Aggregates & Concrete	Gypsum
Percentage of target population trained (100% in 2012)	58%	22%	12%
Percentage of sites holding regular meetings with local communities	52%	14%	22%
Percentage of business units with local action plans	58%	16% Aggregates only	22%
Sites with community engagement plan (CSI)	58%	_	_

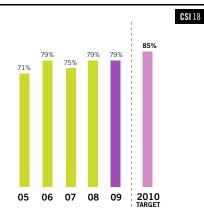
To measure Lafarge's commitment to stakeholder relations, data was collected for the first time this year on KPIs identified in last year's report. Key to making progress is training and workshops on the Group's methodology, which provides a consistent, flexible approach with communities. To maximize the usefulness of this training, it is important that the key people are trained - the nature of the topic necessitates local decision-making. Therefore, plant managers (in Cement and Gypsum divisions) and area/ regional managers (Aggregates & Concrete) are the populations on which training is focused.

### MANAGING AND IMPROVING THE IMPACT OF OUR QUARRIES

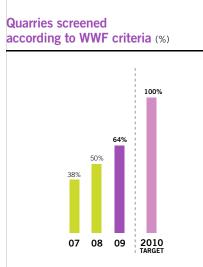
It is easy to make a commitment but only commitments that get measured get delivered. We have been tracking how many of our quarries have rehabilitation plans in place for many years. We have plans in place to help us achieve our target by 2010. Measuring our biodiversity commitment progress is also helping us to identify transferable best practice.

EY 🔂 🖪

### Quarries with a rehabilitation plan (%)

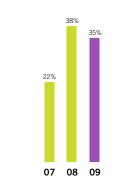


Figures by division for 2009 are Cement 65%, Aggregates 84% and Gypsum 100%. The reporting basis varies within the benchmarked group, but it would seem that Lafarge is in line with peer performance.



Quarries with a site biodiversity program (%)





The numbers of quarries screened has increased by 50% in the last two years. Figures by division for 2009 are Cement 64%, Aggregates 63% and Gypsum 68% For fuller coverage of this issue see page 26. Figures by division for 2009 are Cement 58%, Aggregates 28% and Gypsum 50%.

### Social progress in our workforce

Despite adverse economic context, we pursued our goal in making sure that, at every level of our organization, our businesses care for, and implement social progress.

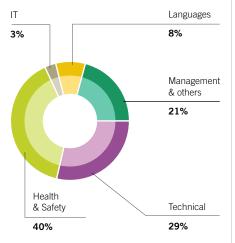
### UPHOLDING DIALOG

Our goals include increasing diversity, encouraging training and performance review for all, upholding a strong social dialog, helping local communities around us, caring for those in need. Where reorganization was the only way to continue running businesses with efficiency, we set up programs to assist employees facing a headcount reduction, and we went beyond legal requirements to ensure that people affected would receive the help that they needed. There is still a lot to do, but we are confident that we will continue making progress, with every business unit in Lafarge gaining year on year a stronger sense of social responsibility.

Employees over Employees under 30 years old 50 years old 20.1% 15.7% 64.2%

The age structure of our workforce

### Lafarge investment in training by type (%)



Our workforce average age is overall stable year on year

Focus was put on Health & Safety, which reflects the Group's  $N^\circ1$  priority. Besides, a growing number of business units (36% against 34% in 2008) set up skills management trainings & lifelong learning programs for non-managers.

NOTE: For 2009, all social indicators are based on a social survey covering 109 business units in 56 countries representing 92.5% of the total Group workforce

**SA** 12

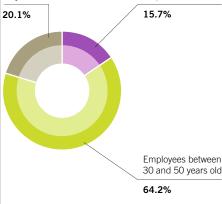
### Challenges in increasing women in management

%	2008	2009	2012 target
Senior executives & managers (Lafarge Grade 18+)	12.0	12.77	20
Boards of directors	5.5*	5.5	
Senior executives (Lafarge grade 23+)	7.5	8.4	
Senior managers (Lafarge Grades 18-22)	12.9	15.0	
Managers (all categories)	19.2	19.0	
Employees	16.3	16.0	

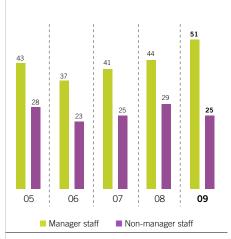
Senior managers' jobs are graded 18 to 22: in order to achieve a consistent classification of management positions, Lafarge uses a single global approach (Hay method). Job evaluation committees meet regularly, with local Hay representatives to enhance consistency, in order to standardize job content (degree of delegation, complexity, etc). In 2009, we increased our target to 20% of senior management roles filled by women by 2012. We are still at 12.7% by year end 2009, keeping up the figure, while all new countries entering our scope show a poorer female ratio.

The indicator audited by Ernst & Young is Senior executives & managers (Lafarge Grade 18+).

\*Data modified after a Data error of 2008 found in 2009



### Investing in a skilled workforce 🚳 LA10 (average number of training hours)



Total hours of training is 2.06 million, representing an 11.5% increase on 2008.

### Increasing staff performance 🕼 LA12

### assessment (employees performance review)



The increasing number of non-managers having had a performance assessment in 2009 is in line with one of the Group's Top priorities: People Development.

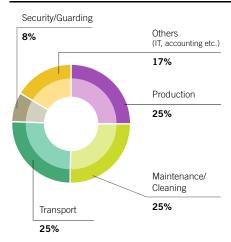
### Number of business units with strike actions



We acknowledge that the economic downturn had an impact on the number of Business Units with strike actions. In 2010, we will endeavour to issue more relevant data on this subject.

### Where Lafarge uses outsourced employees

(breakdown of outsourced employees in%)



In 2009 Lafarge employed 30,480 outsourced employees accounting for some 28% of the total workforce (2008: 29.6%). The split between the different functions performed does not fluctuate significantly from year to year.

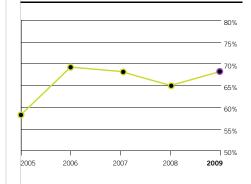


Balance	-1,777	-5,446
Deaths	143	119
Redundancies and lay-offs	5,009	5,625
Retirements	958	947
Resignations	4,148	2,813
Hirings	8,481	4,058
	2008	2009

Lafarge's overall employee base remained relatively stable, despite the economic downturn, with a 4.8% decline in global headcount like for like. We endeavored to limit or postpone headcount reductions, and to assist every employee affected pursuant to our Employment Policy.

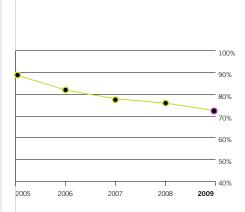
### DIALOG AND ENGAGEMENT WITH OUR STAFF

Lafarge employees represented by staff representatives and/or trade union organizations (%)

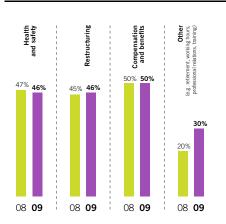


We have a strong social dialog at all levels of the organization, directly with our employees or through health and safety committees, elected representatives, works council, unions. 72.5% of our business units have staff covered by collective agreement on different topics.

### Business units with collective agreements (%)

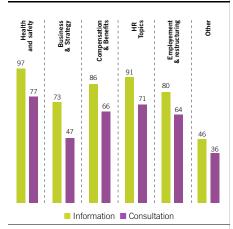


Social dialog is believed to be fundamental at all levels. This figure is due to the arrival in the scope of countries with a weaker unionization history. Employees covered by collective S LA4 agreements on specific areas (%)



An increasing number of collective agreements have been signed on various topics such as retirement, working hours, training, diversity, union rights, travel.

### Information & consultation worldwide in 2009 (Number and Type)



Consultation on major topics was increased worldwide. Social dialog is implemented locally throughout the organization.

### Managing job reorganizations to mitigate impact

	2005	2006	2007	2008	2009
% of business units having implemented significant head count reduction impacting more than 5% of workforce	9%	10%	15%	18%	27%
% of business units having set up an employment channel for employees	_	_	79%	50%	69%
% of business units having set up a local economic development channel for local communities	_	_	69%	31%	17%
Number of Lafarge employees re-employed outside the Group (in another group or in their own business)	91	111	873	572	679
Number of external jobs created through the local economic development program	_	_	468	521	1,041

In 2009, headcount reductions of more than 5% of the workforce were undertaken by 29 business units.

This figure includes those that decided to subcontract an activity, and who transferred employees to a new company, enabling them to carry on with their job. The number of external jobs created through the local economic development program doubled in 2009, compared with 2008.

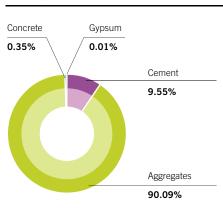
### EY Audited by Ernst & Young (2009 data) 🚱 GRI Bustainability Ambitions 2012

### FOCUSING ON OUR WATER IMPACTS

75% 74% 72%

### Sites equipped with water recycling systems (in %)

### Total process water discharged (in %)



To complete our performance picture here we cover our two remaining Sustainability Ambitions and give further information on water and waste.

**Further** 

ambitions



We push our facilities to recycle their process water in order to decrease their water footprint. The figures by business line are Cement 83% Aggregates & Concrete 75% and Gypsum 68%.

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The majority of process water is released directly, whether used for cooling or just moved for accessing open pits. When charged with sediments, the water goes through settlement ponds or pits before release. We aim to recycle entirely this second category in the future.

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SA 12

### Total water withdrawn by source

In Mm <sup>3</sup>	Cement	Aggregagtes	Concrete	Gypsum	Total
Surface water including water withdrawn from rivers, lakes,					
wetlands and oceans	32.10	29.14	1.16	0.27	62.67
Ground water	23.01	91.32	3.12	1.23	118.68
Rain water collected directly and stored by Lafarge	0.61	33.29	0.17	0.11	34.18
Municipal water supplies or other water utilities	5.51	1.71	4.71	3.02	14.95
TOTAL	61.23	155.46	9.16	4.63	230,48

We started to use the water footprint concept at some pilot plants in our four activities. Beyond minimizing our water footprint, the analysis of the local situation will lead, where feasible, to choose the most suitable source of water.

Cement 🔳 Gypsum

We generate a low but consistent level of waste.

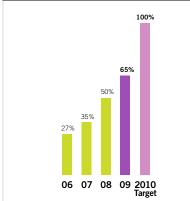


### Sub-Saharan HIV/AIDS **Road Map Actions** (Implementation in %)



#### Sub-Saharan Malaria **Road Map Actions** (Implementation in %)

Progressing on our competition **EY** policy ambition (in %)

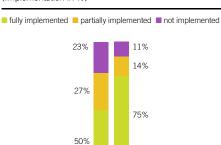


We began the process of having this figure audited in 2008. Figures before this date have not been certified by Ernst & Young

fully implemented E partially implemented I not implemented

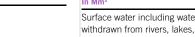


The HIV/AIDS Road Map is now almost in place in all business units in Africa, with key actions such as awareness and preventive activities, voluntary counselling and testing, and care and treatment being in place in 100% of business units in Africa: 100% of employees have constant free access to information and condoms, and an average of 70% know their HIV Status, negative or positive. All of them can now access care and treatment for free, as well as their families, access to treatment being also extended to surrounding communities in Uganda, Malawi and Nigeria, where more than 2,000 community members can now access HIV/Aids care and treatment for free through Lafarge Company Clinics.



As far as Malaria is concerned, all business units now offer regular awareness campaigns as well as free insecticide treated bed nets, and proper Malaria diganosis and treatment within Company Clinics. The next step will be to extend these successful programs to the surrounding communities in some selected countries. Uganda was selected as a pilot country and successfully started providing information and free treated insecticide bed nets to the surrounding community, with 30,000 people benefiting from the program to date

07 09



### **HOW WE REPORT**

# What we considered in writing this report

Over the years of reporting on our sustainability initiatives we have challenged ourselves every year to make step-change improvements. This year we have focused our report on 2009 progress and long-term performance. We have increased our full spread of performance data.

### **RECENT YEARS' PROGRESS**

We listen to what our readers tell us. Readers want communications that are tighter, sharper and more direct. We have restructured the report with this in mind, without reducing the quality and volume of the performance data provided.

Over the past few years we have reviewed our reporting to ensure that it is comprehensive and fulfils the expectations of external standards such as GRI G3, the Dow Jones Sustainability Index, and also the expectations of socially responsible investors. We recognized the fact that many readers did not understand the processes of our industry, and so we have used our reports and our website <u>www.lafarge.com</u> to explain and illustrate these and allow our readers to make more informed judgements about us.

### LISTENING TO OUR READERS

We listen to what our readers tell us. Having a more comprehensive report and explaining our core processes have been welcomed by many readers. However some felt that our reporting was a bit cumbersome, especially in the age of the internet and electronic communications. Readers want communications that are tighter, sharper and more direct. We have restructured the report with this in mind, without reducing the quality and volume of the performance data provided. In fact we have striven to increase the detail and effectiveness of our communication of performance.

### CLEARER MESSAGING

To accomplish clearer, sharper communication we have divided the body of the report in two, with one section covering our progress on each issue throughout 2009 and the other looking at our performance against key targets and external standards over a longer period of time. This structure illustrates clearly the issues we have been addressing over the last twelve months, the successes we have enjoyed and the difficulties we have encountered. This can be seen from the examples we give from around the world. Concentrating our historical performance data in one section alongside a fuller commentary, rather than having it scattered through the report, invites readers to make an informed and balanced judgement on how we are doing.

### CONCENTRATING ON SUSTAINABILITY AMBITIONS 2012

Within the report we have kept a strong emphasis on our *Sustainability Ambitions* 2012. These ambitions motivate and determine our actions. As in previous years we continue to point out where we have not met our targets and where we have encountered difficulties, as well as where we are on-track.

### **EXTERNAL INFLUENCES**

The WBCSD Cement Sustainability Initiative (CSI) sets a framework for performance monitoring and comparison for the cement part of our operations. We have noted how our peers in the industry are increasingly featuring CSI in their reporting. We follow CSI guidelines in this report. Following confirmation by GRI that the 2008 report achieved GRI G3 A+ status, we have concentrated on further improving the range, extent and quality of the performance indicators given in our index. We have continued with our practice of reporting not only against the performance indicators of GRI G3 but also against its principles.

We look forward to receiving feedback on the report and to making further improvements next year.



### **HOW WE REPORT**

# Comparability of performance **how do we measure up?**

We believe that it is important not only to track our performance against previous years but to look at our performance against peer companies and SRI rating indices. We make this exercise a driver for improvement.

### SRI RATING AGENCIES

SRI rating agencies produce indices to inform investors about how responsibly and sustainably companies operate. However we believe that the indices produced can help drive performance and inform reporting.

The nature of the questions as well as the evolution of the questions on issues raised by SRI rating agencies are an indicator for us on how sustainability issues are evolving.

### EVALUATION BY SAM (DJSI INDEX)

In 2009 we improved our total score in the index to 76%. This was an increase of 6% over 2008, which in turn was an increase of 6% over 2007. This was the result of improvements that we were already making. It was also the result of our applying thorough analysis to the more detailed score supplied to us by SAM. In some places where we had not scored well this was due to us not disclosing as much information as we could. In other areas plans needed to be put in place to rectify weaknesses in our performance.

2009 saw material increases in our scores for Codes of Conduct/Compliance/Corruption & Bribery, Anti-Trust Policy, Human Capital Development, Recycling Strategy and Operational Eco-Efficiency. We are pleased to have improvements in these areas recognized. We are aware that we need to keep on driving for improvement against the all-important health and safety measure.

### **OEKOM RESEARCH**

Our rating from this agency is C+, which gives us Prime status. Within the Oekom system a Prime status company is one which "ranks among the world's best companies within the same industry and fulfils the sector specific minimum requirements". The survey identified quarry rehabilitation, addressing climate change and sustainable construction as strengths. These are areas where we have been active for some time. Recyclability and reusability of construction materials were identified as areas of weakness. We had already set ourselves the target of making progress in these areas. This reinforced our determination to do so.

### VIGEO

Vigeo is a French based ratings agency with a strong interest in the social elements of company operations. Vigeo rates Lafarge overall CSR performance as above the sector average. Indeed Lafarge is one of the top performers in the survey. The areas of strongest performance are community involvement and human resources. The weakest area is corporate governance, as Vigeo pointed out that the role of CEO and Chairman are not distinct. Lafarge owns 0.74% of the equity in Vigeo.

### OTHER INDICES

In addition to learning from the indices covered above we have also learned from a wide range of other indices of other organizations including but not limited to, Capitalcom/RiskMetrics, FTSE4Good, Global 100 Most Sustainable Corporations, Innovest and Storebrand. <u>Coverage of these can be found in past year's Sustainability Reports and on our website</u> **@**.

### A CHANGING COMPETITIVE ENVIRONMENT

Through detailed engagement with all these indices we recognize that there is a general improvement in the response of major corporates to CSR and sustainability issues. Performance which was sector-leading last year will not necessarily be so this year. This reinforces our determination to use the indices as a way of driving improvement in our own performance.

There are many other evaluations done by professional agencies, banks, NGOs and others. We cannot list them all. We thank them for their interest in and attention to our company. In all cases we consider what they have to say carefully and in the light of them consider how we can improve both our communication and our absolute performance.



# Reporting **methodology**

The data in this report is generated by systems that have been used within the Group for several years. They are subject to ongoing improvements.

### REPORTING STANDARDS

In 2007 the Group carried out a revision of standards for sustainable development data to take into account the requirements of GRI G3. These were rolled out in 2008. In 2007 the Group carried out a revision of standards for sustainable development data to take into account the requirements of GRI G3. These were rolled out in 2008. In 2009 we have progressed in implementing the indicators according to the GRI G3 definition (eg. waste and water) and will continue in 2010. Health and safety data is collected separately taking into account our internal guidelines on health and safety and external best practices. The Group's Social Policies Department conducts a separate survey on social data. This has been expanded in scope in 2009 to enable us to report more fully on matters of interest to socially responsible investors.

The indicator on local stakeholder relationship management training is reported and controlled for the first time in 2009. Training on the Group methodology is organized around plant managers (in Cement and Gypsum) and area/regional managers in Aggregates and Concrete.

### PERIMETER FOR CONSOLIDATION

All data is reported 100% wherever a company is consolidated.

When a plant is sold, we cease to include its performance data and we remove its data from the baseline data used for our Sustainability ambitions, whether the base year be 1990 or 2005.

Any new plant (built and opened, or acquired) is included as soon as the data is available. We allow up to three years to implement all the Lafarge standards and procedures. Regardless of the availability of data all plants must be consolidated into our numbers when we have owned them for three years or more. At the same time as we incorporate the plant's performance we also update the 1990 and 2005 baselines.

Employee and contractor fatalities are included

for former Orascom and Larsen & Toubro plants, but not lost time injuries.

We use the CSI guidelines to assess the  $CO_2$  emissions between the 1990 baseline and the reporting year.

For dust,  $SO_2$  and NOx emissions, when measurements are missing, we use standard emission concentrations based on the site's kiln process. In 2009 these standards represent 4% of clinker production for dust emissions, 9% for  $SO_2$  emissions and 14.6% for NOx emissions. On persistent pollutants, we use the average of concentration measurements done over the three most recent years since 2006.

### CONTROL AND ASSURANCE

Environmental data is collected by divisions and consolidated at Group level. Social data and health and safety data is collected by business unit and consolidated at group level. Ernst & Young provides independent assurance for lost time injury frequency rate, competition policy, training on stakeholder relationship methodology, female senior managers, environmental audit, quarry rehabilitation, CO<sub>2</sub>, dust, NOx, SO<sub>2</sub> and number of kilns analyzed for persistent pollutants.

You can find the complete text on Reporting Methodology on our website @ in the section Reporting Methodology.

# Correspondence with French NRE law

	SOCIAL TOPICS	PAGES	COMMENTS
a	Total headcount, hirings (fixed-term/permanent), recruitments, redundancies and reasons, overtime, external manpower	Pages 15, 20, 47	
1.b	Headcount reduction and job protection, job-seeking assistance, rehires and supporting measures	Pages 20, 46-47	
2	Organization of working time, length of working hours for full-time and part-time employees, absenteeism and reasons		Working time varies according to the rules in force in the countries where the Group is present, or according to the functions performed in our various activities. As a result, the details (shift, length of working days) are quite diversified and cannot be consolidated. In 2009, 5.5% of business units were fined or sentenced further to a breach on legal working hours standard. Absenteeism is monitored at Group level and applies to occupational accidents.
3	Remuneration and trends, payroll taxes, application of Book III of Part III of the French labor regulations, professional equality between men and women	Page 21	See our GRI index.
1	Professional relations and appraisal of collective agreements	Pages 21, 47	See more details on our GRI index.
5	Health and safety conditions	Pages 12, 13, 41	
5	Training	Pages 20, 46	
7	Employment and integration of disabled workers	Page 21	
3	Social initiatives	Pages 19-21	
)	Importance of subcontracting	Pages 15, 47	
ART 148-3	ENVIRONMENTAL TOPICS	PAGES	COMMENTS
1	Consumption of water, raw materials and energy. Measures taken to improve energy efficiency, use of renewable energy, usage of soil, emissions into air, water and soil, noise pollution, offensive odors, waste	Pages 22-36, 42-44, 48	Continued progression of all items thanks to modernization of equipment, but also partly linked to the drastic slowdowr of activity.
2	Measures taken to limit harm to biological equilibrium, natural environments and protected fauna and flora	Pages 26-28, 31-35, 45	Assessment of the impact on biodiversity of all quarries and development of dedicated action plans, increasing number of sites involved.
3	Evaluation or certification measures taken on environmental matters	Page 39	ISO 14001 is progressing again.
4	Measures taken to ensure the company's activities comply with the laws and regulations applicable to this matter	Page 39	Environmental audits see KPI.
5	Expenditure incurred to avert any impact on the environment from the company's activities	Page 39	
6	Internal environmental management services, environmental training and information for employees, resources used to reduce environmental risks, system put in place to deal with pollution accidents having an impact beyond the confines of the company's premises	Pages 28, 39	Resources and Environmental Management Systems are being implemented worldwide. Crisis management proce- dures in place.
		See note 24 of Annual	
7	Amount of provisions and guarantees for environment related risks, unless such information is liable to cause serious harm to the company in an ongoing dispute	Report and Accounts	
8	related risks, unless such information is liable to cause	Report and Accounts See Chapter 2.1 (Indus- trial sites) and note 29 of Annual Report and Accounts	

# Ernst & Young **Assurance**

### Lafarge, S.A. — Financial year ended on December 31, 2009

Statutory auditor's report on a selection of environmental, safety and human resources indicators Free translation of the original French text

Further to Lafarge's request and in our capacity of statutory auditor of Lafarge, we have performed a review on the selection of environmental, safety and human resources indicators for the financial year 2009 identified by the ED symbol in the sustainability report on pages 4 and 5 (the "Indicators") to obtain limited assurance that the Indicators were prepared in accordance with the reporting criteria applicable in 2009 (the "Reporting Criteria"), consisting in:

- External standards and guidelines elaborated by the Cement Sustainable Initiative (CSI) of the World Business Council for Sustainable Development (WBCSD) for environment and safety indicators and the international Hay job evaluation method for data on senior managers. Those standards and guidelines are available on the WBCSD and Hay websites, respectively<sup>1</sup>;
- Lafarge Group specific instructions and procedures, a summary of which is provided on page 51 under the heading "Reporting methodology", in the comments related to the Indicators presentation on pages 41 to 46 of the sustainability report and on the Group website<sup>2</sup>.

It is the responsibility of Lafarge's Sustainable Development and Public Affairs Department to prepare these Indicators and to provide information on the Criteria.

It is our responsibility to express a conclusion on these Indicators on the basis of our review. Our review was conducted in compliance with the international standard ISAE 3000<sup>3</sup> of IFAC. Our independence is defined by legal and regulatory texts as well as by our professional code of ethics.

A higher level of assurance would have required more extensive work.

### NATURE AND SCOPE OF OUR REVIEW

We performed the following review to be able to express a conclusion:

- We have assessed the Reporting Criteria with respect to their relevance, completeness, neutrality, understandability, and reliability.
- At the Group level and at the Cement, Aggregates and Concrete, and Gypsum Branch levels, we have conducted interviews with the persons responsible for environmental, safety, human resources, competition policy, and stakeholder relationship reporting in order to assess the application of the Reporting Criteria. At this level, we have implemented analytical procedures and verified, on a test basis, the calculations and the consolidation of data.

- At the Cement Branch level, we checked the consistency of CO<sub>2</sub> emissions with figures declared to authorities and verified in the framework of the 2007/589/CE European Directive on "allowances".
- At the Cement Branch level, for the indicators related to CO<sub>2</sub> emission reduction compared to 1990 emissions, our review was limited to reviewing modifications brought since 2005 to the 1990 baseline.
- We have selected a sample of four cement sites, one regional technical center, and seven business units on the basis of their activity, their contribution to the Group's consolidated data, their location, and the results of the review performed during prior financial years. At the level of the selected sites and entities, we have verified the understanding and application of the Reporting Criteria, and verified, on a test basis, calculations and reconciliation with supporting documents.
- We reviewed the presentation of the Indicators in the sustainable development report and the associated notes on methodology.

On average, our tests covered 27% of environmental indicators<sup>5</sup>, 12% of hours worked used in the calculation of the lost time injury frequency rate, and 12% of senior management staff. Taking into account the review performed during the past four financial years in different activities and countries, we assess that these coverage rates provide a sufficient basis for the conclusion expressed below.

### INFORMATION ABOUT THE REPORTING CRITERIA Relevance

- The Group publishes key performance indicators defined for cement activities by the working groups of the WBCSD-CSI, as indicated on page 40.
- Methodologies selected by the Group are consistent with the latest versions of the WBCSD-CSI standards and guidelines; the Group's amendments or specificities are specified in the notes on methodology (see details on pages 41 to 46, 51, and on the Group website<sup>2</sup>).

### Completeness

The Indicators reporting perimeter aims to cover the whole Group worldwide. Methods for estimating missing data, notably atmospheric emissions or 1990 baseline for CO<sub>2</sub> emissions, as well as the perimeters covered by the Indicators (expressed in percentage) have been indicated in the notes on methodology on pages 41 to 46, 51, and on the Group website<sup>2</sup>. **Neutrality** 

The Group provides detailed information on methodologies used to establish the Indicators in the notes on methodology on page 51, in the comments next to the published data, in particular for indicators related to "SO<sub>2</sub>, NOx and dust emissions", the "% of women in senior management", the "quarries with a rehabilitation plan", the "share of audited sites", the "implementation of the competition policy", and the "training on stakeholder relationship management" on page 41 to 46, and on its website<sup>2</sup>.

### Reliability

- Progress has been achieved in improving internal controls by the regional technical centers of the Cement Branch in North America (CTS) and China (ATC). Efforts to formalise controls carried out by regional technical centers should be continued, in particular on the Indicators related to air emissions in the Europe and Russia area.
- For the indicator "quarries with a rehabilitation plan", controls on the consolidated data could be strengthened.
- The methodology selected for the calculation of the indicator "training on stakeholder relationship management" should be formalised and the potential for interpreting this methodology should be reduced. Communication to targeted business units and internal controls will have to be strengthened.

### CONCLUSION

Based on our review, nothing has come to our attention that causes us to believe that the Indicators were not established, in all material respects, in accordance with the Reporting Criteria.

> Paris-La Défense, April 14<sup>th</sup> 2010 The Statutory Auditor

ERNST & YOUNG Audit Christian Mouillon ERNST & YOUNG Environment and Sustainable Development Eric Duvaud

11 www.wbcsd.org/ Sector Project/ Cement and www.haygroup.com/ Our Services / Job evaluation 21 http://sustainabilityreport.lafarge.com in the section "Repórting Methodology" 31 ISAE 3000: "Assurance Engagement other than reviews of historical data", International Federation of Accountants, International Audit and Assurance Board, December 2003. 41 Four cement plants: Davenport (USA), Dujuangyan (Chinia), Hope (United-Kingdom), and Okke (South Korea); the Cement Branch regional technical center Corporate Technical Services (CTS) based in Montréal (Canada); four business units of the Cement Branch (South Korea); the USA, United Kingdom, and Sechuan in Concrete business unit in Spain, and two business units of the Aggregates and Concrete Branch: Lafarge Eastern USA and United Kingdom. 51 39% of CO<sub>2</sub> emissions, 27% on average of SO<sub>2</sub>, NOx and dust emissions, and 21% on average of sites and active quarries.

# Lafarge received more than 50 sustainability awards in 2009

These have been granted by third parties or trade associations and cover environmental as well as social and economic aspects.

### Awards granted by trade associations

 Ontario Stone, Sand and Gravel Association's (OSSGA) AWARD OF EXCELLENCE (Canada - A&C National Ready Mixed Concrete Association (NMRCA) COMMITMENT TO ENVIRONMENTAL EXCELLENCE (Canada - A&C) • Alberta Road builders and Heavy Construction Association (ARHCA ENVIRONMENTAL EXCELLENCE AWARD (Canada - A&C) • National Stone, Sand and Grave Association (NSSGA) AWARD FOR EXCELLENCE BRONZE MEDAL (Canada and US - A&C 10 new sites of Lafarge Aggregates have achieved LEVEL 4 of the Environment Charter UNICEM (France - A&C) • British Precast Concrete Federation, BRITISH PRECAST SUSTAINABILITY CHAMPION AWARD (UK – Cement) • Mineral Product Association (MPA), 2 AWARDS BEST QUARRY RESTORATION PROJECTS (UK - A&C) • Colorado Stone, Sand & Gravel Associatior (CSSGA), COLORADO RECLAMATION SAFETY AWARDS (US - A&C) • Colorado Stone, Sand & Gravel Association (CSSGA), JACK STARNER MEMORIAL RECLAMATION AWARD (US – A&C • GRI, RANKED A+ • AccessiWeb and Euracert, LABEL ARGENT • Hallvarsson & Halvarsson, TOP OF THE 75 FRENCH SITES EVALUATED AND IN THIRD PLACE AMONG THE SECTOR 'CONSTRUCTION & MATERIALS' WEBSITES • Ernst & Young and Euromoney, GLOBAL **RENEWABLE ENERGY AWARDS 2009** • Corporate Knights & Innovest Strategic Value Advisors **GLOBAL 100 MOST SUSTAINABLE CORPORATIONS** 

### Awards granted by third parties

 Alberta Emerald Foundation, EMERALD AWARD (Canada - A&C)
 Challenge of innovative houses (CMI), 2 GOLD MEDALS FOR LAFARGE CEMENT FRANCE (France - Cement) • Greek association of environmental protection companies (Paseppe), MANAGEMENT AWARD FOR SUSTAINABLE **DEVELOPMENT** (Greece - Cement) • Company of the Year Award (COYA) gala, **BEST IN** ENVIRONMENTAL IMPROVEMENT PRACTICES CATEGORY AND 1st RUNNER-UP IN THE **OVERALL COMPANY OF THE YEAR** (Kenya – Cement) • HanKook Daily, KOREA GREEN ENERGY AWARD (Korea – Gypsum) • The Philippine Mine Safety and Environment Association (PMIEA) PHILIPPINE MINERAL INDUSTRY ENVIRONMENTAL AWARDS (Philipines - A&C) Polish Environmental Partnership Foundation, GREEN OFFICE CERTIFICATE (Poland – All Bus) Federación de Áridos de Desarrollo Sostenible en Canteras y Graveras, 2<sup>nd</sup> SUSTAINABLE **DEVELOPMENT NATIONAL PRIZE** under the category Rehabilitation-Large Corporations (Spain – A&C Environment Agency's Water Efficiency, WATER SAVE AWARD (UK – Cement) Agency's Water Efficiency, CHIEF EXECUTIVE'S AWARD (UK - Cement) • Campaign to Protect Rura England (CRPE), AWARD SCHEME (UK – A&C) • Wildlife Habitat Council (WHC), INTERNATIONAL **RECOGNITION FOR CONTRIBUTIONS TO WILDLIFE HABITAT CONSERVATION** (US – Gypsum University of the Aegean, LAFARGE HERACLES IN THE TOP 10 OF THE LEADING CSR **REPORTERS** (Greece – Cement) • Engineers Australia Victoria Division, VICTORIAN ENGINEERING EXCELLENCE AWARDS (Australia – Gypsum) • Institute of Social Innovation, LAFARGE HERACLES AMONG THE TOP 10 IN THE ACCOUNTABILITY RATING IN GREECE (Greece – Cement) INJAZ, BEST CORPORATE AWARD (Jordan – Cement)
 Chamber of Commerce and Industry **GOLDEN MERCURY** (Moldova – Cement) • French-Romanian Chamber of Commerce, Industry and Agriculture (CCIFER), INNOVATION AWARD (Romania – Gypsum) • Rail Freight Group HOPE WORKS RAIL PROJECT (UK – Cement) • BRE Global, BES 6001 RESPONSIBLE SOURCING CERTIFICATE (UK - Readymix) • State of Colorado, SILVER PARTNER AWARD (US -Asphalt)

 National Asphalt & Pavement Association (NAPA), NATIONAL DIAMOND ACHIEVEMENT COMMENDATION FOR EXCELLENCE (US – Asphalt) • Georgia Chapter ACI, 10 AWARDS IN 11 DIFFERENT CATEGORIES (US – Concrete) • "51job" company, BEST TRAINING OFFER IN CHINA (China – Cement) • Association of Greek Advertised Companies, CSR EXCELLENCE AWARD FOR OCCUPATIONAL HEALTH & SAFETY (Greece – Cement) • JREDS, EXCELLENCE AWARD IN HEALTH AND SAFETY (Jordan – Cement) • Med Ad News, MANNY AWARDS BEST PLACE TO WORK AWARD (US – Gypsum) • National Stone, Sand and Gravel Association (NSSGA), COMMUNITY RELATION AWARD (Canada and US - A&C)





For more information on these awards: http://sustainabilityreport.lafarge.com Cover: The National Museum of Science and Technology, a cement project, Beijing, China.
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Vice President Environment Gypsum **René Moretti** 

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