



# 2008 SUSTAINABILITY REPORT



bringing materials to *life*™

# Lafarge presence in the world

The world leader in building materials, Lafarge holds top-ranking positions in Cement, Concrete, Aggregates and Gypsum with nearly 84,000 employees in 79 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:** 50,000

**Sales:** 10.9 billion euros

**Countries:** 50

**Production sites**

**Cement plants:** 125

**Clinker grinding stations:** 33

**Slag grinding stations:** 8

## Aggregates & Concrete

**Worldwide market position:**  
N° 2 - Aggregates, ready-mix and pre-cast concrete products, asphalt and paving for engineering structures, roads and buildings

**Employees:** 26,000

**Sales:** 6.6 billion euros

**Countries:** 40

**Production sites**

**Quarries:** 620

**Concrete plants:** 1,325

## Gypsum

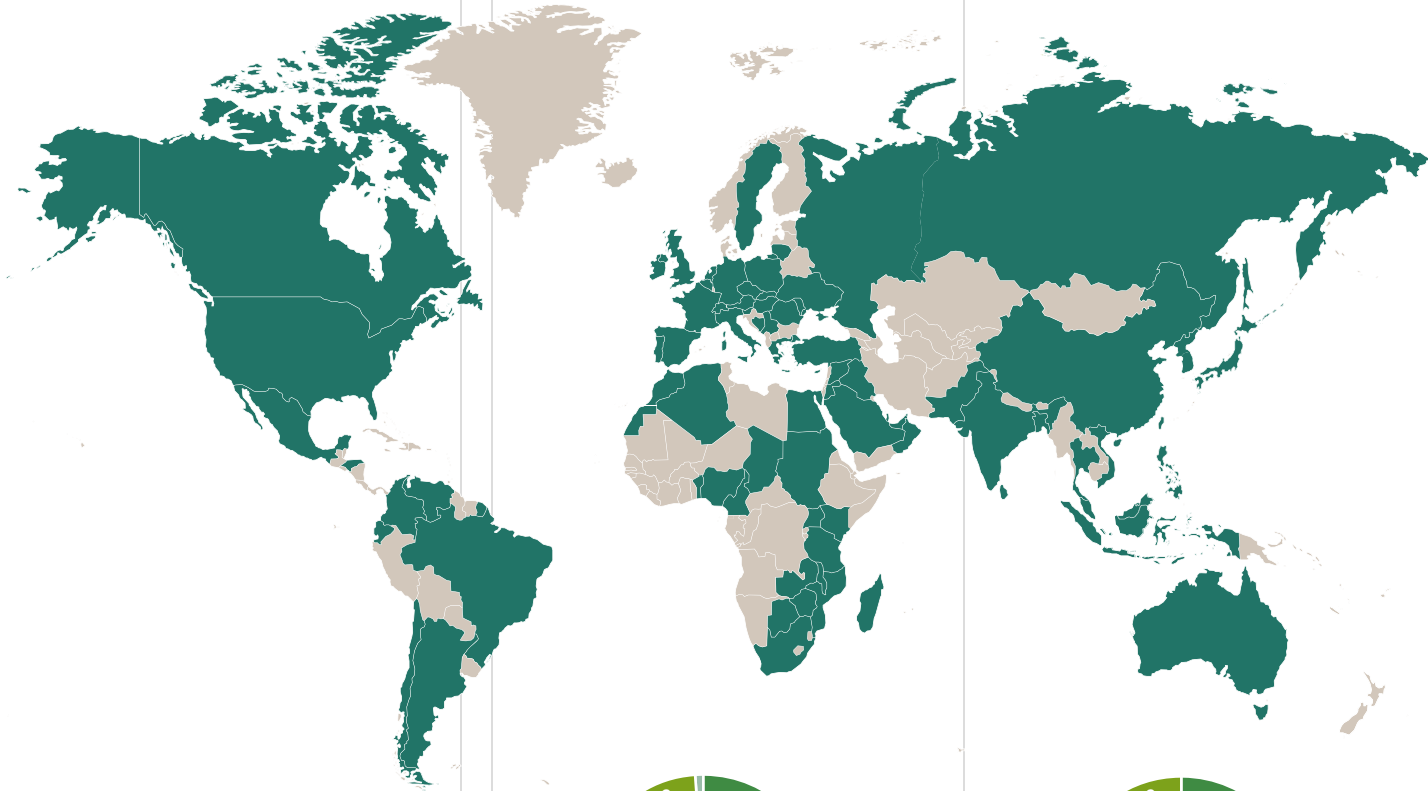
**Worldwide market position:**  
N° 3 - Plasterboard systems and gypsum-based interior solutions for new construction and renovation

**Employees:** 8,000

**Sales:** 1.5 billion euros

**Countries:** 29

**Production sites:** 76

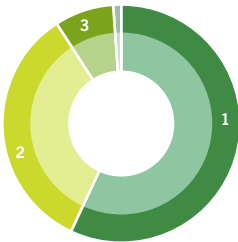


Sales (in billion euros)

19.0

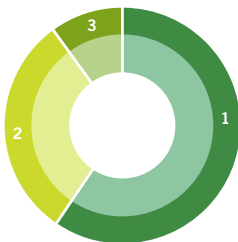
Net income (in billion euros)

1.6



Sales breakdown by business line

1 - Cement	57.3%
2 - Aggregates & Concrete	34.5%
3 - Gypsum	8.0%
4 - Other	0.2%



Workforce breakdown by business line

1 - Cement	59.5%
2 - Aggregates & Concrete	30.7%
3 - Gypsum	9.8%



## What differences a year has made

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### Changing economic environment, progress towards *Sustainability Ambitions 2012*

The world changed in 2008. The second half of the year saw the most significant financial crisis for decades, but the economic knock-on effects will only be fully apparent in 2009. Our Sustainability Ambitions have well defined targets and delivery dates. Despite the financial crisis, 2008 saw considerable progress towards fulfilling them. We continued to measure, report and verify our performance; our company's external auditors verify and benchmark the most important elements of them. We believe that this transparent commitment adds to the credibility of our actions.

### Progress in the fight against climate change

In 2008 we further reduced our CO<sub>2</sub> emissions both in relative terms (-18%) and we achieved our reduction in absolute terms two years ahead of our commitment. Externally the EU reached agreement on the third phase of the Emissions Trading Scheme. We welcome this, recognising with the then President of the EU, that the agreement: "Did not sacrifice environmental ambition and places European industry into innovative leadership while maintaining competitiveness". We are working through WBCSD-CSI and with other interested parties for an equally positive outcome at Copenhagen: a new global regime that will decrease emissions without creating pockets of un-competitiveness.

### Progress on managing social issues

Thanks to the commitment of all Lafarge employees, 2008 saw further improvement in our Lost Time Incident Frequency Rate. However, sub-contractor fatalities doubled. We have set a new challenging safety target for 2009. Throughout 2008 we have been working with our Stakeholder Panel to integrate human rights engagements in our Code of Business Conduct. We have sought respected third party input, for instance on our Code of Business Conduct training from Transparency International ([www.transparency.org](http://www.transparency.org)) and International Chamber of Commerce ([www.iccwbo.org](http://www.iccwbo.org)). In the year in which we achieved our Sustainability Ambition on local stakeholder management, I would like to thank local stakeholders around the world for continuing constructive dialog that aids us in consolidating good practice.

### A word on the report

In this report and the accompanying GRI G3 index we have addressed the most material issues facing us. A great deal of other information is regularly updated and available at the address <http://sustainabledevelopment.lafarge.com>. We would be delighted to receive your comments.

**Olivier Luneau**

SVP Sustainable Development  
and Public Affairs

# Our commitment to operate sustainably

**W**

e are committed to act as a responsible industrial player in each country where we operate. This is not new, it is the Lafarge Way. We certainly produce high quality materials to meet customers' and communities' needs. But we do so while reducing our environmental footprint, taking care of our employees' health and safety, respecting and contributing to wider initiatives in the society. As a leader, we have to set the pace and be a role model in our industry to secure a sustainable future. For more than 3 years now, we have set out our commitments in a transparent and measurable way in our *Sustainability Ambitions 2012* and we are moving forward.

**Our achievements  
are significant**

I am proud that we progressed against all our Ambitions in 2008 and, even more, that we have met the target in advance for three of them. I am pleased to announce that having achieved one of our CO<sub>2</sub> targets agreed with WWF we are well on the way to achieve the second one in 2009.

**Our commitment  
is strong and unchanged**

Despite the economic downturn, Lafarge will not downgrade its commitment to the *Sustainability Ambitions 2012*. Even though, under capital expenditure constraints, we might need to find new ways to achieve them, our overall commitment is undiminished. As it is on safety. While we progressed on our Lost Time Incident Frequency Rate we still suffer from an unacceptable fatality rate, notably on sub-contractors, for which preventive actions are being taken.

## I am proud that we progressed against all our Sustainability Ambitions in 2008.

**I want to thank our  
stakeholders, employees,  
and shareholders**

I want to thank firstly our stakeholders: all around the world, we engage with the communities close to our operations. The ongoing dialog with them keeps us aware of their needs, establishes the confidence for free discussion to anticipate and react to their concerns, and enables us to continue our operations fully integrating our communities. To leverage our experiences and their contribution even more fully, we have now set a training package for all our Units to engage in local stakeholder management. The second group I want to thank is Lafarge's employees. When year by year I follow the progress made towards our *Sustainability Ambitions 2012*, I recognize that it is built on their true engagement. They deserve thanks for this, no less than they do for their contribution to our business achievements. Finally, thanks to our shareholders for their continuing support and recognition of the long-term sustainability of the Group.

**Lafarge is becoming  
a larger Group**

In 2008, we made two major acquisitions, Orascom Cement and Larsen & Toubro Concrete. In this report we explain how we approached the merger: beyond the business synergies, it was a meeting of hearts and minds.

**We are reinforcing  
our partnerships**

Finally, I am pleased to be sharing these pages with the heads of WWF International and CARE France, confirmation that we are truly committed to achieving our Sustainability Ambitions in dialog with our partners in the wider society.



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



## James P. Leape WWF International

In 2000, when Lafarge and WWF signed their first partnership agreement, both parties were uncertain how this pioneering partnership between a conservation organization and a multinational company would work. As expected, the past eight years have been challenging for both WWF and Lafarge but the results have been impressive: by the end of 2008, Lafarge had reduced its CO<sub>2</sub> emissions by 12.5% below 1990 levels (in OECD countries) and by 18.4% per tonne of cement produced globally. This kind of leadership from business combined with robust regulatory frameworks can make a major contribution in the transition to the low carbon economy that is urgently needed. On the strength of these achievements, we have decided to renew our partnership until 2012. Lafarge and WWF will continue working together to define new ambitious targets and action plans in relation to CO<sub>2</sub> emissions, biodiversity, persistent pollutants and water footprint, increasing the scope and impact of our challenging and pioneering collaboration.



## Philippe Lévêque CARE France

It is one thing to develop honorable activities during a period of economic growth. It is quite another to pursue them when the international economic climate is deteriorating. And yet the real commitment of businesses can only be measured using this criterion. In this respect the renewal of the partnership between CARE and Lafarge sends a strong signal. When we began working side by side with the Group in 2003 we made a double bet. First that business could be "part of the solution". Second that by committing on a long term basis, leading companies such as Lafarge, could change their way of working and pull the industry along in their wake. The remarkable distance covered by the Lafarge group in the fight against AIDS shows that this was a winning bet and means that we can tackle future challenges with optimism and determination.

# Sustainability Ambitions 2012: solid progress in 2008

TARGET	Dead-line	2007 Perf.	2008 Performance	WHY IS LAFARGE PURSUING THIS AMBITION? WHAT WILL CHANGE? HOW ARE WE PROGRESSING AGAINST THIS AMBITION?
<b>MANAGEMENT</b>				
On <b>safety</b> halve the 2005 lost time injury frequency rate (LTIFR) (Fr:3.09*) for Lafarge employees by 2008 to Fr:1.55 (revised to 1.39 in 2007). New target for 2009: 1.35.	2008	1.66	1.57 ★	Halve the 2005 lost time injury frequency rate for Lafarge employees by 2008, achieving a Group-wide LTIFR of 1.55 and having contractors work to the same standard. Our aim is to reach as soon as possible zero fatalities and to join the "best in class" industrial companies. <b>While progress continued in 2008 we did not match our revised target and fell fractionally short of our original target of 1.55. We have set a new target of 1.35 for 2009.**</b>
Continue to check the implementation of our <b>Competition policy</b> in our business units. To support the implementation of our Competition policy, 100% of all significant business units will be tested for compliance with our Competition policy by end 2010.***	2010	35%	50% ★	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 that all our units are aligned and operating under the highest competitive standards. <b>We made good progress in 2008 and are on-line to reach 100% by 2010.</b>
Design a training package on <b>local stakeholder relationship management</b> adapted to the respective divisional organization by end 2008.	2008	N/A	Completed	All over the world, local stakeholders have increasing expectations from us on the way we operate our business and the way they benefit from our presence. We have thousands of experiences of good practices. We want to leverage this capital by embedding it in our organization. We aim to interact with local stakeholders in a timely, orderly, pro-active and transparent way and contribute to their well being and to the economic and social development of the local communities surrounding our operations. <b>We successfully completed this ambition in 2008, from 2009 on we are moving forward to Group-wide implementation.</b>
On <b>customers</b> , by end 2008, 100% of significant business units will carry out an annual customer satisfaction survey.  By end 2008, 100% of significant business units will have implemented OTIFIC (on time, in full, invoiced correctly) in their operations.  By 2008, the Group will achieve €1 billion annual sales in new products.	2008	Cement 83% A&C 55% Gypsum 100%  Cement 70% A&C 55% Gypsum 100%  €1.1 billion	Cement 96% Aggreg. 100% Concrete 86% Gypsum 100%  Cement 96% Aggreg. 100% Concrete 79% Gypsum 100%  €1.5 billion	Customers are an aspect of operations that has received insufficient attention within our industry. No longer. We have set ourselves tough targets for customer satisfaction and innovation. Acting on what customers say, and driven by a desire to achieve full customer satisfaction, we have introduced OTIFIC (on time, in full, invoiced correctly). <b>We made significant further progress on customer satisfaction and OTIFIC.</b>  We constantly innovate to meet customer need. We set a 2008 target to achieve €1 billion annual sales from products that have been developed in the last five years. <b>We exceeded our €1 billion annual sales in new products by 50%. A new target has been set: €3 billion annual sales in new products by 2012.</b>
Double the percentage of <b>female senior managers</b> between 2003 and 2008. New target: 20% of women in senior and executive management (Lafarge Hay grades 18+) by 2012.	2008	12.2%	12.9% ★	The female population in senior management in Lafarge is far too low and therefore we set the target of doubling the percentage of women in senior management between 2003 and 2008, with a target of 15.2%. <b>Although we did not meet our goal we have increased by 70% in 5 years the percentage of female senior managers.</b> Further information about our actions can be found on page 45.
<b>SOCIAL</b>				
By end 2010, establish a comprehensive Group-wide occupational health program including, at a minimum, regular medical examination.	2010	In progress	On track	An effective workforce is a healthy workforce. Lafarge operates in countries ranging 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. <b>A full account of our progress in 2008 is given on page 49, showing that we are well on track.</b>
For HIV/AIDS and malaria, by end 2010, Lafarge will have extended to major developing countries where it operates, its best practice currently implemented in Africa.	2010	In progress	On track	Lafarge's interests are equally balanced between the developed and developing worlds. 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. This will mitigate the human burden of these diseases among our workforce and its families, where the consequences of the diseases are most serious and where state health provision is weakest. We will do this while respecting local legislation and culture. <b>We are making good progress, for fuller details see page 47.</b>

\* The 2005 LTIFR figure of 3.09 excludes employee fatalities while our 2008 target includes employee fatalities.

\*\* As per Report Methodology page 62 data from former Orascom business units not included.

\*\*\* The 2008 year-end percentage of achievement has been calculated upon the list of significant business units that appears in Note 35 to the 2008 Annual Report (see <http://annualreport.lafarge.com>), but excluding those business units recently incorporated to Lafarge as consequence of the acquisition of Orascom. Therefore, the number of countries that have been checked so far from a competition perspective is 23 out of a total of 46. Specific action plans for the former Orascom countries are to be implemented mainly during 2010.

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 Executive Committee, they were launched by Bruno Lafont at the Lafarge Shareholder General Meeting on May 6 2007. 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	Dead-line	2007 Perf.	2008 Performance	WHY IS LAFARGE PURSUING THIS AMBITION? WHAT WILL CHANGE? HOW ARE WE PROGRESSING AGAINST THIS AMBITION?
<b>ENVIRONMENT</b>				
Have 100% of our sites <b>audited environmentally</b> within the last four years.	Perma-nent	84%	83% ★	One of our challenges is that we have 2,200 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. Although we audited over 400 sites in 2008, we have not succeeded in increasing the percentage. While large sites have been covered a number of small ready-mix plants have still to be audited. <b>We remain committed to achieving this target.</b> See page 36 for an example of a site audit.
By end 2010 reach a rate of 85% of <b>quarries with a rehabilitation plan</b> complying with Lafarge standards.	2010	75%	79% ★	Lafarge chooses to include a formalized commitment to rehabilitation from the beginning of operations. The rehabilitation plan is one of the essential tools to allow clear local consultation. Although we know that 100% is not an achievable goal given the level of our standard, we continue to refine its understanding and communication. <b>Further progress was made in 2008.</b> We are confident of reaching our 2010 target.
By end 2010, all our quarries will have been screened according to criteria validated by WWF International and those with realisable potential will have developed a site <b>biodiversity</b> program by 2012.	2010	38%	50%	Biodiversity has been on the Lafarge agenda for some time, and even more since our partnership with WWF, which started in 2000. <b>We are pleased that 2008 marked further progress with half our quarries screened and over one-third with a biodiversity program in place.</b>
	2012	22%	38%	
By end 2010: • cut our worldwide <b>net CO<sub>2</sub> emissions</b> per tonne of cement by 20% as compared to 1990. • cut our <b>absolute gross emissions</b> in the Cement Business in <b>industrialized countries</b> by 10% as compared to 1990. • cut our <b>absolute net emissions</b> in the Cement Business in <b>industrialized countries</b> by 15% as compared to 1990.	2010	-16.0%	-18.4% ★	The increased concentration of CO <sub>2</sub> and other greenhouse gases in the atmosphere is driving climate change. Our overall ambition is to cut our net worldwide CO <sub>2</sub> emissions per tonne of cement by 20% by 2010 compared to 1990. By end of 2008 we stood at 18.4%. <b>We are on target to meet our 2010 goal maybe as early as in 2009.</b> Net emissions are the gross emissions less the emissions that come from burning biomass and waste. In addition over the same period we have two further ambitions for the Cement Business in industrialized countries: to cut our absolute gross emissions by 10% and our absolute net emissions by 15%. <b>We reached our target for absolute gross emissions in 2010 two years ahead of schedule. On absolute net emissions we have also reached our target two years early.</b> In the light of the realisation of the increased understanding of climate change, <b>we recognise that new targets will be necessary for the period after 2010.</b>
	2010	-4.5%	-12.5% ★	
	2010	-7.6%	-16.3% ★	
Cut our <b>dust emissions</b> in our cement plants by 30% over the period 2005 - 2012.	2012	-13.7%	-21.1% ★	Our activities may generate dust. Although we are already within local regulations, our voluntary undertaking is to reduce our dust emissions 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>We made very good progress in 2008.</b>
Cut our <b>NOx emissions</b> in our cement plants by 20% over the period 2005 - 2012.	2012	-8.5%	-15.5% ★	Any combustion releases NOx into the atmosphere. Beyond local regulations, Lafarge is voluntarily committing to a 20% reduction of NOx generated per tonne of clinker over the period 2005 - 2012. This will add to Lafarge's efforts for a cleaner world. This will require capital investment and operating expenses. <b>We made good progress in 2008.</b>
Cut our <b>SO<sub>2</sub> emissions</b> in our cement plants by 20% over the period 2005 - 2012.	2012	-11.8%	-32.9% ★	SO <sub>2</sub> results from kiln processes; the sulphur comes mainly from the local raw materials, like limestone, that are used. Consequently the levels of SO <sub>2</sub> emitted by plants can vary considerably. Beyond local regulations, Lafarge is voluntarily committing to a 20% reduction of SO <sub>2</sub> generated per tonne of clinker over the period 2005 - 2012. Significant capital investment and operating expenses are being made to mitigate the impact of these emissions. <b>The target has been exceeded four years ahead of schedule.</b>
By end 2010 have a baseline for <b>persistent pollutants</b> in our cement plants for 100% of kilns and reinforce our Best Manufacturing Practices to limit emissions.	2010	49.3% of kilns analysed	53.5% ★ of kilns analysed	Persistent pollutants can be found in inputs and at the kiln stack. In line with the methodology of CSI and working with WWF, Lafarge is voluntarily undertaking: 1 - To complete the measurements of the persistent pollutants for all its kilns by end 2010. 2 - To develop suitable KPIs and report on progress. 3 - To implement Best Manufacturing Practices to reduce emissions on top emitter plants in 2010. 4 - To integrate into standard management practices the lessons learnt that contribute to limit emissions of persistent pollutants. <b>We will continue to make progress.</b> 56 kiln analyses are contracted for 2009. An indicator will be developed on Best Manufacturing Practices implementation.

★ Indicators verified by Ernst & Young

Most of the raw materials for our business come from quarries. Quarries are a long-term investment that we manage carefully (see pages 26-27).

Rehabilitation plan



**Rehabilitated quarry**  
After operations have finished our quarries are rehabilitated. Our target is to have plans in place for 85% of our sites by 2010 (see pages 26-27).

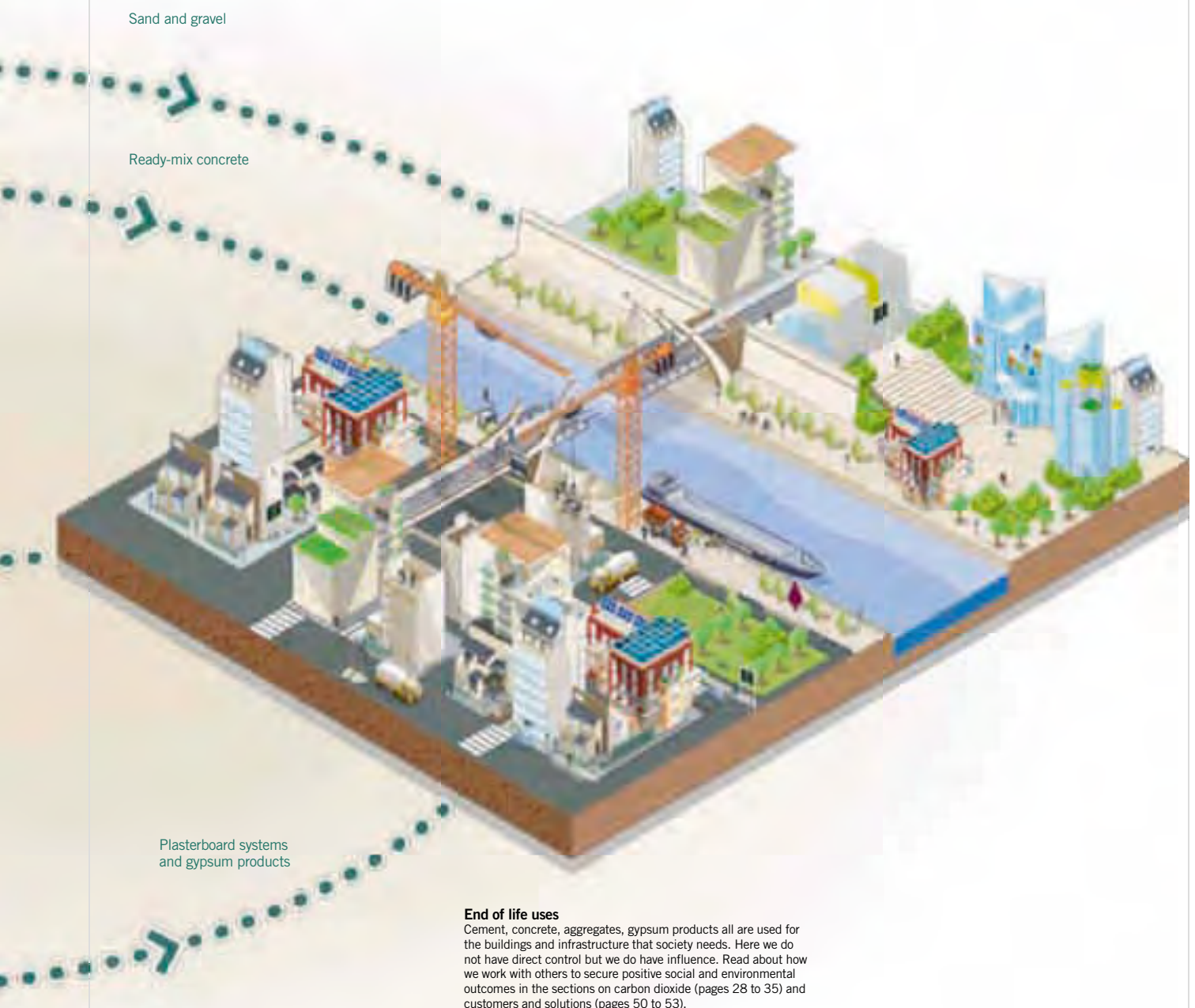
Aggregates are used as raw materials for concrete, asphalt, masonry and other industrial processes and as base materials for roads, landfill and buildings. Aggregates production involves primarily blasting hard rock from quarries and then crushing and screening it to various sizes to meet our customer's needs.

Concrete is produced by blending aggregates, cement, chemical admixtures and water at concrete production plants and placing the resulting mixture in concrete trucks where it is mixed further and delivered to our customers. Concrete plants can be either fixed permanent sites or portable facilities, which may be located at our customers' construction sites.



# Understanding the processes

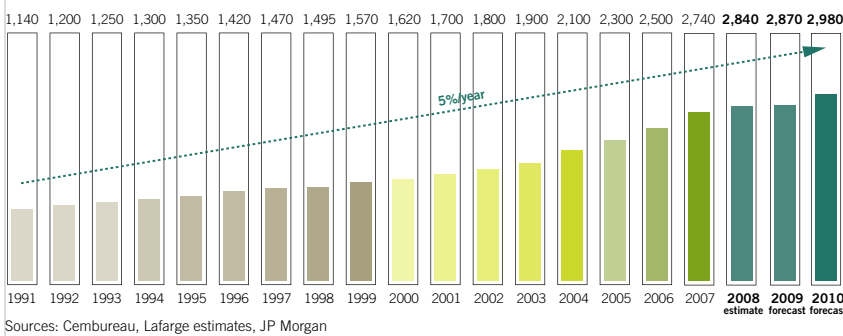
To understand Lafarge's sustainability challenges and opportunities requires knowing how our products are made, how our industry is structured, how Lafarge is organised and run. This knowledge is the basis on which to judge our sustainability issues and performance. The picture below shows the processes involved in our Businesses.



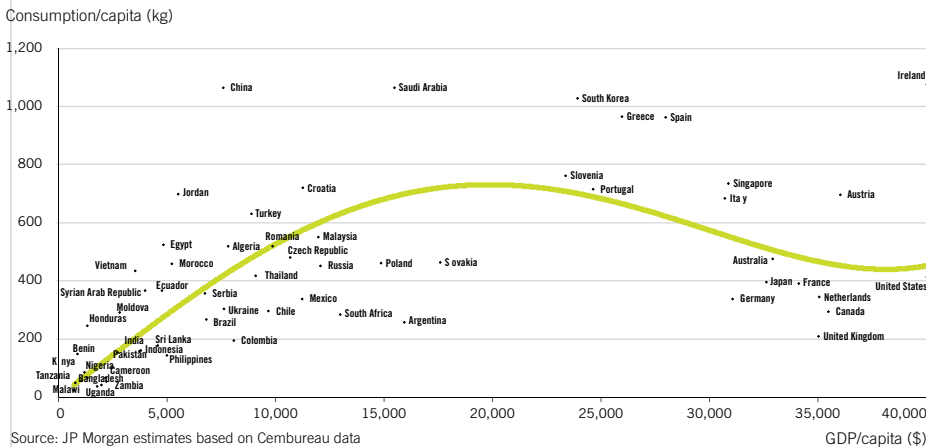
## Understanding the industry

Our products contribute to the development of economies. They are used to build the houses people live in, the offices, shops and factories people work in, the hospitals, schools and infrastructure: roads, railways, airports, bridges, harbors that people use. We supply the construction industry.

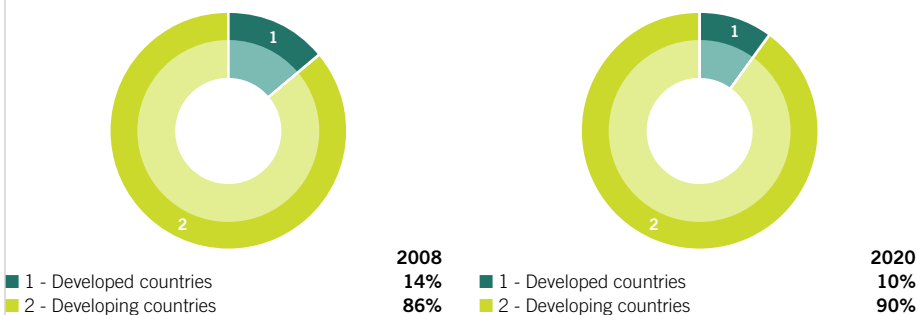
### Average annual growth rate of cement demand: approximately 5%/year in the last twenty years (in million tonnes)



### Cement consumption per capita



### Current and 2020 cement consumption (estimate in %)



### Developing economies drive long term growth in demand

Population growth drives demand for our products. It grows as economies develop, particularly as they urbanise. 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 modernised, it may start to decline.

### Cement demand

The generally accepted projection of global growth in demand for cement through to 2025 is that it will continue to grow by an average 5% a year to around 4.7 billion tonnes. The years 2008, 2009 and 2010 should see a pause in this trend but market growth will resume afterwards at a steady rate, based on housing and infrastructure needs in developing countries.

In some countries, such as the US or the UK, demand is affected by the cyclical nature of the economy and of the construction industry. In 2008, macroeconomic forces, primarily financing constraints, led to significant business uncertainty across the industry. Different markets were affected to different degrees. Spain, the United Kingdom and the United States are examples of markets that saw decline in cement demand of around 20%. Even so it seems likely that many markets will still show increases of cement consumption in 2009 and 2010. However across the industry the pace of taking old plants out has quickened while companies are delaying launching new capacity to adjust to the changed market and financing conditions.

The bulk of the market is in emerging economies. In developing countries the growth in demand for ready-mix concrete exceeds the demand for cement. This is because proportionately less cement is being sold in single

Population growth drives demand for our products. It grows as economies develop, particularly as they urbanise.

bags to families or small builders and proportionately more is going as ready-mix to large construction projects. As economies grow in sophistication so demand for cements and concretes that have particular value-added properties grows in parallel.

### The aggregates business

Aggregates are pieces of stone of various sizes, ranging from sand to gravel or boulders extracted from alluvial, granite or limestone deposits in quarries. They are used as raw materials for concrete, asphalt, masonry and other industrial processes and as base materials for roads, landfill and buildings.

### The concrete business

Concrete is a blend of aggregates, cement, admixtures and water that hardens to form the world's most used building material. Tensile strength, resistance to pressure, durability, quick setting times, ease of placing, aesthetics, workability under various weather and construction conditions are some of the characteristics customers look for when buying concretes.

### The gypsum business

The rate of demand for gypsum wallboard varies significantly depending upon how far gypsum wallboard is used within the local building tradition. The growth in Asia is significantly higher than the one in North America, where the market is mature, and the fall of the market in North America during the last two years has increased the difference.

### Differing levels of consolidation

The cement, concrete, aggregates and gypsum wallboard markets have different levels of consolidation. In gypsum wallboard the top five companies supply two-thirds of the global market. By way of contrast the top five global companies in cement supply only one-fifth of the world market, while in both aggregates

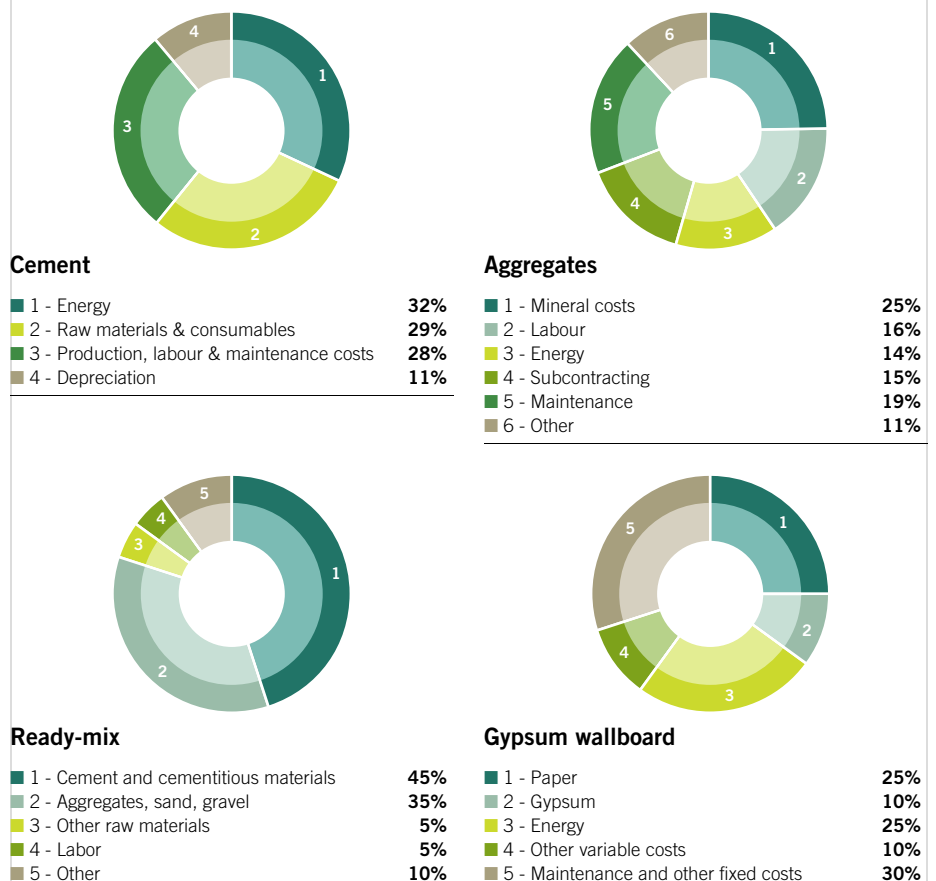
and concrete most local markets are heavily fragmented and are served by a number of multinational, regional and local producers.

### The cost structure of our products varies

Raw materials from quarries contribute relatively little to the cost of cement. This contrasts with ready-mix where cement represents 45%

of the cost. Energy costs are a significant element in the cost of cement and of gypsum wallboard. Energy costs account for 32% of the cement cost structure and for one-quarter of the cost of gypsum wallboard. We intend to continue our efforts to use alternative fuels despite the recent drop in price of more traditional fossil fuels.

### Split of production cost\*



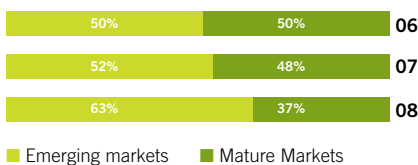
Source: Lafarge

\* Production cost is calculated on a cash cost basis, which excludes depreciation, except in the case of cement. This is average data and does not reflect local variations.

## Understanding Lafarge

Even within the same industry sector each company is different. Here we set out some of the key facts about Lafarge, its history, its strategy and its economics that make Lafarge distinctive.

### Lafarge cement sales by value



### New €4.5 Bn financial package announced in February 2009

#### €3.5 Bn additional steps to reduce debt

##### Operational actions

Divestments in 2009	€1.0 Bn
Further reduction in 2009 capex	€0.2 Bn
Reduction in working capital	€0.2 Bn
Cost cutting in 2009	€0.2 Bn

##### Shareholder measures

Underwritten rights issue	€1.5 Bn
Reduction in 2009 dividend	€0.4 Bn

#### €1.0 Bn new credit line to enhance financing flexibility

### Lafarge history

Lafarge began operations in 1833 when Auguste Pavin de Lafarge founded a lime production company in France, a business that expanded rapidly. The construction of the Suez Canal gave Lafarge the opportunity to extend its lime production activity outside French borders.

A forerunner in its sector, Lafarge established the world's first research center for cement. Lafarge has always earned recognition for the fundamental human values it upholds. Consequently, its employee policy was defined to support its staff's well-being and was congratulated at the Universal Exposition of 1889. The company first entered the gypsum market in 1931. It pursued its international expansion and, in 1997, its Aggregates & Concrete business soared with the purchase of Redland plc. The acquisition was a bold step for a cement company, but set a trend in vertical integration that Lafarge's competitors have since followed.

We are continuing to expand in concrete by acquisition. For instance, in 2008 the purchase of Larsen & Toubro Concrete India Ltd. established us as leaders in the growing Indian ready-mix market. In 2008, Lafarge acquired Orascom Cement, with a capacity of 35 million tonnes, and which had a leading position in the Middle East and the Mediterranean basin. Full coverage of this important acquisition is given on pages 18 and 19. During the year we also disposed of our interest in eight cement plants. The majority of these were in Egypt, Italy and Venezuela (where our interests were nationalised).

### A three-level organization

The aim of our organisational structure is to ensure total cohesion in our global company while encouraging the exchange of best practices and leaving operating units with a high degree of autonomy. We have a three-level organization.

**The corporate level** defines our long-term strategies, Group values and a culture based on high performance.

**The business level** consists of our three divisions Cement, Aggregates & Concrete and Gypsum. They are responsible for enhancing performance and for the long-term success of their respective businesses.



### Sales by region (2008)<sup>(1)</sup>

<b>Mature Markets</b>	<b>54.0%</b>
1 - Western Europe	31.6%
2 - North America	22.4%
<b>Emerging Markets</b>	<b>46.0%</b>
3 - Central & Eastern Europe	9.2%
4 - Middle East	8.5%
5 - Latin America	5.1%
6 - Africa	12.5%
7 - Asia	10.7%

1 | Split by business line: Cement 57.3%, Aggregates & Concrete 34.5%, Gypsum 8.0%, Other 0.2%

**The business unit level** is the heart of our organization and propels the Group's business. There are roughly 120 business units.

### Growing through emerging market expansion and product innovation

Lafarge's growth and profitability are based on a long-term vision of expansion in emerging markets coupled with investment in innovative products. It is a vision that has marked us out from our competitors.

### Expanding in emerging markets

Lafarge has set out to have a well-distributed global portfolio of assets with strong representation in emerging markets where demand for cement is growing most steeply.

The presence in emerging markets has been established for ten years both by acquisition and by greenfield projects. The two largest acquisitions have been that of the 55% interest in Shui On in China in 2006 and of Orascom Cement in 2008. We have built new plants both to take old inefficient plant out of commission and to add new capacity. Due to



### Capital employed by region (2008) <sup>(2)</sup>

<b>Mature Markets</b>	<b>44%</b>
1 - Western Europe	24%
2 - North America	20%
<b>Emerging Markets</b>	<b>56%</b>
3 - Central & Eastern Europe	6%
4 - Middle East	18%
5 - Latin America	4%
6 - Africa	17%
7 - Asia	11%

2 | Split by business line: Cement 76.8%, Aggregates & Concrete 16.5%, Gypsum 4.5%, Other 2.2%

Lafarge has set out to have a well-distributed global portfolio of assets with strong representation in emerging markets where demand for cement is growing.

### Cash value added (2008)

	€ million	%
Sales	19,033	
Cost of goods sold	11,864	
<b>Cash value added <sup>(1)</sup></b>	<b>7,169</b>	<b>100</b>
1 - Taxes to be paid to governments	575	8.0
2 - Paid to investors for providing capital	1,051	14.7
3 - Paid to lenders as a return on their borrowings	777	10.8
4 - Retained for growth	2,058	28.7
5 - Paid to employees for their services	2,697	37.6
6 - Community investment <sup>(2)</sup>	11	0.2



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

the launch of an action plan in February 2009 to strengthen the Group's financial structure, the cement capacity expansion program has been adjusted to 38 million tonnes to be built between 2006 and 2010. Since 2007 more than half of the Group's cement sales by value have been in emerging economies.

### Leveraging value added products

Lafarge has invested heavily in research and development to bring to the market high value-added, internationally branded concretes and gypsum products that meet user need. Agilia®, Artevia®, Extensia® and Chronolia® are our four, leading, international concrete brands. New gypsum wallboard products include Synia®, PLAtec®, Pregymax® and Pregy Wab®, the first gypsum wallboard that can be used in wet rooms and job sites, launched in 2008. Between 2006 and 2009 we increased our research and development (R&D) budget by 85%. Our research center near Lyons, France, is the largest of its kind. Value-

added concretes represented 25% of total ready-mix sales in 2008. Innovation works in all economic times. While total volumes fell by 20% in Spain, the United Kingdom and the United States in 2008, demand for the four international brands Agilia®, Artevia®, Chronolia® and Extensia® grew by 26%. The next waves of innovation will be driven by 30 R&D projects. These projects are structured round two well defined areas: sustainable construction and the needs of emerging markets. While emerging markets and product innovation have been key drivers of Lafarge's success, we have also paid attention to the basics, continuing to improve the efficiency of our processes, cut costs and deliver on our Sustainability Ambitions 2012.

### Cash value added

Lafarge generated €7.2 billion cash value added in 2008. Our employees were the largest single group to benefit from it. €2.1 billion of cash valued added was retained for future growth.



A Lafarge shareholder general meeting.

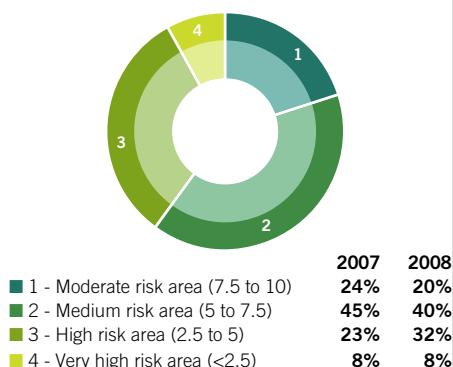
### SUSTAINABILITY AMBITIONS

Competition policy

## Values and governance

Our values and governance shape the way we work. We apply them systematically. How a company is run is a key enabler of sustainability.

### Corruption risk and preventative policies. Breakdown of our sales by country-risk according to Transparency International\*



\*Perception index (countries rated from 1 to 10)

### Code of Business Conduct training enriched by third parties

We have a long-term commitment to ethical behaviour that we constantly update. Our Principles of Action (<http://sustainabilityreport.lafarge.com>) were first published in 1977. The "Lafarge Way" is based on our common values of courage, integrity, commitment, consideration for others and an overriding concern for the Group's interest. Our Code of Business Conduct is an important component of the "Lafarge Way". It was first set out and released to all employees in 2004. Simply having a code is not enough. Each employee must be empowered to act in accordance with its spirit and its provisions. So we decided to upgrade existing training systems and to reinforce and strengthen implementation. Accordingly we are rolling out a Code of Business Conduct Training process. This is a major undertaking but it is not a one-off event. It is a part of a constant effort to deepen understanding, train new recruits and refresh existing employees. Having developed a comprehensive training kit as the vehicle for the process we have sought expert, external input from Transparency International (France) ([www.transparence-france.org](http://www.transparence-france.org)) and the Anti-Corruption Commission of the International Chamber of Commerce ([www.iccwbo.org/policy/anticorruption](http://www.iccwbo.org/policy/anticorruption)). Their positive replies are available on our website (<http://sustainabilityreport.lafarge.com>). The training kit was pilot tested in the Middle East, Africa, Latin America and Asia. Finally the package was reviewed by our Stakeholder Panel at its December 2008 meeting.

### Looking forward

Strengthened by this piloting and consultative process, training is now being rolled out across Lafarge. The target population within each business unit has been set as wide as possible because business ethics concerns all our employees. It is being translated into local languages. We are designing specific modules within the Lafarge University programs to highlight the importance of the code. The Code of Business Conduct training kit is supplemented by specific policies and training related to competition compliance, environment and corruption. A telephone hotline has been available for all employees since 2004.

### Shareholders: the owners of our company

#### Who and where they are

Among institutional shareholders Group Bruxelles Lambert held 21.1% of the shares as at

### Shareholders by type (2008)

Institutional (France)	19.3%
Institutional (other countries)	70.3%
Individual	10.2%
Treasury	0.2%

### Shareholders by geography (2008)

France	29.5%
United States	13.6%
Belgium	21.9%
Luxembourg	14.2%
Rest of the world	20.8%



*A volunteer at the VCT (Voluntary Counselling and Testing) camp, at Kamwenge District, Uganda.*

We have a long-term commitment to ethical behaviour that we constantly update... Simply having a code is not enough. Each employee must be empowered to act in accordance with its spirit and its provisions.

31 December 2008. NNS Holding Sarl, (the Sawiris family holding company) held 13.8% of the shares on that date. All registered shares held for a period of two years benefit from a loyalty dividend set at 10% over and above the normal dividend and a double voting right, with a limit of 0.5% of the total share capital by shareholder. There are no restrictions on the number of voting rights held by each of our shareholders if those rights do not exceed 5% of the rights attached to all the shares comprising the Company's share capital. Above this threshold, the number of voting rights is adjusted on the basis of the percentage of the capital represented at the General Meeting rounded off to the nearest whole unit.

Lafarge keeps its investors informed through methods such as regular notices in the financial press, press releases, regular letters to shareholders and the shareholders' information section of the Lafarge website and through the Shareholders' Consultative Committee. In 2008 we received the prize for the best CAC-40 Shareholder general meeting from CapitalCom in partnership with Les

Echos, Radio Classique and Deloitte. Socially Responsible Investors (SRIs) are represented on our Stakeholder Panel. We meet regularly with individual SRIs to discuss our sustainability policies and performance.

### Proper governance

Our 18 member Board carries out its duties in line with the provisions of the publicly available Directors' Charter. Bruno Lafont is both CEO and Chairman. Mr Lafont's remuneration has been reviewed by the Board in line with the recommendations of AFEP-MEDEF, see also 2008 Annual Report (<http://annualreport.lafarge.com>).

The Board was increased in size during 2008 as a result of the Orascom Cement acquisition and to allow for representation of the largest shareholder, Group Bruxelles Lambert. As of 31 December 2008, ten of the 18 Directors were independent. We follow the criteria of the French employers' associations, the MEDEF and AFEP-AGREF, except the recommended 12-year limitation on length of service. We believe that for a long-term industry such as ours, and to ensure stability serving as a director for

### Ordinary Shareholders' Meeting – May 7, 2008

Voting results	
Number of shares with voting rights	194,674,785
Number of voting rights	218,412,854
Number of shareholders present, represented or voting by post	15,881
Number of shares present, represented or voting by post	119,925,707
Quorum	61.60%
Number of voting rights present, represented or voting by post	134,565,410

All resolutions were approved. The rate of approval for all 11 resolutions ranged between 88.41% and 99.93%.

*In South Africa, students from CIDA City Campus MACC 2007 promotion were trained in the Roodekop training center.*



a longer period of time brings more experience, authority and also reinforces the independence of directors. The Vice-Chairman of the Board is an independent director. He chairs the board discussion on the performance and remuneration of the Chairman and CEO. At least two-thirds of the audit committee must qualify as 'independent' in accordance with the recommendations of the AFEP-MEDEF report. The Board engages with sustainability through the Strategy and Development Committee. Sustainability is taken into account in evaluating corporate risks. The Board carried out a thorough-going review of its practices at year end 2008. The review included all members responding to a formal Board agreed questionnaire. The Board's practices were judged globally satisfactory. Through the exercise the Board identified four ways in which it could optimise its operation.

## Competition

Governments are tightening competition law. In 2007 we adopted a Group-wide Competition Compliance Program. Implementation is assisted by a network of country-based contacts, training and e-learning. The process is a rigorous one. In some cases it is carried out in conjunction with external lawyers. We use real life simulations to increase the understanding of those involved. In all cases there is detailed follow-up to make sure that the lessons to be learned are taken on board. This includes not just legal staff but senior managers. Our Sustainability Ambition is to achieve 100% of all significant business units being

tested for compliance with our policies by 2010. The figure at the end of 2008 was 50%, Orascom countries being excluded, and plans were in place for all remaining business units. We are targeting to be at 80% by year end 2009 with completion in 2010. For information on inquiries and legal proceedings in 2008 please see our 2008 Annual report, pages 14 and F-79 (<http://annualreport.lafarge.com>).

## Human rights

Lafarge supports the Universal Declaration of Human Rights and other international human rights standards (ILO, OECD, UN Global Compact). In 2005 the Group signed an Agreement on Corporate Social Responsibility and Industrial Relations, with IFBWW, ICEM and WFBW. The Lafarge operational footprint is complex, localized and diverse. We extract raw materials, we transform them on site and sell locally for the benefit of local people. We are not delocalizing production. The potential human rights issues are also complex and often location-specific. Lafarge emphasises its corporate Principles of Action and Code of Business

Conduct as a primary means of ensuring that human rights are respected throughout the Group. Lafarge is acutely aware that the proportion of its business based in countries that are considered to have human rights issues is growing. Ensuring delivery on human rights is therefore both a material issue for Lafarge and under increasing external scrutiny. We are currently developing a Group policy that will bring together all elements of human rights issues and practices so as to give more clear and detailed guidance to our operations and managers round the world. The initial draft of the policy was reviewed with our Stakeholder Panel at the December 2008 meeting and is being revised in the light of their input. The revised policy will be reviewed further with the panel at our November 2009 meeting. In parallel we are developing a deployment and training package in preparation for the roll out. This will build upon the learnings from our Code of Business Conduct and local stakeholder training.

## Political contributions

Lafarge employees and officers may participate in political activities. They must not commit the Group in these activities. In the United States it is illegal for corporations to make contributions to candidates running for Federal Office. Contributions can only be made through a political action committee (PAC) (<http://sustainabilityreport.lafarge.com>). In 2008, the PAC of Lafarge employees in North America made contributions to United States Federal candidates or United States Federal candidate leadership committees totaling \$49,500.

### Breakdown of activities in countries of concern regarding human rights (2008)\*

	Sales breakdown	Workforce breakdown
Not free	13%	26%
Partly free	15%	14%
Free	72%	60%

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

# Sustainability management and influencing role

Our approach to managing and improving sustainable development helps enhance our stakeholder relationships and our overall business performance



*Gypsum - South Africa, Roodekop Factory and Training Center, gypsum plasterboard being sawed.*

### Organisation and management systems

#### Our structure

Our Group-wide Sustainable Development and Public Affairs organization exists to promote good, transparent sustainability performance through:

- listening to, understanding, anticipating stakeholders' expectations and questions;
- developing sustainability framework, policies and KPIs;
- delivering on our Sustainability Ambitions;
- monitoring, reporting and challenging results;
- ensuring that the Group responds appropriately at local and global levels.

The Board remit for sustainability issues lies with the Strategy and Development Committee. The Group Executive Committee considers sustainability items through the year and meets annually with the Stakeholder Panel. The Senior Vice President, Sustainable Development and Public Affairs has functional responsibility. He chairs the Sustainable Development Operational Committee which meets twice a year. Its remit is to ensure that sustainability is ever more fully integrated into the daily operations of the Group.

#### Real progress through our Sustainability Ambitions

The Sustainability Ambitions 2012 provide our road map for dealing with the key challenges we face. To achieve them requires understanding, engagement, and application from



*Safety Day in Tanzania, management, employees and contractors visit the site.*



Kenya, Institute of advanced driving, training on a model car track.

## Mobilising our employees worldwide

Without employee commitment we cannot achieve our Sustainability Ambitions 2012. Therefore we constantly remind employees what the ambitions are, how we are progressing against them and how individual employees and business units can contribute to them. Safety is a prime example of an employee centered ambition. No less than 396,932 hours of safety training were delivered in 2008. Through our first ever global Safety Month held at our 2,200 facilities worldwide during June 2008, employees were engaged in sharing safety messages with fellow employees, families, friends and neighbors. Sustainability featured strongly at our 2008 Group operations meeting gathering the top 200 executives in Baveno, Italy. Participants were addressed by Alastair McIntosh, a member of our Stakeholder Panel. Sustainability is not just for senior managers, it must be for all. We communicate about it. For instance, in 2008 each week for 16 weeks, LO, the Group intranet, carried a new short message on one of the Ambitions. The Sustainability Ambitions are fully covered in Group and divisional magazines. Many business units have particular local commitments. In this report, China's story is fully covered on pages 40-43. During 2008 the SVP Sustainable Development and Public Affairs commissioned Internal Audit to produce a report to assess business units awareness of Sustainability Ambitions 2012, how they were translating them into action and how the reporting processes were working. The auditors visited business units representative of all three business lines in Kenya, South Korea, Spain and Uganda. A summary of their findings is available at <http://sustainabilityreport.lafarge.com>.

business units and individuals across the whole Group. Each of the Sustainability Ambitions has a champion responsible for promoting the mainstreaming of the Ambition within each of the Businesses and to encourage and measure progress towards the goal. The goal can only be achieved through the active engagement and support of our employees.

Performance is closely measured and monitored (see pages 4 and 5 for full coverage of the Sustainability Ambitions). Our attention is not limited to the topics covered in the Sustainability Ambitions. We are making progress too on other issues such as water and global NGO partnerships. They do however cover the most material issues, identified in conjunction with our stakeholders.

## Gaining advantage from sustainability performance

A serious and detailed engagement with sustainability issues is the right thing to do and Lafarge derives measurable benefit from the sustainable agenda it follows.

Many companies cite winning and retaining a licence to operate as a key benefit of operating sustainably. Lafarge is acutely aware of the importance of this aspect of the sustainability agenda. To take just one aspect of our operations, Lafarge extracts 435 million tonnes of minerals a year and it must gain government permits and local approval for further extraction.

Yet in our view there is much more to the matter than this. A key part of the sustainability agenda is innovation to meet customer need and innovation that improves the environmental performance of our own operations and of our customers' use of our products. Here there is a confluence between the business and the sustainability agendas.

These matters are dealt with more fully in the Customers and solutions section (see pages 50-53) and in the Climate change section (see pages 28-35).

## Identifying and working with stakeholders

Since 2003 a ten-member panel representing a diverse range of stakeholder groups and sustainability issues have been 'critical friends' to Lafarge and recom-



Morocco, Tetouan cement plant, employee interacting with a customer.

Lafarge takes the view that it can only fulfil its sustainability mission successfully if it plays a full part and gives a lead, both in sustainability within our industry and more generally.

### A diversified, challenging panel

#### Éric Brassart

Secretary Lafarge European Works Council

#### Marion Hellmann

Assistant General Secretary  
Building and Wood Workers International

#### Jean-Paul Jeanrenaud

Director Corporate Relations (External Affairs)  
WWF International

#### Philippe Lévêque

Executive Director CARE France

#### Karina Litvack

Head of Governance & Sustainable Investment  
F&C Asset Management

#### Cornis van der Lugt

Responsible for Corporate Environmental  
and Social Responsibility DTIE U.N.E.P.

#### Alastair McIntosh

Visiting Professor of Human Ecology  
Centre for Human Ecology  
University of Strathclyde, Scotland

#### Dr Frank Rose

formerly Group VP Sustainability ICI plc

#### Livia Tirone

Architect Tirone Nunes

#### Simon Zadek

Chief Executive AccountAbility

mended performance improvements. The Stakeholder Panel normally meets twice a year to debate and make recommendations on a number of topics. The Panel receives regular information from the Group. Its terms of reference are on our website <http://sustainabilityreport.lafarge.com>.

Several panel members engage directly with Lafarge's operational managers through partnerships (WWF and CARE France), the social agreement with our international unions, and our European Works Council.

### Other influences

The Stakeholder Panel is typical of the open and positive dialog we aim to establish throughout the Group's operations. A full account of the methodology and commitment of our engagement with local stakeholders can be found on pages 54-59. Some of the results of our dialog with Socially Responsible Investors are outlined on page 63.

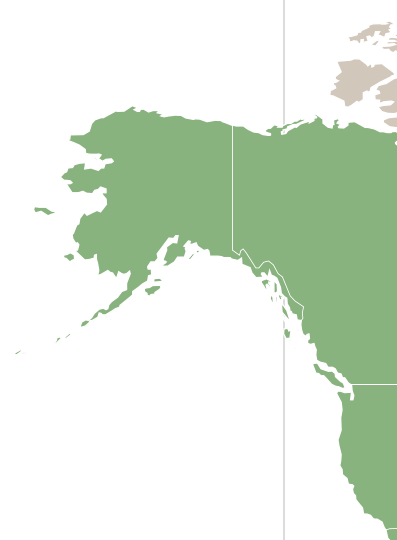
### Using our influence within the industry

Lafarge takes the view that it can only fulfil its sustainability mission successfully if it plays a full part and gives a lead, both in sustainability within our industry and more generally. The clearest and most public example of this attitude is the Cement Sustainability Initiative (CSI) of the WBCSD ([www.wbcSDcement.org](http://www.wbcSDcement.org)). Lafarge, currently co-chair of the CSI, was one of three cement manufacturers that founded

the initiative in 1999. The membership has now grown to 18 cement companies representing around 30% of global cement production, with members coming both from developed and emerging markets. The CSI provides a practical, shared model for grappling with key sustainability issues that face the cement industry.

Lafarge has similarly taken a leading role in WBCSD's Energy Efficiency in Buildings project ([www.wbcSD.org](http://www.wbcSD.org)), as we have been co-Chair of the project from the outset. Here we are using our influence within the industry to help move forward thought and action on the vital and complex issue of sustainable construction.

Also, in France, we play an active part in *Institut de Développement Durable et Relations Internationales* (IDDRI, [www.iddri.org](http://www.iddri.org)), and are represented on its board. This think tank examines sustainability issues that require international coordination, such as climate change and the depletion of natural resources.



## Integrating Orascom Cement and L&T Concrete India Ltd.: Hearts and minds

Lafarge made two major acquisitions in 2008: in January the cement business of Orascom for €8.3 billion (approximately 7,400 employees) and in October Larsen & Toubro's ready-mix concrete business (€244 million\*, approximately 530 employees). These were not merely business transactions. We managed them to maximise the alignment of the new acquisitions with Lafarge's values and way of doing business. We managed them recognising their strengths and culture.

### More than a business transaction

#### How we went about the acquisition

Our three top issues were safety, retention of the skilled ex-Orascom teams and minimising operational disruption. These were a prelude to the mutual discovery and transfer of experience between legacy Lafarge and newly acquired operations. We set up a Merger Steering Committee chaired by Bruno Lafont. Its membership included five Group Executive Committee members. We established work teams reporting to it.

#### Engaging Orascom Cement senior management

A kick-off meeting was held at the beginning of the merger process where Bruno Lafont set the objectives for the merger as follows: getting to know each other, joining the Lafarge safety roadmap, exceeding the budget with a strong focus on 08/09, creating excitement around the merger, and maintaining or increasing the momentum for future growth. Key milestone meetings were held every month to ensure that common action plans on the 13 domains set were reviewed together and to track status of achievement. This was supported by a project team reporting to the Merger Steering Committee responsible for coordinating the

process and ensuring the action plans were followed up and delivered on. Feedback was provided to all employees through a merger newsletter OnBoard.

#### Communicating with Orascom Cement operations

Mergers and acquisitions are not all about what goes on at the top. The commitment and understanding of all former Orascom employees is an indispensable part of success. So we organised "Lafarge Days" at most of the former Orascom operations. An important purpose was to allow the workers to raise their questions and concerns about Lafarge and the acquisition. But it was not just that, it was also to communicate our values and our Principles of Action and to underline the priority we give to safety.

#### Adapting to a new organisation

We modified our organisation to take account of the acquisition. We created two new regions for our Cement business, Middle East and North Africa. They are headquartered in Cairo along with our sub-Saharan Africa region. Cairo has also become home to one of our

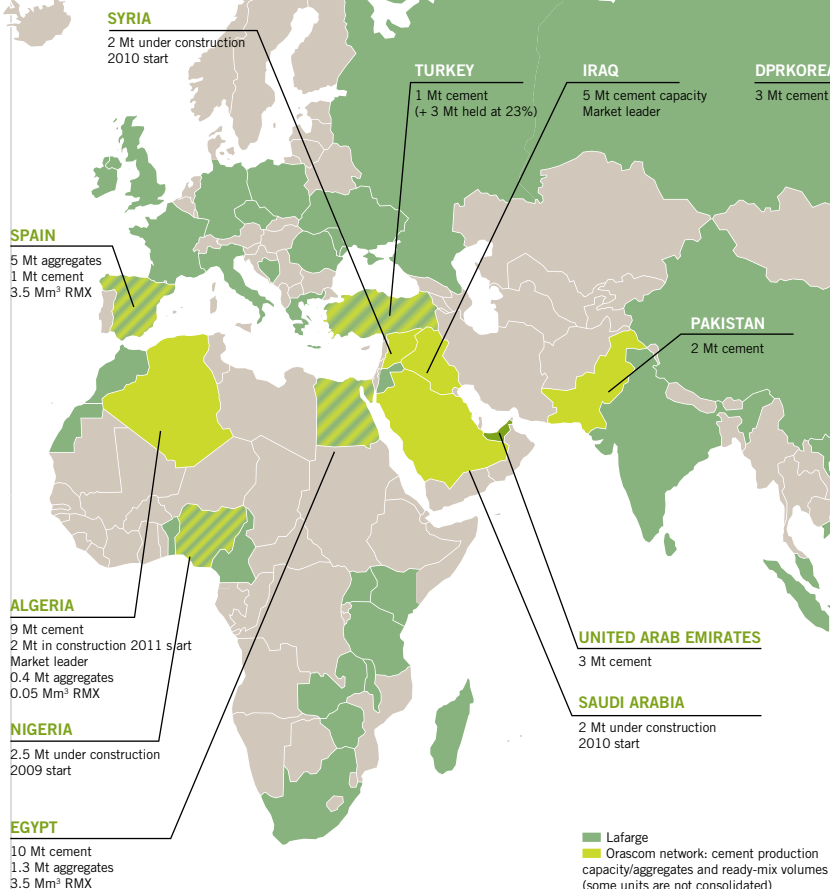
\* Provisional figures which may be adjusted

## Facts about Orascom Cement

- Began producing cement in 1998
- Was a division of the large Egyptian company, Orascom Construction Industry
- Grew mainly through green field sites, so plants are new
- Capacity of about 35 million tonnes of cement in 2008 equalling about a fifth of Lafarge's 2007 capacity
- Additional 10 million tonnes to be added
- Aggregates and concrete activities in Algeria, Egypt and Spain
- Successful cement paper bag business in Algeria and Egypt
- 80% of Orascom Cement's revenues came from cement businesses in Egypt, Algeria and Iraq, some aggregates and concrete
- Most operations have local partners with substantial ownership stakes. Operational control was with Orascom and is now with Lafarge
- 7,400 employees in seven countries in 2008

## Four principal sources of value for the Orascom deal

- 1** Excellent positions in fast growing emerging markets where Lafarge had limited presence
- 2** Modern efficient assets with excellent operational and environmental performance
- 3** Orascom people with a 'can do' spirit were responsible for the excellent operational and environmental performance
- 4** Privileged relationship with Orascom Construction



## A wealth of cultures

Welcoming Orascom Cement into the Group considerably increases our presence in different parts of the emerging world. This is nothing new, Lafarge has long-time operations in Indonesia, Jordan and Turkey and some African countries with diverse populations. We see the move as accelerating our shift to being a truly global, multicultural company. Wherever we are in the world, we set out to operate with sensitivity to local culture. We believe that our business benefits both from operating in so many diverse markets and from the talents and experience of all our employees.

regional technical centers. We have already benefited significantly from the management skills of Orascom Cement in our senior management team, both at Group and business level. Several former Orascom managers have been appointed to various leading positions within the Group and are now part of the Lafarge Top 200 Executives.

## Larsen & Toubro Concrete India Ltd., the Indian leader in concrete

On 23 October 2008 we acquired 69 ready-mix plants in India from the Indian conglomerate L&T. The total additional volume is 4.3 million m³. A safety audit of all plants was conducted upon acquisition. While the safety standards were similar to those of Lafarge, in some cases practice was not, so in the case of eight plants we temporarily ceased operations to correct unsafe situations. In February 2009 "Lafarge Days" took place in nine different towns in India, enabling direct communication with employees on our Principles of Action. We are looking forward to building on and developing L&T Concrete's strong people-development culture.\*

\* L&T Concrete not included in 2008 environmental audit data



Top: Partnership with Paris-Plages operation, France. Lafarge provides sand for this annual event and recuperates it afterwards to be cleaned and recycled. Right: Meknes cement plant and rehabilitated quarry, Morocco.



## Public positions

It is in the Group's interest to influence the adoption of high-quality environmental, social and technology standards and to call for strict enforcement of regulations.

### Public affairs organisation

On a day-to-day management basis responsibility lies with the Senior Vice President, Sustainable Development and Public Affairs. In Europe, a network of about 20 correspondents coordinates the Group's positions.

In the United States, the Environment and Public Affairs Committee serves a similar function to the European group. It meets on a monthly basis.

Some other countries have a specific person whose job is to manage Lafarge's public policy engagement. China is a good example, with its dedicated public affairs officer reporting directly to the CEO of the Chinese operations.

### Lafarge's objectives and positions

Through the Group's public affairs and lobbying activities we seek to:

- Raise understanding of our activities and issues;
- Anticipate stakeholders' expectations and regulatory changes. Where we believe that changes are required we call for them, sometimes through voluntary programs. We advocate effective implementation and enforcement of regulations by authorities to prevent competition distortions;
- Demonstrate responsible sector leadership, notably by promoting more environmentally friendly technologies and socially progressive practices.

We do so transparently, in dialog with key stakeholders and in line with our Sustainability Ambitions. We make an appropriate contribution to public debate. For instance with regard to the recent *Grenelle de l'Environnement* in France, we

published a press kit of the positive steps that we have taken to contribute to good stewardship of the environment in France. This is available at [www.lafarge-granulats.fr/DP\\_LAFARGE.pdf](http://www.lafarge-granulats.fr/DP_LAFARGE.pdf).

### Trade associations

Lafarge recognises the benefits of participating in trade associations. Lafarge is a member of associations at an international, regional, national and local level. Lafarge is a member both of associations whose prime purpose is to represent the building materials sector (for example, the Chinese Cement Association, the National Stone Sand and Gravel Association in the USA, Cembureau and Eurogypsum in Europe) and more broadly to represent private companies (e.g. the World Business Council for Sustainable Development at international level or the AFEP in France). Wherever Lafarge is a member we try to take a lead in encouraging engagement with external stakeholders.



Gypsum - North America, Palatka plasterboard plant in Florida, break in the rehabilitated quarry.

Lafarge demonstrates responsible sector leadership, notably by promoting more environmentally friendly technologies and socially progressive practices.

## Main public policy positions

### The revision of the IPPC directive in the European Union

The IPPC (directive on industrial emissions) is currently being discussed by the European Institutions. We consider that the BREF (documents established by national and European administrations, industry and stakeholders representatives, describing the Best Available Techniques and their associated emission limits) gives the reference. We promote a flexible approach which allows, provided that relevant justifications are given, to deviate from the BAT when local conditions (e.g. nature of raw materials, geographical locations) require to do so. For this reason, creating strict emission limits at European level with no flexibility is not feasible. Lafarge has committed to reduce its industrial emissions (see page 5) and the cement industry was the first sector to

have its BREF revised (end of 2008), therefore it reflects the most recent BAT.

### The revision of the EU ETS (Emissions Trading Scheme) directive

Lafarge welcomed the adoption of the climate and energy package in December 2008. The CO<sub>2</sub> 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 advocated for the recognition of the cement sector's exposure to "carbon leakage". We sought to avoid distortion of competition and maintain the competitiveness of the European industry while preserving the environmental goal of the directive. We are convinced that the European Union has paved the way for an ambitious international agreement which is the best solution to address effectively the global issue of climate change. As a matter of transparency, the posi-

tion of many NGOs can be seen in an open letter to the EU decision making institutions at [www.climnet.org](http://www.climnet.org).

### Access conditions for the cement industry in China

In 2008, the Industry and Information Technology Ministry of China decided to build up a policy related to Access Conditions for the Cement Industry in China to control overheating investments and to raise the bar of management level for the cement industry. As co-chair of the Chinese Cement Association, Lafarge has been consulted for the drafting of this policy, focusing on requirements regarding safety, occupational health standards, new standards on air emissions and on quarrying (new projects must have the main limestone quarry on site with secured reserves and with a end of life rehabilitation plan). The policy will be adopted and published in 2009.

# Building on stakeholder feedback on our 2007 Sustainability Report

We sought external perspectives on our sustainability reporting right from the start. Since 2003 we have benefited from the comments of our formal Stakeholder Panel. We are grateful for the comprehensive and balanced, collective and individual comments that the Panel gave on last year's report. We analysed them thoroughly and took all into account when thinking about how to present this year's report. Below we tabulate some of the main comments made along with what we have done. A fuller version of this table can be found at <http://sustainabilityreport.lafarge.com>.

WHAT WAS SAID	WHAT WE HAVE DONE
The Group should support local managers in implementing the Code of Business Conduct. This could be done with the help of a third party monitoring and reviewing process.	We are doing this. For our externally validated Code of Business Conduct new training program, see page 12.
The Human Rights Policy of the Group should be completed with an independent verification mechanism.	For our progress on this matter and our consultation with the Stakeholder Panel, see page 14.
It is vital that Lafarge continues to clean up the non standard plants that it acquires.	We make significant investments to assure this is so. Noting this comment, we give full coverage to this issue on pages 40-43 referring to China.
An independent expert with specialist expertise in persistent pollutants should be appointed to the Panel.	As a result of this recommendation and with the advice of WWF we have appointed Dr Frank Rose to the Panel to fulfil this role.
We would like to see more engagement from Lafarge as not only producer / contributor / influencer but also Lafarge as partner and collaborator.	This is an area where we are increasing our already significant engagement and action. See pages 29-31.
WWF calls on Lafarge to do more in developing countries... to reverse the emissions growth trend triggered by growing client demand.	We have worked with WWF on a blue print for a climate friendly cement industry ( <a href="http://assets.panda.org/downloads/englishsummary_lr.pdf">http://assets.panda.org/downloads/englishsummary_lr.pdf</a> ) which was published in 2008 ahead of the Poznan meeting and which addresses how to turn round cement emissions in the developing world. The section on China shows how our investment is contributing to reducing emissions.
New issues are arising with the company's growth in emerging countries, such as education, (how to reach skilled people), but also health, subcontracting, transportation costs, construction.	We are addressing these issues and have set out to give insight into how we work in emerging countries by using the example of China, see pages 40-43.
More examples of stakeholder dialog at the regional and national level would be useful as evidence that Group-wide good practices are translated effectively at all levels.	We have moved forward significantly here achieving our Ambition on the training package for local stakeholder relationship management in 2008. To see some examples and our plans for further progress go to Global Partnerships, Local Stakeholders pages 54-59.

### 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)

In addition to the detailed comments made on our Sustainability Report 2007, we have gained greatly from our dialog with panel members individually and collectively. In particular we have benefitted from formally sharing with them our views on topics as varied as climate change, the Code of Business Conduct training, human rights, persistent pollutants, quarry issues in Brittany and

Uganda, implementing local stakeholder relations training and sustainable construction. We have also discussed issues surrounding our cement operations in India and Bangladesh and our cement plant in Ravena, New York State, USA. The debate has challenged us, enabled to see new dimensions to the issues and caused us to change and improve our plans and actions.

# Opinion of our Stakeholder Panel on the 2008 Sustainability Report

Our mission is to serve as “critical friends” who challenge Lafarge’s sustainability strategy and reporting practices, suggest improvements and form each year an opinion on Lafarge’s accountability. We highlight below key areas of progress made during 2008 and remaining challenges for Lafarge both in sustainability performance and in its report. However, we do not verify the data or deliver any kind of assurance on performance.

## Report as a communication tool

Lafarge’s 2008 report builds on a steady positive trend initiated when this Panel was formed in 2003: in this five-year period, the company has shown ever-greater responsiveness to the key issues raised in our meetings. This report reflects both better substance and a more accessible style, including more succinct coverage of more issues and efficient use of web links. However, we feel that it tends to focus on achievements and good practice examples, and gives relatively shallow coverage of failures, incidents of poor practice or remedial actions taken. We have held frank discussions with Lafarge on both fundamental policy issues, including climate change, persistent pollutants, safety and human rights, and specific incidents (e.g. the Dura Quarry in Uganda and Brittany sands); we are pleased to see the outcome of these debates reflected in the report. Dr Frank Rose joined the Panel this year following our recommendation to include a member with expertise in environmental and occupational health. We welcome Lafarge’s unambiguous declaration of continued commitment to sustainable business practices despite the current economic downturn. However, we encourage the Group to be more specific about how its retrenchment in the face of slumping demand will affect progress against its Sustainability Ambitions – most particularly the effect of capex reductions on plant upgrades, as well as human resources policies to retain key staff. With government stimulus packages focusing on infrastructure and green development, we hope to see Lafarge define its recovery strategy so as to capitalize on its sustainability leadership and build on it further as a competitive differentiator.

## Climate change

Lafarge has performed well against certain targets in its Sustainability Ambitions, in particular climate change; however, given the urgent imperative to try and stay within the 2°C maximum temperature increase that Lafarge rightly cites, the company urgently needs to set further challenging targets, and should not wait until the current Ambitions expire in 2012 to announce them. We are also pleased with the inclusion of responsible governance issues, such as with customers and competition policy, and the focus on exercising a positive influence on customers in favor of more sustainable choices.

## Supply and value chains

Increasing the positive impact of the built environment is a process involving many actors and changing many practices. Lafarge can have a significant influence on its own suppliers, contractors and business partners. While we welcome the manner in which the issue is raised in the report, we still would like to see more involvement from Lafarge, not only as a producer, but as a partner using its influence, e.g. to push for the introduction of buildings that are

optimal in each climate region from a sustainable point of view. We appreciate that Lafarge has, at our urging, emphasized sustainable construction, as the most significant part of the environmental impact of buildings resides in their use. We commend this, and we would like a specific focus on integrated and sustainable building solutions, involving the relevant construction industry stakeholders as partners to be included in next year’s report.

## Corporate governance

As a prominent actor in its sector, Lafarge has the opportunity to influence practices and public policies. On the important subject of regulation such as the EU Emissions Trading Scheme, we urge the company to ensure its lobbying positions strengthen its commitment to climate change in a way that both maximizes CO<sub>2</sub> reductions and confronts the threat of carbon leakage. Another key subject, given the changing face of Lafarge and its increasing presence in emerging countries, is the support given to local managers in the implementation of the Group’s Code of Business Conduct. This past year we have discussed, and been impressed by, a new version of the Code of Business Conduct training package that will be rolled out across sites in the coming months. We pushed for the inclusion of an external third party to investigate allegations of potential breaches of the code; and we urged disclosure of data related to the usage of the ethics hotline as we would like to see evidence that the hotline is known about and being used. The panel is aware of the 2008 anti-competitive issues summarized in the Lafarge Annual Report on page 14 and Note 29, but we have not yet had access to any detailed information or the opportunity to discuss these and therefore cannot express an opinion. Lafarge have agreed to our request to put these matters on the agenda for the next Panel meeting so that they may be discussed in depth.

## Health and Safety

We notice that progress on safety performance is limited, and behind expectations, with significantly higher total fatalities for workers engaged in Lafarge processes directly or indirectly. Whilst employee fatalities have reduced, contractor fatalities have more than doubled from 2007. We welcome the important focus placed on subcontractors in the report, even though we urge the Group to take a strong stance in communicating that such fatalities are unacceptable – and perhaps drawing up an exclusion list of subcontractors whose standards fall below Lafarge’s expectations. We welcome the move to develop and implement a comprehensive health policy for employees.

## Persistent pollutants

Progress on Persistent Pollutants is on track with the current commitment to characterise emissions from all kilns by the end of 2010, but more clarity is needed

with regard to medium and long-term intentions, and involvement of local stakeholders. The process for achieving such clarity needs to be worked out within the Stakeholder Panel as advised by expertise especially from the WWF partnership, taking into account risk assessments, legal requirements, and the most relevant stakeholders, notably the kiln neighbors. We also welcome the commitment to implement Best Manufacturing Practices to reduce emissions of the top emitters by 2010. We recognize the complexity of these commitments and that Lafarge cannot do everything overnight, but we do want them to be explicit with us about plans for reductions of emissions.

## Orascom and China

We welcome the report on the significant acquisitions of Orascom Cement and L&T Concrete in 2008, since they are changing the face of Lafarge in many ways including its presence in emerging countries. We welcome the opportunity that this provides for Lafarge to raise the level of the playing field for the industry worldwide. We expect more detailed information on the important issues this evolution raises in terms of human rights, bribery, health, safety, dialog and relationship with local stakeholders, and environmental standards, with examples of how Lafarge deals with these new challenges. As Lafarge supports the Universal Declaration of Human Rights and its principles, we would also like to be given more details about how workers’ rights, especially freedom of association, are promoted in the group’s own facilities and ensured in non-democratic countries, where Lafarge’s presence is now significantly higher. We welcome the focus on emerging economies and China as a response to one of the Panel’s demands, but we would appreciate further details on Lafarge’s broader strategy for those countries, and its role in promoting the application of higher standards. We can see that commitment to raise standards is evident at head office level, but we would like to be kept informed of how effectively this is followed through all the way down to the factory floor or quarry face in distant locations. As the Panel’s primary purpose is to serve as critical friends, we are heartened to note that our role has evolved in a way that has frequently made our Panel discussions over the past year deeply satisfying. We consider that these discussions, often going much further than can be reflected in a report, manifest a real commitment and trust on behalf of all parties concerned to wrestle with challenging issues, and we respect the manner in which Lafarge listens to and responds to our input. Lafarge has power and influence and should use it across the industry sector to effect positive sustainable change: we strongly encourage the Group to pursue and intensify its efforts in this way. We believe that this will give Lafarge a competitive edge, but it will do so because it will enhance the Group’s integrity and the cohesion, including the pride of all its stakeholders.



*Sub-contractor at the Safi plasterboard plant, Morocco.*

## Sourcing and sub-contractors

We are engaged in a process of ensuring that our external sourcing of goods and services truly reflects our ethical and sustainability commitments

### Sourcing

#### What is sourced and how

Lafarge sources most of its raw materials from its own limestone, aggregates and gypsum quarries. Everything else is bought in. In 2008 the Group made €10.7 billion purchases. A breakdown of what we sourced is given in the pie-chart below. Lafarge's spend on external purchases is not concentrated in any single



**Breakdown of our suppliers by type of activity (2008)**

1 - Raw Materials	30.3%
2 - Transport Services	17.6%
3 - Utilities	10.8%
4 - Industrial Products & Consumables	10.5%
5 - General Supplies & Services	9.4%
6 - Plants & equipments	9.0%
7 - Industrial Services	10.0%
8 - Products for Resale	2.4%

Note: Reporting covers 73 business units, or 94% of the Group's procurement.



**Amounts spent on external purchasing by geographical region (2008)**

1 - Europe	37%
2 - North America	24%
3 - Asia	15%
4 - Mediterranean	13%
5 - Africa	7%
6 - South America	4%

market as can be seen from the adjacent pie-chart. We try to buy products as locally as practical, except for our national, regional or world-wide agreements for strategic commodities such as heavy mobile equipment or tires. This is well illustrated by Lafarge India Pvt. Ltd., our cement business in India, which spent €156.1 million on supplies with 93.5% of that spending being with indigenous Indian suppliers. See the table opposite.

#### Contributing to Lafarge's sustainability goals

Our purchasing function is organised on a country and product line approach. This includes direct reporting lines into the centralized function with specific purchasing action plans and responsibilities.

#### Our progress in 2008

To increase supplier awareness of and alignment with our commitments on ethical and sustainable sourcing, we produced our new supplier brochure "Supplier Safety and Sustainable Development" (<http://sustainabilityreport.lafarge.com>) in late 2008, and rolled it out to suppliers in all geographies in early 2009. It sets out in full both our Sustainability Ambitions 2012 and the



Lafarge Shui On Safety Campaign, Lafarge employee and contractor with common safety objectives, Chinefarge plant, Beijing, China.



A concrete jobsite in Denver, Colorado, two Lafarge employees with a contractor.



Supplier brochure

### Purchases by Lafarge India Pvt Ltd. in 2008: benefiting the local economy

Items	Imported		Indigenous	
	Euro million	%	Euro million	%
Stores, Spares, Power & Fuel Oil	1.6	2.3	68.2	97.7
Raw Material	-	-	17.8	100
Fixed Assets (including services)	8.6	12.5	59.9	87.5
<b>TOTAL</b>	<b>10.2</b>	<b>6.5</b>	<b>145.9</b>	<b>93.5</b>

terms of the UN Global Compact, of which we have been an active member since March 2003. It lays out what we are doing to work safely and achieve sustainability. It explains how suppliers and sub-contractors can help us reach our goals. Currently the supplier brochure is available in English. During 2009 we will be making it available in both French and Arabic.

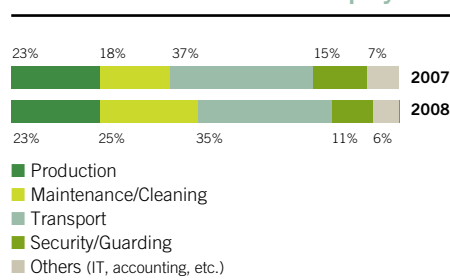
In addition, in 2008 we included language reflecting our United Nations Global Compact commitments in all our standard contracts in Africa, the Americas, Europe and the Middle East. In 2009 this will be rolled out in Asia too.

### Required use of sub-contractors

Getting our business done requires the use of sub-contractors. While direct employment covers most of the workforce in Lafarge, in a number of instances we use sub-contracted

labour. The principal reasons for doing so are securing the appropriate expertise or know-how when this is not available in-house, meeting seasonal peaks of work or in fields that are out of our core business. We are transparent about our use of sub-contracted labour and have published a breakdown about our use since 2004.

### Breakdown of outsourced employees



In 2008 outsourcing represented 29.6% of the equivalent Group labor force (2007: 32%). The most significant function where outsourced employees are used is transport. The production figure relates mainly to the construction of new plant and capacity.

### Corporate Social Responsibility and our sub-contractors

Each local executive committee is asked to nominate a specific individual responsible for the application of the local sub-contracting labour laws. The sub-contractor should observe Lafarge's commitment to fundamental human rights and in particular to the ILO core conventions. Alignment with our Health and Safety Policy, practice and goals is non-negotiable. These commitments are to be factored in to the call to tender. We are looking to address this topic in greater depth and with greater clarity to ensure that we improve upon current practice. The way to do this is to identify best practice within the Group and to share those best practices. In 2008, a group of operational managers from Lafarge met to identify and collect best practices in sub-contracting. As a new step during 2009, we will review the situation in some pilot business units based on this best practice. For safety issues on sub-contractors see page 49.

Yepes quarry rehabilitation plan, in Spain, included the creation of a designated area for cross-country cycling.



## Our International Biodiversity Advisory Panel

**Rebecca D'Cruz**  
Executive Director -  
Aonyx Environmental  
(Malaysia)

**Annelisa Grigg**  
Associate - Fauna &  
Flora International  
(UK)

**Jean-Paul Jeanrenaud**  
Director Corporate  
Relations (External  
Affairs) - WWF  
International

**Robert Johnson**  
CEO - Wildlife Habitat  
Council (USA)

**Kerry ten Kate**  
Consultant,  
Forest Trends

**François Letourneux**  
President IUCN  
French Committee -  
France

**Lafarge personnel**  
Arnaud Colson,  
Director Public Affairs  
and Sustainable  
Development,  
Lafarge Granulats  
et Bétons France;  
Pierre de Prémare,  
VP Environment  
and Public Affairs,  
Quarries, Aggregates  
& Concrete

### SUSTAINABILITY AMBITIONS

Quarries with rehabilitation plan,  
biodiversity evaluation and monitoring

## Quarrying and biodiversity

Limestone, aggregates and gypsum are the base of our products. We source over 90% of these key natural raw materials from the quarries that we operate.

### Biodiversity near Toledo, Spain

Working in partnership with the University of Castilla la Mancha, WWF Spain and the local cross country cycling association, the restoration of the Yepes-Ciruelos quarry has focused on accelerating and scientifically monitoring the re-colonisation of the quarry by the eco-systems that were present before human intervention. This program has developed into an ambitious environmental education center targeted at Lafarge employees, local communities, especially school children and academic research. A designated area for cross-country cycling is now open to the public and passes by areas of wildlife interest.

Restored using the guidelines developed with WWF, this quarry provides an excellent example of fostering biodiversity, furthering education and providing healthy leisure activities. For more information go to <http://sustainabilityreport.lafarge.com>.

### Stewarding our quarries

Quarries are a time-intensive and long term investment. Obtaining permission to operate a quarry can take up to ten years and this time is growing. The quarry may be operational for as little as 10 years to over 100 years. Quarrying has social, economic and environmental effects. From initial plan to final rehabilitation we must engage closely with the local community. Transport is a key issue as geology does not necessarily match needs and quarries are not always within a good distance of their markets. With 17% of its aggregates transported by sea, inland waterways or rail worldwide, Lafarge is probably a leader in ecological transport of stone and aggregates. The quality and volume of water run-off from our sites also needs managing. All quarries have a visible impact. We use landscaping techniques based on earth moving design, seeding and tree planting to foster landscape integration. More and more plant succession is designed to allow for re-colonization by local species. We have been working in partnership with WWF since 2000 and through this partnership have established a quarry rehabilitation policy and standard. These require each site to have a formal plan that is monitored annually. The rehabilita-

tion project is built on engagement with local stakeholders. Because of regular acquisition of new sites and the high level of our standards we have set the target at 85 % of quarries having a formalized rehabilitation plan before 2010. This year we achieved 79 %.

### Using alternative resources

Sustainable construction contributes to conserving natural resources. Innovation in our research center allows more use of low grade or alternative materials in high quality concrete. Our mining expertise enables efficient use of deposits and limits spoilage. Whenever possible, we substitute natural resources with by-products from other industries or with scraps from construction demolition sites. In our Gypsum wallboard business line, synthetic gypsum now accounts for over half of the gypsum used for manufacturing plasterboard. Our plants recycle all their damaged and waste plasterboard. Increasingly but according to local market conditions, we are producing recycled aggregates. In the UK this has reached 6% of our sales. In 2006-2008 we co-chaired a WBCSD task force on concrete recycling. In the Cement business line, substituting various recycled waste materials as raw feed conserves natural resources and



## PANEL

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

Last year I heard about a former Lafarge employee once telling a conference, "Biodiversity is all very nice but we have a business to run!" However, it was told as an example of how far Lafarge has progressed in recent years. Today it would simply not be acceptable for senior managers to split biodiversity from business operations. Lafarge's Sustainability Ambitions 2012 set targets agreed with its International Biodiversity Advisory Panel. I commend this approach, and also the openness with which Lafarge faces potential controversy, such as the Ugandan and Brittany issues on this page. Similar transparency on the Isle of Harris some years ago led to Lafarge pulling out of an environmentally unacceptable project inherited by acquisition. That's why I came onto their panel – I'd seen the integrity of their process – and I was delighted recently when the people of Harris voted to explore National Park status. To me it vindicates Lafarge's costly decision, and shows a willingness to pursue profit but not without values.

## Reopening a Ugandan quarry

Lafarge is reopening the disused Dura limestone quarry. In doing this we have undertaken an environmental and social impact assessment and engage with many local, national and international stakeholders including government agencies, elected representatives, academics and NGOs including Uganda Wildlife Society, International Union for the Conservation of Nature, Nature Agenda, Advocates Coalition for Development and Environment, UNESCO and WWF. As with some other projects, we received a detailed inquiry from an NGO, the Ecumenical Council for Corporate Responsibility. We entered into constructive dialog with them about the subject. For further information see <http://sustainabilityreport.lafarge.com>.

## A controversy near Lorient in Brittany, France

Resources search presents tough choices. Brittany's sub-soil is poor in rounded sands while need for housing and infrastructure remains strong. In less than seven years current resources will be depleted. This is why Lafarge began to explore the feasibility of extracting sand off the coast in 2001. The launch of this research was accompanied by meetings with all concerned parties. Following the official processes the issue is being considered by a commission chaired by the prefect of Lorient. The commission has full access to all our information.

A local group challenges our project insisting on the risk of sand to be removed from beaches because of the extraction. Their views can be found on <http://le-peuple-des-dunes.org>.

Lafarge committed not to proceed if there is any significant environmental impact. Our studies are fully set out at [www.granulats-marins.fr](http://www.granulats-marins.fr) and we have not yet formally applied for a mining licence.

## Services provided by ecosystems

A key issue about ecosystems is the services we derive from the natural environment. The enhancement or restoration of these services is increasingly important in our rehabilitation projects. In Choisy au Bac in Picardy, France, Lafarge is participating in a large European Union funded project on flood alleviation, the SAND project. The design of the quarry rehabilitation is planned with hydraulic experts and the local association of towns of the Compiègne region to help reduce the impacts of flooding. The design has also included the creation of natural habitats. This has been made possible thanks to the successful experience of the nearby Longueil Ste-Marie reservoir.

contributes to the reduction of CO<sub>2</sub> emissions (see Climate Change section page 28). In some 15 countries our ready-mix business substitutes waste for cement in a part of the production process.

### Making progress on biodiversity

Our strategy is to increase our knowledge and understanding of the sensitivity of the environment where we operate and in sensitive areas develop a management program for biodiversity. We take advantage of any opportunities to enhance biodiversity through the rehabilitation process. An independent advisory panel was established in 2006 to support and advise Lafarge on its biodiversity strategy.

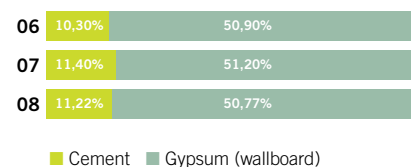
With the tools created with WWF and the Biodiversity Panel, and helped by local nature conservation organizations, employees or other stakeholders, business units can identify risks and opportunities. Biological diversity conservation and quarry enhancement is an area of research but also of awareness raising and education programs.

The recent biodiversity checking done on 50% of Lafarge quarries as part of our Ambitions 2012 proves that 43 % of our quarries are in or next to areas identified for their biodiversity value.

### % quarries with a rehabilitation plan

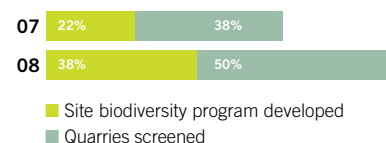


### Use of alternative materials as a percentage of material consumed



■ Cement ■ Gypsum (wallboard)

### Biodiversity



■ Site biodiversity program developed ■ Quarries screened



*The Sungai Prai Bridge, on the west coast of Malaysia was built using Mascrete™ Pro cement.*

## SUSTAINABILITY AMBITIONS

Reduction of CO<sub>2</sub> emissions

# Climate Change: acting to meet the challenge

Reducing the climate change impact of our processes, product innovation and cross sector co-operation to help deliver a low carbon economy

## What is the issue?

### Greenhouse gases and climate change

Greenhouse gases, such as carbon dioxide and methane, trap some of the sun's energy in the atmosphere, warming the land and the ocean. The greenhouse effect is a natural process. Without it, Earth would not be warm enough to support life.

Climate change is attributed to increased concentration of greenhouse gases within the atmosphere. The Intergovernmental Panel on Climate Change (IPCC, [www.ipcc.ch](http://www.ipcc.ch)) says that it is at least 90% certain that this increased concentration is driven by emissions of greenhouse gases resulting from human activities rather than natural causes. The cement industry accounts for 5% of the man made greenhouse gas (GHG) emissions and a slightly higher percentage of CO<sub>2</sub> emissions.

Lafarge believes that all necessary action should be taken to cap global average temperature increase at 2°C. Even this degree of change has significant economic and environmental consequences. The UK government's Stern Review ([www.sternreview.org.uk](http://www.sternreview.org.uk)) estimated the economic cost of inaction on climate change as 5% of global GDP each year. In contrast, the costs of action – reducing greenhouse gas emissions to avoid the worst impacts of climate change – can be limited to around 1% of global

GDP each year. The challenge of climate change is so big that it cannot be met by any single government, industry or company. However to meet the challenge requires intelligent co-operation between governments, industries and companies. We are acting within our own business and in co-operation with others.

### The built environment and climate change

The built environment has a significant impact on climate change.

The main CO<sub>2</sub> emitters – burning primary energy – are in order of importance:

- power generation,
- transport,
- industry and manufacturing,
- buildings, and
- other uses.

However, if we examine the end use of the energy produced the order changes and becomes:

- buildings,
- transport,
- industry and manufacturing, and
- other uses.

Demand for building products will continue to grow substantially, particularly driven by economic growth in developing economies.

The main global challenge for the cement industry is to facilitate economic growth while reduc-



*Planting trees at the Simpang Pulai quarry, Ipoh, state of Perak, Malaysia.*

ing CO<sub>2</sub> intensity within the built environment. This, of course means reducing the carbon intensity of our own operations. What we are doing here is described more fully at the end of this section. In addition it means innovating in products with a full environmental life-cycle assessment of the products at the heart of that process. For more about this see Customers and solutions, pages 50-53.

However because much more energy is used in operating a building than in the manufacture of the construction materials, a bigger impact can be derived from working with other interested parties to make sure that our products are used in a way that diminishes the energy intensity of a building over its whole life. This activity is what is often called Sustainable Construction. Recognising its vital importance it is an area in which Lafarge has set out to give a lead.

### **Lafarge engagement with others to deliver Sustainable Construction**

Lafarge has control over its own product. Within the total life history of the design, construction, use and demolition of a building it is just one of many players. The graphic on the next page shows the different players and the complexity of their relationships. Within this complex set of relationships Lafarge acts both as a producer of building materials,



*Sustainable construction of the Vancouver 2010 olympic village, Canada.*

## **Sustainable Construction Progress in 2008**

2008 saw good further progress for Lafarge on sustainable construction. Lafarge defined its strategy to address the challenge of sustainable construction. 2009 will focus on:

- Further developing the scientific approach of sustainable construction with life cycle analysis and understanding the building design process;
- Raising awareness within the Group on what sustainable construction is and what opportunities it represents for Lafarge. For instance a new e-learning module is developed for all new employees and business unit managers;
- Taking action where Lafarge has the most impact, for instance including environmental assessment criteria in R&D programs, 53% of which is devoted to sustainable construction related initiatives;
- Initiating and participating in national/international projects to promote sustainable construction to a wider audience.

Lafarge has a cross-functional steering committee for sustainable construction.

a contributor to building systems and an influencer of building regulations. Our capacity to act and influence varies. Clearly we have the greatest influence in production within our own operations. Our influence upon building systems is increasing through our work on Sustainable Construction both internally and through co-operative ventures such as the WBCSD Energy Efficiency in Building project. As governments increasingly realise the importance of building regulations with regard to climate change, we are well placed to contribute towards the development of the regulations.

### **What Sustainable Construction is and is not**

Sustainable construction is not about any one building material or technique being better than another. It is about developing and understanding all the dependencies and inter-relationships around a building, so as to minimise the environmental footprint of the building through construction and use right through to demolition. Secondly, since many already existing buildings have many years of useful life left, it is about retrofitting the existing building stock. Sustainable Construction is a developing field. The take out box on this page gives an account of our own actions

## BIG ISSUES



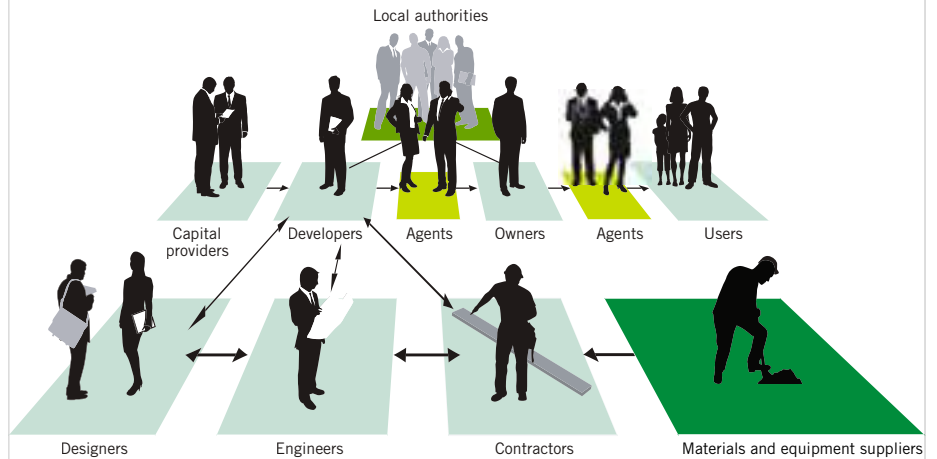
### PANEL

**LIVIA TIRONE**  
Architect

As an architect committed to mainstreaming sustainable construction for 20 years, being part of Lafarge's stimulating Stakeholder Panel, who contributes to the consolidation of Lafarge's strategic pathway towards sustainability, is a very meaningful experience. Witnessing Lafarge's success in implementing the targets on reducing emissions and enhancing safety in the process of production, while enhancing the well-being of the local communities they work with, is solid proof that even the largest of organizations is able to transform and adapt to the environmental and social challenges sustainability poses.

Looking at the future, I wish cement and concrete to be progressively addressed as essential ingredients of sustainable construction, integrated in solutions which are adapted to local climate and culture, bringing benefits such as health, comfort and reduced resource demand, to people in the markets Lafarge is active in.

Lafarge's strong commitment to achieve important environmental goals (in spite of the current market conditions) and the very positive and successful experiences at the level of local communities, are positive and encouraging messages I hope to see communicated internally and externally to the Group.



### Complex relationships in construction

Source: WBCSD, Energy Efficiency in Building Facts and Trends, 2007

in 2008. However, in the very nature of the subject much of the progress made comes through collaboration with others. We have for instance been working on a sustainable urban planning project with Arup. The project shows that the order of factors that needs to be considered to realise sound sustainable construction projects is:

- 1 Site selection (preferably brownfield site)
- 2 Good connection links/nodes to public or low carbon transport
- 3 Close proximity or access to natural/artificial water sources
- 4 Close proximity/access to renewable energy sources
- 5 Building design that maximizes passive measures such as natural light, natural ventilation, thermal mass, and minimizes energy demand etc.
- 6 Construction systems
- 7 Source local materials

An integrated approach to urban planning is the starting point for minimizing the environmental of human settlements. This is not easy since many dimensions need to be taken into account simultaneously and they influence each other: buildings, transport, land use and land take, energy, health, viability, inclusion, air quality and employment.

Sound sustainable construction planning is about making the right decisions at each of the steps 1 to 7 in the given order.

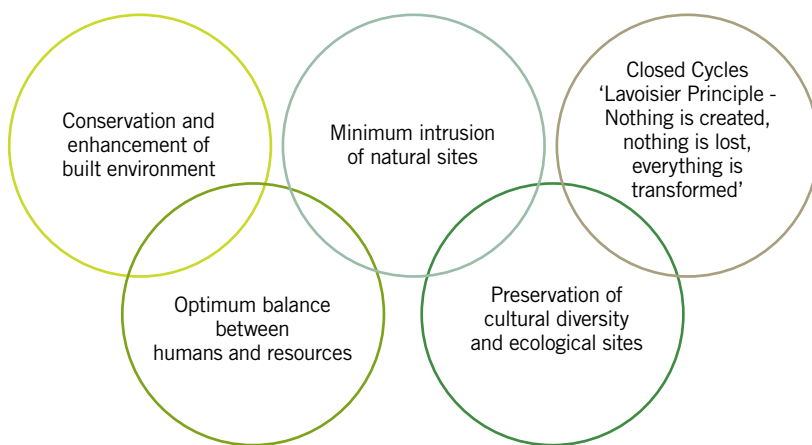
### Working with others on sustainable construction and climate change

Lafarge is working in a large number of initiatives together with national/international organisations and NGOs to progress on sustainable construction. Lafarge co-chairs, together with United Technology Corp. and the WBCSD, the initiative "Energy Efficiency in Buildings" (EEB). This project brings together all

### Lafarge's reach in the value chain

Lafarge role:	Producer	Contributor	Influencer
	Products	Building systems	Regulations
Impact on sustainability	Medium*	High	Low ↗
Lafarge capabilities	High	Low ↗	High

\* impact on sustainability of all building products is lower than that of building systems and quality of erection



## High level criteria for building sustainable cities

Source: Arup

the actors in the value chain: investors, regulators, architects & engineers, contractors, material & equipment suppliers, users, and maintenance & service industry. The aim is to produce a roadmap to reach out to the vision of “a world where buildings consume zero net energy”, i.e. buildings will need to produce as much energy as they consume. It has produced the Facts and Trends report, which establishes a baseline. EEB promoted the study through forums and conference presentations. EEB has created a tool for evaluating the feasibility of achieving emissions goals. The tool can:

- Capture policy packages;
- Model adoption preferences of building systems;
- Evaluate cost to owners and government;
- Estimate total energy use and CO<sub>2</sub> emissions;
- Quantify business opportunity.

It can yield analysis by submarkets and country e.g. single family homes, multi-family homes, offices, etc. This information is very valuable for national and local governments as they make policy choices with regard to buildings and energy efficiency. Within the WBCSD, Lafarge is founder and core member of the Cement Sustainability Initiative (CSI). CSI members are committed to protecting the climate, reducing the consumption of fossil fuels and raw materials and giving a lead through good practice. Bruno Lafont is the current co-chair. We promote, with the CSI, a cement sectoral approach as a way to move toward an international agreement on CO<sub>2</sub> emission reductions:

- combining cap & trade in developed countries and intensity targets (CO<sub>2</sub> per tonne of product) in developing countries;

- set within the UN Framework Convention on Climate Change;
- including major producing economies (G8+5);
- compatible with existing and future mechanisms;
- using verified emissions data to track compliance;
- being mandatory with government involvement required to enforce agreed sectoral targets and / or actions.

This subject made a significant contribution to the debates in Poznan in December 2008. It will make a significant contribution to those in Copenhagen in 2009. Our contribution to the debate on the EU ETS is covered in our Public Positions section. CSI published a paper on concrete recycling in October 2008 and approved the first step in the action plan in November 2008. Lafarge is a founding member of the United Nations Environment Program (UNEP) Sustainable Building and Construction Initiative, SBICI ([www.unepsbci.org](http://www.unepsbci.org)), which aims to provide stakeholders with a common platform to promote the adoption of sustainable construction practices and to promote benchmarks for sustainable building. Lafarge is a co-founder of the “*Fondation Bâtiment Energie*”, a French fund that finances public R&D projects. Its aim is to achieve a reduction of energy consumption – and their associated greenhouse gas emissions – in existing and new buildings by a factor of four. The foundation, with an €8million budget, is funded on a 50:50 basis by its founders and by the French state. It works on a competitive basis choosing the best proposals from an annual bidding round.



## PANEL

### CORNIS VAN DER LUGT UNEP

I am impressed with the progress made by Lafarge on GHG emissions reductions. Remaining challenges include the need to continue progress and set targets beyond 2010, greater use of alternative fuels and ways to reduce clinker content. R&D investment in this field remains critical. I look forward to a leadership role by Lafarge in promoting awareness of environmentally sound technologies and green products in support of sustainable building and construction, and promoting internationally recognized standards as they grow their presence in emerging markets. Their involvement in collective work in this field under the UNEP Sustainable Building and Construction Initiative is important. I note also the new interest in water footprinting. Resource intensive industries increasingly need to look at the risks that climate change poses to water availability and possible disruption of supplies globally. My appeal is to look not only at volumes of water used, but also their life cycle impacts. Finally, I welcome the efforts made in extending environmental audits to all sites. I suggest complementing this with greater take-up of full ISO14001 certification.



Entrance to Hima cement plant, Uganda.

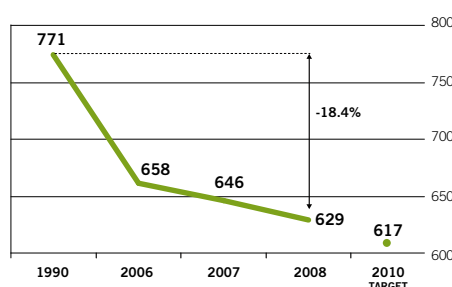
## Our Sustainability Ambitions **on target!**

We are acting where our scope for control is greatest within our production processes (so-called scope 1 emissions). After establishing our WWF partnership we set our current targets for CO<sub>2</sub> reduction in 2001. By 2010 as compared to 1990 we aim to:

- cut our worldwide net CO<sub>2</sub> emissions per tonne of cement by 20%;
- cut our absolute gross emissions in the Cement business in industrialized countries by 10%.

These targets are within the framework of the WBCSD Cement Sustainability Initiative of which we are a founder member. We met our target of a 10% cut in absolute gross emissions in industrialized countries in 2008, a full two years ahead of target. We are on track to reach the 20% cut in our worldwide net emissions per tonne of cement a year ahead of schedule. We are transparent about our performance. Our CO<sub>2</sub> emissions are audited

**“-20% worldwide” objective:**  
**KgCO<sub>2</sub> per tonne of cement**



by Ernst & Young and the result is sent to WWF. We participate in the Carbon Disclosure Project and have contributed to the surveys every year from the inception of the project. In 2008 we were ranked as world leaders being the only construction and building products company in the Carbon Disclosure Leadership Index ([www.cdproject.net/carbon-disclosure-leadership-index.asp](http://www.cdproject.net/carbon-disclosure-leadership-index.asp)).

### The actions that have delivered the results

We are improving our CO<sub>2</sub> emission performance, notably by less carbon intensive combustion. This comes from introducing new plant with best available technology and upgrading old cement plants. We give the details of how this has worked in China on page 42. Globally, on our current scope of activity, our performance improvements since 1990 enable us to avoid more than 23 million tonnes CO<sub>2</sub> on a yearly basis. This is part of our broader commitment to the concept of industrial ecology. Industrial ecology is a sustainable production philosophy. Taking nature as a model, it minimises losses of materials in consumption and production processes mainly thanks to waste recovery.

For instance we use alternative fuels for combustion so reducing our CO<sub>2</sub> emissions. This is done by substituting high carbon content fuels such as coal with renewable, biomass energy sources made from organic materials such as palm kernel shells, rice husks or eucalyptus biomass. The waste

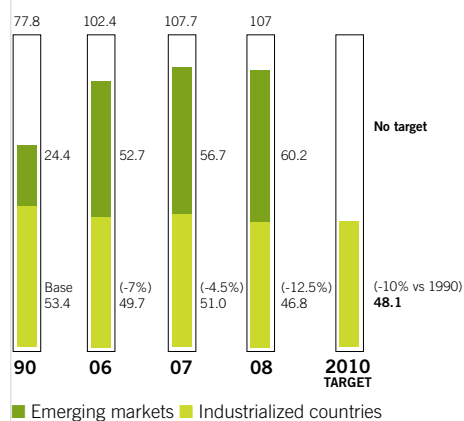
In Uganda, coffee husks are used as alternative fuel.



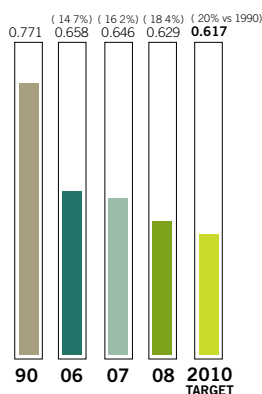
## Hima Uganda: using coffee husks to reduce CO<sub>2</sub> emissions

In Uganda, the Hima cement plant has reduced fossil fuel consumption by around 30% by using coffee bean husks as a source of alternative fuel. Coffee accounts for 50% of the country's exports. After harvesting and drying, the coffee grains are separated from their husks, which were formerly treated as waste. Now the husks are transported to the cement plant, where they fuel the furnaces thanks to a system developed especially for this purpose. A new local activity has been created, along with around a hundred jobs.

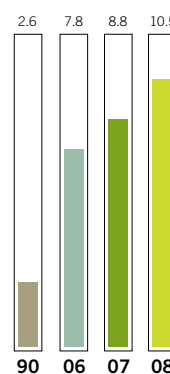
### Group's cement plants gross CO<sub>2</sub> emissions\* (millions of tonnes)



### Specific net CO<sub>2</sub> emissions\* (tonnes of CO<sub>2</sub>/tonne of cementitious product)



### Energy from renewable & alternate sources\* (Cement only) (%)



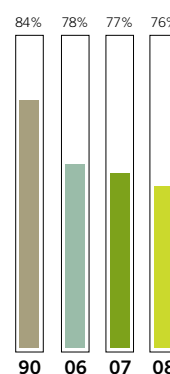
### Fuel mix evolution in the Cement Business\*

	1990	2006	2007	2008
Coal	56.8%	44.2%	44.8%	44.8%
Coke	7.4%	24.9%	21.7%	19.1%
Oil	13.3%	5.2%	5.8%	7.4%
HVF**	2.1%	0.7%	1.5%	0.7%
Gas	17.9%	17.2%	17.4%	17.5%
Biomass	0.7%	1.9%	1.9%	2.3%
Waste	1.9%	5.9%	6.9%	8.2%

\*\*HVF: High Viscosity Fluids

\* 1990, 2006 and 2007 figures based on the 2008 perimeter (see Methodology page 62)

### Clinker ratio\* (%)





## Port-la-Nouvelle, France: twenty years of commitment to alternative fuel use

Since 1988, the plant has used alternative fuels to reduce its consumption of fossil fuels. With the aim of continued improvement, more and more local residues are being used in the plant's cement kiln. In 2008, the plant substituted 50% of its traditional fuels, enabling it to save almost 72,000 tonnes of CO<sub>2</sub>.

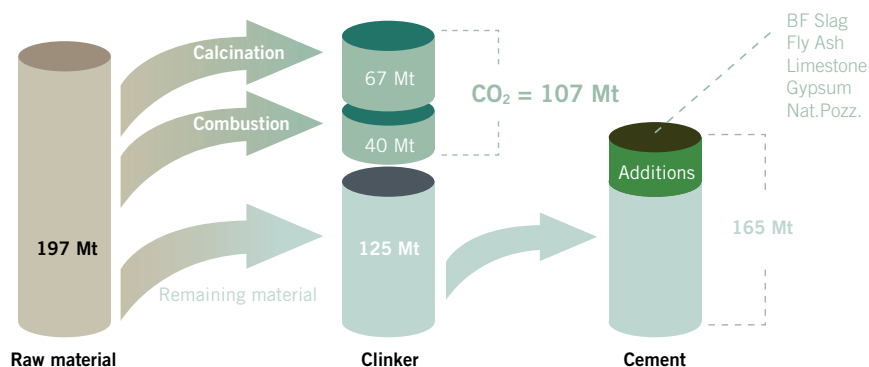
Waste such as meat and bone meal, tires and substitute liquid fuel (SLF) have been used in the plant's kiln. In order to store the waste and use it as an alternative fuel, significant reorganization has had to be undertaken at the plant. In 2001, an animal and bone meal processing unit was set up, and in July 2007, €2.5 million was spent on introducing a processing unit for shredded solid waste such as tires.

## How CO<sub>2</sub> is emitted in the cement making process

Our Cement activity accounts for 98% of our CO<sub>2</sub> emissions. The cement making process necessarily entails the release of carbon dioxide. In order to make cement, limestone is combusted to produce clinker. The simple formula is limestone (CaCO<sub>3</sub>) plus heat combustion results in clinker (CaO) and carbon dioxide (CO<sub>2</sub>). Decarbonated additives are then mixed into the clinker to make cement. Carbon dioxide comes 60% from embedded carbon dioxide in the limestone, and 40% from the fossil fuels used in the combustion process.

### Lafarge CO<sub>2</sub> Emissions in 2008

(Only non biomass waste fuels taken into account)



products that are used instead of fossil fuels for firing burn at a temperature of 1,500°C. All the organic compounds are destroyed, like those used in the composition of tires for example, without having a negative impact on the environment. The combined effect of Lafarge's actions to use alternative raw materials and alternative fuel led to our recovering more than 7.3 million tonnes of biomass waste and by-products in 2008. An example from our cement plant in Hima, Uganda is shown page 33, Port-la-Nouvelle, France on this page.

Use of more decarbonated additives such as fly ash, a waste by-product of electricity generation, and blast furnace slag, a waste by-product of steel manufacturing, in the cement is a way to offer our customers a larger range of products satisfying different usage values; it also reduces the amount of clinker needed and hence the energy intensity of the product. In Brazil we have achieved a 24% CO<sub>2</sub> reduction per tonne of cement in this way between 1990 and 2008, which corresponds to 600,000 tonnes CO<sub>2</sub> avoided on a yearly basis. Our ability to implement this further and to spread to other countries depends upon the product standards laid down for concrete and cement. We are making representations to governments on the benefits



Employees at the Sapphire Resource Recovery Birmingham depot, United Kingdom.

## What is meant by Scope 1, Scope 2, Scope 3?

The WRI-WBCSD Greenhouse Gas Protocol (GHG Protocol) is the most widely used international accounting tool for government and business leaders to understand, quantify, and manage greenhouse gas emissions. It defines the three different scopes. Put simply, Scope 1 encompasses a company's direct GHG emissions, whether from on-site energy production or other industrial activities. Scope 2 accounts for energy that is purchased from off-site (primarily electricity, but can also include energy like steam). Scope 3 is much broader and can include anything from employee travel, to "upstream" emissions embedded in products purchased or processed by the firm, to "downstream" emissions associated with transporting and disposing of products sold by the firm.

of decarbonated additives. We have developed our Clean Development Mechanisms in line with the framework laid down by the Kyoto Protocol (see below).

### Our indirect emissions: Scope 2 and 3

The direct emissions described on the previous page are known as Scope 1 emissions. Indirect emissions are related to the consumption of electricity from the grid (Scope 2 emissions) and other emissions (Scope 3). The Scope 3 emissions are typically those from employee business travel, external distribution and logistics, use and disposal of products and services and from suppliers. Based on our internal data from all our business divisions and on the WBCSD/WRI GHG protocol, we calculated that:

- Scope 2 emissions represent 9.1 million tonnes CO<sub>2</sub> equivalent;
- as part of the Scope 3, products transport from our sites (delivered and picked-up) represent 2.3 million tonnes CO<sub>2</sub>;
- a very first analysis of our CO<sub>2</sub> emissions from employees' business travels gives an amount of 0,1 million tonne.

Several programs have been launched at business unit, Business and Corporate level

in order to identify and roll out the levers that can enable us to reduce our indirect emissions. These include renewable energies (wind and solar) and waste heat recovery for Scope 2. Possibilities for Scope 3 reductions include biofuels, logistics optimisation, transport mode switch.

### Lafarge and Clean Development Mechanisms

The Clean Development Mechanism (CDM) is an arrangement of the UNFCCC (United Nations Framework Convention on Climate Change) under the Kyoto Protocol. It allows industrialized countries with a greenhouse gas reduction commitment to invest in projects that reduce emissions in developing countries. This is as an alternative to more expensive emission reductions in their own countries. Three CDMs have been registered so far by Lafarge business units:

- a wind farm project in Morocco;
- a fossil fuel substitution by biomass project in Malaysia; and
- a clinker substitution project in India.

These three projects generate together every year a reduction of 160,000 tonnes of CO<sub>2</sub> – the equivalent of planting ten million trees and

a total of 450,000 CERs have been generated until now by these three CDMs. Despite the increasing difficulties, low acceptance rate and consequently longer lead-times to register these projects, Lafarge is committed to leverage wherever it makes sense this strong incentive mechanism in order to reduce CO<sub>2</sub> emission from our activities in developing countries. Projects currently under development or investigation include ones in Africa, Asia, South America and Eastern Europe. We are also working within the CSI on a new CDM methodology with the help of Ecofys ([www.ecofys.com](http://www.ecofys.com)).

### Program for further reductions

We are strengthening actions on traditional drivers with a special focus on blended cements. This includes exploring higher use of blast furnace slag, of fly ash from coal-fired power plants and other cementitious materials. We are exploring new clinker, cement and concrete formulations.

We are developing partnerships on Carbon Capture and Storage. These are specifically looking at increasing the CO<sub>2</sub> concentration in the flue gases using oxy-combustion process to facilitate capture and storage and assessing a wide ranging number of other new avenues.



United Kingdom,  
Cauldon cement  
plant, supervising of  
the planting in the  
rehabilitated quarry.

### SUSTAINABILITY AMBITIONS

Sites audited environmentally,  
dust emissions, NO<sub>x</sub> emissions,  
SO<sub>2</sub> emissions, persistent pollutants

## Environment: delivering improved performance

Producing cement, aggregates, concrete and gypsum has an impact on the environment. We aim to mitigate our environmental footprint. In key areas we have set ourselves targets within our Sustainability Ambitions 2012

### Managing our impacts, delivering best practice, reducing risk

Sound environmental management and performance must be built on fact. Our system of environmental audit underpins all our environmental efforts.

Lafarge has an environmental audit system with independent input that is applied to major sites, in cement and in gypsum plants. The different businesses have audit criteria that reflect the nature of the processes involved. In the case of cement plants there are ten criteria against which performance is rated on a 1-5 scale. Gypsum plants are also rated against ten aspects. Except where a plant is being audited for the first time, how successful the plant has been at implementing previous audit recommendations is fundamental to the audit. Environmental audit is not a one-off event but a consistent and constant process to raise standards. It improves our environmental performance across the whole Group.

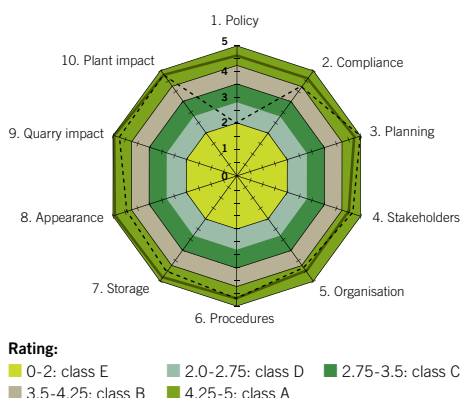
Our Sustainability Ambition here is to have all of our sites audited within the last four years. This is a significant challenge since we have 2,200 sites worldwide and have grown by acquiring mainly existing plant. 2008 saw some significant progress. For instance, in the Cement business line the number of sites audited within the

last four years rose from 88% at the beginning of the year to 93% at the end of the year. The percentage of cement sales covered by an EMS (Environment Management System) increased from 66% to 76% over the same period, with the percentage covered by an ISO14001 system growing from 34% to 42%. This was achieved despite the sale of six existing plants and the consolidation of the plants of Orascom Cement. Lafarge has increased its environmental and safety investment.

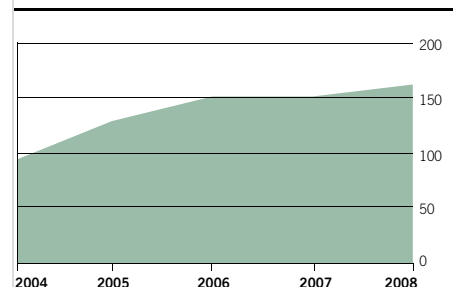
### Curtailing NO<sub>x</sub> and SO<sub>2</sub> emissions

Nitrogen oxides (NO and NO<sub>2</sub> commonly known as NO<sub>x</sub>) and sulphur dioxide (SO<sub>2</sub> sometimes also referred to as SO<sub>x</sub>) are generated by

### Plotting the output of an audit in Cilegon gypsum plant, Indonesia



### Environmental and safety investments committed (million euros)





Left: Cairo quarry, Egypt.  
Bottom: Safety day  
at Dunbar plant, United  
Kingdom, June 2008.



the combustion process at high temperature. The NO<sub>x</sub> reduction program requires a consistent effort in all our plants as NO<sub>x</sub> is produced by the combustion process. The investments required are significant, for instance just within the EU we invested in NO<sub>x</sub> abatement at 32 facilities between 2005 and 2008.

In our Sustainability Ambitions 2012 we are committed to reducing our NO<sub>x</sub> emissions per tonne of clinker by 20% over the period 2005 to 2012. As can be seen from the line graph considerable progress has been made since 2005. By the end of 2008 we were already close to achieving our 2012 target ambition. Overall we emitted 15,360 tonnes less NO<sub>x</sub> in 2008 than 2007 despite higher volumes of production.

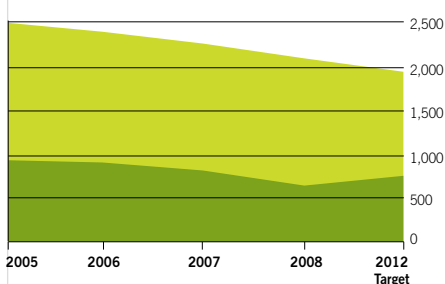
SO<sub>2</sub> (sulphur) forms during the combustion process. Sulphur is prevalent in raw materials, primarily those from quarries. The level of sulphur in the raw materials varies considerably between sites. Consequently the level of SO<sub>2</sub> emitted by our plants varies considerably too, as do the investments that are required. Through our Sustainability Ambitions, we committed to reducing our SO<sub>2</sub> emissions per tonne of clinker by 20% over the period 2005 to 2012. In 2008 we exceeded this target four years ahead of schedule, because of closing or

disposal of kilns and significant capital investments. Reduction requires high capital investment and increases operating expenses. An example can be found at our plant in Dunbar, Scotland. Here a €30 million investment went operational in November 2007. Emissions have been cut by 70%. For more details see <http://sustainabilityreport.lafarge.com>.

In 2008, we emitted 20,640 less tonnes of SO<sub>2</sub> than in 2007 despite higher volumes of production. Volatile organic compounds (VOC) are now measured and reported according to WBCSD-CSI guidelines (55.6µg/T clinker measured on 57 kilns).

### NO<sub>x</sub>, SO<sub>2</sub> Emissions

(grammes/tonne clinker)



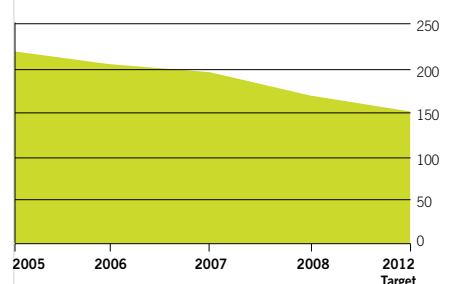
■ NO<sub>x</sub> total emissions 2008: 264,006 tonnes  
■ SO<sub>2</sub> total emissions 2008: 79,306 tonnes emitted

### Reducing Stack Dust

Making cement may generate dust. If not properly controlled, this can be a significant environmental nuisance for our neighbors and our employees. Where we acquire existing plant, we frequently find that dust is a particular problem and that we need to act to bring the plant up to our standards. Newly acquired plant therefore often raises our average dust emission levels. Our aim is to improve Lafarge's performance on dust. Already dust is subject to stringent regulations, but we aim to go beyond these regulatory levels. Our Sustainability Ambition commits us to cut

### Stack Dust Emissions

(grammes/tonne clinker)



■ Total emissions 2008: 21,188 tonnes



Caudon cement plant, United Kingdom, kiln

emissions in our cement plants by 30% over the period 2005-2012. 58% of our kilns emit less than 50mg/Nm<sup>3</sup>.

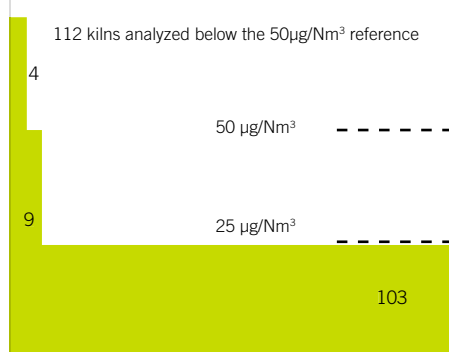
We are already nearing our 2012 target. We achieved a reduction of 2,990 tonnes in 2008 over 2007. Progress in plants that had been in long-term Lafarge ownership was even better. Our Emerging Economies section illustrates progress in NO<sub>x</sub>, SO<sub>2</sub> and dust by using the example of China.

## Understanding and controlling persistent pollutants

Traces of persistent pollutants such as dioxins/furans and mercury may be found in the

### Kilns analyzed for mercury emissions

(µg/Nm<sup>3</sup>)



emissions of cement plants. These substances are accumulative in living bodies and are injurious to health. We have committed through Sustainability Ambitions 2012 to analyze by 2010 all our kilns in operation in order to detect the potential presence of persistent pollutants. At the end of 2008, we had data from 116 of our 217 kilns worldwide. This represents 53.5% of kiln production. Contracts have been signed with recognized sub-contractors to do the analysis in places where local expertise is not available. All kilns will be measured at least once in this process. To illustrate the situation (see below), we display the number of kilns where average

mercury measurements are above 50 µg/Nm<sup>3</sup> and 25 µg/Nm<sup>3</sup> (50 µg/Nm<sup>3</sup> is a value corresponding to the actual European regulatory limit for co-incineration of waste as a reference).

We plan to analyse 56 new kilns in 2009. We have a global figure for all kilns in operation extrapolated on the basis of the measurements that we have performed to date.

Our second commitment on persistent pollutants is to implement Best Manufacturing Practices to reduce emissions of our top emitters by 2010 and to integrate into standard management practices, the lessons that we have learnt.

### Persistent pollutants

	Analysed kilns (number)		Quantity (t/year)		Specific µg/t cementitious material		Specific µg/t clinker	
	2007	2008	2007	2008	2007	2008	2007	2008
Dioxins/ Furans	86	103	-	-	0.047	0.071	0.061	0.094
Mercury	104	116	3.95	4.13	27.1	25.2	35.5	33.2

Measurements collected and reported according to the WBCSD-CSI guidelines

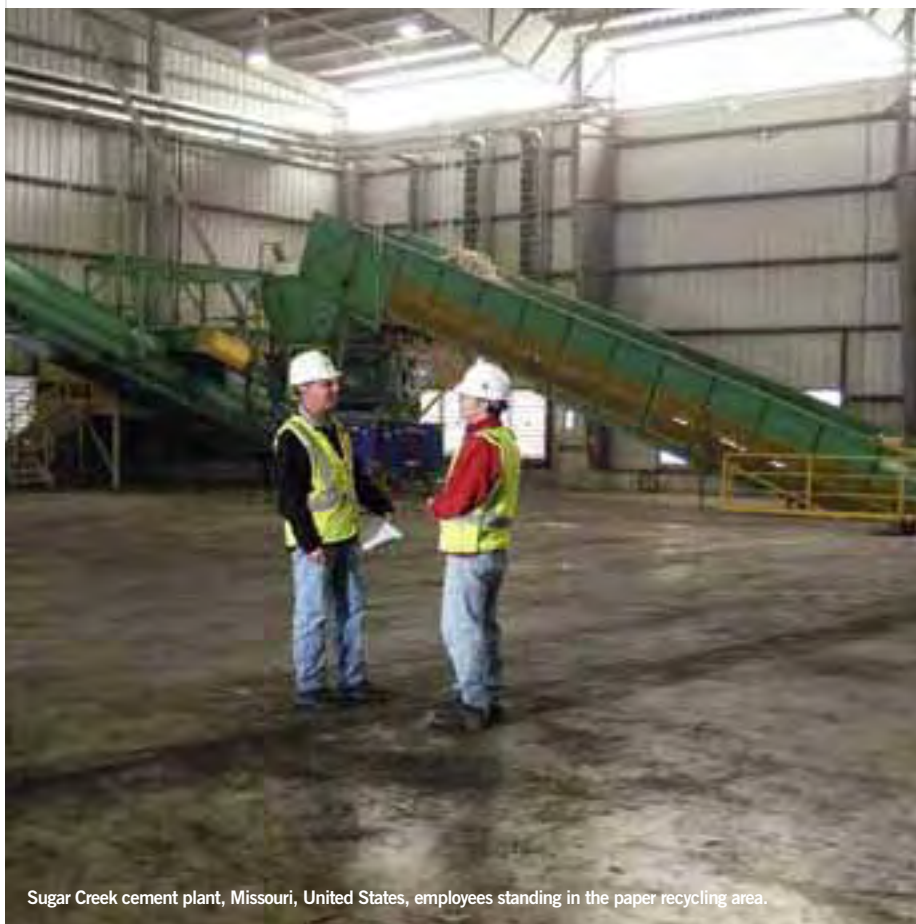
European limit for co-incineration of waste: 50 µg/Nm<sup>3</sup> is given to provide a point of reference



### PANEL

**FRANK ROSE**  
Independent, formerly Group VP  
Sustainability ICI plc

Since joining the Panel I have valued the meaningful discussions and the receptive manner in which Lafarge listens to and responds to the Panel. The commitment on Persistent Pollutants to conduct baseline assessment of all kilns is progressing to plan and the data shows that most of the kilns operate within relevant standards. The next step should be to clarify the intention for level of control and how priorities for improvement will be decided and implemented including a routine monitoring programme. Progress on Safety performance is limited with total fatalities significantly higher. Employee fatalities have reduced, but still there were 5, and contractor fatalities have more than doubled from 2007. A big part of the solution is in the Lafarge report (see page 49) in that where Lafarge has exerted strong influence on contractors their performance improves dramatically. The case study of the Xinpu plant confirms that best practice examples are within Lafarge, and should be spread to all parts of the Group. The development of a comprehensive Occupational Health system is welcome and should include measures of prevention and protection as well as output measures of work related illness.



Sugar Creek cement plant, Missouri, United States, employees standing in the paper recycling area.

At Matraville plasterboard plant, in Australia, 400,000 liters of water are collected from the roofs and thus saved every year.

### Water

We have been acting on the issue of water for a number of years, even though it is a less material environmental issue for us than those we have set Sustainability Ambitions for. Our industry does not consume very much water. We have been publishing our water consumption by business line since 2005. We have been acting to reduce consumption and increase recycling but, as we have also improved the accuracy of metering, the reported figures do not reflect the actual progress made.

As the profile of the issue of water is rising so we are increasing our efforts. We joined the Water Footprint Network, officially launched in October 2008 by seven global organisations including World Business Council for Sustainable Development (WBCSD), WWF and UNESCO-IHE Institute for Water Education.

The water footprint approach requires us to understand how the concept applies to each of our manufacturing processes and to collect data. Therefore we have decided, in 2009, to:

- Collect data on 2008 figures on the basis

of Global Reporting Initiative (GRI) guidelines;

- Identify precisely all water flows in several pilot plants and, for each of them, to define measurements required by the water footprint concept;

- Develop, for each flow, sets of best practices to improve our water footprint.

From 2010 we will implement the best practices at sites located in areas where the total renewable water resource is scarce and/or where access to improved water supply is low. The best practices will then be progressively implemented at all plants.

### Waste

Making cement creates very little waste. The same is true of our gypsum business. Nonetheless we monitor the amount of waste we create. In 2008 waste disposed of as a percentage of total production was 0.8% (1.3 million tonnes) for cement (primarily dust and used refractory bricks) and 1.3% (130,000 tonnes) for gypsum.

*Left: Work at height on raw mill, Chinefarge plant, Beijing, China.  
Right: Dujiangyan following May 12 2008 earthquake in Sichuan Province, China.*



## Emerging economies: implementing our Sustainability Ambitions in China

Emerging economies are increasingly important both within the global economy and to Lafarge. This year we approach this issue by highlighting what we do in China.

The main growth in demand for cement comes from emerging economies. Lafarge has set out to ensure that it has a balanced portfolio with full representation from the emerging markets. Our Sustainability Ambitions 2012 are as important in emerging markets as they are in developed ones. As everywhere throughout the world, we face the challenge of living out our values consistently but with sensitivity to local culture and circumstances. In our view too often companies fail to recognise that the flow of benefits from engagement with emerging economies is not all one way. While the economies benefit from our direct investment and state of the art technology, so the company also benefits from new partnerships, insights and new management talent. This year we have decided to illustrate this story by looking at what this means for us in China.

### The fast evolving Chinese context

Over the last ten years China's GDP has grown by over 200%. China now consumes half of the world's cement. China is the world's highest emitter of CO<sub>2</sub> in absolute terms. However, in per inhabitant terms levels remain well below those of the United States, Europe or Japan. The Chinese government has put in place a number of focused can-do policies to reconcile economic growth with environmental

protection. The five year plan aims to cut energy consumption by 4% a year. The State Environmental Protection Administration has a goal of producing 15 % of energy from renewables by 2015 and 30% by 2030.

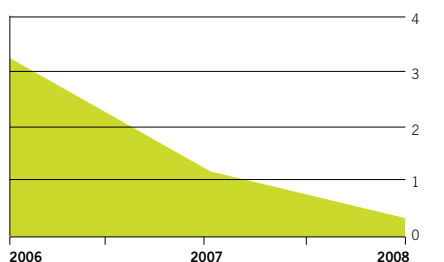
Ambition is not confined to the national level. The Mayor of Chongqing, a city with over 30 million inhabitants, has appointed Bruno Lafont to be a member of his advisory group. In 2008 the city set a five point plan to double the economic weight of the city in five years while cutting energy consumption and emissions.

### Our growing business in China

Our operations in China manufacture locally to serve the local Chinese markets.

In Cement our business is carried on through Lafarge Shui On. Founded in November 2005 it is a joint venture with Hong Kong based Shui On Construction & Materials. It is a leader in cement in south west China. Lafarge Shui On has been built up and expanded to serve the domestic market. Between 2005 and 2008, to date Lafarge Shui On has closed 38 old kiln lines and started eight newly built kiln lines. The eight new lines have a capacity of cement production of 8.5 million tonnes. This substitutes for 5.5 million tonnes of cement production capacity from the 38 lines and an expansion in capacity of 3 million tonnes. This investment and our operational practices

**Lafarge Shui On Lost time injury frequency rates**



Incidents with lost time of more than one day per million hours of work



## Earthquake

On 12 May 2008 Sichuan province, where Lafarge Shui On has three plants and more than 1,800 employees, suffered an earthquake that registered 7.8 on the Richter scale. Almost 70,000 were killed and 4.8 million were made homeless. Two people working for the plants and 26 family members died in the earthquake. Two of the three plants were close to the epicentre and so were heavily affected.

The CEO of Lafarge Shui On, Cyrille Ragoucy, established a task force on the day of the disaster to help resolve employees' personal situations. At the same time work began to recover production at the affected plants. On 15 May 2008 Bruno Lafont, Chairman and CEO of Lafarge, and Cyrille Ragoucy visited Dujiangyan, one of the affected plants. Mr Ragoucy also visited Jiangyou, the other affected plant, on the same day.

Also on 15 May 2008 Lafarge Shui On donated 15 million RMB to relief operations. This was added to by a further 1.1 million RMB from employees worldwide, with donations matched by the company, and business partners.

In the immediate aftermath of the quake Lafarge Shui On supported over 4,000 people made homeless with food, water and temporary shelter. More than 320 temporary Lafarge homes were provided at Dujiangyan and the dormitory at Jiangyou was rebuilt.

Part of Jiangyou became operational again in July 2008, followed by Dujiangyan in October.

Unfortunately in a series of aftershocks that happened during early August, four contractors lost their lives while working on a roof in the Jiangyou plant on 13 August. The Jiangyou plant was closed down again for several months to recheck structurally all buildings.

The relief efforts were informed by the lessons learned from the tsunami in Indonesia and the Turkish earthquake experience.

have had positive effects on CO<sub>2</sub> and other emissions as can clearly be seen from the accompanying graphs. Lafarge Shui On is the only non-Chinese company to be invited to provide one of the Vice-Chairs of the Chinese Cement Association. Our gypsum business is carried out through a 50:50 joint venture with Boral, Lafarge Gypsum China, which is based in Shanghai. We set up the business in 1996. It is a leading high-end player in plasterboard systems with plants in Shanghai, Chongqing and Chengdu. With four concrete plants in China, the Group has recently begun to develop its Aggregates & Concrete businesses in the country.

### Strong commitment to sustainability

Like all our businesses Lafarge Shui On is committed to the Sustainability Ambitions 2012. It has five local priorities:

- Safety
- Employees
- Energy saving & environmental protection
- Customers
- Relations with our communities.

### Keeping the pace on safety

Significant progress has been made based on the framework of the global safety road map. This has been delivered through application of

global policy and guidelines, through training and, where necessary, capital investment.

Xinpu Plant has had no time losing injuries, among employees and contractors, for more than 18 months. This has been achieved through systematic training. Up to end of December 2008 employees had received over 157,316 hours of training with 31,110 hours for contractors. Management has shown total commitment through site observation, by leading the safety training and recognising success. The safety road map is strictly implemented with a regime of inspection and audit and a comprehensive incident management system.

Lafarge Gypsum China won the Best Safety Improvement Award for 2007 in the worldwide Gypsum Division.

### Benefiting from local skilled employees

Lafarge Shui On has a truly Chinese workforce. It has only 44 expatriates in a staff of more than 12,000. 90% of the business units are managed by Chinese local staff. Our policy is to recruit, induct, train, challenge and motivate skilled local staff.

New recruits receive localised training induction. Young graduates are put on a professional engineer development plan. For newly appointed plant managers there is a cement



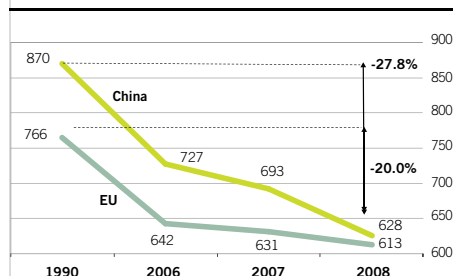
Cement - China, the "Bird's Nest" Olympic National Stadium in Beijing.



China, schoolchildren visiting a rehabilitated quarry in Guizhou.

master program. Lafarge Shui On has three School Plants, both to transfer knowledge and technology and for people development. Every employee is entitled to training for further development. 164,606 hours of training were delivered in 2008. The cost of training in 2008 was 7.8 million RMB\*.

## Views on specific performance by Lafarge (CO<sub>2</sub>/t of cement)



## Old kilns vs New kilns

As a result of the closing of 38 old kilns and the start-up of 8 new state of the art kilns between 2005 to 2008 we cut our total emissions in China of

Dust by 76%  
NO<sub>x</sub> by 39%  
SO<sub>2</sub> by 60%

## Energy saving and environmental protection

Lafarge Shui On has seen a sharp decline in emissions, mainly as a result of plant modernisation and consequent closure of existing, old plant. The overall investment to bring about these changes was some 3.6 billion RMB. An example is the 39% reduction in specific heat consumption (amount of energy per tonne of clinker) between 1990 and 2006. This has led to a 27.8% reduction of specific net CO<sub>2</sub> emissions. A significant contribution to this was made by the waste heat recovery systems put in at the Nanshan, Gongxian and Kaiyuan plants. The investment costs 60-90 million RMB per plant. Each investment reduces emissions by 70-90,000 tonnes of CO<sub>2</sub> per year. Most of Lafarge Shui On's plants are adapted to the use of alternative raw materials. All can use FGD (flue gas desulphurisation) as a substitute for natural gypsum in the cement. Using FGD saved 260,000 tonnes of natural gypsum in 2007.

Lafarge Shui On is fully aligned to Lafarge global standards for quarry rehabilitation. At Dujiangyan quarry, vegetation has been restored with almost 100,000 plants being planted between 2002 and 2008 at a cost of 852,000 RMB. Some 6 million RMB has been invested in water and soil conservation there.

The rehabilitation is subject to independent third party verification. Lafarge Gypsum China is taking a lead in waste utilisation. The Chongqing factory was the first to use 100% recycled gypsum in 2001. Now all three factories use 100% recycled gypsum. New Chinese environmental regulations relating to power plants mean that power plants will generate large quantities of waste gypsum. It is estimated that 15 million tonnes per year will be generated. Unless it can be reused it will all have to go to landfill. Lafarge Gypsum China is set to be part of the solution. It is estimated that the Shanghai plant alone will be able to take 50% of the extra waste by-product generated locally.

## Satisfying our Customers' needs

Lafarge Shui On partners with customers to help them improve their safety and their contribution to environmental protection. For instance, each business unit conducts at least one safety seminar for our customers per year. Sales representatives further emphasise our care for safety by using personal protective equipment during their visits to customer work sites. In 2006, China eliminated the PO32.5 cement product standard (PO products have low cementitious replacement rates).

\* €1= 8.7RMB



*Lafarge Shui On Cement supported the earthquake-affected employees whose homes were damaged. Here a Lafarge employee delivering supplies.*



## PANEL

**KARINA LITVACK**  
F&C Asset Management

Lafarge's future lies in emerging economies, where economic growth, urban migration and infrastructure development will drive its success. This report's focus on China and the Orascom Cement acquisition underscores the company's determination to embed sustainability in this expansion. The record to date is promising: technological upgrades have delivered sharp cuts in CO<sub>2</sub> emissions/tonne in China, while recycling of waste gypsum from nearby power plants shows how Lafarge's 'industrial ecology' strategy can deliver practical benefits on a significant scale. Lafarge is also beginning to leverage its influence in two important ways: 1) by pressing its customers to make more sustainable choices, e.g. lower-clinker cement and better safety practices; and 2) by encouraging reform at the political level, e.g. through Bruno Lafont's role on the Mayor of Chongqing's advisory body. But real challenges remain: credit crisis notwithstanding, cement consumption will continue to rise much faster than the carbon savings Lafarge has achieved to date. As political responses to climate change drive carbon costs ever higher, Lafarge will need to achieve a step-change in carbon management if it is to survive this looming threat to its business model.

Lafarge supported this by working with our customers to change to the use of higher cementitious products. This helped to reduce the demand for clinker and its impact on the environment. We continue to help our custom-

### Lafarge Shui On Association Registration 2008

Participate as	Associations names
Member	China Association for the promotion of industry development
Member	China Association for Standardization (CAS)
Member	China Building Material Federation (CBMF)
Board Member	China Business Council for Sustainable Development (CBCSD)
Board Member	China Environment News
Member	European Union Chamber of Commerce in China (EUCCC)
Registered by Lafarge	WWF
Registered by Lafarge	Global Business Coalition(GBC)
Cooperation relationship	Marie Stopes International
Cooperation relationship	Fuping Development Institute
Vice Chair	Chinese Cement Association

ers to use products with higher cementitious additions. Together with value-added service and focus on their satisfaction, Lafarge Shui-On aims to build strong customer bonds and competitively differentiated value that in turn, makes our business sustainable.

We conduct annual customer satisfaction surveys to feel the pulse of our customers and to understand their needs. On product quality, we set strict limits in plants to ensure consistency. Technical visits are made to customers and quality reviews are made at least on a monthly basis. Our sustainability commitments have helped us to win iconic projects, such as the China Olympic Stadium (Bird Nest) and the unique architecture achievement of the CCTV tower in Beijing.

### Engaging with our Communities

Lafarge Shui On aims to be a good neighbor and supports local communities. Over 1 million RMB has been given in donations and sponsorship programs since 2006.

Working in collaboration with the Labor and Security Bureau of Jiangjin and the Chongqing Industrial and Commercial School, we have invested 1 million RMB on providing training for the unemployed. The total number of sponsored trainees is 500. The rate of employment post training is 86%.



Employees at the Rezina cement plant, Moldova.

## SUSTAINABILITY AMBITIONS

Female senior managers,  
HIV/AIDS and malaria

# Employees: the people who make it happen

A skilled and highly motivated workforce is a desirable thing in itself and key to Lafarge's success

### The Lafarge workforce

Lafarge had 83,438 employees at year-end 2008. The challenge is for us to apply Group-wide guidelines while respecting the inherent localness of our businesses. This year we have chosen to focus particularly on people development. In addition to this text further information on our employees and employment practices can be found in our GRI index at <http://sustainabilityreport.lafarge.com>.

### Developing people: our main employee challenge

Part of meeting our main employee challenge lies in developing our main asset: the skills and competences of our people. People development within Lafarge is a key driver for performance and change, supporting the achievement of our business challenges and strategies. We provide a global framework that allows for local delivery and is relevant to local circumstances. For any given area of people development, whether it is skills development, behavioral development or leadership competency, Lafarge promotes a variety of development practices at all levels of the organisation:

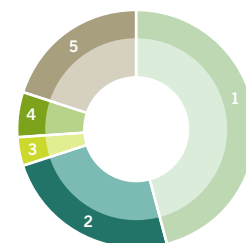
- On the job learning (in class and e-learning);
- Action learning; (special assignments or projects)
- Coaching.

- Knowledge sharing: transferring best practices and building knowledge and know-how through teamwork, transversal projects and networks.

For instance, the Gypsum business line has developed operational training with objectives of cross-country and cross-cultural transmission, the sharing of common culture and language, common knowledge and know-how, team building and team spirit. In 2008, 477 attendees received training courses during 38 training sessions which covered mostly manufacturing and technical fields such as quality control, plasterboard process, and also product and systems. Some 90 employees were specifically trained in new plant construction. The Cement business line has its own Cement Professional Development Program. This allows participants to acquire foundation level in cement manufacturing, develop a wide range of competencies in the plant and to integrate safety fully into plant operations. The program is mandatory for all engineers joining the Group. It takes place over a 12-18 month period, alternating between on the job training and formal training sessions. 1,880 engineers have been enrolled from 2000 to 2008. Some 253 completed the training in 2008, a year of particular commitment to training as there were 509 participants on the course. In addition, Lafarge created its own program for

a key role in the cement plants: "Certification of control room operator". In 2008 more than 200 operators were involved in this 18 month long program structured round both on- and off-the job training. The vast majority were from emerging economies. People development is boosted by performance reviews, Individual Development Plans and collective development initiatives.

- Performance review (Leadership Profile guidelines, 360°, other assessment tool and objectives setting are mandatory for all managers – 96% of



Breakdown of training courses  
received in 2008

1 - Technical training	46%
2 - Health and safety training	24%
3 - IT training	4%
4 - Language training	6%
5 - Management and other training	20%

Total hours training 1.85 million, 6.5% increase on 2007

Employees of Cairo cement plant, Egypt.



## Using technology to increase performance in Aggregates & Concrete

The KTP (Knowledge Technical Portal) allows individual employees to make a contribution to the Division's records of best practice and shared experiences. It includes a formal bench-marking function and the planning tool Skillbuilder.

managers and 55% of the non managerial staff had an annual performance review in 2008.

- Individual Development Plans (IDPs) are mandatory for all Group's senior managers (Lafarge Hay grades 18 and above) – approximately 70% of the Group managers had an IDP .
- Collective development initiatives on team performance/effectiveness workshops, such as knowledge management, training programs.

Lafarge University continues to make a significant contribution to people development. In 2008 it organised 51 training sessions for 1,547 participants from 27 countries, 22.2% of participants were women. Some 750 new employees attended one of 15 "Meet the Group" sessions. Following on from our training-related Sustainability Ambition achieved in 2007 we continue to measure our training. At Group level, the average number of hours of training received during 2008 increased to 44 for managers and 29 for non managers, (in 2007 it was 41 for managers and 25 for non managers).

### Diversity: Benefiting from a global presence

The Lafarge Group recognizes that diverse companies are better performers and wants diversity to be a mindset and a priority at all levels of the organization. Lafarge seeks to



Employee, Tetouan cement plant, Morocco.

benefit all its employees and to gain from the diverse skills, experience and capabilities that they have.

### Gender diversity

We have not achieved our Sustainability Ambition target of having 15.2% women in senior management by the end of 2008. Nonetheless 2008 saw further progress towards this goal.

- The percentage of women in senior management increased in 2008 from 12.2% to 12.9%. So over five years numbers have increased by 70% rather than doubling as we had hoped.
- The Group Executive Committee has launched a cultural change initiative on this topic and its commitment will be necessary to mobilize the whole Group on the new objectives. It consists of:

- Increasing the exposure of the management through an external benchmark and internal interviews to capture the perception of male employees on this topic;

### Women within the Group

%	06	07	08
Boards of directors	6.7	6.7	6.7
Senior executives	4.9	5.5	7.5
Senior managers	10.7	12.2	12.9
Managers (all categories)	18.6	19.5	19.2
Employees	16.6	17.7	16.3

### Job evolution

	2007	2008
Hirings	5,535	8,841*
Resignations	4,430	4,148*
Retirements	879	958
Redundancies and lay-offs	4,846	5,009*
Deaths	175	143
Balance	-4,795	- 1,777

\* This figure takes into account the seasonal variation of headcount in US/Canada and is including scope variation effect.



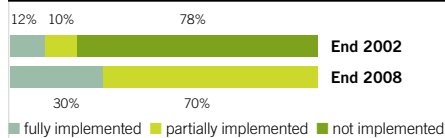
### PANEL

#### MARION HELLMANN BWI

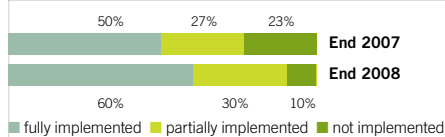
In Lafarge the already high contractor and subcontractor fatalities rate have more than doubled from 2007! Lafarge promised to act in a Corporate Social Responsibility way and will address the issues of suppliers, contractors and sub-contractors in greater depth. In many developing countries there is a widespread use of the contracting system. Workers are employed on a project basis, with no insurance against periods of unemployment or sickness, insecurity of employment and lack of social protection and their wages and conditions of work are far from decent. It would be best if Lafarge directly employed all labor whenever possible. However meeting seasonal peaks of work requires subcontractor employees. We believe that:

- Lafarge should ensure that their suppliers, contractors and sub-contractors respect obligations to all workers under labor and social security laws and pay social security and pension contributions for their workers.
- Suppliers, contractors and sub-contractors shall be required to appoint a competent person to manage health and safety and to take part in safety meetings.
- Lafarge should ensure that workers are not classified as self-employed when working under conditions of direct employment (bogus self-employment).
- All workers shall receive a written contract of employment.

#### Sub-Saharan HIV roadmap actions



#### Sub-Saharan Malaria roadmap actions



■ Increasing the involvement of women in this initiative in 2008. A group of women has been brought together to diagnose problems: this Women taskforce recommended actions in five major areas (career management; quotas, networking and mentoring; recruitment and communication; role models, training and leadership commitments; work life balance).

■ The Group Executive Committee had a working session with the taskforce, gave feedback and took commitments, such as including gender diversity in the Lafarge University programs, targeting specific countries/universities for recruitment of women, momentum to be maintained through the Taskforce, providing update to Group Executive Committee twice a year and agreed on the new objective to reach 20% of women senior and executive managers (Lafarge Hay grades 18+) by 2012.

#### International diversity

To develop people and benefit from diversity, our goal is to have one non-national in each Business Unit Executive Committee. We continue to make progress. At the end of 2008, 83% of the business units now meet this goal, 100% is the target. There are 1,255 expatriate employees. They come from 55 different "home" countries and work in 65 different "host" countries. 70% of our expatriates come from emerging countries.

#### People with disabilities

The specific agreement on people with disabilities was renewed for a further three years in 2008. It is applicable in the Group Headquarters in France. In addition to previous commitments there are, for instance, new targets on matters such as recruitment and specific training programs in foreign languages for unemployed disabled people. The Group has also strongly increased sub-contracting works and tasks to companies specialising in employing people with disabilities.

#### Employment

In 2008 16 business units had to implement a change in their organization having an impact on their headcount, these were mainly in Europe and North America. The Group has an employment policy that explicitly states that where we need to restructure we must anticipate the consequences of the restructuring through actions such as effective workforce planning, developing the skills of individuals and teams through training, maintaining employability through reassignment and possible working time adjustments. We must also act with consideration towards those communities and non-employees impacted by our restructuring. Our policy has been implemented, for instance, in markets as diverse as France, Poland, Jordan and Zambia. The Group acts on





Left: Cement plant in Egypt, bagging.  
Top: Malaysia, Hulu Langat quarry, state of Selangor, employee handling aggregates.

### Information and consultation with employees worldwide

2008	Information	Consultation
Health & safety	97%	67%
Operational Changes	77%	35%
Compensation & benefits	87%	63%
HR topics	86%	56%
Others*	48%	28%

\* Business performance, environment

external employment issues. An example of this is provided in France where Lafarge has decided to renew its investment in "Société d'investissement France Active" whose goal is to help unemployed people to find employment. For more information see [www.franceactive.org/default.asp?id=209](http://www.franceactive.org/default.asp?id=209).

### Productive action on our HIV/AIDS, malaria and occupational health commitments

Committed to caring for our employees wherever we are, we have responded to the scourge of HIV/AIDS and malaria by action in sub-Saharan Africa. However, our commitment is not limited to this area. Our Sustainability Ambitions 2012 commit us by 2010 to extend to major developing countries the best practice on combating HIV/AIDS and malaria that we are currently implementing in sub-Saharan Africa. We are well on-course to meet this goal. The efforts undertaken in sub-Saharan Africa now reach all 10 countries where Lafarge operates. The Africa Health Committee, chaired by a business unit General Manager, meets regularly to co-ordinate and guide efforts. It has been instrumental in mainstreaming this effort into the life of the business.

By 2008:

- 99% of our 8,000 employees working in Africa were included, with coverage being

extended in some cases to family members and neighboring communities;

- Health and clinic audits had been carried out in all ten countries.

A Health Guide collecting the best practices applied and developed in Africa has been drafted. CARE and Global Business Coalition on Aids have contributed. It will be completed in early 2009 and distributed in other continents as part of our move to fulfilling our ambition for 2010.

### Wellbeing

During 2008, the European Works Council decided to focus on health. It set up a working group to lead on the topic. It recruited an external firm, ISW Limits-Axis Mundi, specialists in this area, to perform a survey at three pilot sites: in France with the Lafarge Gypsum Headquarters in Avignon and the Lafarge Research Centre in Lyons, and in Germany with the Karsdorf cement plant. The results showed: generally positive feedback, low absenteeism rate and very few stress complaints compared to the external benchmark.

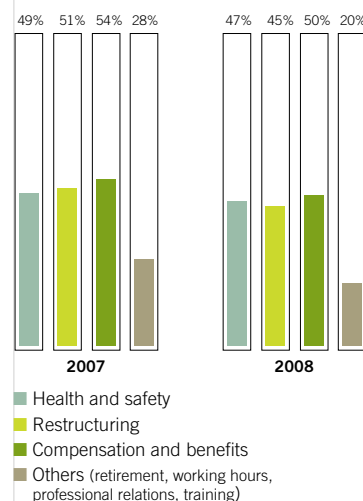
### Working with unions

We work with trade unions at a global, national and local level. Lafarge continues to work closely with the three international trade union federations that it has an agreement with.

There was one formal meeting in 2008. At group level 65% of employees are represented by elected or trade union representatives with 76% covered by collective agreements. The figure is slightly lower than in 2007 as a result of the integration of Orascom Cement which had a lower level of unionization among the workforce.

The question of sub-contractors is addressed separately on page 25.

### Percentage of employees covered by collective agreements on specific questions



## BIG ISSUES

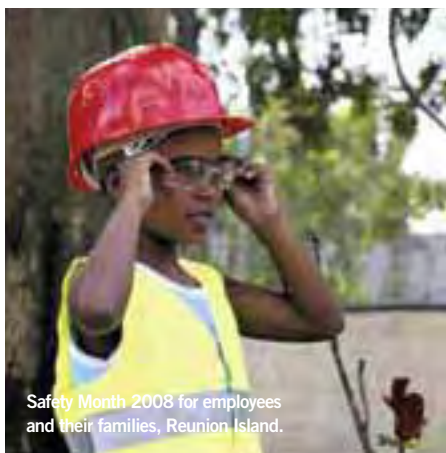


### Our first-ever, global Safety Month

When we initiated our health and safety ambition every employee signed up to the commitment to deliver our goals. Continued commitment is vital. In June 2008 we ran our first-ever Group-wide Safety Month. Special events, open days, communication campaigns and awareness-raising programs were held at some 2,200 facilities around the world. Employees and their families, customers, sub-contractors and the local communities joined in, to draw in as broad an audience as possible. The month helped to reemphasise our commitment to the "zero accidents" message.

### Example of immediate action on safety

In 2008, following two fatal accidents, the co-Presidents of the Cement Division decided to immediately halt all construction projects for new cement installations, so that extensive safety audits could be performed at each site. Most sites were stopped between two days and one week.



Safety Month 2008 for employees and their families, Reunion Island.

## Health and Safety: a commitment to world class performance

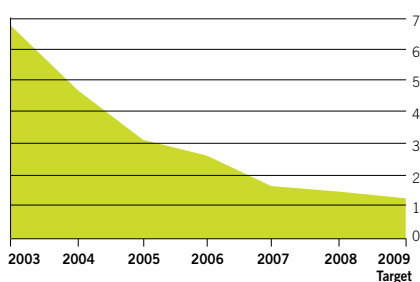
We are committed to carrying out our business in a way that is safe and healthy. Two of our Sustainability Ambitions, those to do with safety and with occupational health provision, reflect this commitment. Over the last two years we have delivered 1.2 million hours of health and safety training, 15 hours for each employee.

### SUSTAINABILITY AMBITIONS

**Safety, comprehensive Group-wide occupational health program**

#### Changes in the Lost time injury frequency rate over 6 years

(Incidents with lost time of more than one day per million hours of work)



### Our ambition to be world class

Our goal is to be world class in health and safety performance, that is to say to be a company that consistently has a lost time injury frequency rate (LTIFR) of less than 1. We lead our sector and want to be ranked among the best industrial groups. We must have a low total injury frequency rate over time and over all business units. We must have a low level of occupational health incidents and have our contractors work to the same standards as our employees. We are making progress. As recently as 2002 our LTIFR was 8.35 and by 2008 this rate had been reduced to 1.57. We are working to reduce it still further. Our Sustainability Ambition 2008 was to halve the 2005 lost time injury rate to 1.55. Good performance in 2007 incited us to set ourselves an even tougher target of 1.39 in 2008. We finally ended at a rate of 1.57. This was an improvement on the previous year but did not quite meet our original goal. We will better this performance in 2009 and future years and our target for 2009 is set at 1.35.

### Our roadmap

While all managers and employees are responsible for safety, we also have a dedicated safety function comprised of over 400 professionals. Our guide is our safety roadmap, the current iteration of which dates from 2006. Four actions have been key to our progress.

**Commitment from the top:** Having our CEO as Health and Safety sponsor for the whole Group.

**A global Health and Safety Organisation:** Common policies and rules and common standards rolled out across all business units. Each business unit has an annual safety plan. Performance against the plan is reviewed on a quarterly basis.

**A drive to improve engagement and leadership across the Group:** This has increased issue-visibility and has been accompanied by clear leadership from managers and a full program of training for all.

**A link to pay:** Part of managers' variable pay is now linked to health and safety performance. Health & safety is formally discussed monthly by our Executive Committee.

### Results in 2008

As noted, we did not quite achieve our LTIFR target for 2008. Nonetheless further progress was made over the previous year and the reduction over 2002 remains striking. We regret that we still have on the job fatalities in our operations. Our aim is to reach zero fatalities. In 2008 we had five industrial employee fatalities, three of which were due to transport related accidents. However, this is not the whole picture: we deplore a large increase in subcontractor fatalities (see next page).



Lafarge units' Safety Events Around the World, Safety Day in Mazan, France, work at height exercise.

## Transport safety in East Africa

In August 2006 Lafarge launched the award-winning Driving for Excellence program across Kenya, Tanzania and Uganda, with the active support of every transport company, supplier and customer driver working with Lafarge. Now a basic requirement for any driver carrying a Lafarge product, Defensive Driving Training & Certification and

the Drivers' Safety Promise combat the prevailing Ajali haina kinga (Accidents just happen) mind-set. Drivers must score above 70% to earn the pass for entry to our plants. A mandatory checklist excludes trucks with faults like worn tires or missing wheel nuts from the trucks.

There have been no fatal incidents involving our trucks since 2006. Lafarge and partners will maintain or initiate new safety measures such as on-board GPS, to help anticipate road conditions.



## PANEL

**ÉRIC BRASSART**  
European Works Council,  
Lafarge

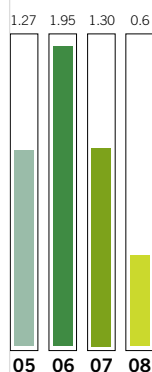
I welcome the strong focus Lafarge puts on safety at work, as well as the ambitious targets they have maintained despite the economic downturn. In addition, we appreciate the work done on stress management and its connexion to employee well being, and encourage Lafarge to pursue its efforts in this way. However, I have the feeling that safety training could be further structured at the operational level, especially in smaller units where communication is less easy. Finally, I strongly support Lafarge's current effort to disseminate its safety culture among its newly acquired companies, and wish it to be further pursued.

## Sub-contractor fatalities

In 2008, there was significant construction activity, and we profoundly regret that there were 21 sub-contractor fatalities in our plants. In transport we suffered 25 fatalities. In part this reflects the poor road safety record in many of the countries that we operate in. The adjacent side bar gives one example of where we have acted to reduce transport related injuries and fatalities. Overall progress has been most notable with the category of employees working in our sites. We are committed to further work to reduce injury rates among contractors and the relatively high levels of accidents related to transport, particularly on the roads in countries with poor safety culture and road safety records.

### Group fatality rate

(Number of fatal accidents per 10,000 employees)



## Moving forward in Occupational Health

Lafarge operates in countries where the health care provision varies considerably. We believe that a healthy workforce is an effective workforce and are not only concerned about the effect of work on the health of our people but also about the effect of their health on work. Therefore our ambition is by 2010 to establish a comprehensive Group-wide occupational health program to address these issues and ensure regular targeted medical assessments of all our employees. This

should allow Lafarge to develop and implement specific actions that will help us better manage health risks. Initially we worked on identifying the best product on offer on which to base a harmonised global occupational health system. During 2008 we created the head of Occupational Health function and we recruited a medical doctor to fill this position in February 2009. He will lead on our occupational health commitments. 2009 will see the detailed development of our occupational health road map for roll out in 2010 in line with the Sustainability Ambitions 2012.



*Top: Delivery of Extensia® concrete, Telford, Shropshire, United Kingdom. Bottom: Cement - Brazil, Lafarge client in his store, in Santa Luzia, Minas Gerais State.*

### SUSTAINABILITY AMBITIONS

#### Customer relationships

## Customers and solutions

Our business model is built upon growth in innovative, value-added products to meet customer need. Long term sustainability and environmental factors play an increasing role in our research and our new product development

#### The varied nature of our markets

In developed markets we sell our products primarily on a business-to-business rather than on a business-to-consumer basis. In emerging economies we sell much more on a business to consumer basis. In both cases most customers buy only enough to cover their current needs and consequently Lafarge rarely has a significant order backlog. Our products are bulky and costly to transport over long distances. In addition, concrete must be delivered within a few hours of production. This means that our markets are local markets.

#### What are customers' expectations of Lafarge?

While the structure of the customer base is complex and varied, our customers have some common needs. Price is important but so too are consistency, reliability, durability, technical support and solutions, and customer service: they expect us to help them develop their

own business. The demand for value added products is growing significantly. We strive to ensure that our products and services are reliable and consistent. In all business lines we are increasing the effort we spend in listening to customers. We listen in order to innovate, improve the efficiency of our interface with them and meet their needs. We aim to add value and be the preferred supplier.

#### Setting sustainability ambitions for customer relationships

It is customers who drive our industry. Too often our industry is thought of as just a commodity based industry in which the customer and the customer's preferences are not top priority issues. We believe that this view is profoundly misconceived and underestimates the contribution that we can make to economic prosperity and sustainability. That is why in 2006 we innovated by being the first global player in the industry to devote a whole



## Enabling low income households to become customers

Lafarge already has experience of helping to provide low cost housing, for instance through the public-private partnership in the Gauteng province in South Africa. Now Lafarge is considering working in Aceh, Indonesia to enable local microfinance institutions to propose loans averaging US\$1,000. This is sufficient to allow the family to extend or improve their home. The target population is among households who are at the base of the pyramid (income of less than US\$3,000 parity purchasing power per annum). Once the model is fully validated Lafarge will look to replicate it elsewhere.

section of our Sustainability Report to customers. Our strategy for growth is built around value-added products that fulfil customer need while making our own company more successful. This strategy is part of what will make and keep Lafarge sustainable.

We set Sustainability Ambition goals for each of our significant business units to conduct an annual customer satisfaction survey and to implement OTIFIC (on time, in full, invoiced correctly). The result for this year is given on page 4.

Our customer related goal was firmly innovations and solutions focused. It was to achieve €1 billion in sales of new products (products that were developed less than five years ago) by 2008. This was achieved a year ahead of time in 2007 with €1.1 billion sales. In 2008 sales of new products rose to €1.5 billion. Our new target is €3 billion by 2012. That means 10% of turnover from these new products.

## Constantly innovating to deliver solutions

The evolution of our product and service is to meet customer need. The demand for value added products is growing. New products developed through our R&D function receive ever more thorough and complex scrutiny of their environmental impact over their whole life-cycle. All new products are systematically measured against five categories of environmental indicators:

- Primary energy,
- Resources,
- Air emissions,
- Water emissions,
- Solid waste.



## Environmental assessment criteria in R&D programs

The percentage of the R&D budget dedicated to sustainable development has increased from 48% in 2007 to 53% in 2008

1 - Reduction of CO <sub>2</sub> emissions	18%
2 - Energy efficiency	13%
3 - Natural resources	10%
4 - Safety & security	6%
5 - Comfort & quality of life	6%
6 - Others	47%



Marinier Matériaux, construction materials supplier, Marseilles, France.

Our research and development considers the whole lifecycle of the products including the environmental considerations not only of production but also performance, combination with other products, maintenance and recyclability. This rigorous approach ensures that we are developing products with a better environmental footprint over their whole lifecycle. In the long-term it contributes to reducing CO<sub>2</sub> emissions.

## Innovations in cement

We have a full range of cements within the Group.

**Dust-free technology**, the starting point for **Sensium® cements** for mortar and concrete, was first perfected in Japan following three years of research and required a further two years of work by Lafarge's Research Center in Lyons, France and the technical and marketing teams at Lafarge Ciments in France. This took into account the needs expressed in a survey of more than 1,500 construction industry professionals.

**Mascrete™ Pro** provides a strong example of innovation in cement. Launched by Lafarge in Malaysia, this new high-tech cement, whose main component is pulverised fuel ash (PFA), is the fruit of long years of research within the Group. Its innovations include improved permeability and durability, thanks to the addition of PFA. This ash (waste from coal-fired power stations) reacts when mixed with ordinary cement and fills voids within the hardening concrete, contributing to enhanced strength and reduced permeability.

The use of PFA is part of Lafarge's ongoing policy of reducing consumption of non-renewable resources and recycling waste products. **Mascrete™ Pro** thus decreases consumption of energy (lower temperature rise), decreases use of resources (less water is needed) and reduces CO<sub>2</sub> emissions (by using fly ash waste as an additive). Innovation covers not just the product itself but how it is presented. In the United Kingdom tear resistant plastic packaging has given **Mastercrete Original** a verified shelf life of four months, double that of mainstream paper packed product. This reduces waste and delivers a 10% cost saving for the merchant and end user.

## Offering tailor-made value added concretes

The Group offers over 500 different concrete formulas to meet differing customer needs. However five concretes are particularly important in the drive to meet current customer needs.

**Agilia®** is the most consistent and the most advanced self-placing, self-levelling concrete. It flows into the smallest nooks and perfectly matches any shapes. Its fluid texture eliminates the need to vibrate the concrete to make it spread regularly, thus saving time and money for the builder.

**Ductal®** is an ultra high-performance, fiber reinforced concrete. When it is set it is highly ductile and can be stretched or bent without breaking. It has compressive resistance six to eight times that of traditional concrete and flexural strength ten times that of traditional



## PANEL

**JEAN-PAUL JEANRENAUD**  
WWF

Through our partnership and the Stakeholder Panel, Lafarge has made a substantial contribution to reducing its overall ecological footprint, establishing the benchmark for the entire construction material sector. Therefore, we are pleased to renew our partnership. Lafarge's improved performance in 2008 in relation to CO<sub>2</sub> emissions reduction is encouraging. However, WWF requests Lafarge to come up with an ambitious action plan and quantitative targets, notably for developing countries where construction sector is growing rapidly. WWF expects Lafarge to play a constructive role at the UN climate negotiations and to promote a global agreement with absolute emission caps for developed countries, and demonstrate ways for emerging economies to follow a low carbon pathway. WWF expects Lafarge to demonstrate similar leadership on persistent pollutants following the recent agreement at the UNEP GC to reduce global mercury supply. WWF will work with Lafarge to strengthen its persistent pollutants strategy, and help develop a robust and transparent monitoring and reporting programme. WWF is convinced that, through our new and expanded joint program of work (including water conservation and management), we will continue to provide leadership and set a positive example to business and industry worldwide.

## Positive environmental solutions in Gypsum Australia

The Green Star rating scheme, driven by the Green Building Council of Australia is changing the face of commercial building in Australia. Lafarge is responding positively. To help customers achieve a Green Star rating, Lafarge has put together a Green Star Compliance Package. Tailored to each market sector, it presents in simple terms how Lafarge products and services can attain credits

under each Green Star Rating Tool. It includes a description of our Environmental Management System (EMS), the eco-preferred content of our plasterboard products and compounds, a warranty to ensure that products last their full lifespan, a service to remove end of life materials and to divert these waste materials from landfill and instructions for disassembling plasterboard for recycling or reprocessing. Lafarge is the only Australian supplier to provide this positive value-added service for customers.

concrete. It is highly resistant to corrosion, abrasion or shocks.

**Artevia®** is a range of decorative concretes mainly for outdoor use. These concretes are easily adaptable to complex shapes. They are easy to maintain and are rapidly installed. They are highly resistant to wear and tear.

**Extensia®** enables construction of surface areas of up to 400m<sup>2</sup> without joints, compared to 25m<sup>2</sup> with conventional concrete. The advantage for the user is that it has lower maintenance costs. It has the environmental benefit of requiring a lower quantity of raw material and eliminating the need for auxiliary steel mesh or steel fibre.

### **Extensia® life cycle analysis**

Extensia was subject to a life cycle analysis conducted according to ISO14040 recommendations. As compared to the traditional concrete with either steel mesh or steel fibre environmental performance is improved. Specifically:

- Up to 20% reduction in CO<sub>2</sub> emissions;
- Up to 46% reduction in coal consumption;
- Up to 16% reduction in oil consumption;
- Up to 85% reduction in waste production.

**Chronolia®** offers the same flexibility of use as a conventional ready-mix concrete but develops high mechanical resistance soon after pouring. The time savings enable the doubling of daily formwork operations and so lead to considerable gains in productivity.

### **Practical solutions in gypsum**

Gypsum Business line continues to innovate in both product and systems

**Synia®**, the plasterboard with four tapered edges that offers quick installation and a high quality finish, continues to grow in sales. In 2008 we introduced damp-resistant wet area boards. These new boards, product of a stringent R&D process, can be left out in inclement weather for up to six months without damage. This enables quicker construction and is superior in health and safety terms. In the UK we have instituted a commercial service to collect and re-cycle gypsum board from sites. In Australia we have set up a business to enable safer, quicker and cheaper installation of the very long boards typically used there at height.

### **Comparison of bridge beams (example of 30-meter span, 2 lane bridge)**

Standard solution: steel girders with concrete slab (basic solution widely used)

Ductal® innovative structure (new solution)

Criteria	Ductal® solution % of the basic solution	Factor of improvement
CO <sub>2</sub> emissions	47%	Emissions divided by 2.1
Primary Energy used	50%	Consumption divided by 2.0
Quantity of raw material used	65%	Reduced by 1.3



*Melloussa, Morocco,  
Lafarge contributed  
to the construction of  
a social center dedicated  
to young women.*

## Global partnerships, local stakeholders

Dialog and listening contribute to resolve issues and challenges. They enable us to progress in mutual understanding.

### SUSTAINABILITY AMBITIONS

#### Local stakeholder relationship management

#### Our history of global partnerships

Lafarge has three global partnerships: with WWF, with CARE and with Habitat for Humanity.

Our first partnership agreement with WWF was signed in March 2000. Working in the framework of the partnership we finalised our quarry rehabilitation policy and initiated a biodiversity strategy. At the same time we set Group environmental performance indicators and targets. The first Sustainability Report was published in autumn 2001. In that autumn we also committed to CO<sub>2</sub> reduction targets. June 2005 marked a renewal of the agreement for a further three years. The agreement's four priorities are:

- Continuing to reduce emissions. Lafarge not only confirmed its targets of a 20% reduction of net CO<sub>2</sub> emissions per tonne of cement produced over the period 1990-2010 and a 10% reduction in absolute gross emissions in industrialized countries over the same period but also committed to a joint systematic evaluation of persistent pollutants.

- Rollout of a worldwide measurement and management system for our biodiversity performance in quarries.

- Encouraging construction players to use sustainable construction products and systems.

- Strengthening the collaboration through local partnerships.

2008 saw negotiations to renew the partnership for a further four year period. The agreement was concluded in 2009. It is built on a detailed, jointly-agreed work program with specific commitments on climate change, persistent pollutants, water footprint, biodiversity, sustainable construction and fostering local partnerships to deliver projects of common interest. The detailed plans in each area are to be announced during 2009.

The management team of the partnership will now include two Lafarge Executive Committee members. The Chairman and CEO of Lafarge and the WWF International's Director General will hold a top-level meeting at least once a year.



Nigeria, Lafarge WAPCO Ewekoro plant.



Green School project, students in the Gongoni Primary School, Vipingo, Kenya.

Lafarge's partnership with CARE was established in 2003 for an initial five year period. The partnership is centred on the fight against HIV/AIDS. We are pleased with the very practical way in which CARE has worked with us and the insights and understanding CARE brings to our joint work in emerging economies. In early 2009 we renewed and extended our partnership for three years and are going to concentrate on some other specific themes such as jointly devising an agreed methodology to measure our business impact on our local communities.

Our partnership with Habitat for Humanity dates back to 2005. We worked together to provide up to 300 housing units for low-income families over the period 2005-2009. In addition, we have an agreement with three international trade union federations signed in 2005 for a period of five years. In 2008 we added a review of three topics: safety, labor relations in the USA and human rights in subcontracting companies.



Cement - China, Gongxian plant.

## Fostering good local stakeholder relations in the Cement Business

### 2002

Integration into the Advance performance program

### 2003

- Development of methodology guide
- Mandatory self-assessment and action plan for each cement plant manager
- New plant managers receive full day training on local stakeholder relations

### 2006

Training extended to Industrial directors

### 2008

Training extended to Development Project directors

## Meeting our Sustainability Ambition on local stakeholders

All over the world local stakeholders have increasing expectations from us on the way we operate our business and the way they benefit from our presence. We recognize that we have thousands of experiences of good practice throughout the Group. However, this capital has not been consistently leveraged and applied throughout the whole of Lafarge. In addition to our desire to do better, we recognise that everywhere local community expectations and demands are growing. Communities expect ever fuller and more transparent communication on environment, health, employment and our economic contribution to the local community.

So we set ourselves the Sustainability Ambition of designing a training package on local stakeholder management adapted to our respective divisional organisations by the end of 2008. This was achieved and 2009 will be the year for rolling out the package.

## Identifying and building on good practice

The Cement business line has been our trailblazer in local stakeholder management. The Business developed a set of tools and procedures in 2002 as part of the Advance performance program. Its aim is to foster consistent good practice across the business line.

In 2007 we formed a task force to deliver the Lafarge-wide training package. Its members were the Communications and Environment VPs of each of the three business lines, the Group SVP for Sustainable Development and the VP, Social Policies. So as to be able to take into account external good practice, the task force commissioned a survey of best practice by other industrial groups from consultants, First & 42nd ([www.first42.fr](http://www.first42.fr)).

## Progress in 2008

Taking into account:

- Cement Business best practices
- The study of external best practice
- An internal survey of all plant managers and quarry managers

We defined a common methodology at Group level, common tools, case studies and workshops. The methodology and tools were tested on a pilot basis in locations as varied as China, France, Indonesia and Romania. Lessons learned were incorporated into the final document. Our progress was reviewed and discussed with our Stakeholder Panel



Ho Chi Minh City, Binh Thanh, Binh Quoi garden, ride on a motorcycle.

in December 2008 and we also benefited from a significant input from CARE France ([www.carefrance.org](http://www.carefrance.org)).

## Some key actions

Key actions to foster a professional approach within the package include:

- Perception and image surveys with the aim of all large sites conducting one every three years;
- Needs analysis, with help from research institutes and local NGOs, to ensure that our social responsibility initiatives are relevant;
- Assistance from local sociologists in analysing local situations;
- Partnerships with universities.

We will be setting out to measure the effectiveness of the training package. Initially we will be using three measures on which we will report annually:

- Percentage of target population trained;
- Percentage of sites holding regular meetings with local communities;
- Number of local action plans.

## Organisation of roll out

During 2009 modules common to our businesses will be organised in countries that are considered a priority and where Cement, Aggregates & Concrete and Gypsum are all present. Of course the existing workshops in the Cement Business will continue in parallel.



## PANEL

### PHILIPPE LÉVÊQUE Executive Director of CARE France

With the acquisitions of Orascom Cement and L&T Concrete strengthening an already important international presence, emerging countries are becoming a crucial strategic growth lever for the future of the company. Community issues are thus more important than ever to the Group. We acknowledge that Lafarge already started reinforcing its action in the fields of Human Rights and community dialog before those acquisitions, and we congratulate it. It is vital for Lafarge to pursue its efforts and to integrate these new constraints to the Group CSR roadmap. We are confident that Lafarge will dedicate necessary resources to the development of mechanisms that will allow a full expression of the growth potential borne by the Group's activity (employment, supply chain) in favour of poor communities.



Cement - Brazil, Cantagalo plant.



Neighboring communities working on the eucalyptus program, Mombassa, Kenya.



*Lafarge eucalyptus plantation program for alternative fuel which will be used in the kilns of the Mombassa cement plant, Kenya.*

All over the world local stakeholders have increasing expectations from us on the way we operate our business and the way they benefit from our presence.

## Examples of local stakeholder engagement

### Actions for 2009 on local stakeholder relationship training:

1. Training on new local stakeholder relationship methodology for 100% of targeted units will be completed by 2012.
2. In 2009, 100% of targeted units will have completed a self assessment on local stakeholder relationships.
3. A full reporting on the three new KPIs will be completed by the end of 2009.
4. A new dedicated intranet website on local stakeholder relationships will be launched in 2009.
5. To support and check on progress, a new internal audit screening tool will be implemented in 2009.

### Doing our bit on water in Australia

When there is a local need or challenge we play our part. Some areas of Australia face severe water shortage. This includes the area around our Matraville plasterboard plant. Saving water is therefore a top priority. The Matraville plant has been recognised for its contribution to water conservation. Its water recovery system collects water from the roof of the plant into a three-tank storage system with a storage capacity of 400,000 liters. This enables the saving of 10 million litres of drinking water a year, the equivalent of 42 days of autonomous water supply. This yields a cost saving of €8,100. So this initiative helps the environment and the local community while reducing our costs.

### Shamba: Community partnerships in biofuels

Now in its second year of operation this Kenyan initiative benefits the environment, the local population and Lafarge. The biofuel sites are located at a distance from the plant in rural areas surrounded by poor communities, mainly of subsistence farmers. Lafarge commissioned the training of 24 Community Based Organisations (CBOs) in seedling production and nursery management by Kenya Forest Services. Of the 417,500 seedlings procured in the first year of the project 100,000 came from this community source. Further training has been commissioned for 2009 with the intention of increasing community seedling production. By using this approach Lafarge

East Africa has ensured that the use of biofuel has not just environmental but also social and economic benefits.

### Improving the rail link to Hope, England

Our cement plant at Hope, Derbyshire is set in the beautiful Peak District National Park. In 2005 the plant received £15 million to develop its rail infrastructure and to enable it to transport more of its production to south east England by rail. Although one of the main issues to do with the works was transportation by lorries, many of the local residents who lived closest to the railway were opposed to it being used more heavily. Lafarge engaged with and listened to the local community. An exhibition was held at the works with senior managers available to answer questions. Lafarge met regularly with groups potentially opposed to rail expansion. As a result of this dialog a noise study was sponsored by Lafarge. It showed that rail line noise remained below the nuisance level for 98% of the time. Regular quarterly liaison meetings were held with local councillors and other key stakeholders. The proposal received planning permission in July 2007 and was officially opened in September 2008. So that local people could see the difference that the investment made two open weekends were held: one in September 2005 before construction began and one after completion in September 2008. More than 8,000 people visited the plant across the four days.



2001



2002



2003



2004

## What Sustainability means to us and how we set out to improve our report this year

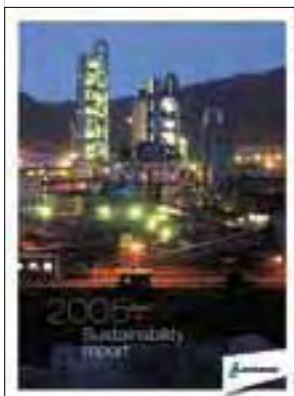
### What Sustainability means to us...

The Brundtland Report says: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs". This helps define Sustainability for us. Our products meet basic human need: helping to provide homes, transport, infrastructure and public buildings. All are necessary for a strong and healthy society. We are working with partners in our own industry, related industries, NGOs and governments to make the use of our products contribute to securing a sustainable world through Sustainable Construction. Making our products has a significant social, economic and environmental footprint. Throughout we look to enhance the positive impacts and to be more resource and energy efficient in production. Our Sustainability Ambitions 2012 guide us here. Our activities have large benefits and big impacts. We are committed to working ever more sustainably: maximising the human benefits of using our products while reducing the size of our environmental footprint.

### ...how we set out to improve our report this year

Over the past two years we have paid particular attention to the detailed technical guidance on reporting available from external experts and standards. These include but are not limited to the GRI G3, the UNEP/SustainAbility/Standard & Poor's Global Reporters 2006, the Dow Jones Sustainability Index and other SRI investor guidance. We believe that we have improved our report through this process. Having been certified as GRI B+ last year this year we have targeted becoming A+. This year we have particularly applied ourselves to answering some of the implicit and explicit questions posed by our Stakeholder Panel, see in particular the table on page 22.

We are pleased to be able to report on the achievement of long-standing Sustainability Ambitions, most notably that relating to local stakeholders. Finally, we noted that over the years our report had become somewhat crammed. We have tried to make this year's report easier on the eye while maintaining comprehensive coverage not least through the detailed GRI index available on our website <http://sustainabilityreport.lafarge.com>.



2005



2006



2007

## Our history of reporting

### A First Report on our Economic, Social and Environmental Performance 2001

We were the first major cement company to issue a global sustainability report. Our first report was sub-titled Building a sustainable world. We designed the report as a tool for dialog including external stakeholder views. It set the pattern of development for our future reporting. From the outset our reporting recognised the over-riding imperative of operating sustainably: "For more than 160 years, Lafarge has been producing construction materials that are vital for the development of human society, and therefore extracting non - renewable, abundant natural resources from the Earth's crust. The very nature of this activity, which necessitated the establishment of a firm local foothold, means that Lafarge has historically worked at integrating all three dimensions of sustainable development into its strategy and corporate culture."

(Bertrand Collomb, Chairman 1989-2007 and CEO 1989-2003)

The report also emphasised the centrality of our Principles of Action and the importance of good governance in delivering sustainable performance. The report set 17 Group objectives.

### Sustainability Report 2002

We built on our report by consulting stakeholders. We have made stakeholder engagement a theme within our reporting. Responding to stakeholder feedback we increased clarity, improved data, made our objectives clearer and addressed the oft-overlooked issue of economic impact.

### Sustainability Report 2003

This was the first report to carry a full statement from our Stakeholder Panel. It was our first report to be in accordance with the GRI guidelines (2002).

### Sustainability Report 2004

The Stakeholder Panel were yet more closely involved. Following detailed consultation, each chapter opened with the disclosure expectations expressed by panel members and ended with a comment by the panel member most concerned. For the first time we benchmarked our performance against competitors.

### Sustainability Report 2005

The report included an independent report by PricewaterhouseCoopers on key environmental and social data in the report. The report

included a detailed description of how we re-secured our licence to operate at our Millery quarry in France and a report on our response to the tsunami in Indonesia.

### Sustainability Report 2006

This report was the first to feature and report on our Sustainability Ambitions 2012. It was structured to focus more clearly on the Big Issues faced by Lafarge, not least those in emerging economies where we gave particular focus to China. Key indicators were audited by Ernst & Young. They selected a sample of seven sites/business units verifying the understanding and application of the Reporting Criteria, and verifying data.

### Sustainability Report 2007

The report gave fuller prominence to values, governance and sustainability management. It integrated the coverage of our own CO<sub>2</sub> emissions and sustainable construction to give a proper perspective on the issue of climate change. We gave a full explanation of What we considered in writing this report.

# 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

Common environmental reporting standards (Group Environmental Reporting V3.5.3 and Quarry Rehabilitation Standard v1.13) drawn up in 2004, were reviewed in depth in 2007 and 2008 to ensure their alignment with the Sustainability Ambitions 2012. The definitions of active sites and active quarries have been clarified. The quarry rehabilitation standard was modified this year to first take into account the local compliance with quarry rehabilitation regulations if any; where the rehabilitation is not formally regulated, a valid rehabilitation plan must comply with the four unchanged Group criteria. In the Cement Business, the environmental indicators are defined in the Business Reference System (BRS®). Each site shares the BRS® and operating data is collected through the technical reporting system. In the Aggregates & Concrete Business, environmental data is collected at the business unit level through a dedicated Excel® file based on the Group Environment Reporting V3.5.3 and the Quarry Rehabilitation Standard v1.13 definitions. The scope of data reported and the definition of the indicators are tailored to the specificities of each activity (aggregate, readymix, asphalt). Gypsum environmental data is collected through the Gold management system. The Group has developed social reporting standards over the last five years. Data related to the percentage of women in senior management is collected thanks to a yearly questionnaire sent to BU HR Directors. The Group has started to roll out a new dedicated reporting tool for Sustainable Development Data in 2008. In 2007, we carried out an in-depth revision of the standards to take into account the requirements of the new Global Reporting Initiative G3 guidelines. Our health and safety management systems have been developed taking into account the guidelines on health and safety management systems in the workplace.

## Reporting perimeter

Environmental reporting covers all the business units and their industrial production sites under the Group's business control throughout the world. All data is reported 100%, whenever the company is consolidated. Using the following protocols: Reported CO<sub>2</sub> emissions relate to the direct emissions from the Cement Business. In accordance with the CSI guidelines, to assess the CO<sub>2</sub> emissions reduction between the 1990 baseline and the reporting year, the 1990 perimeter is reconstructed each year. Newly acquired plants that are reporting their CO<sub>2</sub> emissions for the first time as part of the Group and existed in 1990 are included in the baseline, their CO<sub>2</sub> emissions in 1990 are collected or estimated and added to the baseline. Plants that are sold are removed from the baseline. Shutdown of kiln lines does not lead to any change in the baseline. For dust, SO<sub>2</sub>, and NOx emissions, measurements are not always available or reliable. In this case, we use standard emission concentrations based on the site's kiln process. When reliable measurements are available, estimates are replaced with measured values. In 2008, estimates represent 2% of CK production for dust emissions, 12.5% of CK production for SO<sub>2</sub> emissions and 24% of CK production for NOx emissions. With regard to

the targets for reduction of dust, SO<sub>2</sub> and NOx emissions, the 2005 baseline reference is recalculated every year. The perimeter of the 2005 baseline is updated based on the reporting year's perimeter and following the same approach as for CO<sub>2</sub> emissions baseline: newly consolidated sites which existed in 2005 are included in the 2005 baseline, greenfield plants erected after 2005 are consolidated from the inauguration date, and plants or lines sold to third parties are excluded from the 2005 baseline. The data entered in the 2005 baseline corresponds to emissions measurements, if available and reliable, or is estimated based on the same standards as for the reporting year. For SO<sub>2</sub>, as it is, by large, linked to the raw material quarry, when analyses subsequent to 2005 prove that the emission level is significantly different than the standard emission factor, the 2005 emissions are adjusted to reflect the analyses. In 2008, the dust emissions 2005 baseline was raised by 1% to take into account corrections in the Ukrainian site's data. Lafarge continues to acquire complete ownership or an equity interest in existing sites from other operators. These new sites are never fully in line with Lafarge Standards. As a rule, we allow three years starting from the acquisition date to meet our criteria. Indicators are reported whenever criteria are implemented and in all cases the 4th year. During this period, we implement the appropriate management and data collection systems to ensure coherence with the Group reporting standards. Notably, sites acquired in the last three years by the Cement Business are not accounted in the environmental audits & quarry rehabilitation indicator and represent 9% of the sites to be audited and 26% of the total quarries. This year, Orascom plants emissions for CO<sub>2</sub> emissions, NOx, SO<sub>2</sub> and stack dust have already been consolidated, with the exception of Orascom activities in DPR Korea and Spain. The Group number of fatalities and fatality rate include Orascom fatalities. Nevertheless, Orascom had not been included in the LTIFR safety reporting perimeter in 2008 and is scheduled to be integrated at the beginning of 2010. Neither have Orascom activities been included in the data reported this year on competition policy. In the Aggregates & Concrete Business, environmental reporting covers its three activities readymix, asphalt and aggregates. New business units are gradually included in the perimeter. In 2008, reported data corresponded to some 89% of the Business' turnover, Larsen & Toubro Concrete India, managed since October 2008, being excluded. In the Gypsum Business, a site is integrated in the reporting perimeter the year following its start up or its acquisition. Our social reporting is based on voluntary declarations by the human resources departments of the Group's business units. For the 2008 report, 87 business units participated, (Orascom business units have been partially included) covering 87% of the total Group workforce.

## Consolidation and control

Environmental data is consolidated and controlled within each business line and is then consolidated at Group level. The Cement Business's CO<sub>2</sub> indicators have been independently verified since 2001. In CO<sub>2</sub> emissions reporting, biomass amounts to

zero everywhere, in agreement with WWF. Social data is consolidated and controlled by the Group's Social Policies Department. Ernst & Young provides independent assurance over the CO<sub>2</sub>, dust, SO<sub>2</sub> and NOx, environmental audit, the quarry rehabilitation indicator, female senior managers, safety and competition policy.

## Methodological limits

Environmental and social indicators can have methodological limits because of:

- the limited availability of the data needed for calculations;
- the qualitative nature of some of the data, which can be open to interpretation;
- the practical methods for collecting and recording such data.

This is why for some indicators, we have specified the definitions and methodologies used and, where applicable, the associated limits and margins of uncertainty.

## Nature and scope of the competition checks

The indicator reflecting the percentage of achievement in the process of testing the implementation of our competition policy worldwide, has been built based on the number of countries where Lafarge has operations that have been subject to verification so far and not necessarily on the specific number of business units existing in those countries. Given the national nature of competition regulations and risks, the Group Competition Team has decided to go beyond the internal divisional structuring of our activities, by analysing the situation of our business units on a country-by-country basis. The foregoing means that every time that a country is included in the action plan for a competition verification, all activities in that country are tested, even if one or more of them are not significant business units. This is consistent with the fact that the Competition Network within Lafarge Group is composed by competition correspondents (normally the General Counsel of the largest business unit in the country), who are in charge, from a competition law perspective, of all activities existing in their respective country, on a shared services basis.

When we include a given country in the statistics (and, therefore, all the business units operating in such country), it implies that the implementation of our competition policy has been somehow tested in that country. The "competition test" that is conducted in each country is not always the same and its determination mainly depends on the previous assessment of the competition situation in that specific country. Such assessment is done by the Group Competition Team in conjunction with the relevant competition correspondent. In this manner, competition verifications include a wide range of activities, which go from a simple risk assessment questionnaire completed by the competition correspondent in the less risky countries, to a full "mock dawn raid", normally conducted in the more risky countries with the direct involvement of members of the Group Competition Team.

# Comparability of performance how do we measure up?

It is important not only that we track our policy and performance against previous years but that we look at our performance against peer companies and external standards. We look to learn from the comparison and to set ourselves more stretching targets.

## Benchmarking WBCSD Cement Sustainability Initiative

We benchmark against the other WBCSD companies to help drive improvements in Lafarge's performance and to assist stakeholders' and analysts' need for easily comparable data. The benchmarking can be found on pages 64-65. The data was verified by Ernst and Young.

Companies evaluated include founder members and participating members of the WBCSD Cement Sustainability Initiative. Benchmarking is based on the information published for 2007, and for 2008 when available.

All comparisons must be considered taking into account differences in each company's scope and reporting perimeters. The table on page 64 gives an overview of such factors, which could sometimes limit the relevance of such comparisons.

## Global Reporting Initiative

Our 2007 Report was rated B+ GRI checked. This year we are targeting A+. However the most important thing is that we have been improving our data collection systems so that we can meet the requirements of GRI more fully. The first benefits of this can be seen in this year's index <http://sustainabilityreport.lafarge.com>. The full benefits of this improved performance will feed in over a number of years.

## SRI Rating Agencies

We are pleased that we continue to be highly rated by many SRI rating agencies. While high ratings are gratifying what we find most useful is the insight that the questions asked by the rating agencies give us into what are the matters of growing concern in sustainability. The information that the agencies gather from public sources also help us to assess how effective we are in communicating our sustainability ambitions, policy and performance. For 2009 we have set ourselves the internal objectives of improving the already good disclosure that we make to the agencies and improving the efficiency with which we use the SRI feedback.

Below we comment specifically on some of the ratings we received in 2008. 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.

## Evaluation by SAM (DJSI Index)

In 2007 Lafarge was not placed in either the DJSI STOXX or the DJSI World Index. In 2008 we improved our overall score by 6 points to achieve 70%. This led to us being restored to the STOXX index. Although we scored one point more than the lowest company in the DJSI World Index, we were not included this year owing to the methodology used to determine index composition when the gap between an existing and a potential member of the index is narrow.

## Evaluation by Global 100 Most Sustainable Corporations

We were pleased to retain our place in this index in a year when 32 existing members of the index were removed. The Global 100 most Sustainable Corporations is a project initiated by Corporate Knights Inc with Innovest. Companies in the index are selected on the basis that they "they have displayed a better ability than most of their peers to identify and effectively manage material environmental, social and governance factors impacting the opportunity and risk sides of their business". Lafarge is the only cement company included in the index.

## Capitalcom and RiskMetrics Evaluation of the CAC40

This study rates the non-financial performance of France's top 40 companies under three main headings: diversity, environment and governance. We are pleased that Lafarge was rated number 1 in the environment section by the study.

In past reports we have covered a number of evaluations which remain current. These include those made by Vigeo, Innovest's Intangible Value Assessment, Storebrand's analysis of the Construction Materials sector and FTSE4Good Environmental Leaders Europe 40 Index.

Coverage of these can be found at <http://sustainabilityreport.lafarge.com>

# Benchmarking our performance

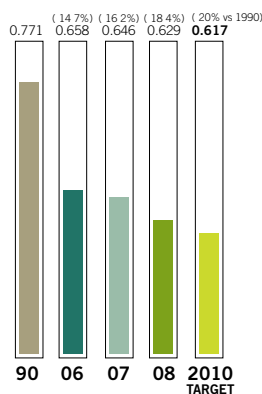
A comparison of our performance with other Cement Sustainability Initiative members and participants

Companies give readers of reports performance data. The most frequently given context is that of the company's current year performance against previous years. We have given this throughout the report. Readers however also ask: "How are you performing against other companies in the sector?" These pages give this data for key Cement Sustainability Initiative indicators against a number of peer companies. The data has been checked by Ernst & Young. In all cases it relates to the company year ending in 2007. The data is taken either from the company's report or it has been calculated from publicly available sources. We are unable to make a comparison on the basis of 2008 data as, at the time of publishing this report, not all the other companies had published 2008 data. In each case we give a comment upon the benchmarking comparison for 2007\*. We note how and whether Lafarge's own performance improved in 2008.

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

### Specific net CO<sub>2</sub> emissions

(tonnes of CO<sub>2</sub>/tonne of cementitious product)



Nine companies disclosed data against this indicator for 2007. Only one company had a lower level of emissions of CO<sub>2</sub> per tonne of cementitious product lower than Lafarge's for that year. In 2008 Lafarge made a strong further improvement against this indicator.

## Overview of differences in scope

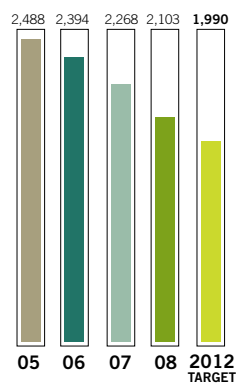
### Company profiles (Base year 2007)

		Turnover (M€)	Employees (Number)	Production (Mt)	Production capacity (Mt)	Countries (Number)
CSI core Members	Cemex	21,673	67,000		96.7	> 50
	Cimpor	1,966	7,530	24.5	28.4	11
	CRH	20,992	92,000	15.6		32
	Heidelberg	10,862	67,916	88		50
	Holcim	27,052 CHF	89,364	149.6	197.8	> 70
	Italcementi	6,001	23,706	65		22
	Lafarge	17,600	77,721	148.4		72
	Portland Valderrivas	1,886	5,066	18		7
	Titan	1,497	6,034	15.5	16	11
CSI Participants	Siam Cement (cement only)	268 MMTHB	5,918		24.2	9

## Other main atmospheric emissions

### NO<sub>x</sub> emissions

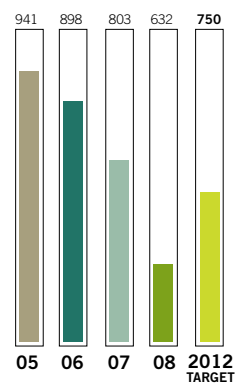
(grammes/tonne of clinker)



NO<sub>x</sub>: Nine companies reported 2007 data for this indicator. Lafarge was ninth. Lafarge made good progress in 2008.

### SO<sub>2</sub> emissions

(grammes/tonne of clinker)

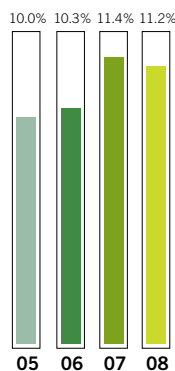


SO<sub>2</sub>: Nine companies reported 2007 data for this indicator. Lafarge was ninth. Strong progress in 2008 means that we have met our 2012 target four years ahead of schedule.

## Raw materials and fuel substitution ratios

### Use of alternative materials

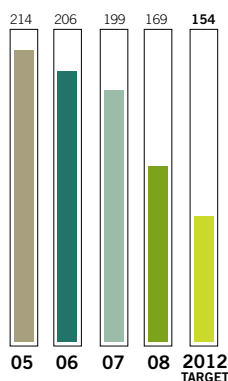
(as a percentage of total material consumed)



Of the eight companies reporting on 2007 performance Lafarge was fifth. The lower number for 2008 reflects the impact of integrating former Orascom plants into the Group.

### Dust emissions

(grammes/tonne of clinker)

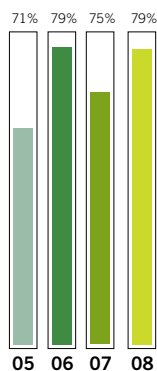


Dust: Nine companies reported 2007 data. Lafarge was fifth. Significant further progress was made in 2008.

\*Portland Valderrivas is not included in the ranking sample for graphs. 2007 and 2008 figures: Lafarge includes Orascom.

## Local impacts

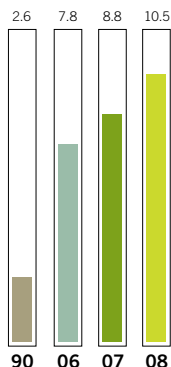
### Quarries with rehabilitation plan



Only six companies published data on this subject in 2007. The reporting basis varies but it would seem that Lafarge is in line with peer performance.

### Energy from renewable & alternate sources

(Cement only) (%)

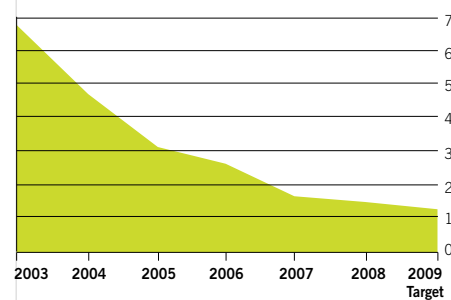


Seven companies reported in 2007 against this indicator. Only one company used a higher proportion of alternative fuels than Lafarge. The plants acquired from Orascom had a lower use of alternative fuels than existing Lafarge plants.

## Health and Safety

### Changes in the LTI frequency rate over 6 years

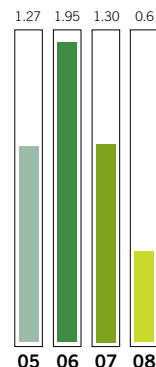
(Incidents with lost time of more than one day per million hours of work)



Nine companies reported their lost time frequency rate in 2007. Lafarge was ranked second.

### Group fatality rate

(Number of fatal accidents per 10,000 employees)



Seven companies reported their performance against the fatality rate in 2007. Lafarge was ranked sixth in this group. Two companies had a zero fatality rate. Lafarge continues to aim for a zero fatality rate. Performance against this indicator improved further in 2008.

# Indicators and correspondence tables

			2007	2008				
UNIT		GROUP		CEMENT	AGGREGATES & CONCRETE	GYPSUM	GRI G3	
Activity								
Sales	billion euros	17.6	19.0	10.9	6.6	1.5	EC1	
Breakdown of sales by business	%			57.3%	34.5%	8.0%	EC1	
Total headcount*	number	77,721	83,438	49,673	25,633	8,132	LA1	
Breakdown of 2008 headcount by business	%			59.5%	30.7%	9.8%	LA1	
Annual production	unit of product			165.1 million tonnes of cement <sup>(A)</sup>	42.5 million m³ of concrete 236 million tonnes of aggregates	872 million m² of wallboard <sup>(B)</sup>		
Management								
Lafarge internal management systems	% of sales	66%	76%	76%	70%	100%		
Of which ISO 14001 certified systems	% of sales	34%	42%	60%	17%	21%		
Environment								
Total energy consumption	million tonnes of Oil Equivalent	11.9	13	12.9	0.3	0.5	EN3	
Water consumption	L/unit of product			343 L/tonne of cement	284 L/m³ of readymix	6.02 L/m² of plasterboard <sup>(D)</sup>	EN8	
% of sites equipped with water recycling system	%	72%	74%	77%	74% <sup>(C)</sup>	65%		
Use of alternative raw materials	% of total raw materials consumed			11.22%		50.77 <sup>(D)</sup>	EN2	
Waste disposed of	% of total production			0.79%		1.3%	EN22	
NOx emissions <sup>(1)</sup> ★	g/t clinker			2,103			EN20	
SO₂ emissions <sup>(1)</sup> ★	g/t clinker			632			EN20	
Stack dust emissions <sup>(1)</sup> ★	g/t clinker			169			EN20	
Quarries with a rehabilitation plan <sup>(2)</sup> ★	%	75%	79%	67%	84%	89%	EN14	
% of sites audited environmentally in the last 4 years <sup>(3)</sup> ★	%	84%	83%	93%	81%	100%		
Specific gross CO₂ emissions ★	t CO₂/tonne of product			0.648	NA	NA	EN16	
Specific net CO₂ emissions ★	t CO₂/tonne of product			0.629	NA	NA	EN16	
Net CO₂ emissions	million tonnes	97.4	105.4	103.9	0.5	1.0	EN16	
R&D budget	million euros	29.7	34.9					
Environmental and safety investments (amounts committed)	million euros	148	157	119	22	16	EN30	
Health & safety								
Lost time injury frequency rate <sup>(6)</sup> ★	points	1.66	1.57	1.27	1.51	3.38	LA7	
Lost time injury severity rate <sup>(7)</sup>	points	0.14	0.101	0.076	0.12	0.176	LA7	
Number of lost-time injuries among Lafarge employees <sup>(4) (5)</sup>	number	247	234	105	76	53	LA7	
Number of lost-time injuries among contractors' employees	number	231	173	112	33	28	LA7	
Lafarge employee fatalities on site <sup>(4)</sup>	number	7	2	1	1	0	LA7	
Lafarge employee fatalities - transport	number	2	3	3	0	0	LA7	
Contractor employee fatalities on site	number	14	21	20	1	0	LA7	
Contractor employee fatalities - transport	number	3	14	12	1	1	LA7	
Third-party fatalities on site	number	3	0	0	0	0	LA7	
Third-party fatalities - transport	number	3	8	4	4	0	LA7	
Lafarge employee fatality rate <sup>(4) (8)</sup>	number	1.30	0.60	0.80	0.39	0	LA7	

NA: Not available

(A) Total physical output (B) and 1515k tonnes of plasterpowder. (This figure includes all powders and readymix compounds.) (C) Readymix plants only. (D) Plasterboard activity only.

★ Indicators verified by Ernst & Young



# Correspondence with French NRE law

ART R 225-104	SOCIAL TOPICS	PAGES	COMMENTS
1.a	Total headcount, hirings (fixed-term/permanent), recruitments, redundancies and reasons, overtime, external manpower	Inside front cover, pages 44-47	
1.b	Headcount reduction and job protection, job-seeking assistance, rehires and supporting measures	Pages 44-47, page 67	
2	Organization of working time, length of working hours for full-time and part-time employees, absenteeism and reasons	Pages 44-47, pages 48-49, page 66	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 different activities. As a result, the details (shifts, length of working day, etc) are relatively diversified and cannot be consolidated. In 2008, 6% of Business Units were found to be in breach of working time standards. Absenteeism monitored at Group level refers to workplace accidents.
3	Remuneration and trends, payroll taxes, application of Section IV of Book IV of the French labor regulations, professional equality between men and women	Pages 44-47	See note 31 to our consolidated financial statements for details of payroll charges paid at Group level in 2008. See also our GRI index.
4	Professional relations and appraisal of collective agreements	Pages 44-47	We have a strong social dialogue at all level of the organization, directly with our employees or through H&S committees, elected representatives, works council, unions. We know that 76% of our BU have staff covered by collective agreement on different topics (see page 47).
5	Health and safety conditions	Pages 48-49, 66	
6	Training	Pages 44-47	
7	Employment and integration of disabled workers	Pages 44-47	
8	Social initiatives	Pages 54-59	
9	Importance of subcontracting	Page 25	
ART R 225-105	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 28-39, page 66	Emissions into air are reduced and energy efficiency is improving by reduction of kilns' energy and by recycling by-products of other industries.
2	Measures taken to limit harm to biological equilibrium, natural environments and protected fauna and flora	Pages 26-27	The Group has started to assess the biodiversity of its quarries in every continent, and to develop a action whenever biodiversity is at stake. It has started to be reported recently.
3	Evaluation or certification measures taken on environmental matters	Pages 36-39	The number of ISO 14001 certified cement sites is increasing.
4	Measures taken to ensure the company's activities comply with the laws and regulations applicable to this matter	Pages 36-39	Environmental audits, which are conducted at least every four years, include verification of compliance with regulations.
5	Expenditure incurred to avert any impact on the environment from the company's activities	Pages 36-39	
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 36-39, page 66	Resources (environmental resources, training) and procedures (EMS, standards, reporting) are in place and are rolled out throughout all the Group.
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	See note 24 of Annual Report and Accounts	The main environment-related provisions relate to quarry rehabilitation (which is not strictly speaking a risk). At Group level, provisions for site redevelopment and environmental risks amounted to €230 million in 2008.
8	Amount of compensation paid during the year in execution of a court ruling on environmental matters and measures taken to make good any damage caused to the environment	See note 29 of Annual Report and Accounts	
9	All elements of the objectives set by the company for its foreign subsidiaries with regard to points 1 to 6 above	Pages 4-5	

Further detail on many of the above items can be found in our GRI index at <http://sustainabilityreport.lafarge.com>

# Ernst & Young Assurance

Lafarge, S.A. — Financial year ended on December 31, 2008  
Statutory auditor's report on certain environmental, safety and human resources indicators

*This is a free translation into English of the original report issued in the French language.*

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 2008 identified by the ★ symbol in the sustainability report on pages 4, 5, 66 and 67 (the "Indicators") to obtain limited assurance that the Indicators were prepared in accordance with the reporting criteria applicable in 2008 (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 62 under the heading "Reporting methodology" and in the comments related to the Indicators presentation on pages 66 and 67 of the sustainability report.

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>2</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 and competition policy 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 five cement sites 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 23% of environmental indicators, 15% of hours worked used in the calculation of the lost time injury frequency rate, and 8% of senior management staff. None of the former Orascom sites was included in our sample as it was decided late to include them in the reporting; Orascom sites represent 15% of CO<sub>2</sub> emissions and 12% of other air emissions on average. Taking into account the review performed during the past three 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 performance indicators that are comparable to those of other members of the WBCSD-CSI.
- 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 62, 66 and 67).

### Completeness

- The reporting perimeters for environment, safety, and human resources data, and notably whether all Orascom sites are included or not, are specified in the "Reporting Methodology" section on page 62.

- 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 if needed page 62.

### Neutrality

- The Group provides detailed information on methodologies used to establish the Indicators in the notes on methodology on page 62 and in the comments next to the published data, in particular for indicators related to "SO<sub>2</sub>, NO<sub>x</sub> and dust emissions", the "% of women in senior management", the "quarries with a rehabilitation plan", the "share of audited sites", and the "implementation of the competition policy" on page 67.

### Reliability

- Efforts have been undertaken this year to improve the reliability of the "quarries with a rehabilitation plan" indicator, notably by strengthening the communication with the business units. The Reporting Criteria were also amended which affects the comparability of data with previous years.
- For the indicator "share of audited sites", requirements imposed on audits in the Aggregates and Concrete Branch should be clarified.
- With regards to indicators related to SO<sub>2</sub>, NO<sub>x</sub> and dust emissions, internal controls by the Group and the regional technical centres could be better formalised.

## 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 3<sup>rd</sup> 2009  
The Statutory Auditor

ERNST & YOUNG  
Audit  
Alain Perroux

ERNST & YOUNG  
Environment and  
Sustainable Development  
Eric Duvaud

1 | [www.wbcsd.org/Sector/Project/Cement](http://www.wbcsd.org/Sector/Project/Cement) and [www.haygroup.com/OurServices/Jobevaluation](http://www.haygroup.com/OurServices/Jobevaluation) 2 | ISAE 3000: "Assurance Engagement other than reviews of historical data", International Federation of Accountants, International Audit and Assurance Board, December 2003. 3 | Five cement plants: Kanthan (Malaysia), Ravenna (U.S.A.), Volos (Greece), and Mykolaev (Ukraine) and Alpena (U.S.A.) for air emissions only; three business units of the Cement Branch (Malaysia Cement, Greece Cement, and East U.S.A.); and four business units of the Aggregates and Concrete Branch: Lafarge Bétons et Lafarge Granulats (France), Lafarge Western Canada, and Malaysia Concrete. 4 | 27 % of CO<sub>2</sub> emissions, 17 % on average of SO<sub>2</sub>, NO<sub>x</sub> and dust emissions, and 30 % on average of sites and active quarries.



In the immediate aftermath of the earthquake in China, Lafarge Shui On supported over 4,000 people made homeless with food, water and temporary shelter. More than 320 temporary Lafarge homes were provided at Dujiangyang and the dormitory at Jiangyou was rebuilt.

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