

SUSTAINABILITY  
REPORT  
**2006**

 **LAFARGE**

# Lafarge presence in the world

## Cement

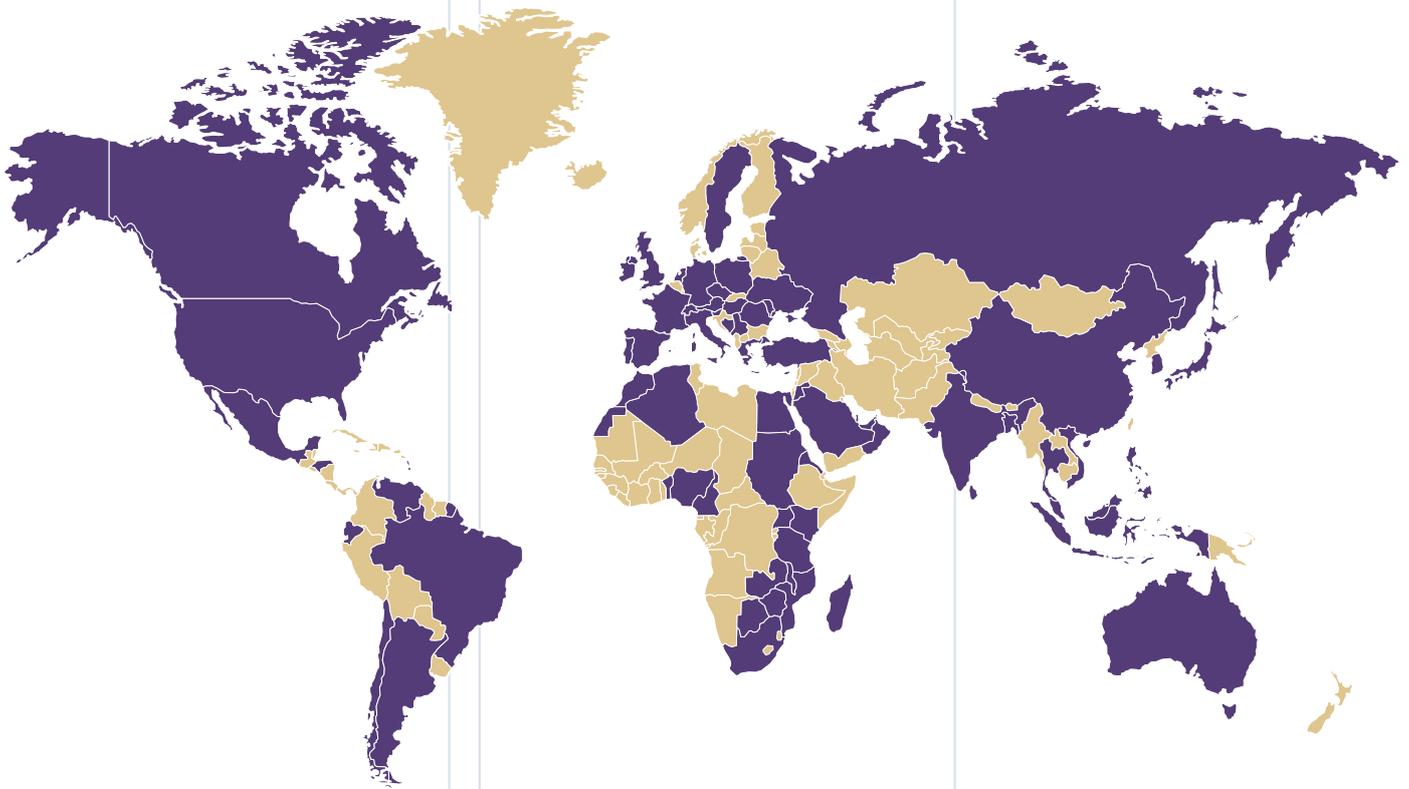
Worldwide market position: World leader  
 Employees: 42,000  
 Sales: 8.8 billion euros  
 Cement plants: 122  
 Clinker grinding stations: 38  
 Slag grinding stations: 6  
 Countries: 46

## Aggregates & Concrete

Worldwide market position: N° 2  
 Employees: 22,500  
 Sales: 6.4 billion euros  
 Quarries: 596  
 Concrete plants: 1,139  
 Countries: 29

## Gypsum

Worldwide market position: N° 3  
 Employees: 6,500  
 Sales: 1.6 billion euros  
 Plants: 76  
 Countries: 25



Sales (in billion euros)

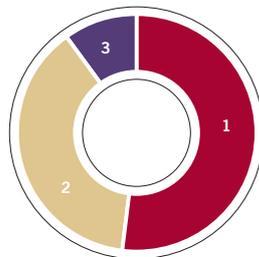
17

Employees

71,000

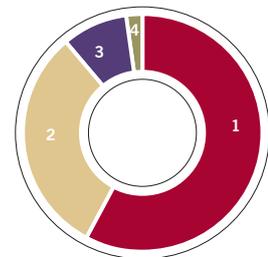
Countries

70



Sales breakdown by business

■ 1 - Cement	52%
■ 2 - Aggregates & Concrete	38%
■ 3 - Gypsum	10%



Workforce breakdown by business

■ 1 - Cement	58%
■ 2 - Aggregates & Concrete	31%
■ 3 - Gypsum	9%
■ 4 - Others	2%



Rebuilding of the  
Lafarge cement plant  
in Banda Aceh, Indonesia,  
after the tsunami



## How to read this report

This year's Sustainability Report has a new structure.

We open our report with a section *Establishing understanding*.

This gives the context that we work in: the processes used to make our products, the structure of our industry and the key facts about Lafarge. It sets out our values and explains how we manage our sustainability commitments.

The report addresses the material issues that face us. To illustrate this, we have developed five major sustainability issues. This is complemented by a description of our Sustainability Ambitions for 2012, the challenges that we have set ourselves and how we will live up to them.

The *Completing the picture* section, taken with the Performance section, ensures that the reader has an all-round picture of Lafarge. We have independent stakeholder comment throughout the report, from our Stakeholder panel, individually and collectively. Our report carries assurance from Ernst and Young.

In line with our *Annual Report 2006* this report does not include data on our Roofing Division which was divested early in 2007.

We trust that these changes will assist reader understanding and increase the transparency of our report. Unless otherwise specified the data used in this report is drawn from Lafarge's own systems.

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• Managing editor: St phanie Tessier • Design and production: Direction de la communication Lafarge • Editorial team: The Corporate Citizenship Company • Graphic design: Textuel

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# Lafarge Sustainability Ambitions 2012

## Why we are acting

It would be easy to run Lafarge without consideration for the broader impacts the Group has on the world around us, easy but wrong. Lafarge must be run in a sustainable way. In the context of our strategic plan “Excellence 2008” launched in June 2006, we have renewed our commitment to be ranked among the world’s most effective industrial groups in terms of employee health and safety, environmental protection, social responsibility and corporate governance. This means running our business so that we can satisfy our customers tomorrow better than we do today. It means running our business so that we can satisfy our employees and our shareholders tomorrow better than we do today. It means acting in a way that cares for the well-being of the environment and the communities that we operate in, as outlined in our Principles of Action.

**“Regardless of how ambitious our goals are we are committed to achieving them. We are committed because achieving our goals will make a real difference. When we have achieved our goals, we will have contributed to a better environment and society.”**

This requires a great deal of listening to explore and make progress. This means challenging ourselves regularly as the world is evolving and therefore requires that we anticipate the changes and adapt constantly. With our Sustainability Ambitions 2012, we choose to concentrate on major issues: the areas where we have a big impact, the main environmental and social challenges that we face, and the areas where we can make a real difference and lead the way to positively influence our industry.

goals are we are committed to achieving them. We are committed because achieving our goals will make a real difference. When we have achieved our goals, we will have contributed to a better environment and society.”



**BRUNO  
LAFONT**

**Chairman and  
Chief Executive Officer  
of Lafarge**

## Setting goals to motivate our improvement

For each one we have carefully measured where we are and set ourselves the goal of making a major improvement over the next five years. Some of these goals have been inherited from previous plans. We have retained them because we judge them to be good. In other cases we have looked at the goals we set and made them tougher. Having questioned ourselves about the impact of our business and listened to people outside Lafarge, we have set goals for the first time with regards to local stakeholders, customers, biodiversity, emissions and health.

## Make a difference

Regardless of how ambitious these goals are we are committed to achieving them. We are committed because achieving our goals will make a real difference. When we have achieved our goals, we will have contributed to a better environment and society.

## This is how we see the challenge of leadership

The world in which we move is evolving, and the building materials sector is undergoing a substantial transformation. We are now picking up speed so that we can take on these new challenges. Sustainability Ambitions 2012 should advance us a little further along the road to the long-term leadership to which all our teams are committed.

# Understanding the processes

To understand Lafarge's sustainability challenges and opportunities requires an understanding of: how our products are made; how our industry is structured; how Lafarge is organised and run. We now deal with each of these in turn to give a firm basis on which to judge our sustainability issues and performance. This double page spread examines the processes involved in our businesses.

## Sourcing

### Energy, goods and services

Lafarge spent 9.2 billion euros with external suppliers in 2006. Energy, from conventional and alternative sources, is the most important item. See page 48.



Energy from conventional sources



Alternative fuels



Other goods and services

### Raw materials

Lafarge sources most of its raw materials from its own limestone, aggregates and gypsum quarries. But half the raw materials for gypsum board and one-tenth of the raw materials for cement come from other sources. See pages 36-41.



Limestone quarry



Aggregates quarry



Gypsum quarry

Lafarge's property and control

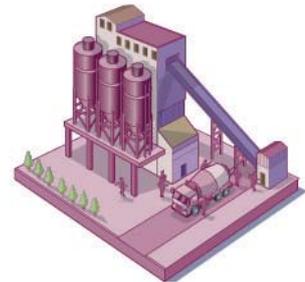
## Manufacture

### Processing

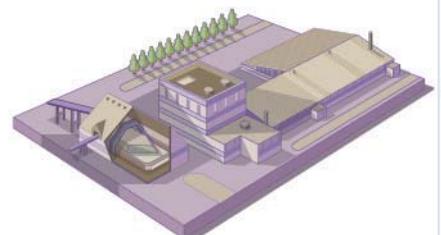
Our raw materials are bulky and heavy: they must be processed near to the quarries. Turning limestone into cement is the most energy intensive process. In some markets we are also involved in the ready-mix concrete business. For our impact on climate change see pages 18-23.



Cement plant



Ready-mix concrete plant



Gypsum plant

## Construction

### Construction

Our cement, concrete, gypsum and aggregates products are used in construction.

## Use

### Customers

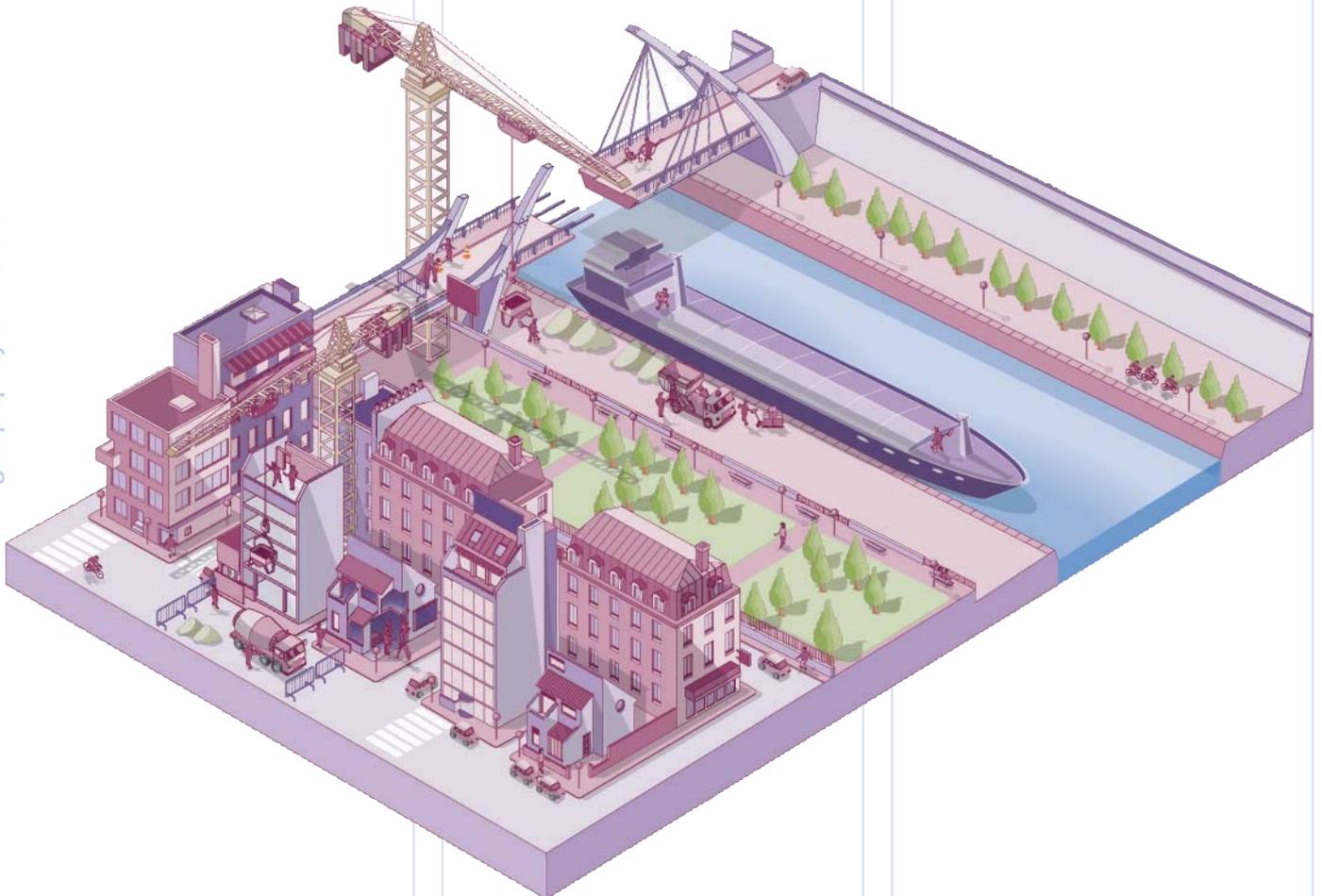
Our products are used for homes, offices, public buildings and infrastructure works like dams. For more on how we serve our customers see pages 30-35.

## Disposal

### Sustainable use and disposal of our products

Our products' biggest environmental and social impact lie in the way they are manufactured, used and disposed of. We are building alliances with the users of the products to increase their overall sustainability, see page 23

Lafarge's property and control



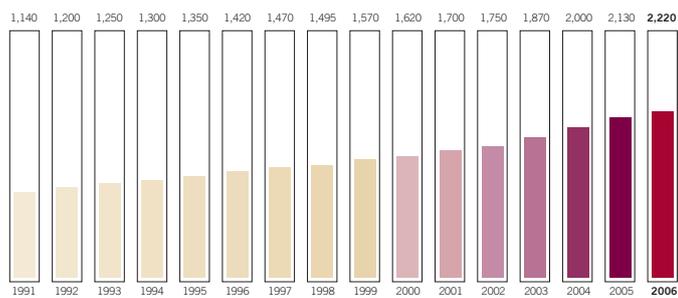
Our products are used to build and renovate the homes people live in, non residential buildings and to build the infrastructure, such as roads, bridges and flood defences.

# Understanding the industry

Our products are used for building. They are used to build the houses people live in; the offices, shops and factories people work in; the hospitals, schools and the infrastructure: roads, railways, airports, bridges, harbours that people use. We supply the construction industry.

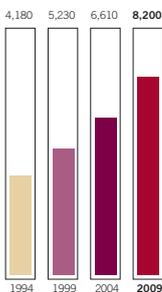
## Demand for our products from the construction industry is growing...

**Average annual growth rate of cement demand: 4.5%/year** (in million tonnes)



**Average annual growth rate of gypsum wallboard demand: 4.6%/year** (in million square meters)

(in million square meters)



When population grows demand for our products grows. It grows as economies develop, particularly as they urbanise. Within developing economies the demand for cement (and therefore also for concrete and aggregates) grows 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. The demand for gypsum is also closely linked to growth in construction.

Consequently the best projection of global growth in demand for cement through to 2020 is that it will grow by around 80%. However the growth in demand in emerging economies is expected to be five times faster than that in developed countries. Demand for ready mix concrete is growing much faster than cement demand in emerging countries. The rate in the growth of demand for gypsum varies significantly regarding how far gypsum wallboard is used within the local building tradition.

## ...but the rate of growth varies between countries...

**Cement demand forecast 2004-2008 Annual Growth Rate**

Country	% per annum
Japan	-0.5
United States	2.9
China	6.1

**Gypsum wallboard forecast 2004-2008 Annual Growth Rate**

Region	% per annum
North America	1
Eastern Europe	9
Asia (excluding Japan)	13

**Readymix concrete demand forecast 2004-2008 Annual Growth Rate**

Country	% per annum
France	7
United States	3
China	10

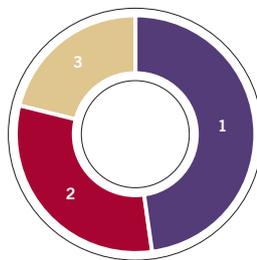
**Aggregates demand forecast 2004-2008 Annual Growth Rate**

Country	% per annum
France	1
United States	2
India	7

## ...as does the end use of the product

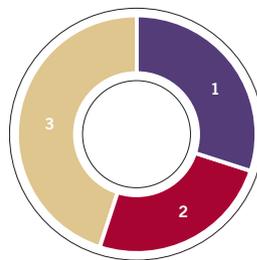
### Western Europe

1 - Residential	48%
2 - Non residential	31%
3 - Infrastructure & Public buildings	21%



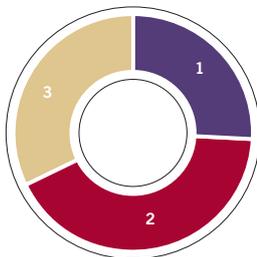
### United States

1 - Residential	30%
2 - Non residential	25%
3 - Infrastructure & Public buildings	45%



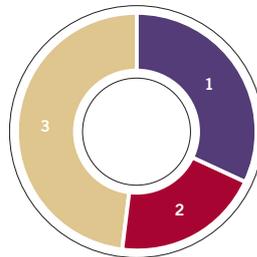
### Eastern Europe

1 - Residential	26%
2 - Non residential	42%
3 - Infrastructure & Public buildings	32%



### South Korea

1 - Residential	32%
2 - Non residential	20%
3 - Infrastructure & Public buildings	48%



Various construction activities (building, renovation and improvement of infrastructure, homes, public and private non-residential) make a different contribution to demand for our products depending upon the nature and development of local economies.

### Markets are local

Global demand is growing but our industry remains above all a local one. By their nature our products are bulky, heavy and consequently difficult to transport long distances. In addition concrete must be delivered from the ready-mix plant to the customers before it sets.

Consequently the typical radius serviced by a cement plant in Western Europe is 200 kilometres and by a ready-mix concrete plant is about 20 kilometres. Only 6% of global cement production is traded internationally. This involves transport by ship.

### Cost structure

The table gives an average manufacturing cost structure of products. Energy is the largest single element for cement accounting for just over a third of the costs. In contrast raw materials account for almost three-quarters of the

cost of ready-mix concrete. Delivery costs account for a fifth of the total. Raw materials account for two-fifths of the cost of gypsum wallboard. Energy, raw materials and direct labour comprise half the cost of aggregates.

### Average Manufacturing of Products Cost Structure

	Cement	Ready-mix concrete	Aggregates	Gypsum wallboard
Energy	35	1 <sup>1</sup>	9	27
Raw materials	15	70 (over half of which is cement)	23	27 (Paper) 14 (Gypsum)
Direct labour	18	3	18	22
Other	32	26 <sup>3</sup>	50 <sup>2</sup>	10
<b>TOTAL</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

1 | Direct energy costs only, excl. sub-contracting delivery  
 2 | includes maintenance, depreciation, inventory change & subcontracting  
 3 | of which delivery costs 20%

Based on 2005 data.  
 Sources: PCA, Euroconstruct, Lafarge estimates

# Understanding Lafarge

Here we set out some of the key facts about Lafarge, its history, its strategy and its economics.

## How Lafarge is organised

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

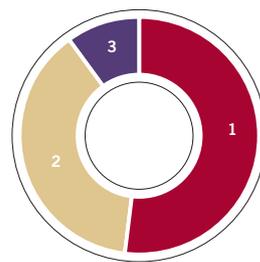
**The group level** defines our long-term strategies, group values and a culture based on high performance.

**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.

**The business unit level** is the heart of our organisation and propels the Group's business. There are roughly 150 business units.

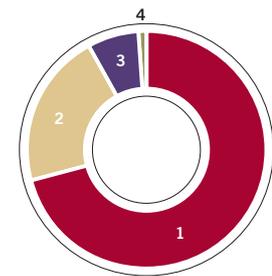
## Lafarge history

We began operations in the early 1800's when Auguste Pavin de Lafarge founded a lime exploitation enterprise in France. Lafarge S.A. was incorporated in 1884. We first entered the market for gypsum products in 1931. Our Aggregates & Concrete business expanded significantly in 1997 with our acquisition of Redland plc. The acquisition was a novel one for a cement company and set a trend in integration that our competitors have followed. In 2001 Lafarge completed the acquisition of Blue Circle plc which placed Lafarge in the number 1 position in cement and number 2 in aggregates and concrete.



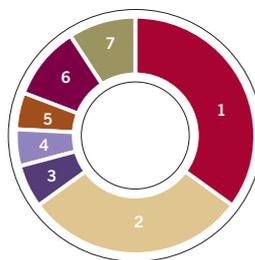
Sales by business line (2006)

■ 1 - Cement	52%
■ 2 - Aggregates & Concrete	38%
■ 3 - Gypsum	10%



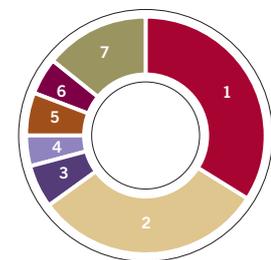
Capital employed by business line (2006)

■ 1 - Cement	71%
■ 2 - Aggregates & Concrete	21%
■ 3 - Gypsum	7%
■ 4 - Others	1%



Sales by region (2006)

<b>Mature Markets</b>	<b>65%</b>
■ 1 - Western Europe	35%
■ 2 - North America	30%
<b>Emerging Markets</b>	<b>35%</b>
■ 3 - Eastern Europe	6%
■ 4 - EuroMed	5%
■ 5 - Latin America	5%
■ 6 - Africa	10%
■ 7 - Asia Pacific	9%



Capital employed by region (2006)

<b>Mature Markets</b>	<b>65%</b>
■ 1 - Western Europe	34%
■ 2 - North America	31%
<b>Emerging Markets</b>	<b>35%</b>
■ 3 - Eastern Europe	6%
■ 4 - EuroMed	4%
■ 5 - Latin America	6%
■ 6 - Africa	5%
■ 7 - Asia Pacific	14%

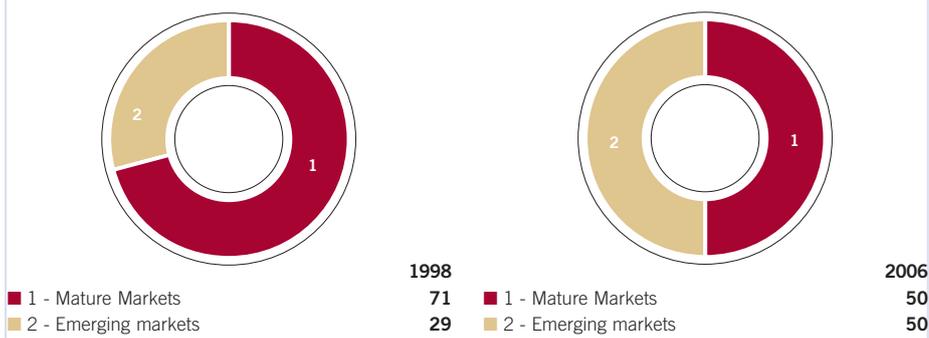
During 2006 Lafarge negotiated the sale of the roofing division. The sale took place in 2007. Lafarge retains a 35% minority interest in the new entity. In June 2006 Lafarge launched the Excellence 2008 programme with the aim to become and remain the best in the sector.

### Future growth

Our growth strategy is based on growing markets, innovation and local consolidation. Our cement sales in emerging markets have more than quadrupled between 1998 and 2005. This has come from organic growth and from acquisitions. We will add a further 40 million tonnes of capacity by 2010, half of it in China and India through organic growth.

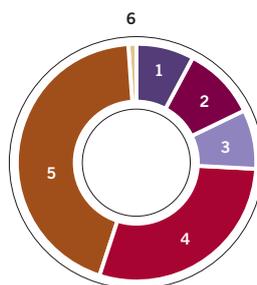
In concrete we will continue to maximize profitability through innovative products such as Agilia® and Artevia® that already account for more than 3% of our concrete sales. Cost reduction will help to generate cash flow for investment. Our growth will be underpinned by living out our values, particularly in social, environmental and health and safety responsibility. We will continue to display a leadership attitude, particularly with regard to corporate governance.

### Cement sales by value



### Cash value added (2006)

	€ million	%
Sales	16,909	
Cost of goods and services	10,452	
<b>Cash value added <sup>(1)</sup></b>	<b>6,457</b>	<b>100</b>
■ 1 - Taxes paid to governments	543	8.4
■ 2 - Paid to investors for providing capital	617	9.6
■ 3 - Paid to lenders as a return on their borrowings	513	7.9
■ 4 - Retained for growth	1,888	29.2
■ 5 - Paid to employees for their services	2,885	44.7
■ 6 - Community investment <sup>(2)</sup>	11	0.2



Lafarge generated €6.5 billion cash value added in 2006. Our employees were the largest single group to benefit from the cash value added. Almost a third of the cash value added was retained for future growth.

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

## Values and governance

Our values and commitments shape the way we work. We apply them systematically. How a company is run is a key enabler of sustainability. Our business is global but serves lots of local markets. The following pages show both the overriding principles that we follow and some of the evolving steps we have taken to ensure that we manage the sustainability of our business more effectively. A more detailed index of governance issues in this report is given on page 59.

### Lafarge Way: origins and coverage

Lafarge's goal is to be the undisputed world leader in building materials. To maintain our leadership position, we are committed to being the preferred:

- supplier for our customers,
- employer for our employees,
- partner for our communities and
- investment for our shareholders.

We adhere to common values - courage, integrity, commitment, consideration for others and an overriding concern for the Group's interest - the foundation of the Lafarge Way. We also share clear processes as well as respected and known rules which allow everyone to understand how a decision is made and who is ultimately responsible.

### Our Code of Business Conduct

Our Code of Business Conduct sets standards of behaviour throughout the Group for all Lafarge employees and officers and those individuals providing goods and services on behalf of the Group. These rules do not cover every issue that may arise but establish basic guiding principles for employees and officers carrying out their business duties. A Group-wide dedicated telephone line is made available to employees for reporting observed violations of the Code.

### Independent directors

Our Board consists of nine independent Directors. We have followed the criteria of independence recommended by 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 a long period of time brings more experience, authority and also reinforces the independence of directors. Most of our Board of Directors is deemed independent under U.S. Securities and Exchange Commission (SEC) and NYSE criteria.

### Sarbanes-Oxley Act compliance

On March 24<sup>th</sup> 2006, Lafarge became one of the first groups outside the USA to be certified as compliant with the Sarbanes-Oxley act and to have completed the process a year before the official deadline. Section 404 of this act covers financial reporting by foreign firms listed on the US market. Certification was achieved in under two years and the process enabled us to identify ways to improve our operational and financial processes and share best practices across Business Units. It attests to the transparency and reliability of our financial processes.

### Political contributions

While Lafarge employees and officers, in their capacity as citizens, may wish to participate in political activities, they must refrain from morally or financially committing the Group

in these activities. Furthermore, any employee or officer who is involved in decisions to be taken by a State, a governmental agency or a public body must not take part in a decision that affects the Group (such as the granting of a license, an authorization or a procurement contract).

In the United States it is illegal for corporations to make contributions to candidates running for Federal Office. Contributions can only be made by an affiliated political action committee (PAC) funded by voluntary contributions from company employees. In 2006, Lafarge in North America PAC made 32 contributions to candidates for elected offices totalling \$40,000.

### Competition law

We support free markets and open competition. Lafarge continues to strengthen its internal communications on competition policy. Key documents are available in French, English, Spanish, Portuguese and German. An interactive programme is made available through our intranet. Our legal team as well as local teams are actively engaged in this process so that we meet our obligations in this area.

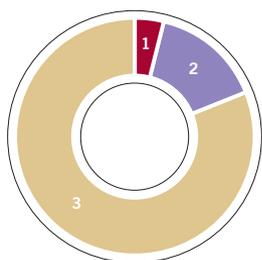
### Assessing risk

Sustainability-related factors are considered in our processes to evaluate corporate risk. Among the factors touched on in the risk factor section of our Annual Report are raw materials, emerging economies and pension obligations.

# Sustainability management

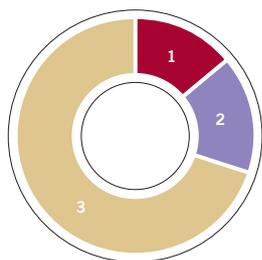
Our approach to managing and improving sustainable development helps enhance our stakeholder relationships and our overall business performance.

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



Sales breakdown 2006

■ 1 - Not free 4%  
 ■ 2 - Partly free 15%  
 ■ 3 - Free 81%

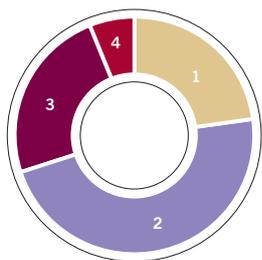


Workforce breakdown 2006

■ 1 - Not free 14%  
 ■ 2 - Partly free 16%  
 ■ 3 - Free 70%

\*Based on Freedom House's "Freedom in the World 2006" Index, which rates countries on their levels of civil and political rights.

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



■ 1 - Moderate risk area (7.5 to 10) 23%  
 ■ 2 - Medium risk area (5 to 7.5) 47%  
 ■ 3 - High risk area (2.5 to 5) 24%  
 ■ 4 - Very high risk area (<2.5) 6%

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

## Evolving systems

We are an expanding group facing an ever broader range of sustainability issues, some of them in markets where we have been in a long time, some of them in new markets.

We respond to this not only by including sustainability issues in our risk planning but by process measures such as incorporating sustainable development and CO<sub>2</sub> considerations into our capital expenditure planning process. We ensure a broader management perspective by following the rule that at least two nationalities must be represented on the executive committee of each business unit. We engage with stakeholders and also are transparent about our public policy positions.

## A new organisation

In 2006, Lafarge launched a new Group-wide Sustainable Development and Public Affairs organization to promote good, transparent sustainability performance through:

- listening to, understanding, anticipating stakeholders' expectations and questions;
- influencing, where possible, the legal framework of our operations
- ensuring that the Group responds appropriately at local and global levels.

The team, which reports to the CEO, increased from five to eleven people, including posts dedicated to climate change. Key to the concept is that those with responsibility for the environment in each division have been brought together with those with corporate responsibility. We seek seamless continuity between what we say in head office and what we do in the field. As a result of the change we have a truly multifunctional team dedicated to promoting sustainability performance reporting to our CEO.

The organisation is governed by the Group's Executive Committee, which approves Group policies and targets and meets annually with our Stakeholder Panel. The Sustainable Development Operational Committee formulates and implements Group policies, meeting at least twice a year. This committee was established to integrate sustainability into daily operations better. It is chaired by the Senior

Vice president, Sustainable Development and Public Affairs, and includes senior operational executives from each Division, as well as senior executives from Group functions (Research & Development, Social Policies, Communications).

## Stakeholder panel

Since 2003, Lafarge has invited nine individuals representing a diverse range of stakeholder groups and corporate responsibility issues to serve as "critical friends" to Lafarge and recommend performance improvements. Stakeholder Panel members, chosen for their experience and knowledge, meet twice a year to debate and make recommendations regarding a range of topics including employee diversity, occupational health and sustainable construction. Almost all Lafarge Executive Committee members attended the December 2006 meeting, including the CEO, and minutes of the meetings are published.

Specialist panels have been convened to address particular issues such as biodiversity. Beyond the panel activity, several panel members engage directly with Lafarge's operational managers through partnerships (WWF and CARE), the social agreement with our international unions, and our European Works Council.

## Members of Lafarge Executive Committee

- Bruno Lafont**, Chairman & Chief Executive Officer
- Michel Rose**, Chief Operating Officer Cement
- Ulrich Glaunach**, Executive Vice President Cement
- Guillaume Roux**, Executive Vice President Cement
- Jean-Charles Blatz**, Executive Vice President Aggregates & Concrete
- Isidoro Miranda**, Executive Vice President Gypsum
- Jean-Jacques Gauthier**, Executive Vice President Finance
- Christian Herrault**, Executive Vice President Organization and Human Resources



**EMERGING COUNTRIES**

*(Top)* The new Chhatak cement plant in Bangladesh is linked to a quarry in India by a 17-km long conveyor belt. *(Bottom)* Inhabitant of the new houses rebuilt by Lafarge and its partners in the Lam Kruet village, Indonesia, after the tsunami.

# The importance of Emerging economies within Lafarge

Emerging economies are increasingly important both within the global economy and also to Lafarge. In this big issue section we show how Lafarge builds and operates sustainable businesses in emerging economies.

Emerging economies are the fastest growing in the world. Their requirements for modern infrastructure and better quality housing have increased their significance to our industry. Their share of world cement consumption grew from 56% in 1985 to 79% in 2005 and is forecast to increase to 87% in 2020. In 2006 Lafarge revenue from emerging markets represented 35% of the group's revenue and 42% of current operating income. We continue to make strategic long-term investments in emerging economies. The challenge for Lafarge is about more than making our operations in emerging economies profitable: it is about making them sustainable. This requires investment. Partly investment to

meet growing demand and partly investment to bring old plants we have acquired up to standard. For example, in 2003-2006 we invested over €1.5 billion in sustaining and internal development capital expenditure in emerging economies.

Often our investment requires demanning, as where we acquire plant it is often being operated less efficiently than is ideal. As elsewhere, we also invest to ensure that the plant can meet our high environmental standards. Some of our most modern and most efficiently operated plants are to be found in emerging markets. In emerging economies as in all our markets

we work to understand and deliver on customer requirements.

The following case studies show examples from China, Zambia and Mexico of the challenges we face in three emerging economies. The common challenge between the three is of meeting growing demand sustainably. In China the coverage focuses on employee skills and upgrading plant, in Zambia on new investment, environmental and health performance and in Mexico on new investment and safety. The case studies show how, guided by our global standards and bolstered by the talent and skills of our local workforces, we are striving to meet them.

Employee, Phu Thuan cement plant, Vietnam.



## PANEL

**KARINA LITVACK**  
F&C Asset Management

The real story of Lafarge will be written in the Emerging Markets, where the bulk of its growth and toughest sustainability challenges come as a package deal. The company is set to ride the construction boom created by rapid GDP growth, industry consolidation and urbanisation. But it also needs to contain, and ultimately reduce, its environmental impacts, especially its CO<sub>2</sub> emissions, where technical improvements are fast being outpaced by production growth. Starting new is inevitably easier than fixing the old, so it is no surprise, if still welcome, that its most modern facilities are located in its newest markets. The harder job is with acquisitions, which bring legacy problems alongside a short-cut to markets and people. Here we would expect Lafarge's pre-purchase due diligence to assess all risk factors thoroughly, including environmental performance, safety, corruption etc, and ensure that upgrades to global best practice standards are fully costed and built into the firm's acquisition strategy.

The Chongqing 2 cement plant in China is the first 100% Chinese cement plant of the Group.



## China: the world's biggest user of cement

### A new era

Lafarge has operated in China for over ten years, with each of our activities concentrated in different regions. In every market we have established joint venture partnerships in which we hold a majority stake, integrating each partner's complementary strengths. We purchase existing sites, build new state-of-the-art plants and recruit and develop local managers who can build and integrate teams effectively into the Group.

**Cement.** We manufacture cement in China for the Chinese market. China is now the world's largest cement market, representing 45% of global consumption. The country's limestone supports a sustained 6 to 7 percent growth rate. The annual increase in China's production capacity over each of the past four years has equalled the entire cement-making capacity of North America.

Having established Lafarge in Beijing with a joint venture (Chinefarge) in 1994, we launched our South West China operations with two cement factories in 2002 successfully leveraging the Chinese government's "Go West" public works programme. In August 2005 a formal merger created Lafarge Shui On Cement, now one of China's top three cement producers with 20 cement plants.

The market is highly fragmented, with China's top five producers sharing only 10% of the domestic market, while the top five world producers command 28% of the global market. We developed a fully-supported inte-

China is now the world's largest cement market, representing 45% of global consumption.

gration plan to position ourselves as one of ten major players that the Chinese government expects will emerge from the current field of over 5,000 cement producers. In 2006 our integration process started with audits of our social performance, safety, technical evaluation and started to assess the environmental impact. We established internationally-supported local teams.

**Gypsum.** The Chinese plasterboard market is now the world's third largest, delivering around 75% of global market growth. Since 1996, Lafarge has been developing a leadership position in the Yangtze Delta, one of the world's most densely populated regions with 193 million inhabitants. Our South West activity has developed since 2001 with plants in Chongqing, Sichuan, Guizhou and Hunan.

### Building the road to success

**Creating a foundation for excellence.** To help us compete in China's rapidly-changing market, our research and development team has engaged the country's foremost universities and institutions in cement

and concrete to create a scientific and technical network which defines topics for collaboration and scientific exchange, strengthening our links with Chinese research scientists and potential recruits.

**Engineering added value.** The highly fragmented Chinese cement industry is consolidating with the government-driven transition from old vertical shaft and wet process kilns to modern dry process rotary kilns. In 2005 Lafarge inaugurated its brand new Chongqing cement plant which significantly reduces CO<sub>2</sub> emissions and helps to optimise performance and ensure profitability despite low price levels.

To enhance cost-effectiveness and help meet our worldwide production capacity target we established the China Procurement Platform (CPP) in Beijing as part of our long-term development strategy. Working with institutes and suppliers, the CPP supports our Technical Centres by evaluating and advising on their requests; organizing technical clarification and negotiation meetings; and liaising with suppliers regarding quality compliance, expediting, shipping and other issues. The CPP not only helps us meet capacity targets but



#### EMERGING MARKETS

The Chinese cement market: China is the world's largest cement market, representing about 1 billion tonnes of cement a year, about half of the world market.

also provides Chinese suppliers with the opportunity to become key players abroad.

**Environment and Energy efficiency.** Our plasterboard operation is setting new environmental performance standards for Chinese industry. We are unique in using 100% recycled gypsum (FGD) as raw material and are also committed to 100% recycling of waste products. Our new plants outperform other Chinese plants in terms of heat consumption, dust and sulphur emissions. We are also investing substantial resources to promote new insulation technologies which significantly reduce buildings' energy consumption.

**An assurance of true quality.** As a result of our reputation for product excellence in China, counterfeiting operations are challenging all our businesses. A Gypsum Business Unit team is dedicated to hunting down counterfeit products, which constitute an estimated 5 to 10 percent of all sales. While Chinese authorities confiscate fakes once they are detected, the most effective strategy is to outpace counterfeiters by bringing to market technologically innovative products.



#### Creating a healthy environment for change

The success of our integration process in China depends on raising our plants to the Group's global standards of health and safety, performance, overall appearance and environmental performance which are the trademarks of our business.

**Safety first.** Improving safety in China is our top priority. In 2006, we recorded two fatal work-related accidents and 50 lost-time accidents at Lafarge Shui-On sites. We have proved that a culture of workplace safety can be achieved: the Chinefarge plant achieved a "zero accident" level during 2003-2006 following its integration into the Group and its sister plant, Shunfa, has been accident-free since 2004. In China, accident frequency rates for plasterboard activity are well below the Gypsum Division average, with a single lost-time accident in 2006. The launch of the new Group safety policy in September 2006, backed by management leadership and training in safety and reporting procedures, will help us create an accident-free environment in all our Chinese plants.

**A testing time for teams.** We have already demonstrated that Chinese teams are capable of the highest standards of measurement accu-

racy. The Chinefarge kiln has attained 99% reliability for five successive years. However, other plants require substantial upgrading, hampered by outmoded equipment and processes which increase production costs and exceed Chinese emissions standards. In our first year of integration, expert teams at the Asia Technical Centre identified "quick win" actions at several sites to deliver fast results including improvement in grinder ventilation, reduction of air intake into exchanges, optimizing processes to increase initial cement strength and modifications in quarry blasting.

**Developing local talent.** We are committed to raising the level of all our employees' performance. While our new performance culture has been effective in attracting professionals to the Group, our challenge is to persuade our best people to remain with us to develop their careers once they have been trained. To create more stable staff teams, we are advertising more jobs internally, offering training and development opportunities inside and outside China as well as promoting affirmative recruitment of women.



Chilanga Cement Plc. HIV/AIDS peer educators in Zambia.

## Zambia: growth in sub Saharan Africa

### Business and social leadership challenges

Africa has the highest demographic growth in the world, with 14 cities anticipated to exceed 3 million inhabitants by 2015. Cement production in sub-Saharan Africa has nearly doubled over the last 10 years and we are the leading supplier, with 22% market share and plants in ten countries. With increasing political stability in the region and 6% average GDP growth, cement markets should expand by an average of 5.5% over the next five years.

In Zambia, we acquired in 2001 an 84.5% stake in Chilanga Cement Plc, which operates plants in Chilanga and Ndola. We anticipate considerable industry growth following government commitments to prioritize housing and significant public works projects. Despite enjoying a majority market share, we are building on our leadership position, constructing a new US\$120m Tukule plant with Chinese contractor CBMI to meet

the cement requirements of the growing Zambian economy. We see the new plant as providing a lot of benefits for us since there is an opportunity for the development of new products and services that will evolve from the volumes the new plant will generate. This will assist in creation of employment in the areas of distribution, sales, new market and product development as bulk cement offerings will become more pronounced on the domestic market. In all this we see a new group of entrepreneurs evolving some of whom will reside near the plant.

In the field of environment, the new plant will reduce drastically the dust emission levels from the current 150mg/Nm<sup>3</sup> to 35mg/Nm<sup>3</sup>, a level lower than most European countries standards. This will be a key development for the communities as this has been their major concern.

One in every six Zambian adults is living with HIV; in 2005, 98,000 died of AIDS. A 2004 anonymous study of Chilanga Cement employees revealed that 26% in Chilanga and 28% in Ndola were HIV positive. We are committed to the fight against HIV/AIDS as we regard the health of employees and their families in the communities where we operate as a critical business issue.

In 2000, working with local and national NGOs, Chilanga Cement launched its HIV prevention and wellness programme. A network of 45 trained peer educators carries out daily workplace briefings and twice weekly one-to-one discussions with employees and truck drivers as well as ensuring the free availability of male condoms in our facilities. We provide anti-retroviral treatment and HIV testing. We also provide private medical services for employees and their families.



**PANEL**

**PHILIPPE LÉVÊQUE**  
President of CARE France

**Local impact and global drive?**

Each time I visit a small or large Lafarge site, the managers and staff I meet insist on the importance of developing and maintaining strong and transparent relationships with local communities. This is essential for Lafarge to keep its “licence to operate”, and this year’s report, like the previous ones, is very weak on local impact, community relations and investments. Some things are happening, I am sure, but there is no global methodology, no process, no lessons learnt and no formal drive. Lafarge claims the group had excellent community relationship management, but this assertion can and must be challenged until there is evidence of it, clear objectives and measurements, benchmarking against peers and stronger reporting. Only then, shall we be able to evaluate Lafarge’s performance in this area, crucial across all markets, whether there are mature, emerging or very poor, and identified as such in the “Sustainability Ambitions 2012”.



**MEXICO**

The Tula cement plant in Mexico whose construction site proved that safety was inextricably linked to performance.

**Mexico:  
leading by example**

**Safety performance**

Mexico is enjoying a resurgence in economic growth. In 2003 Lafarge embarked on plans to build a new cement plant in Tula. With the plasterboard market growing at 10% annually, Lafarge also established a joint venture with a Mexican partner to build a plasterboard plant in Queretaro.

Both projects have been marked by outstanding safety records. Construction of the state-of-the-art Tula plant, which began in May 2004, finished in 20 months - 17 weeks ahead of schedule - with an accident frequency

rate of only 1.5, 11 times lower than the Mexican construction sector average. This impressive achievement, which was recognized with the Grand Safety Prize from the Instituto Mexicano del Seguro Social, resulted from a “zero tolerance” safety programme featuring training tools, stringent control procedures, weekly meetings and audits and a supervisor-to-worker ratio of 1 to 40. The same approach was applied to the construction of the Queretaro plasterboard plant, where no lost-time accidents were reported.

**Emerging economies share of world cement consumption grew from 56% in 1985 to 79% in 2005. It is forecast to increase to 87% by 2020.**

# Climate Change our actions, influence and work in partnership

Climate change is a term used to describe the alterations in the prevailing patterns of weather and temperature that have occurred over the last century.

## About Climate Change

Climate change is attributed to increased concentration of greenhouse gases, like carbon dioxide (CO<sub>2</sub>) and methane, within the atmosphere. The Intergovernmental Panel on Climate Change (IPCC) believes 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. See page 20.

turing, Buildings and others. However, from the energy user's perspective, the order of importance becomes: Buildings, Transport, Industry & Manufacturing and others. The cement industry causes 5% of man made CO<sub>2</sub> emissions today. See page 23 for how Lafarge is working with others to achieve sustainable construction.

### Effects of human activity on concentration of greenhouse gases

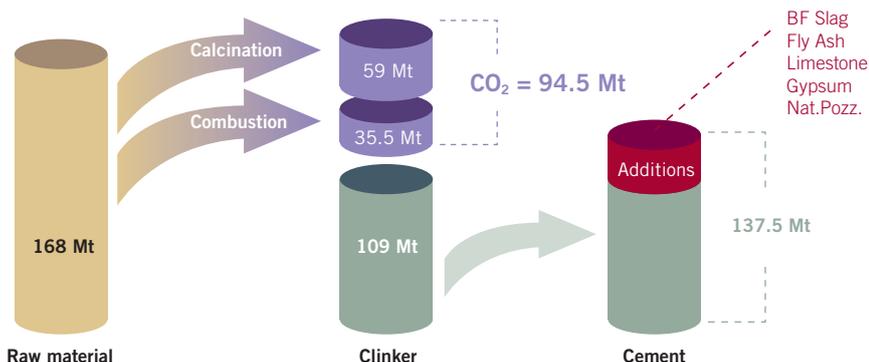
	CO <sub>2</sub> parts per million	Methane parts per billion
Pre-industrial value	280	715
2005	379	1,779

Source IPCC

### The total carbon footprint

The main CO<sub>2</sub> emitters - burning primary energy - are in order of importance: Power generation, Transport, Industry & Manufacturing.

### Lafarge CO<sub>2</sub> Emissions in 2006 (Only non biomass waste fuels taken into account)



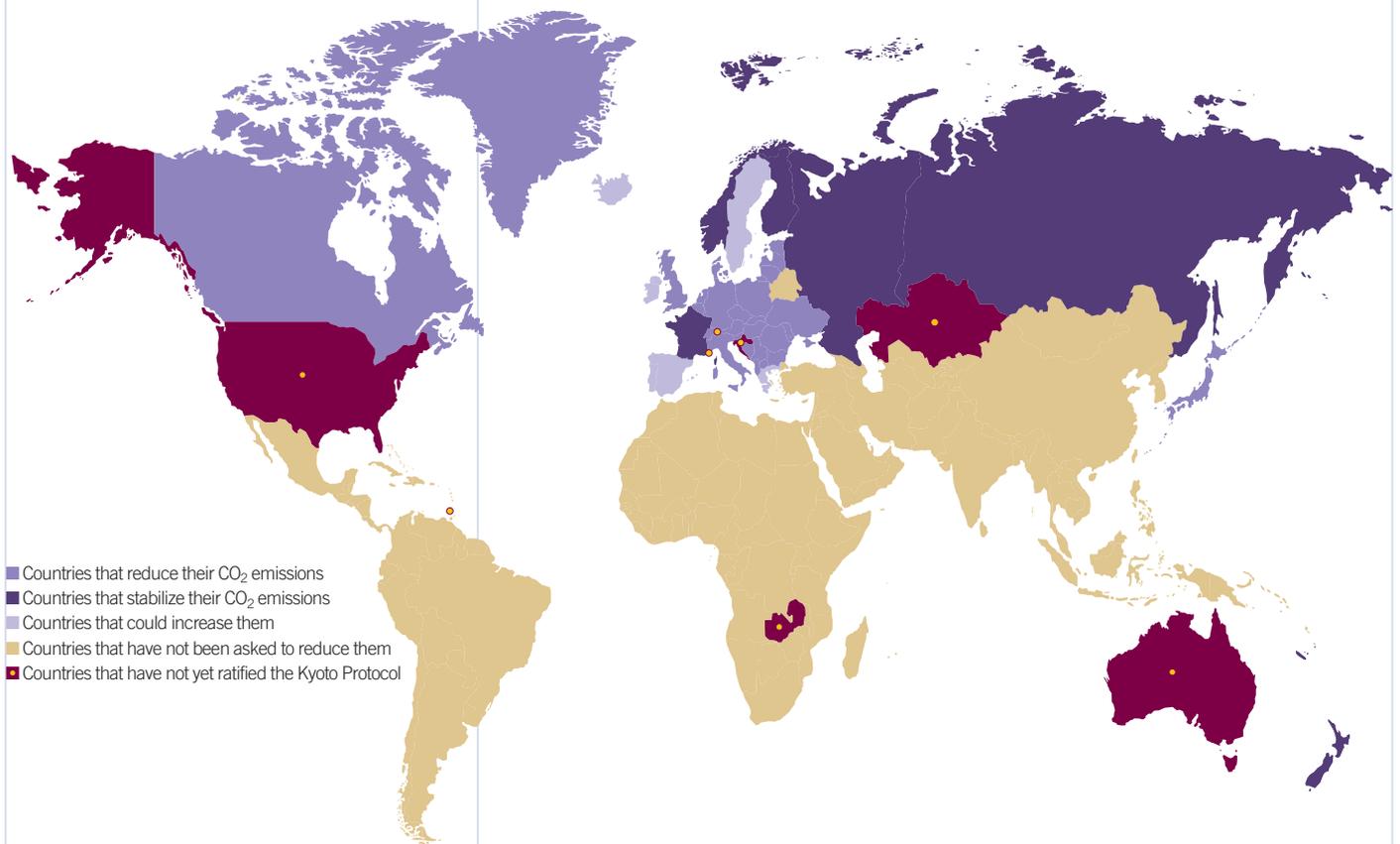
The combustion process often uses high carbon containing fuels i.e. coal or petrol coke (carbon content is 85 %) and high viscosity liquid fuel (carbon content is 70%)

With electricity consumption at about 10,000,000 kWh per year, Lafarge gypsum plasterboard plant in Hartershofe, Germany, has managed to compensate its CO<sub>2</sub> emissions thanks to solar energy production.



The main CO<sub>2</sub> emitters - burning primary energy - are in order of importance: Power generation, Transport, Industry & Manufacturing, Buildings and others. However, from the energy user's perspective, the order of importance becomes: Buildings, Transport, Industry & Manufacturing and others.

## Managing CO<sub>2</sub> emissions under the Kyoto Protocol



### World management systems for CO<sub>2</sub>

The 1997 Kyoto Protocol assigns mandatory targets for the reduction of greenhouse gas to the developed nations that are signatories. It imposes an average 5.2% reduction for 2008-2012 compared to 1990. Lafarge operates in countries that have:

- no target assigned (e.g. India)
- not ratified the protocol (e.g. the United States)
- a target to limit the increase of emissions (e.g. Spain)
- a target to stabilize emissions (e.g. France)
- a target of reducing emissions (e.g. Canada)

We recognise that the regime which replaces Kyoto will necessarily be more challenging. We are actively contributing to the debate on what that regime should be, see Public Policy positions pages 46-47.

### The EU CO<sub>2</sub> Emissions Trading System

- Established 2003, initial period 2005-2007
- Quotas for five key industrial sectors, including cement
- Covers 50% of EU CO<sub>2</sub> emissions
- All Lafarge's EU cement activities included

- Some gypsum activities included
- Aggregates and ready-mix concrete are excluded
- Each plant has an emissions quota
- Unused quota may be sold
- If the quota is exceeded, compensating credits must be bought on the open market
- Over the initial period Lafarge's emissions have broadly matched the quota because of our voluntary (WWF) commitment made in 2001 and reductions achieved since then

The Calgary train station, Canada, built with Ductal®.  
Architect: CPV Group Architects & Engineers LTD



### PANEL

CORNIS VAN DER LUGT  
UNEP

I welcome its efforts and encourage Lafarge to further explore the use of waste byproducts from other industries to change its fuel mix and reduce greenhouse gas emissions, inspired by the principles of industrial ecology and life cycle management. Good to see also is data indicating the amount spent on research and development in this field. In future reporting, more coverage of systematic progress in introducing alternative fuels through operations world-wide and involvement in CDM projects would be welcome.

Lafarge believes that all necessary action should be taken to cap the global average temperature increase at 2°C.

## Lafarge and climate change

### What are Lafarge's commitments?

Lafarge believes that all necessary action should be taken to cap the global average temperature increase at 2°C. We have set measurable targets for our operations. In establishing our WWF partnership in 2001 we committed over the period 1990-2010 to:

- reduce our absolute gross CO<sub>2</sub> emissions by 10% in industrialized countries<sup>1</sup>;
- cut our worldwide net<sup>2</sup> emissions by 20% per tonne of cement.

Together with the WBCSD, we have encouraged industry-wide action by initiating the Cement Sustainability Initiative (CSI) and by co-leading the Energy Efficiency in Buildings (EEB) initiative.

### How does climate change happen?

Greenhouse gases 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.

The Intergovernmental Panel on Climate Change (IPCC) believes 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 IPCC projects a rise in temperature of between 1.8° C and 4°C by 2100. This could lead to sea level rises of between 28-43 cm and the disappearance of Arctic summer sea ice in the second half of this century.

Rising average temperatures and changing weather patterns are the unintended and destructive consequences of human activity.

### How does building and construction contribute to climate change?

Buildings account for about one-third of the world's energy use. This is expected to grow. If energy consumption in buildings rises at projected rates, buildings will use by 2050 almost as much energy as industry and transport combined.

1. Climate Change Convention Annex 1 countries plus Serbia and Moldova

2. Net emissions are gross emissions minus the emissions from waste combustion (see public position statements pages 46-47)



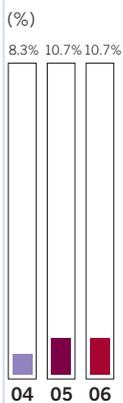
## PANEL

**JEAN-PAUL JEANRENAUD**  
WWF

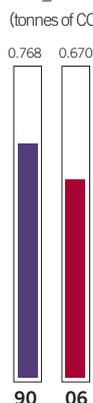
We welcome the progress made in reducing specific net emissions of CO<sub>2</sub> by 14.2% below 1990 levels. However, there has been little evolution of the fuel mix since 2004, the only real change being the increased use of waste, which is a trend across the cement industry. Biomass use has been rather stable in the last years, and global CO<sub>2</sub> emissions are now in fact increasing in both developed and emerging economies. Lafarge has embarked proactively on developing CDM projects. However, the company should now develop a strategy for reducing their dependence on fossil fuels, while setting challenging targets to increase the share of biomass. The commitment to report on persistent pollutants data from 2007 onwards and to implement best manufacturing practices, including reducing emissions at top emitting kilns by 2010, represents progress in Lafarge's approach and is welcome. Nevertheless, we were again disappointed by the lack of information on monitoring and emissions data for persistent pollutants, including dioxins and mercury. Given our joint work on this issue over the past few years, we would have appreciated some consultation on the development of the new commitment to address this issue in their Sustainability Ambitions 2012. WWF also welcomes Lafarge's proactive approach in recognising stakeholders' concerns about the marine aggregates extraction controversy in Brittany. We encourage the company to develop a constructive dialogue to resolve this issue.

As Lafarge has declared a commitment to promoting sustainable construction, involvement in the One Planet Living initiative would afford the company an opportunity to be involved in a series of groundbreaking sustainable construction projects around the world and demonstrate their leadership in this sector.

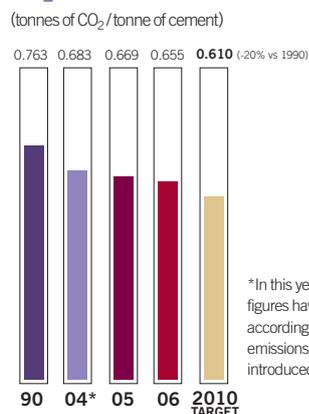
### Part of energy from alternative fuels (%)



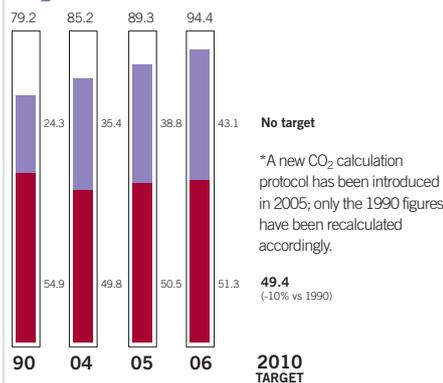
### Specific gross CO<sub>2</sub> emissions (tonnes of CO<sub>2</sub>/tonne of cement)



### Specific net CO<sub>2</sub> emissions (tonnes of CO<sub>2</sub>/tonne of cement)



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



### Fuel mix evolution in the Cement business

	2004	2005	2006
Coal	45.3%	40.0%	43.5%
Coke	28.2%	30.6%	28.0%
Oil	6.2%	6.5%	5.8%
HVF**	0.3%	0.3%	0.4%
Gas	11.5%	11.9%	11.6%
Biomass	2.1%	2.1%	2.3%
Waste	6.5%	8.6%	8.4%
Others	0.0%	0.05%	0.05%

\*\*HVF: High Viscosity Fluids

## BIG ISSUES

Comparison of bridge beams made with different types of concrete. Left to right: Ductal®, prestressed concrete and reinforced concrete.



### Comparison of bridge beams

	Ductal®	Prestressed Concrete	Reinforced Concrete
Weight: (kg/linear metre)	140	467	530
Quantity of aggregates, water and additives (kg)	101	380	453
CO <sub>2</sub> intensity (kg)	24	55	49

in making construction more sustainable. Agilia® is a self-compacting concrete that offers easier application. It ensures that formwork is filled evenly, delivering a finish and a quality at least equal to that of conventional concrete, but without the need for vibrating. It thus saves both time and energy. Ductal®, an ultra high-performance concrete, conserves natural resources and extends the lifetime of a construction. Thanks to a mechanical strength which is 6 to 8 times greater than that of traditional concrete, the volumes of raw materials used and therefore the energy content of a construction are considerably reduced. Research is also under way to promote the thermal inertia properties of concrete.

### Carbon capture and storage

In the longer term, Lafarge is working with industrial and scientific partners on the feasibility of CO<sub>2</sub> concentration for capture and storage. These are potential long term contributors to beating climate change.



The Rawang and Kathan cement plants in Malaysia are now using palm kernel shells as alternative fuels under a CDM project, saving 60,000 tonnes of CO<sub>2</sub> per year.

## Leadership in combating climate change: Where Lafarge has control

### A robust management system

Our management system involves monthly reporting of emissions and an annual independent audit which is communicated to and discussed with WWF. Emissions are measured according to a protocol developed by the WBCSD CSI. This protocol has subsequently been adopted by governments as the most accurate and effective measure for emissions. The Cement Division accounts for about 90% of our energy consumption and about 98% of our CO<sub>2</sub> emissions.

### Three lines of approach

Our approach consists of:

- increased energy efficiency and materials addition;
- product and process innovation;
- carbon capture and storage.

### Increased energy efficiency and materials addition

Overall net emissions have been cut from 0.763 tonnes of CO<sub>2</sub>/tonne of cement in 1990 to 0.655 in 2006, a 14.2% decrease.

A number of developments have contributed such as reducing the specific heat consumption of our kilns and upgrading the old less efficient plant by the installation of more up-to-date technology. A key contributor to energy efficiency is alternative fuels such as biomass, or waste and by-products. A good example is burning of palm kernel shells, a waste product

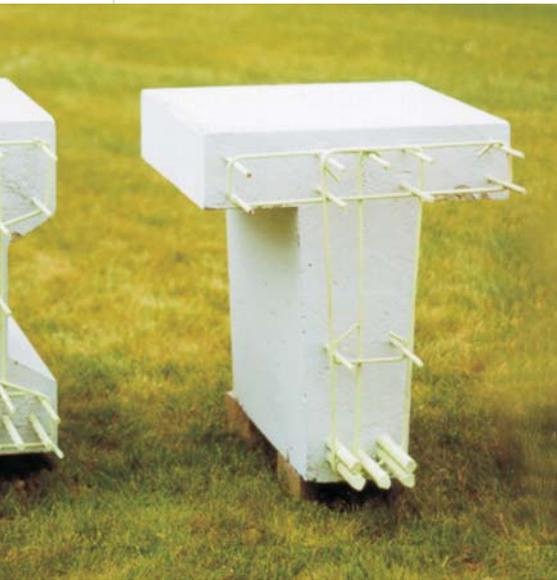
of the palm oil industry, in our Rawang and Kathan cement plants in Malaysia. The project saves 60,000 tonnes of CO<sub>2</sub> per year. This is Lafarge's second Clean Development Mechanism (CDM) project. A CDM project is an emission reducing project in a non-Annex I country approved by a UN body as a credit towards the Kyoto objective. Further CDMs are underway in Brazil, India, Philippines and Uganda.

CO<sub>2</sub> emissions result from the manufacturing of cement. 60% of the emissions come from the release of CO<sub>2</sub> embedded in limestone, called decarbonation, and 40% from usage of fossil fuel. Where we are able to use materials such as slag and fly ash in the cement making process, we cut specific CO<sub>2</sub> emissions.

Investments in programmes such as modifying the chemical composition of clinker to generate less CO<sub>2</sub> during its production amounted to 11% of research expenditure in 2006. The research concentrates strongly upon our cement business. In addition close to €100m is spent in our technical centres on increasing the efficiency of our plants.

### Product and process innovation

Lafarge has innovated so that some products and processes can contribute to sustainable development by being easier to apply and offering improved performance. They assist



## The key to make progress towards sustainable development is to address the building sector

The building sector's **environmental footprint** needs to be addressed at every phase of a building's existence: production and distribution of materials, erection, a building's energy efficiency and maintenance over the years and its end of life.

The result of energy life cycle analysis shows that about 75% - 85% of a building's total energy is consumed during its use phase: energy used for heating, cooling, lighting and hot water. The remaining 15 - 25% is used in all other phases of its lifetime: to produce and deliver materials (steel, glass, concrete, timber, bricks etc.), to erect, to maintain, to refurbish and to demolish the building.

The building sector is **economically** important. It represents roughly 10% of world GDP.

The building sector has **social** importance: it answers to the basic need for housing and provides employment to more than 100 million people in the world.

## Leadership in combating climate change: Where Lafarge has influence

### The facts:

- The world's population is rising by 33% to 9 billion by 2025 and requirements for housing and infrastructure are set to increase dramatically.
- Existing buildings in developed countries consume 40% of total energy, 40% of natural resources and generate 40% of all the waste.

We see that buildings - and constructions - have an important environmental footprint, but also generate social and economic benefits to society. Therefore, we believe that the entire sector needs to act in accordance with the guiding principles of sustainable development.

This is why Lafarge, as one of the actors in the construction value chain, is taking initiatives in the field of sustainable construction.

### Product innovation

Lafarge increasingly takes sustainable development criteria into consideration when deciding on R&D programs for new product development.

### Working in partnerships

Lafarge co-chairs, together with United Technology Corp. and the WBCSD, the initiative "Energy Efficiency in Buildings" (EEB). This project brings together all 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

**"We have to act on climate change. Buildings are key energy users. They must play their part in cutting emissions, and the know-how exists to do that" Björn Stigson, President of WBCSD.**

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.

The process involves stakeholder dialogues and forums to seek ideas and opinions, using market research to understand the barriers to energy efficient buildings and how to overcome them. Finally, the EEB project will deliver in 2009 a call for action to the industry.

A global assurance group has been formed to advise and validate the project (see box below) 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.

Lafarge is a founding member of the United Nations Environment Programme (UNEP) Sustainable Building and Construction Initiative (SBCI), which aims to establish global baselines for sustainable development. It promotes tools and strategies to enable companies to meet those baselines.

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. Sustainable construction is one of the priorities in the partnership renewed with WWF in June 2005.

## Members of the Assurance Group of the Energy Efficiency in Building Projects (WBCSD)

**Dr. Klaus Töpfer**, is the former United Nations Undersecretary-General and former Executive Director of the United Nations Environment Program (UNEP). Dr. Töpfer is the Chairman of the EEB project.

**Hon. Eileen Claussen** (USA), President of the Pew Center on Global Climate Change and Strategies for the Global Environment.

**Vivian Ellen Loftness** (USA), University Professor and Head, School Architecture, Carnegie Mellon University and Senior Researcher at the Center for Building Performance and Diagnostics.

**Thomas Johansson** (Sweden), Professor of Energy Systems Analysis and Director of the International Institute for Industrial Environmental Economics (IIIEE) at the University of Lund, Sweden and Senior Advisor on Energy and Climate Change to the United Nations Development Program (UNEP).

**Shin-ichi Tanabe** (Japan), Professor in the Department of Architecture at the Waseda University.

**Jiang Yi** (China), Vice Dean of the School of Architecture at Tsinghua University and Academician of the Chinese Academy of Engineering.

## BIG ISSUES

### BANDA ACEH

Lafarge employees in front of the Group's harbour in Banda Aceh, Indonesia.



# the people who make it happen

A high-performing, skilled workforce is key to Lafarge's success.

### Global and local

Our Group is global in scope - employing 71,000 people in 70 countries around the world - but each business is local. This is because our products cannot economically be transported over significant distances and so each of our businesses serves a particular local market. Our challenge therefore is to develop Group standards while respecting the inherent localness of our businesses.

Success in our industry also requires us to recruit, develop and retain talented people.

### Leader for Tomorrow

Promoting the Lafarge Way is central to the Group's Leader for Tomorrow corporate project, launched in 2003, which has been rolled out across all of our businesses.

In early 2006, all employees were surveyed in their own languages - 43 in all - about their perceptions of changes in the Group and their impact on their own behaviour and that of

colleagues in the workplace after the LFT project. The record response rate of 80% created an opportunity to make further progress in terms of dialogue and improving performance.

Some of the results of this internal survey are given in the table below.

As previous surveys, the employee engagement with the Group was shown to be strong. The first part of this survey was composed of Group questions but each Business Unit chose its own questions for the second part. Each site and Business Unit has devised their own action plan to improve on the results.

SUBJECT	RESULT
Employee engagement	81% are proud to work for Lafarge 73% would recommend Lafarge as a good place to work
LFT and values	68% believe values are clearly communicated 53% see some improvement in the way they work with others but 53% believe there has been no improvement in the way they are managed since LFT started
Safety	78% consider that managers show by their action that safety is their number one priority 75% consider that health and safety rules are observed in their workgroup
Contribution of the employees through ideas and initiatives	68% of the employees feel encouraged to come up with new and better way to doing things but 58% think that when they do a good job, their performance is not rewarded
Performance and development	66% of the employees understand how their performance is evaluated but 49% think that their manager does not give them regular feed back on their performance



Employee at the Montcada cement plant, Spain.

Our Group is global in scope - employing 71,000 people in 70 countries around the world - but each business is local.

### Respecting local work cultures

In some parts of the world, local work cultures and habits can be perceived as a bar to the Lafarge Way: as an example the full and frank exchange of ideas and views with hierarchies, that is part of the Lafarge Way, does not come naturally to employees. Therefore, following the Employee Feedback Survey, in-depth interviews have been conducted with 20 to 30 employees in Business Units in Jordan, Malaysia and China to ensure a positive coming together of the local work culture and the culture of our Group.



### PANEL

**MANFRED REUER**  
European Work Council, Lafarge

All important duties and activities at Lafarge are listed in the report. I am particularly glad to see that Health and Safety actions have become a priority.

Lafarge should do all it takes to employ healthy and motivated workers. The European Works Council is to set up a working group on occupational health. Lafarge should by all means support this initiative.

Another important point is on-the-job training. Education and on-the-job training should apply to white and blue collar workers, and it should not be limited to management issues. For all the above duties we need our employees. That is why Lafarge needs resources, ideas to motivate the staff, to promote leading positions for women – very positive, a very ambitious target. In this industry I hardly believe that doubling leading women positions is feasible, but it is a target, a commitment for Lafarge.

## BIG ISSUES

### Health and safety

For Lafarge, health and safety are key Group values that form the basis of good performance. Our ambition is to reach as soon as possible zero fatalities and to join the “best in class” industrial companies. To achieve this, the Group has defined a policy and action plans that call for commitment from everyone. The new Group safety policy was launched in September 2006 following an audit of 91 sites by Dupont in the first half of 2006. Despite substantial progress in injury rates and safety awareness, the audit revealed a lack of systematic transmission of good safety practice, failure to apply procedures in a rigorous fashion, low management involvement and a need to review the safety function in light of its ambitions.

A Health and Safety Roadmap has now been established for the Group, based on five critical challenges:

- **building world class foundations** with a revised Health & Safety Policy, Rules and mandatory group governance and operations standards;
- **learning and sharing** via training programmes for leaders, managers and supervisors, a process for distilling best practices, supported by health and safety staff;
- **living safety** through effective communications, incident investigation processes, job hazard assessments and regular audits;
- **sustaining local improvement** by implementing the roadmap at Business Unit level, safety measurement systems and safety focus group initiatives;
- **leadership and accountability** with sponsorship of the Roadmap from the top and clear management accountability.

### Training

To ensure we remain the employer of choice for our people, we support our employees throughout their careers in the Group, helping them develop and demonstrate their creativity and sense of initiative, to keep pace with the demands of our environment.

Training is organized at both Group and local levels. To complement local training and on-the-job coaching, Lafarge University was established by the Group in 2003 to change the mana-

### Occupational frequency rate <sup>1</sup>

	2004	2005	2006
Occupational frequency rate <i>Group</i>	3.57	3.09	2.57
Occupational frequency rate <i>Cement</i>	2.61	2.48	2.14
Occupational frequency rate <i>Aggregates &amp; Concrete</i>	4.75	3.66	2.78
Occupational frequency rate <i>Gypsum</i>	5.43	5.10	4.43

<sup>1</sup> | Number of accidents leading to loss of time by million of hours worked.

### Occupational severity rate <sup>2</sup>

	2004	2005	2006
Occupational severity rate <i>Group</i>	0.19	0.19	0.17
Occupational severity rate <i>Cement</i>	0.14	0.14	0.14
Occupational severity rate <i>Aggregates &amp; Concrete</i>	0.25	0.24	0.20
Occupational severity rate <i>Gypsum</i>	0.28	0.27	0.23

<sup>2</sup> | Number of calendar days lost as a result of accidents by thousand of hours worked.

**Note:** This data covers 100% of the workforce.

### Group's safety performance

	2004	2005	2006
<b>Total number of employees</b>	<b>65,326</b>	<b>68,634</b>	<b>70,676</b>
Number of lost-time injuries among Lafarge employees	507	438	368
Number of lost-time injuries among contractors' employees	264	257	273
Lafarge employee fatalities on site	3	6	11
Lafarge employee fatalities – transport	1	3	4
Contractor employee fatalities on site	8	9	12
Contractor employee fatalities – transport	12	12	13
Third-party fatalities on site	2	3	0
Third-party fatalities – transport	2	10	7
Lafarge employee fatality rate* – <i>Group</i>	0.56	1.27	1.95
Lafarge employee fatality rate* – <i>Cement</i>	0.48	1.00	2.21
Lafarge employee fatality rate* – <i>Aggregates &amp; Concrete</i>	0.45	2.15	2.05
Lafarge employee fatality rate* – <i>Gypsum</i>	1.35	0.00	0.00

\*Fatality rate: number of fatal accidents per 10,000 employees

gerial styles of its executives, encouraging them to act in accordance with our Principles of Action. Individual development plans are drawn up for all managers and revised annually to ensure that they constantly acquire new skills. In 2006, 2013 managers attended 48 Lafarge University sessions, a 2.7% increase over 2005.

### Average training time per year and per employee

(in hours)	2006
Managers	37
Non-managers	23

### Skills development

The Group has always promoted internal mobility. In 2006, 1656 job vacancies were published on the Group Job Market. 452 posts, 27% of the total, were filled by this process. Our Business Units implement numerous skill and competency development programmes. Some outstanding examples across the Group include:

- Development of a record number of qualified cement professionals and managers through manpower planning, individualized career management, professional mobility, select recruitment, skills development

## For Lafarge, health and safety are key Group values that form the basis of good performance.



### PANEL

MARION HELLMANN  
BWI

Lafarge is making a serious review of the challenges which are formulated in the health and safety roadmap. Nevertheless, the main focus is on safety issues and the health component still needs to be elaborated. In particular, workers' participation and rights including workers of subcontractors in health and safety committees should be part of the concept. We should keep in mind that Trade Unions make an important contribution to the prevention of accidents and ill health at work. Trade Union Safety Representatives should be elected to represent workers interests on health and safety. Joint management- union Health and Safety Committees should be established, as is already required by law in many countries. Workers participation in Operational Health and Safety (OHS) implementation can also bring down the accident rate and the fatality rate which is still increasing; furthermore, systematic OHS training in the group concept still needs to be elaborated.

programmes and strong co-ordination with the Cement Division;

- Rapid recruitment of highly qualified engineers spanning a range of technical disciplines to establish the Beijing Office of the ATC (Asian Technical Centre);
- Creation of an ATC certification programme for Central Control Room operators incorporating on-the-job training and assessment with support from Lafarge plants in Malaysia, China, India and Egypt;
- Creation of programmes to accelerate development of sales and marketing executives and promote skills development for the sales force in the North American Cement Division;
- A Romania-Moldova Twinning Programme which facilitates transfer of expertise to developing Business Units, aligns development opportunities for plant performance objectives and builds a relationship between mature and developing companies;
- Green Day marketing events in Vietnam where Lafarge employee teams visited 500 retail shops in key markets, conducting market surveys with retailers to gain feedback on products and services and better understand their needs;
- In North America, development of a maintenance organization by certifying as many Inspectors and Planners as possible through a programme of training classes, coaching processes and assessments encompassing tests, leadership, projects, plant-associated KPIs and a final "Sit the board" event;
- Developing Aggregates Talent Programme (DATP): We are recruiting young engineers in emerging countries, training them for 18 months in our established business units in the UK, France, USA and Canada before promoting them back to lead our developments in their home countries;
- In Turkey, an Industrial Competency Project (EYP) which aims to improve technical skills of Cement Division employees through a 3-year training programme incorporating CECIL+, hands-on training by specialists and customized training for each employee;
- In Ecuador, a safety-driven cultural change project (Latitud 0) which swiftly integrated the Group's best practices alongside existing best practices.

### HIV/AIDS

Lafarge employs approximately 7,000 people - 9% of the group's workforce - in 10 sub-Saharan African countries. These are among those worst hit by the AIDS epidemic: Benin, Cameroon, Kenya, Malawi, Nigeria, South Africa, Uganda, Tanzania, Zambia and Zimbabwe. Confronted with this serious threat to public health and with the lack of infrastructure in many of the countries in which it operates, Lafarge has been committed to the fight against HIV/AIDS since 2000, in accordance with its values and sustainable development approach.

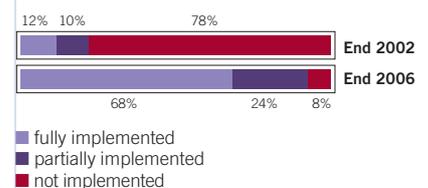
The Group has undertaken various initiatives to improve the management of health in Africa, focusing particularly on the HIV/AIDS problem.

#### As of 2006:

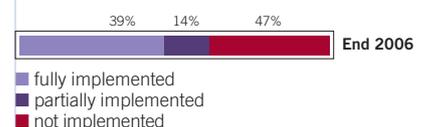
- 90% of employees in Sub-Saharan Africa were benefiting from prevention and information activities and from distribution of free condoms;
- 40% of employees had voluntarily participated in testing campaigns;
- 9 countries were offering access to antiretroviral therapies (ART) for workers and their families;
- about 300 people were undergoing antiretroviral therapy in Lafarge clinics. Others are treated in non-Lafarge facilities. As we respect employee privacy we do not have an exact number for people in this category.

Please see pages 42-43 for our new HIV/AIDS target.

#### Sub-saharan HIV roadmap actions



#### Sub-saharan Malaria roadmap actions



## DIVERSITY

Employee at the Chongqing cement plant laboratory in China.



## Diversity

The promotion of diversity is an important objective of our HR strategy.

In 2004, Lafarge became one of 35 major French corporate signatories to a Diversity Charter which commits the Group to achieving cultural, ethnic and social diversity in its workforce. As part of this commitment, the Group adopted a policy of promoting young ethnic minority graduates within its French Business Units. During 2005-6, more than 80% of Human Resources staff specializing in recruitment and career development, as well as Executive Committees, participated in awareness-raising and training sessions organized by the Business Units to promote this policy. As a result, half the young graduates recruitments achieved during this period have met the diversity rules and targets.

### Women within the Group

%	05	06	Target 08
Boards of directors	6.7	6.7	
Senior executives	1.6	7.4	
Senior managers	9.6	10.0	15.2
Managers (all categories)	15.8	17.3	
Employees	14.5	16.1	

### Percentage of Business Units that pursued affirmative hiring or career development action for...

%	2005	2006
... women	9	4
... ethnic minorities	4	5
... the disabled	9	11
... job seekers	4	5
... people over the age of 50	NA	3

NA= Not Available

In 2006, 17% of the Group's Business Units set up a specific recruitment and/or career development plan adapted to their local context.

Lafarge also encourages employees to work abroad to promote sharing of good practice and to introduce a more cosmopolitan perspective into its teams. For example, CIMENCAM, a Lafarge cement plant in Cameroon, launched a training programme in 2006 to develop local managers - none of whom had previously held key management positions - and contribute to Group development. Following the programme, local managers now hold three key positions and three Cameroonian CIMENCAM staff undertook expatriate assignments at the end of 2006.

## Remuneration and share ownership

Lafarge offers highly competitive salaries when compared with companies of similar size. Lafarge also offers benefits that are often more generous than those offered locally, helping the Group attract, motivate and retain skilled employees.

Since 1961, Lafarge has operated an active employee share ownership programme so that all employees can share in the benefits of the Group's economic performance. All of the Group's employee offerings have shared common features:

- employees are engaged to the extent permitted by local laws;
- the employee's contribution is supplemented by an employer's subsidy;
- in certain countries savings in the plans cannot be sold or disposed of for a minimum period, subject to local requirements.

The Group launched its latest Lafarge en Action employee share ownership plan in 2005. 48.8% of employees subscribed to the offer.

At the end of 2006, Lafarge employees owned 1.74% of our share capital and 2.88% of our voting rights. We will repeat these employee share offers every two to three years to increase further the number of employee shareholders. Currently we have 42,000 employee shareholders, out of our total workforce of 71,000.

### Comparison of minimum salaries/statutory salaries

	Lafarge minimum salary	Sector minimum salary	Statutory minimum salary (Base 100)
Chile – Aggregates & Concrete	147	100	100
China – Cement	115	100	100
Jordan – Cement	313	253	100
Romania – Gypsum	161	113	100
South Africa – Aggregates & Concrete	256	100	100
Ukraine – Cement	175	100	100
United States – Gypsum	250	230	100
Vietnam – Gypsum	213	100	100

Examples taken from different continents.

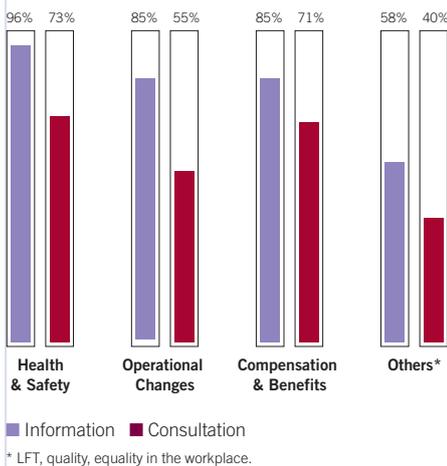
# BIG ISSUES



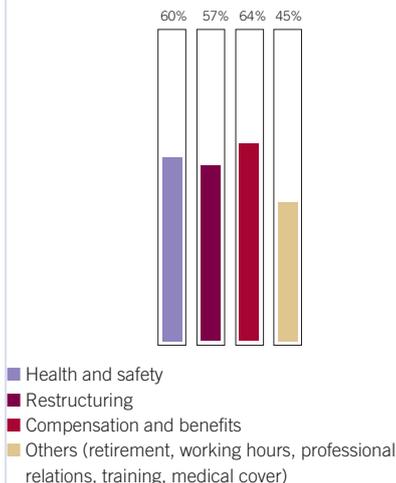
## Breakdown of illnesses prompting applications for legal recognition as occupational illness in 2006

	Recognized illnesses	New cases	Cases pending
Respiratory or pulmonary conditions	8	0	9
Asbestos-related conditions	0	0	9
Silicosis	0	0	1
Chronic bronchitis	1	0	1
Dermatitis	2	0	1
Burns	0	0	1
Hearing impairment	4	1	9
Sight impairment	3	0	6
Vibration syndrome (hands, arms etc.)	0	1	3
Backache, hernia, lumbago	5	1	1
Other	1	3	0

## Percentage of employees informed/consulted on local policies or procedures in 2006



## Percentage of employees covered by collective agreements on specific questions in 2006



## Working with unions

Lafarge upholds the fundamental social rights defined by the International Labour Organization (ILO) and contributes to raising international social standards. A total of 82% of Lafarge's workforce was covered by collective agreements in 2006.

An agreement on the Group's approach to social responsibility and international labour relations was signed in September 2005. Since then the signatories of this agreement (Lafarge and three international union federations) have met twice (January and November 2006). The discussions were focused on :

- safety, the group priority (Group Safety Initiative, safety road map, health and safety policy, health and safety rules.)
- the integration of the Shui On activities in China within the Group and particularly on social matters,
- local industrial relations difficulties

In 2007 Lafarge will share with the international trade union federations, the improvements made to the safety culture in Lafarge's Chinese sites.

Lafarge has worked closely with the unions via its European Works Council to manage the proposed sale of the Roofing Division. Following meetings, both the Group and the unions are satisfied that the new owners are committed to achieving a quality of dialogue with union representatives which will enable them to develop a constructive relationship going forward.

## Restructuring

Organisational changes and restructuring are part of business. This is particularly the case

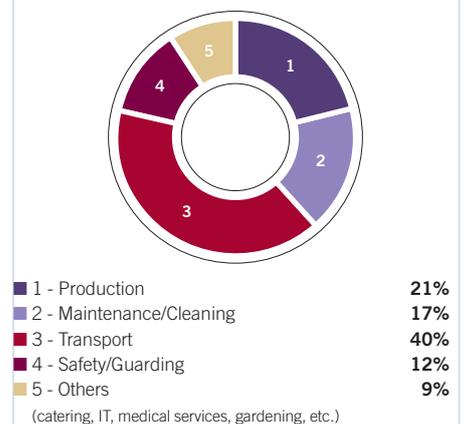
since the company is growing through acquisition. The plant that we buy has often been overmanned in the past. Part of bringing it up to modern, efficient performance standards often means that a smaller workforce is required. Our Business Units make their best efforts to reduce the impact of change by applying our employment policy and restructuring guidelines.

## Job evolution\*

	2006
Hirings	5,046
Resignations	5,176
Retirements	806
Redundancies	3,982
Deaths	114
Balance	-5,032

In 2006, there was a slowdown in recruitment, not compensating for the number of departures. Notably, in China and the U.S.-Canada, the number of resignations was high. On the other hand, redundancies for economic reasons have decreased.

## Breakdown of outsourced employees in 2006



Subcontracting has remained stable, with persons employed by subcontractors representing 30.7%, compared to 30.1% in 2005, when excluding the former Roofing division.



### CUSTOMERS

(Top) Cleaning a premix truck in Chile.  
(Bottom) A French jobsite, using Signa™, the plasterboard with 4 tapered edges for a better and easier finishing.



# Customers: building relationships, meeting needs

*“Our mission is to provide the construction industry with products, systems and solutions that are the most reliable, innovative and cost effective”* Lafarge Principles of Action 2003

One of the goals is to be the preferred supplier for our customers. We seek to convey our sustainability vision to our customers for their business.

## Who are Lafarge’s customers?

### The nature of our markets

Lafarge sells its products primarily on a business-to-business rather than on a business-to-consumer basis. 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. In addition, concrete must be delivered within a few hours of production. This means that our markets are above all local markets. We have a few multinational customers who buy through local contracts all around the world.

Globally the gypsum market is the most consolidated. 80% of the wallboard market is supplied by seven firms. Historically the cement market was fragmented. Consolidation began in Europe in the 1970s and the United States in the 1980s. Today the world’s top five producers have 28% of the global market. Concrete and aggregates are in the early stages of consolidation.

Each market reflects the state of development of its economy and the nature and structure of its construction industry.

### Multiple influences upon the purchase

In most business-to-business transactions the purchasing organisation also uses the service or consumes the product. The purchasers judge the importance of price and quality for themselves. All Lafarge’s products are used in construction. The set up here is much more complex.

Many different actors can be involved. Their influence upon the purchase decision varies with the product line, the use to which the purchase is to be put and the structure of the local market.

The Millau Viaduct, France.



Most customers buy only enough to cover their current needs and consequently Lafarge rarely has a significant order backlog.

**What influence does the actor have over the purchase decision?**

<b>Owners of land</b>	Sometimes the owner is also the developer. However, where the owner is not the developer, the owner has little or no influence over the purchase
<b>Building developers</b>	Usually the developer exerts only indirect influence over the decision. The business model for the development sets the general parameters of price and quality, but in the case of gypsum, drywall often has a critical influence
<b>Architects</b>	Architects have general influence through their design. Usually they do not specify with absolute precision the materials to be used. Sometimes the architect is also the specifier
<b>Specifiers</b>	Significant influence in terms of the exact specification of the materials needed
<b>Government regulators</b>	Government influences the parameters of product standards and specifications. This influences factors such as quality, safety, health and environment
<b>Contractors</b>	In some cases, within the constraints laid down by the other actors listed above the contractor will place the order and make the payment...
<b>Sub-contractors</b>	...in other instances this will be done by a sub-contractor. In Gypsum the sub-contractor has a critical influence
<b>Wholesalers</b>	Some of our cement, aggregates and gypsum products are sold through wholesalers rather than direct. The wholesalers influence the choice of retailers and other customers
<b>Retailers</b>	In some developing markets cement is sold direct to consumers through local shops. Gypsum wallboard is also sold through Do-It-Yourself centres. Retailers influence the choices of consumers
<b>Users of buildings</b>	In most circumstances the users exert little influence, except for gypsum drywall. This may vary for buildings or infrastructure with specialist uses e.g. concert halls, hospitals, military facilities

Lafarge marketing strategy is geared to address all the different actors.



Mobile Readytec mortar plant implemented on a jobsite in Seville, Spain.



**PANEL**

**KARINA LITVACK**  
F&C Asset management

Lafarge is absolutely correct to focus on Customers as a pivotal stakeholder group: as we all know, 'the customer is always right', so both the company's financial viability and its success in launching sustainable product designs depend above all on customer behaviour.

The report lays out clearly the difficulties Lafarge faces: fractured purchasing decisions mean the ultimate beneficiaries of design improvements are largely oblivious to product improvements. In other words, no matter how hard Lafarge may try to lead this distracted horse to water, sustainability is not making it very thirsty. Sadly, however, the report gets bogged down in over-long descriptions of customer satisfaction metrics, and ducks the obvious but difficult question: if customers are a weak force for change relative to other stakeholders, what is Lafarge's strategy to mobilise them, create a need and translate sustainability into a value enhancer?

**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 product is growing.

Our customers product expectations relate to:

- durability;
- health and safety, during construction and in use;
- effect upon the environment;
- ease of application and minimisation of waste;
- and, in the case of buildings, creating a comfortable and attractive place to be;
- services such as system designs, response to tender, on-site delivery, training, technical assistance, tailor-made products.

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 and in developing products to match particular needs and build product differentiation.

Customers benefit when we eliminate 'hidden costs'. This includes making the order process simpler with accurate, timely billing. Equally it can mean the development of product that is easier and quicker to use, thereby reducing construction time and so the customers' labour costs.

Products must meet and exceed local regulatory requirements. They must be adapted to meet the market needs. This can be in terms of adaptation for a specific use or the quantities in which it is available. We cater both for firms responsible for major works like the Olympics and for individuals in developing countries who want small quantities of cement for simple household improvements.



**STATE-OF-THE ART PRODUCTS**

Construction of the Law Court in Pontoise, France, made with self leveling and self placing concrete Agilia®.

Our approach is to listen to and understand our customers, build value propositions and improve them, deliver seamlessly what we promised, and measure customer perception and action it.

## How does Lafarge meet customer needs?

### Strengthening our customer orientation

Being on the same wavelength as our customers is key to growth and increasing market share. Today Lafarge is delivering more value-added products and services tailored to the specific needs of different types of customers, through different segmentations such as in cement: bags/bulk, ready-mix, pre-cast, roads.

Our approach is to listen to and understand our customers, build value propositions and improve them, deliver seamlessly what we promised, and measure customer perception and act on it.

For instance, in France Lafarge uses the internet to reach key customers and influencers of purchasing decisions. Each group has a dedicated website. Batissor.com is for the 300,000 small builders and entrepreneurs. It is part of a multi-channel approach. It is supported by the quarterly magazines L'Entre-Nous and L'Entre-Vous Madame and

eight demonstration days at different centres across France. Creargos.com is for architects and specifiers. Half of all French architects are subscribers. Batirenovation.com is for the public, particularly homeowners thinking of home improvement or renovation. The site had 3.7 million hits in 2006. All product strands promote sustainability - for instance giving information about the new requirements for a thermal efficiency diagnosis introduced in France in November 2006.

Our Gypsum Division is building upon a fuller understanding of customer need through the "Tell me about you" initiative. The business listens to the users of our systems to align future development and new value propositions with their real needs and support their business development.

As an example, Lafarge Cement Division conducts annual customer satisfaction

surveys through its Business Units in 46 countries. The survey is done blind. A third party tabulates the results. The 2006 results show Lafarge is "best in class" in 48% of the local business units and joint first in a further 17%. The division is training its 1,000 strong marketing and sales force to segment the customer base to better understand market demands. This understanding is the basis for proposing and delivering value propositions that meet particular customer needs.

All divisions are progressively adopting the OTIFIC system: On Time, In Full, Invoiced Correctly. OTIFIC saves time and money for the customers and for Lafarge.

We are committed to extend this best practice to all significant business units by 2010, see page 42.

Test at the Lafarge Center of Research in Lyon, France.



Lafarge helps customers to be effective and sustainable through customer care and education.

### Product innovation

We have a 2008 target of 1 billion from sales of products that are less than five year's old. The Lafarge Research Centre (LCR) is the world's biggest building materials research laboratory. It develops new materials which save customers' time, energy and money, reducing waste whilst ensuring the highest standards of product performance.

The self-placing quality of **Agilia®** is easier to use. It can be laid more quickly and less noisily than ordinary concrete.

**Sensium®** is a no-dust cement designed for the bag market. It too is cleaner, more efficient and easier to use.

**Ductal®** is a concrete that is fibre-reinforced. It combines a pleasant visual experience with mechanical strength six to eight times greater than traditional concrete. It reduces the amount of raw materials and embedded energy needed. Constructions made with Ductal® resist abrasion as well as granite. Ductal®'s durability minimises the need for maintenance throughout the lifetime of the structure.

**PLAtec™** plasterboards are made-to-measure flush or offset shapes with varied contours that can be easily assembled on work sites to build architects' designs for creating

volumes and working with space and light. This new generation of products enables specifiers to design plasterboard works easily and inexpensively, reducing costs and improving productivity.

**Signa™** is the first plasterboard with four tapered edges. Ideal for ceilings and high partition walls, this new-generation product makes it possible to create large, flat surfaces free of imperfections and simplifies the work of plasterboard installers. On-site installation time and costs are reduced because installers no longer need to finish off the joints.

The new products match real customer needs. They bring with them specific, economic, environmental and social benefits.

### Customer care

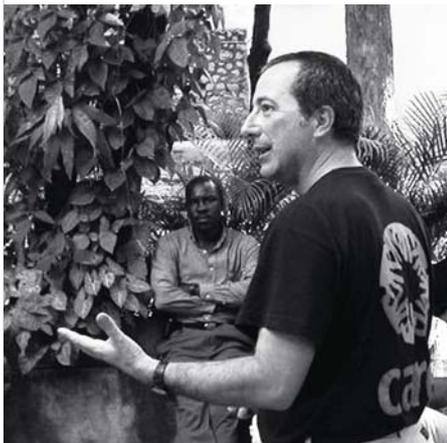
Lafarge's helps customers to be effective and sustainable through customer care and education.

Our Gypsum Division is working with large Chinese property developers, who are

building developments containing over 1,000 dwellings. The purpose of the co-operation is to enable the developer to meet the requirement for reduced energy usage in the dwellings.

In India since 2000 our aim has been to be more than a supplier of cement. We aim to be the partner of the homebuilder, helping him to achieve his project under the best conditions. More than 70,000 copies of the guide Home Building Made Easy have been distributed aimed at the 50,000 people who build their own homes each year in Calcutta alone. We have created the "Home Building Centre" (HBC), a place where people can find all the information they need relating to their project. 80% of members are end-users and 20% are professionals. Customers situated a long way from Calcutta can visit the HBC on the Internet and find further services.

In India masons are the prime influencers in cement purchase. Increasingly alarmed by unsafe conditions on construction sites,



## PANEL

**PHILIPPE LÉVÊQUE**  
President of CARE France

What about the bottom of the pyramid?

I welcome the focus on emerging economies and on customers, especially the subject of relationships with the end-user. Lafarge has a lot more to do in understanding and improving its relationships to home/building owners, in particular in poor countries, where access to decent housing is a key issue. In areas where cement can be the most appropriate sustainable solution, Lafarge could reach millions of people in desperate need. Lafarge does not seem to be pursuing this opportunity and the group needs to analyze and manage the retail chain better: the distribution circuits seem to be long, rather expensive, not very efficient and, as a result, the poorest people pay a disproportionate cost for cement. Many large companies are already targeting “bottom of the pyramid” markets, and Lafarge should do the same.

### ARCHITECTURE

Ductal® project of the MUCEM (National museum of European civilization) in Marseille, France by architect Rudy Ricciotti.



## Delivering through brand

We deliver high quality and good value for money through all our products. However to meet the needs of different customers we have segmented our offering with different brands serving different needs. Here is an example from our Cement Division, illustrating the “Good-Better-Best” approach:

**All-purpose products** (40-60% of market) have Lafarge Quality at a competitive price (e.g. France Le Classic).

**Enhanced performance and quality products** (20-40% of market) maximizing customer benefits with advanced technologies (e.g. Avancrete in Malaysia, Concreto in India, Sensium® in France, Mastercrete in UK)

**Best quality products** (up to 10% of market) are speciality products addressing niche requirements for demanding applications (e.g. Rapidset in the UK, Durabat in France).

As a result of our reputation for product excellence, Lafarge has become the target of counterfeiting activities in a number of its markets, particularly China. While our Business Units work with law enforcement authorities to counter the production and distribution of fake products, our most effective strategy is to outpace counterfeiters by bringing to market technologically innovative products.

insufficient safety awareness and limited support for masons in the event of an accident, Lafarge India has launched the Safe Construction Practices and Safety at Work initiative. It propagates safety messages and safe behaviour amongst the mason community. As part of the program, Lafarge India also gifts a life insurance policy to the masons. Ten thousand masons were gifted with life cover in 2006. Lafarge is the only company sponsoring such a scheme.

80% of cement in Eastern Africa is sold through a vast retail base built around small scale construction projects driven by Fundis

(the Swahili word for artisans, masons, foremen and small contractors) and individual home builders. For the past four years Lafarge East Africa (Kenya and Uganda) has been building loyalty through training programs targeted at the Fundis. This service offering has allowed us to build relationships and brand awareness while training a segment that normally lacks formal construction training. The initiative, named Partnership in Building Programme, is made up of seminars conducted across Kenya and Uganda by both Lafarge and building experts.

## BIG ISSUES



### QUARRIES

(Top) The Chateaufneuf du Rhône and the Cassis aggregates quarries, France. (Bottom) Muids aggregates quarry, France.

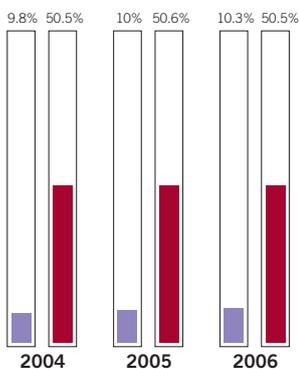


## Sourcing raw materials

Limestone, aggregates and gypsum - the core of our products - are natural mineral resources. We source 92% of these raw materials through quarrying operations. As an example, per capita annual consumption of aggregates (sand and gravel used in concrete and in roads) averages some 7 tonnes in Europe, to almost 10 in the USA and close to 15 in Canada. With such high demand sourcing raw materials is a big issue.

### Use of alternative materials

(as a percentage of material consumed)



■ Cement  
■ Gypsum (boards only)

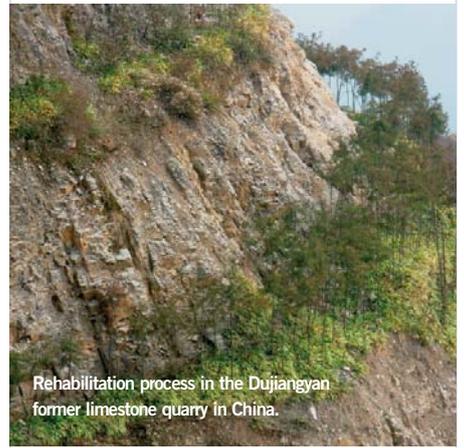
### Sourcing

Quarries create social, economic and environmental impacts which we must manage. As part of our commitment to sustainability, we work to conserve natural resources by mining our quarries efficiently and using substitutes for raw materials whenever possible.

Quarries are a capital-intensive investment. Obtaining permission to open a quarry can take up to ten years. The cost of a new quarry ranges from €2.0m to over €45m, depending on its size, location and type of deposit. To achieve an acceptable return on investment, a quarry must remain in service for 10 years (sand and gravel) to 30 years (crushed rock) and may be open for more than 80 years. This means that we have a long-lasting rela-

tionship with the local community through to the post-operative rehabilitation of the quarry.

Extracting mineral resources is an activity that uses up land. Although it only does so for a limited time span, open-pit mining requires quasi-exclusive usage of land. As such, it competes with other possible activities such as farming, forestry, recreation, and conservation. In many developed countries, land available for mineral extraction is becoming scarce and we have started to look for other possible sources. Among these are marine sand and aggregates that are reclaimed offshore from the sea-bed. This new source of aggregates is quite recent, except in the UK and Germany, but should develop gradually in the years to come.



Rehabilitation process in the Dujiangyan former limestone quarry in China.

We work to conserve natural resources by mining our quarries efficiently and using substitutes for raw materials where possible.

### Using alternative resources

Whenever possible, we substitute for natural resources generally with by-products from other industries. In our Gypsum Division, synthetic gypsum now accounts for over half of the gypsum used for manufacturing plasterboard. Gypsum is a raw material which can be externally recycled to manufacture new products, making it a non-extinguishable resource, although non-renewable. The Lafarge Executive Vice President, Gypsum, in a meeting between European Vice-President Verheugen and other gypsum industry representatives, committed to work with the Commission to enter a voluntary agreement to develop significant recycling of gypsum construction and demolition waste.

In our Cement Division, substituting various recycled waste materials such as blast furnace

slag and pulverized fly-ash as raw feed or as addition to clinker conserves natural resources, and reduces the cost of cement production, and contributes to the reduction of specific CO<sub>2</sub> emissions. In our Aggregates & Concrete Division, we operate numerous materials recycling centres in France, UK, USA and Canada to substitute for primary aggregates.

### The nature of quarries

We establish a quarry where there is a local market. Given the weight, expense and the environmental impact of transporting rock and aggregate, the quarry must be near the processing plant. The plant is usually the quarry's sole customer, and generally Lafarge operates both the quarry and the plant. Before

## Mitigating the effects of quarrying

We seek to mitigate these effects but sometimes we cannot totally suppress them. Our rehabilitation standards ensure that a full assessment of the quarry development is performed before the quarry comes into operation, including final rehabilitation.

### Measures to ameliorate the effects of quarrying:

- We undertake extensive geotechnical, hydrological and hydro-geological studies to develop an extraction plan which will ensure maximum efficiency in the utilisation of mineral deposits.
- We work in dialogue with local residents to ensure transparency, and acceptance, of our development plans.
- We employ sustainable solutions to limit nuisance, with a particular focus on reducing dust emissions and vibrations.
- We use landscaping, for instance planting tree screens to mitigate the visual impact and nuisance of our quarries.
- We take steps to limit the disruption caused by traffic from the quarries, sometimes for instance building transport by-passes so that our lorries do not have to go through local settlements.
- We develop and implement quarry rehabilitation plans in conjunction with community stakeholders. By the end of 2006, 79% of quarries had rehabilitation plans in line with Group standards.
- And last but not least, we work to use alternatives to quarried materials to conserve non-renewable mineral resources and extend the life of our quarries.

opening a new quarry, we systematically conduct environmental impact assessments. A quarry alters natural habitats and can create a visible scar in the landscape. Its operations create noise, dust and vibrations. In some instances, it can impact water systems. The quarry generates traffic, principally associated with transporting the raw materials for processing or selling them. For the most part quarries only operate during daylight hours.

### REHABILITATION

Rehabilitation into farmlands of the Tswana limestone quarry in South Africa whose program was planned in conjunction with the chief of the native BaRalong Bo-Ratshidi tribe



## A quarry lifecycle

A quarry passes through several stages in its lifecycle. Beginning with the identification of a site, it moves on through geological exploration to assess the deposit; land acquisition;

environmental impact assessment; planning application; public inquiry leading up to its operational phase and finally rehabilitation as planned from the beginning.

**01.** Best practice dictates that from inception through to rehabilitation we choose to act in dialogue with the impacted local populations, with NGOs and with governments. The nature and intensity of the dialogue varies. Throughout the life of the quarry it is key to ensuring the best outcomes.

**02.** Our geologists undertake drilling to obtain rock samples which are used to identify and classify mineral reserves using 3D modelling software. This is the exploration phase.

**04.** An independent evaluation is conducted to assess the likely impact of quarry operations on landscape, water and air quality, biodiversity, and other environmental factors. It proposes measures to decrease these impacts.

**03.** We acquire land plots necessary for efficient, cost-economic access to mineral deposits we have identified.

**05.** A planning application contains a description of the planned quarry and installations the mining plan and the rehabilitation plan. It spells out the potential environmental impacts and proposes means to mitigate them.

**06.** The public inquiry processes leading to quarry approval vary between countries. It usually requires Lafarge to present evidence of economic benefits, environmental protection measures and responsible corporate behaviour.

**07.** Quarry operations pose different types of problems that are tackled by Lafarge right from the outset. We always budget for work we do to minimize the impact of a quarry on the landscape as part of our operating costs. We work to mitigate the impacts of operations. Because problems which arise can be highly site-specific we work to develop solutions in dialogue with people in local communities.

**08.** Rehabilitation is performed progressively whenever possible. With more than 30 years of experience in quarry rehabilitation, we aim for 85% of our quarries to have rehabilitation plans by 2010.



Bushes and plants growing at the bottom of the extraction face in the disused quarry of Aix en Provence, France.



## PANEL

**LIVIA TIRONE**  
Architect

As Lafarge is engaged in leading a dedicated internal debate on its role in sustainable construction without having reached, to date, a consensual position on the potential ways forward for sustainable building solutions, it is not possible to comment specifically on this positioning, within the context of this report. On a more strategic level I propose that Lafarge focuses even more effectively on their 'end user' and on their 'end product'. Downstream from production, is the most impacting dimension of Lafarge's products life cycle (about 85% of the real impact) that needs to be understood, quantified and conveyed.

Lafarge materials, if correctly applied (as systems), together with other materials, determine thermal comfort (thermal inertia) and acoustic comfort in the built environment. These solutions that Lafarge needs to provide respond to qualities that are more and more in demand and have long lasting effects on the quality of life of end users.

## BIG ISSUES

Rehabilitated aggregates quarry in Baudreix, France.



### Quarries with rehabilitation plan



## Rehabilitating our quarries

### A controversy in Brittany

Brittany's land based supply of sand is almost depleted. Ten tonnes of aggregates per inhabitant per year are used. This is higher than the French average. At this rate, only seven years of sand supply remains.

Accordingly Lafarge is exploring the feasibility of extracting sand off the coast of Morbihan to meet the demand for housing.

The purpose of the current exploration permit is to ensure there would not be any material environmental impact. If there were to be any, Lafarge has committed to withdraw the project. This will be done in a fully transparent way. We set out our position fully at [www.lafarge-granulats-marins-projet-sud-orient.fr](http://www.lafarge-granulats-marins-projet-sud-orient.fr). Not everybody agrees with us.

A local group called *Peuple des Dunes* has been formed to oppose the extraction of sand. Their views are set out at [www.peupledesdunes.blog.com](http://www.peupledesdunes.blog.com)

For over 30 years, the restoration of sites has been an ongoing concern for Lafarge. We restore our quarry sites to give them a new lease of life, and continuing social, economic and environmental value.

In 2001, in partnership with WWF, we established a quarry rehabilitation policy. From the day a site opens, it is subject to a rehabilitation plan that is incorporated and coordinated with the operating plan, taking into account:

- environmental protection and all applicable regulations;
- the points of view of the parties concerned (local residents, authorities, associations, etc.) to implement the projects which are most suited to local requirements.

This plan precisely describes the site restoration and rehabilitation operations before, during and after its utilization. It is subject to annual monitoring and evolves to take into account technical developments and new restoration possibilities.

Disused quarry sites in remote areas can be converted into nature reserves. Land used for quarrying may be recovered for agricul-

ture or forestry use. Working in consultation with local communities, former quarries can also be converted into recreational or educational developments, urban housing estates or commercial or industrial parks.

We have developed expertise in integrating our sites into natural landscapes: creation of original environments and wetlands conducive to the development of specific flora and fauna, treatment of quarry surfaces, replanting of land in high agricultural yield sectors and reforestation.

Together with WWF we have also defined a biodiversity strategy to promote the re-establishment of the ecological value of quarries. The Group has a database covering quarry rehabilitation methods, good environmental practices, examples of application for all divisions and international environment network contacts as well as internal contacts for sharing best practices.

We agreed with WWF that 80% of our quarries would have rehabilitation plans in line with the Group standard by 2004. We had



## REHABILITATION

Rehabilitation of the Dinmor disused quarry in the UK



## PANEL

**ALASTAIR M<sup>C</sup>INTOSH**  
 Visiting Professor of Human Ecology,  
 Centre for Human Ecology /  
 University of Strathclyde, Scotland

I continue to be impressed by Lafarge's general ethos of openness and willingness to subject its operations to the scrutiny of this Panel. My main suggestion is that the company's senior management takes a stronger lead in developing sustainable building solutions. These are vital so that more can be made from less – greater utility drawn out of fewer virgin natural resources. I understand that the industry may not yet be ready for significant ecological innovation and that there are market and technical uncertainties about which strategies to adopt, but that is where Lafarge's creative leadership must prove itself. I call on senior management to prioritise transparent political lobbying to help raise the level of the industry's playing field and so to tread more lightly upon this Earth.

## Quarry rehabilitation in a maritime setting

Dinmor Parc, a disused quarry has been restored as a nature park and fish farm. Located on the Isle of Anglesey off the coast of North Wales, Dinmor Parc Quarry was mined until the early 1980s. Stone was shipped by sea, which required the construction of a large pier and related facilities that severely marred the natural beauty of the coastal scenery. Lafarge became responsible for the site through a series of business acquisitions after the closure of the quarry, and decided to restore it. Several landscape transformations were made, including removal of the pier and sea-loading facilities and contouring of the cutting faces. Foreshore stabilization systems were put in place to counter wave erosion. To offset the lack of topsoil, the quarry floor has been covered with crushed stone to promote the growth of new vegetation. In addition to restoring the quarry to a more natural appearance, a fish farm has been set up to stimulate the local economy. The project successfully restored a natural appearance to the site. The fish farm created seven jobs and produced 200 tons of turbot in its first year of operation. The goal is to attain an annual production level of 1,000 tons of fish and create an additional sixteen jobs.

initial difficulties with implementation of this standard and checking compliance. This resulted in performance figures that were unreliable into 2006. Criteria have been reviewed at the end of 2006 and we have set ourselves a new target of 85% achievement in 2010.

Even though we are committed to rehabilitate all our quarries at the end of life, the 85% objective reflects the fact that there are always a number of quarries that do not have plans in place because they have only recently been acquired, or they are under discussion or revision between ourselves and other interested parties.

## Biodiversity

Lafarge is committed to biodiversity and to the rehabilitation of our quarry sites. As part of our partnership with WWF, we have jointly developed a biodiversity index. It helps monitor the ecological evolution of our sites.

Through our biodiversity programme, Business Units can identify risks and opportunities in partnership with WWF and other nature conservation organisations; communicate with stakeholders, employees and other partners interested in biological diversity management; and participate in research, awareness and education programmes. An independent panel was established in 2006 to support and advise Lafarge on its biodiversity strategy.

# Sustainability Ambitions 2012

TARGET	Deadline	2006 Performance	WHY IS LAFARGE PURSUING THIS AMBITION? WHAT WILL CHANGE?
<b>MANAGEMENT</b>			
On <b>safety</b> halve the 2005 lost time injury frequency rate for Lafarge employees by 2008 (Fr : 3.09).	2008	2.57 ✓	Halve the 2005 lost time injury frequency rate for Lafarge employees by 2008, achieving a groupwide LTI frequency rate of 1.55 and having contractors working with the same standard. This means 240 less accidents per year. Our ambition is to reach as soon as possible zero fatalities and to join the "best in class" industrial companies. We will improve our safety practices so that nobody is killed on the job.
Ongoing monitoring of 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 2010.	2010	27%	Free market 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>NEW</b> Design a training package on <b>local stakeholders relationship management</b> adapted to the respective divisional organisation by 2008.	2008	N/A	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. Their expectations become a requirement for us. Throughout the Group 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>NEW</b> On <b>customer relationships</b> , by 2008, 100% of significant business units will carry out an annual customer satisfaction survey. By 2008, 100% of significant business units will have implemented OTIFIC in their operations. By 2008, the Group will achieve €1 bn annual sales in new products.	2008	N/A	Having customers satisfied today and tomorrow is absolutely necessary to achieve sustainability. This is 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. By 2008 all of our significant business units will be carrying out an annual customer satisfaction survey. Acting on what customers say and driven by a desire to achieve full customer satisfaction, we want to have completed the implementation of the OTIFIC programme (on time, in full, invoiced correctly) in 100% of our significant Business Units by 2008. We constantly innovate to meet customer need. By 2008 we aim to achieve €1 billion annual sales from products that have been developed since 2003. This will maintain viability and fuel growth, deepen our understanding of our customer base and create a platform for working with them on sustainability related issues.
<b>SOCIAL</b>			
Double the percentage of <b>female senior managers</b> between 2003 and 2008.	2008	10% ✓	The female population in senior management in Lafarge is far too low and therefore we have set the target of doubling the percentage of women in senior management between 2003 and 2008, with a target of 15.2%.
Report on <b>training</b> at Business Unit level using the GRI (n° 3) guidelines.	2007	In progress	Without a high skills base a company is not sustainable in a competitive market. Our employees are skilled but currently we have no consolidated data of the training being done and so cannot manage it to best effect. So we will collect and report average hours of training per year per employee at Business Unit level as the first step in managing and increasing employee skills globally.
<b>NEW</b> By 2010, establish a comprehensive groupwide occupational health programme including, at a minimum, regular medical examination.	2010	N/A	An effective workforce is a healthy workforce. Lafarge operates in countries from those with comprehensive health provision provided by the state to those with no public health provision. Therefore our ambition is by 2010 is to establish a comprehensive group-wide occupational health programme with regular medical examination. This will provide the foundation for better health for all our employees, benefiting both them and Lafarge.
<b>NEW</b> For HIV/AIDS and malaria, by 2010, Lafarge will have extended to major developing countries where it operates, its best practice currently implemented in Africa.	2010	In progress	Lafarge's interests are equally balanced between the developed and developing worlds. In the developing world HIV/AIDS and malaria are major killers. The misery caused by these preventable diseases is untold. The challenge is greatest in sub-Saharan Africa. Here we have acted already. We now commit that by 2010 Lafarge will have extended our best practice from Africa to other major developing countries where we operate. 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 with respect to local legislation and culture.

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TARGET	Deadline	2006 Performance	WHY IS LAFARGE PURSUING THIS AMBITION? WHAT WILL CHANGE?
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## ENVIRONMENT

Have 100% of our sites <b>audited environmentally</b> within the last four years.	Permanent	84% ✓	Have 100% of our sites audited environmentally by skilled/expert teams, within the last four years. One of our challenges is that our organization has close to 2,000 sites 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.
By 2010 reach a rate of 85% of <b>quarries with a rehabilitation plan</b> complying with Lafarge standards.	2010	79% ✓	Lafarge puts as much effort into planning for the quarry after it ceases its active life as it does into putting a new quarry into operation. This involves engagement with local stakeholders in order to find the best output. In some cases this will mean a new activity in the site and in others a return to nature. Because of the complexity and the role of the parties in the decision making process, it is unlikely that we could reach 100% at any point in time.
<b>NEW</b> By 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  2012	N/A	Biodiversity has been on the Lafarge agenda for some time, and even more since our partnership with WWF, which started in 2000. We have already been working on the biodiversity of selected sites. Now we need to move to a position where it is not only a set of selected quarries, but all quarries that have a real potential.
By 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 <b>in industrialized countries</b> by 10% as compared to 1990. • cut our <b>absolute net emissions</b> in the Cement business <b>in industrialized countries</b> by 15% as compared to 1990.	2010	-14.2%* ✓ -6.6%* ✓ -8.9%* ✓	The increased concentration of CO <sub>2</sub> and other greenhouse gases in the atmosphere is driving climate change. It is the biggest environmental challenge of our time. 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 2006 we stood at 14.2%. Net emissions are the gross emissions less the emissions that come from burning waste. In addition over the same period we have two further ambitions for the industrialised countries cement business to cut our absolute gross emissions by 10% and our absolute net emissions by 15%. In the light of the realisation of the increased understanding of climate change, we recognise that new targets will be necessary for the period after 2010.
Cut our <b>dust emissions</b> in our cement plants by 30%* over the period 2005 - 2012.	2012	-4.4%** ✓	Our activities may generate dust. Beyond local regulations, our voluntary undertaking is to reduce our dust emissions by 30% by 2012 compared to 2005. This will considerably reduce nuisance for our neighbours. Achieving this aim will necessarily involve capital investment.
<b>NEW</b> Cut our <b>NOx emissions</b> in our cement plants by 20% over the period 2005 - 2012.	2012	-0.5%	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>NEW</b> Cut our <b>SOx emissions</b> in our cement plants by 20% over the period 2005 - 2012.	2012	-8.2%	SOx results from kiln process; the sulphur comes mainly from the local raw materials, like limestone, that are used. Consequently the levels of SOx emitted by plants can vary considerably. Beyond local regulations, Lafarge is voluntarily committing to a 20% reduction of SOx 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>NEW</b> By 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	N/A	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: <b>1</b> - To have completed the measurements of the persistent pollutants for all its kilns by 2010. <b>2</b> - To develop suitable KPIs and report on progress (in 2007). <b>3</b> - To implement Best Manufacturing Practices to reduce emissions on top emitters in 2010 <b>4</b> - To integrate into standard management practices the lessons learnt that contribute to limit emissions of persistent pollutants.

### ✓ Indicators verified by Ernst & Young

The table above outlines our 16 Sustainability Ambitions for the period through to 2012, half the ambitions are new ambitions while half reflect commitments already made. The ambitions are the fruits of prolonged thought and consultation. They complement our commitments taken within the framework of WBCSD Cement Sustainability Initiative. The table not only sets out each ambition but the rationale for that ambition. The middle columns note the deadlines for achieving the ambition and, where relevant, performance in 2006. Overall the Sustainability Ambitions 2012 are a new, major contribution to future environmental and social performance.

\*2006 emissions verified. \*\* Emission reduction target and 2006 performance are given for full scope.

# Opinion of our stakeholders on the 2006 sustainability report

Our mission is to serve as “critical friends” who challenge Lafarge’s sustainable development 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 2006 and remaining challenges for Lafarge both in sustainable development performance and in its sustainability report; however, we do not verify the data or deliver any kind of assurance on performance.

### Communication

Overall, we welcome the new structure of Lafarge’s sustainability report: we especially appreciate the educational background given on production processes and industry context, as well as the five “big sustainability issues” outlined in the report. This makes the report more accessible to a non-expert audience even though it is occasionally overly simplified or non-specific content (especially on emerging countries and local communities).

Last year, we wrote that the report would gain in quality from providing more systematic accounts of gaps and challenges; we note some modest progress on this in this year’s report, in particular the candid account of the controversy related to sand extraction in Brittany. But lack of progress or missed targets need to be disclosed and frankly explained to external audiences: we would expect to find explanations of the causes of such incidents and a discussion of remedial actions.

We also reiterate our call for Lafarge to set all such reporting in its proper context, i.e. by benchmarking data (quantitative and qualitative) against appropriate comparators, such as the group’s own previous performance and commitments (so that progress can be tracked), peers’ performance and targets, best practices from other industries and specific data on local operations.

The fact that sustainable construction as topic has been left out of this report makes it impossible to comment on these specific impacts of Lafarge’s products. Nonetheless, we feel that sustainable construction is the area in which the impact of Lafarge’s contributions to society is the longest term and the most relevant.

### Managing direct but also indirect impacts

The direct impacts of Lafarge’s production processes (as opposed to the effects of its products once in use) are also very well covered in this report: we appreciate the impressive progress made on CO<sub>2</sub> and would expect to see the outlook on CO<sub>2</sub> strategy extend beyond 2010. We still call for more reporting on subjects like health, alternative fuels (e.g. the burning of tyres and biofuels), alternative raw materials and reduction of persistent pollutants emissions (heavy metals, dioxines, etc.).

But given its commitment to playing a leadership role in terms of corporate responsibility, Lafarge arguably faces its greatest challenges in managing its indirect impacts, and particularly in using its influence throughout the value chain to advance sustainable construction. The panel understands that Lafarge staff are engaged in leading considerable internal debate about the potential ways forward for sustainable building solutions; we trust that we will be kept informed of progress and we welcome the new section on customers, which focuses on how use of its products can be leveraged to achieve more sustainable outcomes. But there is still room for improvement in reporting on the group’s efforts beyond its operational impacts on a range of areas, including:

- advancing new technologies and system thinking for sustainable building solutions (where we believe that Lafarge has excellent opportunities to bring a positive contribution to the end user in terms of comfort, thermal inertia, acoustic insulation, etc.)
- making effective and transparent use of its political influence to raise industry standards,
- working with other value chain partners in emerging countries to address the needs of low-income customers, and
- addressing the group’s major impacts on local communities, especially in southern countries.

### Commitments and engagement

Among the positive aspects of this year’s report are the efforts to listen to stakeholders - in particular employees and customers worldwide. But the group needs to encourage further engagement with workers across the company, so as to foster employee participation rights and involve local trade unions, especially in environmental compliance, safety, anti-corruption as well as on the group-wide occupational health programme.

The Sustainability Ambitions 2012 are a step in the right direction, whether it be on dust emissions, Nox and SOx, or on health: we particularly welcome the systematic training on local relationship management and the extension of the HIV Aids and Malaria policy to major developing countries (although we would like to see greater preci-

sion on how this will be prioritized across business units), as well as the comprehensive group-wide occupational health programme (provided that the same standards are applied in all countries). We also welcome the target to double the percentage of female senior managers. Though we would emphasize the crucial role Lafarge can play in promoting diversity in general at all levels and we regret that no specific goal has been set on this issue nor on community investment where effectiveness indicators could be developed.

### Emerging markets challenges

We would like to see a better appraisal of technical possibilities on reducing volumes of primary resources and limiting the industry’s contribution to climate change while accommodating an anticipated 80% increase in cement demand. Regarding China, we appreciate that the group tries to apply global best practice standards on environment, health and safety, and are pleased to note that this matter has been addressed following our criticism in last year’s report. But while we understand that the group’s pre-acquisition procedures include environmental risk assessment, we would expect Lafarge’s growth strategy to ensure that all sites undergo external environmental audits as part of the routine due diligence process.

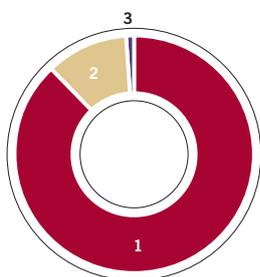
In conclusion, as part of rolling out its Sustainability Ambitions 2012, Lafarge should sharpen its commitment to achieving global best practice standards across its operations, identify and disclose any performance gap, and outline its strategy for reaching these goals.

#### MEMBERS OF THE PANEL

- Marion Hellmann (Building and wood Workers International)
- Jean Paul Jeanrenaud (WWF)
- Philippe Lévêque (CARE)
- Karina Litvack (F&C Asset Management)
- Cornis van der Lugt (UNEP)
- Alastair McIntosh (Centre for Human Ecology)
- Manfred Reuer (European Works Council)
- Livia Tirone (Architect)
- Simon Zadek (Accountability - not commenting the report)

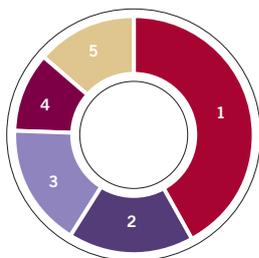
# Shareholders

As stated in our *Principles of Action 2003*, our goal is to be the preferred investment for our shareholders.



**Shareholders by type (2006)**

■ 1 - Institutional	88.2%
■ 2 - Individual	11%
■ 3 - Treasury	0.8%



**Shareholders by geography (2006)**

■ 1 - France	42.1%
■ 2 - United States	16.9%
■ 3 - Belgium	16.7%
■ 4 - United Kingdom	10.7%
■ 5 - Rest of the world	13.6%

Note: the percentages shown in the charts are percentages by value

## Who are our shareholders?

At December 31, 2006, individual shareholders accounted for 11% of our shares with 12.8% of the voting rights, institutional shareholders for 88.2% of our shares with 86.5% of the voting rights and Treasury shares accounting for 0.8% with 0.7% of the voting rights.

Among the institutional shareholders Groupe Bruxelles Lambert held 15.92% of the shares. A further 13 institutional shareholders each had holdings that exceeded 1% of our outstanding shares, including Capital Group International who owned 3.2% of the shares. Out of 207,000 shareholders, 500 are institutional investors and 206,500 are individual shareholders, including 42,000 employee shareholders.

## Dealings with shareholders

Our shareholders have a lot to gain from Excellence 2008. The choice of indicators for measuring performance, net earnings per share and the profitability of the capital employed, is very relevant for our shareholders, just as it is for our employees, and represents an important element of decision-making.

The acquisition of the minority holdings in Lafarge North America and the divestment of the Roofing Division are perfectly in line with the logic of a better valuation of the Group's assets, with the optimization of our invested capital and the increase of our net earnings per share.

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. The number of such shares held by one shareholder cannot exceed 0.5% of the total share capital.

Today the number of voting rights held by each shareholder is unrestricted provided they do not exceed 1% of the rights attached to all shares comprising the Company's share capital. Above this threshold, the number is restricted according to the total number of voting rights

held by shareholders represented at the shareholders meeting. At the May 3 2007 AGM we will propose to raise this threshold to 5% and to waive it should the shareholders' participation at the Annual meeting exceed two-third of the voting rights.

## Keeping investors informed

To keep its investors informed, Lafarge:

- regularly publishes financial notices in the financial and economic press; press releases, which can be consulted on the Group's website, [www.lafarge.com](http://www.lafarge.com). Since 3<sup>rd</sup> quarter 2006, we publish quarterly results;
- provides shareholders with dedicated tools and assistance via the shareholders' information area on the Group's website and the Individual Shareholders' Relations Department;
- organizes meetings to discuss matters with shareholders including the Annual General Meeting, information meetings in the different regions of France (on average 5 per year) and the salon Actionaria;
- is always ready to listen to shareholder concerns, particularly through the Shareholders' Consultative Committee (nominated for four years) and the consultation prior to General Meetings. The Committee meets three times a year on average (in two full meetings and one site visit). Its recently increased role is to contribute to the improvement of our communications with individual shareholders.

SRI (Socially Responsible Investors) are represented on our stakeholder panel. We also meet with individual SRIs to discuss our sustainability policies and performance.

## COMPLETING THE PICTURE

### EDUCATION

Pr. Ellis Gartner, Principal Scientist at LCR, teaching a class in the physical chemistry of building materials, part of the new Chair of Materials Science for Sustainable Construction's program, co-chaired by Lafarge and two French engineering schools, the Ecole des Ponts and the Ecole Polytechnique.



# Public Positions: Exerting a responsible influence

On the major public issues that affect Lafarge we set out a clear position. This makes it clear where Lafarge stands and moves debate forward.

### Public affairs

In Europe, our network of approximately 20 correspondents from our Business Units meets three to four times annually, coordinating and promoting the Group's positions at national, European and international level as well as conveying them to the trade associations. This section includes both general public positions as well as positions on current legislative issues.

### 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. We call for required changes, sometimes through voluntary programmes. We advocate effective implementation and enforcement of regulations by authorities to prevent competition distortions.
- demonstrate responsible sector leadership, notably by developing and promoting more environmentally friendly technologies and socially progressive practices.

### More responsible lobbying

Responsible lobbying requires compliance with three major principles:

- **Transparency.** Our public policy positions are published annually.
- **Dialogue.** We meet regularly with our stakeholders and organize site visits, so that they gain an insight into the reality of situations in the field.
- **Sustainability.** We align our lobbying objectives with our sustainability commitments for 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.

### Implementation of the EU-ETS (European Union emission trading scheme directive)

Building upon the first phase of the EU-ETS mechanism implementation (2005-2007), Lafarge believes that:

- The allocation of emission quotas should be based on performance standards not historic emissions. This would allow better recognition of past performance improvements and motivate players towards investments and higher performance;
- Combustible waste should be regarded as CO<sub>2</sub> neutral when used in the cement manufacturing process since it substitutes to

fossil fuel and therefore contributes to CO<sub>2</sub> emissions reduction;

- The specific value of CO<sub>2</sub> within the EU-ETS may create a competitive gap which would affect Lafarge operations in the EU compared to the rest of the world. Lafarge believes that the long term success of the EU-ETS and of its CO<sub>2</sub> emissions reduction objectives are at risk if the mechanism weakens the competitiveness of industries vulnerable to imports.

### Future international regime for combating climate change

We support EU efforts to encourage all countries and all sectors of the world economy to participate in the process. This move is key to climate change management success, to the success of the EU-ETS and the protection of European industries' competitiveness.

We support national and international public and private research programs towards low emissions products and processes innovations as well as carbon capture and storage initiatives.

We are in favour of setting emissions reductions targets based on sectoral technical standards to make them compatible with economic growth, while creating a level playing field. We encourage governments to consider positively a cement industry sectoral approach.

Old tires used as alternative fuel in the kiln of the Atlanta cement plant, USA.



We align our lobbying objectives with our sustainability commitments for 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.

### Sustainable construction

Lafarge considers that construction is a sector where there is considerable potential for contribution to sustainable development. Making construction more sustainable is a basic trend that is gaining importance.

#### The Group is convinced that it needs:

1. A global approach to construction so as to measure the environmental impact throughout the entire life cycle
2. To integrate the idea of traceability of products and their components right from their design, but also during use and through to their end of life.

### Environmental performance

As a founding member of the Cement Sustainability Initiative (CSI), Lafarge fully implements its recommendations and progressively sets the indicators and processes established by CSI within all its cement sites. CSI defined a framework, different indicators and units of measurements in order to publish environmental performance in a homogenous and comparable way for all its members. Nevertheless, what is defined by CSI does not prevent Lafarge from making commitments in fields and countries which go beyond those recommended by CSI.

### Biodiversity

Mineral extraction is just one stage in the life of a piece of land.

Based on our experience of operating quarries in a sustainable manner and rehabilitating them, we believe strongly that extraction of mineral resources is compatible with biodiversity.

### Waste framework directive

The use of waste as an alternative fuel or raw material is the keystone to our commitment to industrial ecology and sustainable development.

We consider that all activities concerning waste must be carried out by trained professional and, above all, within a strict regulatory framework to ensure the operators' credibility for the local authorities.

We therefore defended the following positions on the Waste framework directive : a reinforcement of the dispositions specific to hazardous waste, the necessity of a permit to exploit under IPPC procedures and the regulatory recognition of pre-treatment operations as recovery operations. To avoid any dogmatism that could lead to economic distortion, we also defend flexibility in the waste hierarchy.

### Groundwater directive

By way of the European gypsum producers association, Lafarge Gypsum defended the replacement of the sulphate concentration measure by a measure of conductivity, accompanied if necessary by more detailed investigations into the nature of ions. It has been accepted that the level of sulphate has no health incidence. Sulphate remains on the list of pollutants in the Directive adopted by the European Parliament, but the limits established by the Member States should take into account the level of natural concentration.

### Marine strategy directive

Marine aggregates can partially substitute for sand and gravel from land-based quarries. This is particularly important where extraction is difficult or reserves are depleted. This strategy of diversification of supply is backed by governments and already operates in several Member States.

Lafarge supports the proposal for a Marine Strategy Directive but believes that marine protected areas and good environmental status should be defined so that environmental protection and access to mineral resources are compatible. They should be based on sound science. Implementation criteria should require consultation of all stakeholders.

# Suppliers

Lafarge is acting to improve the sustainability of the supplies that it purchases.

## Structure of function and what is bought

Lafarge sources supplies from a very diversified supplier base around the world. As part of its drive toward achieving excellence, in 2004 Lafarge instituted a supplier management programme aimed at building relationships with "Best in Class" suppliers, and introducing sustainable development criteria in its supplier selection process. Through its strong purchasing network, Lafarge drives the implementation of best practices across the organisation. This has enabled the Group to work more closely with the suppliers' market and with the Business Units' internal customers.

## How Sustainable Development is integrated into the supply chain

With €9.2 billion of purchases made in 2006, the Group involves suppliers in its sustainable development initiatives. Suppliers are expected to comply with Lafarge values including protection of human health and safety, environmental protection and respect for human rights, as well as adhering to its code of business conduct. Frame agreements signed include such sustainable development clauses.

## What was promised in 2005 and whether delivered

In 2005 Lafarge committed to:

- commission independent social audits of its suppliers in countries at risk from a Human Rights and environmental perspective;
- introduce a system to assess Business Units' management of supplier relations from a sustainable development perspective.

In 2006, the Group produced a purchasing handbook, incorporating sustainable development principles into its criteria for managing supplier relationships. Questionnaire per major purchase category are also prepared to assess supplier practices in terms of safety, health and socially acceptable conduct. Business Units are chal-

lenged to introduce social and environmental indicators into their selection process.

## Plans for action in 2007

Lafarge is committed to reduce release of persistent pollutants as part of its commitment to sustainable development. In 2006 an assessment of the Group's purchasing practices was performed jointly with WWF. It has highlighted several areas for action, including:

- increasing understanding and awareness among suppliers, purchasers and users of the impact of supplier practices on persistent pollutants;
- rolling out a purchasing sustainable development project to specific suppliers of raw materials and fuels as well as industrial products.

## Some Sustainability Sourcing Achievements in 2006

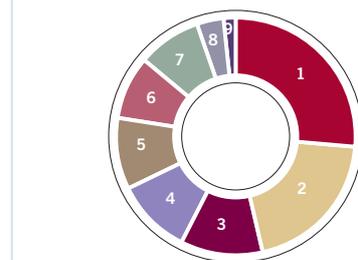
- Integrating sustainable development aspects into Purchasing Handbook;
- Integrating sustainable development aspects in the quality review of Purchasing Performance Plans;
- Elaborating security management guidelines;
- Marking of paper bags made out of PEFC (Programme for the Endorsement of Forest Certifications) or FSC (Forest Stewardship Council) certified paper;
- Continuing social audits taking the specifics of the purchase category and its manufacturing/production processes into account.

## Some of our Sustainability Plans for 2007

- Finalise the launched social audits by third party supplier;
- Follow up of audit results and action plan progression for each purchase family;
- Integrate sustainable development aspects in the Strategic Sourcing policy for centralised categories, like solid fuels and vehicles;
- Add sustainable development performance criteria into the annual objectives of the purchasing management team.

Number of Business Units that have included at least one sustainable development initiative in their PPP (Purchasing Performance Plan) **44**

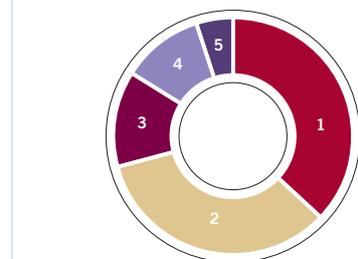
Number of sustainable development initiatives proposed in PPPs **101**



Breakdown of our suppliers by type of activity (2006)

1 - Raw materials	26.5%
2 - Transport services	20.1%
3 - Utilities	10.9%
4 - Industrial Products & Consumables	10.3%
5 - General Supplies & Services	9.7%
6 - Plants & equipments	8.8%
7 - Industrial Services	8.5%
8 - Products for Resale	3.7%
9 - Uncategorized	1.5%

Note: In 2006 the reporting covers 63 Business units or 88% of the Group procurement



Amounts spent on external purchasing by geographical region (2006)

1 - Europe	37%
2 - North America	34%
3 - Asia	13%
4 - Africa	11%
5 - South America	5%



## Community Relations

As a global company, we aim to live up to our responsibilities wherever we are. As our business is local, we aim to carry on policies and actions which meet the needs of the communities where we operate.

### Local stakeholders

Each of our plants and quarries works to maintain good relations with local stakeholders. We deal with tens of thousands of local stakeholders.

### Global partnerships

We have three global partnerships with international non-profit organisations. Our partnership with WWF helps address key environmental issues. With Habitat for Humanity International our Business Units help disadvantaged families build simple, decent houses; 25 countries should be involved by 2010. With CARE we work globally and locally, especially in the fight against HIV/AIDS. In 2006 we launched programmes to prevent and treat Malaria in our sub-Saharan locations.

### Learning from experience

The December 2004 tsunami devastated Banda Aceh where Lafarge operates a cement plant. We immediately provided emergency care, financial support and welfare assistance for survivors. Longer-term projects helped local communities return to normal.

Working jointly with CARE, we captured lessons for use in response to future crises.

- **Emergency action phase.** Local teams demonstrated outstanding leadership. They worked together with impressive speed in the month following the disaster. In future better-resourced crisis management support can enable a more co-ordinated response.
- **Resumption phase.** In the six months following the Tsunami, Lafarge provided plant employees with material aid while rebuilding mosques and schools and establishing a mobile clinic. These actions were effective. In future identification of suitable partners to deliver and develop programmes can enhance the sustainability of action in this phase.
- **Reconstruction phase.** The UN judged the house re-building programme as one of the best conducted in the disaster zone. Its relative complexity highlighted the need to identify and manage partnerships with non-profit community organisations. The study shows that the reconstruction phase of disaster recovery takes longer than is generally expected.

### INDIA

Lafarge in India is involved in the development of neighboring rural communities near its plants. Its "Project Employability" gives young people the opportunity to train as masons.

Overall we learned in future to ask three questions:

- how can we balance immediate action and following procedures?
- how can we make sure our actions have long term effects?
- how can we balance the need for an immediate response with sustainability?

### IMPROVING

Reduction of stack dust emissions at the Huabei Cement plant in China.



## Managing our environmental impact

We aim to give leadership in the environment: investing, innovating and acting in partnership to ameliorate our environmental impact.

### Water

Water consumption is primarily for ready-mix concrete and plasterboard production, as well as to cool machinery and clean aggregates. The main use of water in producing cement is cooling the machinery. Lafarge has optimised water consumption and introduced water recycling and closed-loop cooling systems. We still operate some wet kilns that use water in the process which is evaporated through the stack. We are optimising our use of water, reducing the quantities we consume and promoting water recycling. A 29% reduction has been achieved in the amount of water consumed through cement manufacturing between 2000 and 2006. For plasterboard the water reduction was 16% between 2001 and 2006. We are working currently on an assessment for further progress.

### NO<sub>x</sub> and SO<sub>x</sub>

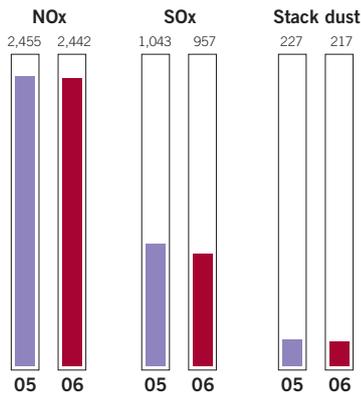
Nitrogen oxides (NO and NO<sub>2</sub>, commonly known as NO<sub>x</sub>), are generated in the flame during combustion. They are subject to increasingly stringent environmental legislation. The quantity released depends upon the type of fuel used and the raw material available from the quarry. Whenever it is necessary to meet local standards, gas treatment with injection of ammonia-based chemical is implemented to cut nitrogen oxide emissions. At its Wössingen cement plant, Lafarge used an ammonia source, recycled with photo processing liquids, taking advantage of their similar chemical composition.

NO<sub>x</sub> and SO<sub>x</sub> emissions are reduced whenever new state-of-the-art processes are built to replace remaining old production lines with

poor performance. For instance, at the new cement plant in Sugar Creek, Missouri, Lafarge replaced two 1950s process lines with a state-of-the-art system, which reduces energy consumption. Energy consumption per ton of cement has been reduced by half. Emissions of NO<sub>x</sub> were lowered by 18%, emissions of sulphur oxides (SO<sub>x</sub>) by 53%.

SO<sub>x</sub> and NO<sub>x</sub> emissions have also been reduced in plasterboard production. Lafarge's plant in Ulsan replaced a heavy-oil fired boiler used to dry plasterboard during its production with hot air from natural gas burners, supplying heat directly to the dryer. The new process significantly reduced pollutant emissions (including SO<sub>x</sub> and NO<sub>x</sub>) as well as fuel costs.

**NOx, SO<sub>2</sub>, Stack dust emissions (2006)**  
(grammes/tonne of clinker)

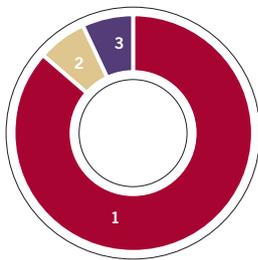


Farming use of lands around Bouskoura cement plant in Morocco.

Lafarge has been pioneering Industrial Ecology and has decided to consider it as a whole complementary activity to the cement core business.

**Dust**

Making cement entails the release of dust, which is subject to stringent regulations. We want to improve the Group's performance beyond regulatory levels. Two thirds of our kilns emit less than 50mg/Nm<sup>3</sup>. The acquisition of existing plant, mainly in emerging economies has increased the Group average release of dust. Our ambition is to cut emissions by 30% by 2012 in our cement plants



**Environmental and safety investments (amounts committed)**  
(millions of euros)

■ 1 - Cement	128
■ 2 - Aggregates & Concrete	10
■ 3 - Gypsum	10

**Group:** 148

The Gypsum figures are well below reality. Lafarge standards are applied whenever a new plant is built or a major investment is made in an existing plant. These standards consider many aspects linked to safety and the environment, but the costs are not isolated from global investments.

**Persistent pollutants**

Persistent pollutants (such as dioxins, furanes and heavy metals) can be found in emissions in cement plants. Lafarge has undertaken to improve its performance and has been working together with WWF since 2002 on a specific programme to reduce these emissions. In 2006, we finalised the Best Manufacturing Practices on operations, currently subject to experimental validation, and undertook a screening exercise to identify and investigate in-depth potential emitter kilns. Lafarge is making the commitment of performing the baseline analysis on 100% of its kilns by 2010. We will report on our progress. We also reviewed our purchasing practices, see page 48. Lafarge's commitments can be found in the Sustainability Ambitions 2012 on pages 42-43.

**Industrial ecology**

Natural ecosystems are in equilibrium and thus sustainable, provided human activity does not break cycles. Industrial Ecology aims at mimicking the biosphere by optimising the use of every type of resources (inputs, outputs and stocks), and in particular by fostering the use of waste as alternative resource. Cement production is by nature a huge consumer of non renewable resources (minerals and fossil fuels). Sparing these resources is thus a key

issue with regard to the sustainable development of the cement industry. By chance, characteristics inherent in the cement process offer a broad possibility to replace non renewable raw materials and fossil fuels by biomass, waste and by-products from human activity (both from industry and from our day to day life). Therefore, by being active in Industrial Ecology, the cement industry can contribute to sustainable development in a very concrete manner. Not only it saves non renewable resources, but it brings service to the community as well by offering a sound recovery solution for waste. Replacing fossil fuels mitigates CO<sub>2</sub> emissions either by using CO<sub>2</sub> neutral biomass or by using waste which would have been disposed of with additional greenhouse gas effect. In addition it helps in keeping competitiveness in front of the sharp increase of the cost of fossil fuels.

Lafarge has been pioneering Industrial Ecology since the mid seventies and has decided at the end of the nineties to consider Industrial Ecology as a whole complementary activity to the cement core business. Consequently, the cement division has developed professionalism, expertise and dedicated organisation both centrally and within the Business Units.

In 2006, Lafarge recovered more than 6.5 million tonnes of biomass, waste and by-products.

### The Global Reporters 2006 Survey of Corporate Sustainability Reporting

We were pleased to be among the top 50 companies and the only one in our industry in the SustainAbility/UNEP/Standard&Poor's *Tomorrow's Value The Global Reporters 2006 Survey of Corporate Sustainability Reporting*.

This report is in line with two of the key recommendations arising out of that study: simplify and rethink. We have simplified our reporting by focusing more clearly on material issues. We were anyway rethinking and renewing our sustainability targets. This rethink has been approved by the Group's Comex and is summed up in the Sustainability Ambitions 2012.

The report noted "even the biggest multinationals struggle with the issue of how to report on their developing world operations". We trust that our in depth coverage of our impact in emerging economies, and their importance to us, will contribute towards rectifying this imbalance.

We are pleased that SustainAbility/UNEP/Standard&Poor made their report methodology assessment publicly available. It has helped inform our thinking of the development of this report and will make a contribution to our reporting for some year's to come.

## Global Reporting Initiative

In putting together our report we have been mindful of the philosophy underlying the Global Reporting Initiative. Here we explain how we have taken these principles into account in preparing our report.

### Materiality and prioritisation

We have always taken materiality into account. This year we have strengthened this aspect of our reporting in two ways.

The first is by the sharing of our Sustainability Ambitions 2012. These are the culmination of a process of listening to our external and internal stakeholders. We have also considered carefully the commitments made by our peers and competitors.

The Sustainability Ambitions 2012 set out the actions that we are prioritising and why we are prioritising them. They reflect our values as a company. They respond to issues that are important to our stakeholders. They concentrate on key challenges for our industry. They have targets so that we can measure the difference that we make over time.

The second is our internally-driven decision to feature five big issues in our report: emerging economies, climate change, employees, customers and sourcing our raw materials. These are key sustainability issues for us. It is the first time we have devoted a whole section of our report to emerging economies or to customers.

### Completeness

A complete report takes into account the full upstream and downstream effects the company has. As a result of the changes we have made this year we believe that the 2006 report more fully meets this goal than its predecessors did. The section on Sourcing Raw Materials taken with the suppliers section gives a full picture of our downstream impact. The customers section gives the most complete picture to date of our interaction with our customers, how that interaction assists both them and us to be more sustainable.

### Sustainability Context

Sustainability reports must give the information needed to understand sustainability challenge and performance fully. We have always tried to make sure that we do this effectively.

This year we set ourselves the objective of improving on our performance in this area yet further. We hope that the Establishing Understanding section and the development of our use of graphics within the report advance readers' understanding of our sustainability context. In particular following the GRI guidance we have increased context by focusing in on particular markets, such as the emerging economies we report on.

### Comparability

We have maintained the same core suite of measures as in previous reports, though of course, the Roofing Division is no longer included in this report. We have also continued our commitment to give benchmarking data against our industry peers.



Bamburi's nature reserve on a restored quarry, Kenya

Lafarge is a signatory of the UN Global Compact. This report gives more information to show how we are ordering our business in line with the principles of the Global Compact.  
[www.unglobalcompact.org](http://www.unglobalcompact.org)

"This report was prepared in accordance with the 2002 Global Reporting Initiatives guidelines. We believe it gives a reasonable objective view of the Group's sustainability performance and have submitted it to the stakeholder panel for their critical review." **Bruno Lafont, Chairman & CEO of Lafarge**

### Balance

We have maintained our tradition of all-round reporting. For instance in covering the results of the Leader of tomorrow survey, we have reported on the results that encourage us and the results that challenge us.

### Accuracy and timeliness

We trust that we have given a sufficient description in the Comparability of Performance and Reporting Methodology sections to assure the reader that the data at the heart of our report is both accurate and timely.

### Clarity and reliability

We worked with the objective to write a complete and self sufficient report. We have taken care to avoid acronyms and jargon.

### Stakeholder inclusiveness

For us this is an on-going process. Many of the changes we have made in our reporting over time have emerged from the constructive, managed dialogue we have at a Group wide and at a local level.

In addition to the GRI principles of reporting we have two further standards that we constantly bear in mind: humility and constant improvement. We do not think we have got everything right. We do however trust that the efforts we have put into this year's report mean that it is fuller, clear and provides a more material picture than its predecessors. We will be listening and planning carefully to ensure that our 2007 report marks a further step forward in the excellence of our reporting.

A full GRI index can be found on our website.

# Benchmarking our performance

Companies give readers of reports performance data. Yet the data can be hard for non-technical readers to understand because it lacks context. 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 assembled by Ernst & Young. In all cases it relates to the company year ending in 2005. 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 2006 data as, at the time of publishing this report, not all the other companies had published 2006 data.

In each case we give a comment upon the benchmarking comparison for 2005. We note how and whether Lafarge's own performance improved in 2006.

We trust that this assists the reader's understanding and improves the transparency of our report.

## Overview of differences in scope

Company profiles (Base year 2005)

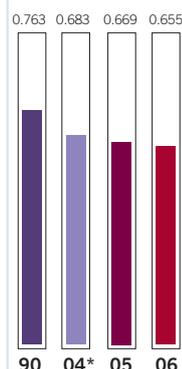
	Turnover (M€)	Employees (Number)	Production (Mt)	Production capacity (Mt)	Countries (Number)	Emergent market countries (%)	
CSI core Members	Cemex	12,986	54,635	98	98	>50	
	CRH	14,449	66,466	12.8		25	
	Holcim	11,876	59,901	113.3		>70	
	Italcementi	5,000	21,854	56.3	70	19	49%
	Lafarge	16,000	80,146	131		76	
	Portland Valderrivas	978	2,328	11		2	
	Taiheiyo	6,527	17,170	22.21		8	30%
	Titan	1,342	6,000	15		6	45%
CSI Participants	Siam Cement	4,506	20,000	55	55	5	100%

**CSI Core members:** CIMPOR, Heidelberg, Uniland: Excluded from benchmarking because no data was made public and readily available in 2005. The latest set of publicly available data is for 2004.  
**CSI Participants** Only Siam Cement is included throughout. Cementos Molins is included solely with regard to safety. The other companies did not provide a sufficient number of indicators.

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

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

(tonnes of CO<sub>2</sub>/tonnes of cement)



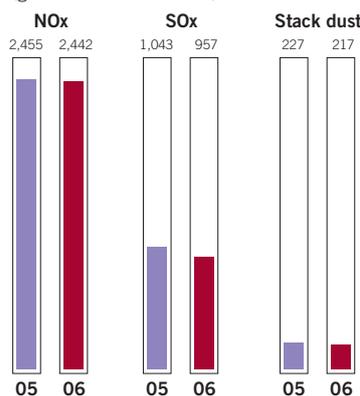
\*In this year's report, the 2004 figures have been recalculated according to the new CO<sub>2</sub> emissions protocol, introduced in 2005.

Six companies disclosed data against this indicator. Lafarge had the second best record in absolute terms. However three companies had made a slightly larger reduction of emissions against the 1990 baseline used for this indicator. In 2006 Lafarge continued the trend of improvement against this indicator.

## Other main atmospheric emissions

### NO<sub>x</sub>, SO<sub>x</sub>, Stack dust emissions

(grammes/tonne of clinker)

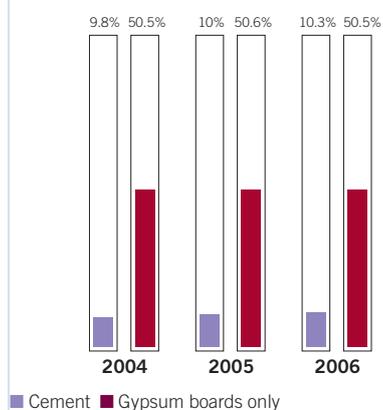


Eight companies reported in 2005 against these indicators. Lafarge has the highest emissions of SO<sub>x</sub> and is sixth highest in terms of NO<sub>x</sub>, though only marginally above the average for the group. In 2005 Lafarge had continuous emissions monitoring in 80% of its facilities, the second highest amongst the benchmarked companies. 2006 saw an improvement in Lafarge's indicators against all three indicators. Also Lafarge now has full coverage compared to 80% in 2005.

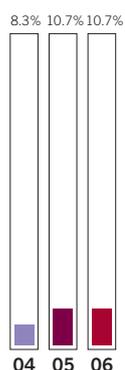
## Raw materials and fuel substitution ratios

### Use of alternative materials

(as a percentage of total material consumed)



### Part of energy from alternative fuels (%)

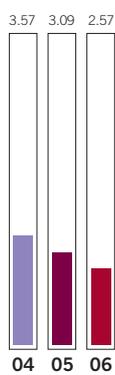


Eight companies reported in 2005 against these indicators. Lafarge ranked fourth in terms of alternative fuel rate and third in terms of alternative raw material rate. In 2006, the apparent stability of the use of Alternative Fuels by Lafarge reflects in fact an increase of more than 10% of the volumes used due to the expanded perimeter of the Group.

## Health and Safety

### Group occupational frequency rate

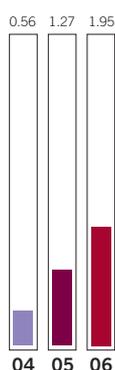
(Number of lost time accidents by million of hours worked)



Nine companies reported their lost time injury frequency rate in 2005. Lafarge was ranked fourth. Lafarge's performance against this indicator improved significantly in 2006.

### Group fatality rate

(Number of fatal accidents per 10,000 employees)



Six companies reported their performance against the group fatality rate in 2005. Lafarge was ranked fourth in this group. Lafarge's performance against this indicator worsened in 2006.

## Local impacts

### Quarries with rehabilitation plan



Seven companies reported in 2005 against this indicator. Lafarge was placed third in this group. In 2006 performance improved.

## PERFORMANCE

# Indicators and correspondence tables

		2005	2006				
Activity	UNIT	GROUP <sup>(E)</sup>	CEMENT	AGGREGATES & CONCRETE	GYPSUM	GRI (2002)	
Sales	billions of euros	14.5	17	8.8	6.4	1.6	EC1
Breakdown of sales by business	%			52%	38%	10%	EC1
Total headcount	number	68,634	70,676	41,191	21,822	6,361	LA1
Breakdown of 2006 headcount by business <sup>(F)</sup>	%			58%	31%	9%	LA1
Annual production	unit of product			143 million tonnes of cement (total physical output)	43 million m <sup>3</sup> of concrete 249 million tonnes of aggregates	705 million m <sup>2</sup> of plasterboards <sup>(A)</sup>	
<b>Management</b>							
Lafarge internal environmental management systems	% of sales	80%	78%	67%	90%	100%	
Of which ISO 14001 certified systems	% of sales	34%	36%	54%	12%	26%	
<b>Environment</b>							
Total energy consumption	millions of toe <sup>(B)</sup>	11.1	11.9	10.9	0.4	0.6	EN3
Water consumption	L/unit of product			355 L/tonne of cement	250 L/m <sup>3</sup> of readymix	5.48 L/m <sup>2</sup> of plasterboards	EN5
% of sites equipped with water recycling system	%	52%	61%	71%	60% <sup>(C)</sup>	55%	
Use of alternative raw materials (plasterboard only for the Gypsum business)	% of total raw materials consumed			10.3%		50.5%	EN2
Waste disposed of	% of total production			0.7%		1.2%	EN11
NOx emissions	g/t clinker			2,442			EN10
SO <sub>2</sub> emissions	g/t clinker			957			EN10
Stack dust emissions <input checked="" type="checkbox"/>	g/t clinker			217			EN10
Quarries with a rehabilitation plan <input checked="" type="checkbox"/>	%	71%	79%	74%	81%	76%	EN27
Specific gross CO <sub>2</sub> emissions <sup>(H)</sup> <input checked="" type="checkbox"/>	t CO <sub>2</sub> /tonne of product			0.670	NA	NA	
Specific net CO <sub>2</sub> emissions <sup>(H)</sup> <input checked="" type="checkbox"/>	t CO <sub>2</sub> /tonne of product			0.655	NA	NA	EN8
Net CO <sub>2</sub> emissions	millions of tonnes	88.4	93.5	92.3	NA	1.2	EN8
LCR R&D budget	millions of euros	24.2	24.2				
Environmental and safety investments (amounts committed)	millions of euros	124	148	128	10	10 <sup>(D)</sup>	EN35
<b>Social / health &amp; safety</b>							
Occupational frequency rate <input checked="" type="checkbox"/>	points	3.09	2.57	2.14	2.78	4.43	LA7
Occupational severity rate	points	0.19	0.17	0.14	0.20	0.23	LA7

(A) and 814 thousand tonnes of powder. (B) TOE: Tonnes of Oil Equivalent. (C) Readymix plants only. (D) The Gypsum figures are well below reality. Lafarge standards are applied whenever a new plant is built or a major investment is made in an existing plant. These standards consider many aspects linked to safety and the environment, but the costs are not isolated from global investments. (E) Proforma excluding roofing. (F) Divisions total = 98%. The remaining 2% represent Group and holding functions. (G) Measured values without estimation would give lower figures (2043 for NOx, 888 for SOx and 171 for dust), according to E&Y measured data. (H) 2006 emissions verified.

### Notes on methodology

The environmental indicators cover 100% of the Group's perimeter. Extrapolations were made when the data for an activity did not cover its entire perimeter. NA: Not Available.  
CO<sub>2</sub> emissions: Gross emissions exclude emissions from biomass combustion only. Net emissions exclude also emissions from alternative fuels corresponding to waste. Specific CO<sub>2</sub> emissions are divided by tonnes of cementitious products which include both clinker production and cement additives used in grinding. CO<sub>2</sub> calculation methodologies and the reconstruction of the 1990 baseline comply with WBCSD-CSI Cement CO<sub>2</sub> Protocol (CO<sub>2</sub> Accounting and Reporting Standard for the Cement Industry, Version 2.0, June 2005)(2004 and 2005 data published in this report are not reconstructed). Emissions factors used by the Group are the WBCSD default values for limestone decarbonation and fuels. For more information on WBCSD-CSI standard: [www.wbcsd.org/chapter Sector Project / Cement](http://www.wbcsd.org/chapter%20Sector%20Project/Cement).  
SOx, NOx, and dust emissions: In accordance with the WBCSD-CSI Guidelines (Guidelines for Emissions Monitoring and Reporting in the Cement Industry, March 2005), the Group reports on dust emissions of the main stacks. Stack emissions (tons/year) are calculated based on concentrations measured at site level and standard flow rates defined at the Group level depending on kiln technology.  
Dust concentrations are measured in kilns representing 88% of clinker production. For the "full scope" data, emissions for the remaining kilns (mainly the ones recently acquired in China) are estimated with standard average values (g/tclinker) based on kilns of similar age and technology. Continuous Emission Monitoring (CEM) systems are installed at kilns representing 77% of clinker production; the rest being measured by spot measurement. SOx and NOx concentrations are measured in kilns representing 78% and 77% of clinker production, respectively.

		2005	2006	
	UNIT	GROUP <sup>(E)</sup>		GRI (2002) <sup>(3)</sup>
<b>Social</b>				
Percentage of women in senior management <sup>(1)</sup> ✓	%	9.6%	10.0%	
<b>Breakdown of staff between permanent and fixed term contracts</b>				LA1
Permanent employees	%	92%	91%	LA1
Fixed-term contracts	%	4.5%	5%	LA1
Temporary employees	%	3.5%	4%	LA1
Percentage of Lafarge employees who attended safety training	%	77%	80%	LA9
Percentage of new recruits who attended safety training	%	94%	92%	LA9
Percentage of Lafarge employees represented by elected staff representatives and / or trade union organisations	%	57%	68%	LA3
<b>Economy - Community</b>				
<b>Restructuring / job cuts</b>				
Percentage of Business Units having implemented a significant headcount reduction impacting more than 5% of the workforce <sup>(2)</sup>	%	9%	10%	
<b>Breakdown of employees affected by reorganisations by personal situation</b>				
Number of Lafarge employees re-employed outside the Group (in another group, or their own business)	number	91	111	
<b>Procurement</b>				
Number of Business Units that have included at least one sustainable development initiative in their PPP ( <i>Purchasing Performance Plan</i> )	number		44	
Number of sustainable development initiatives proposed in PPPs	number		101	

#### Notes on methodology

For the 2006 report, 78 Business Units participated in such reporting, covering 93% of the Group's consolidated workforce.

Sites and environmental audits: Definition of active sites or quarries has been updated in June 2006 in the Lafarge Group Environmental Reporting specification (V2.2). The Environmental Audit Methodology is decided at the Division level for Cement and Gypsum divisions and at the business unit level for the A&C division.

Quarries with a rehabilitation plan: For quarry rehabilitation, four minimum criteria (graphic presentation of final stage, description of various features with intended use, rehabilitation work to be performed, appropriate description of the sequencing of work) have been selected and circulated within the A&C division in December 2006 and then shared with other divisions beginning of 2007. Due to the deadline, the data for Cement division has been roughly estimated with these new criteria. These changes may affect the data comparability between 2005 and 2006.

Lost time injury frequency rate: The 2002 Group Health and Safety Policy has been replaced by the New H&S Policy & Rules. The Group H&S Governance Standard issued in January 2007 defines Lafarge's H&S KPI's that conform with WBCSD-CSI Guidelines (Safety in the cement industry, Guidelines for measuring and reporting, October 2005). To follow the new reduction target on lost time injury frequency rate, the 2005 baseline is reconstructed to take into account for scope changes. For year 2006, China (Cement Division) and Spain (A&C Division), acquired during year 2005, account for the scope changes while the Roofing divestment will impact the 2007 scope.

(1) Percentage of women in senior management: Women whose job is graded by local evaluation committees between 18 and 22 according to the Hay method Reporting on executives is based on voluntary declarations by the Human resources department of the Group's main Business Units. For more information on Hay method: [http://www.haygroup.com/chapter/Service\\_Line/Job\\_evaluation](http://www.haygroup.com/chapter/Service_Line/Job_evaluation).

(2) In 2006, eight Business Units made headcount reductions of more than 5%.

(3) A full GRI index can be found on [www.lafarge.com](http://www.lafarge.com).

✓ Indicators verified by Ernst & Young

# Correspondence with French NRE law

ART 148-2	SOCIAL TOPICS	PAGES	COMMENTS
1.a	Total headcount, hirings (fixed-term/permanent), recruitments, redundancies and reasons, overtime, external manpower	Inside front cover Pages 24-29	
1.b	Headcount reduction and job protection, job-seeking assistance, rehires and supporting measures	Pages 24-29, 56-57	
2	Organization of working time, length of working hours for full-time and part-time employees, absenteeism and reasons	Page 24-29	Absenteeism monitored at Group level relates 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 24-29	See note 32 to our consolidated financial statements for details of payroll charges paid at Group level in 2006
4	Professional relations and appraisal of collective agreements	Pages 24-29	Collective agreements not consolidated at group level
5	Health and safety conditions	Pages 24-29	
6	Training	Pages 24-29	
7	Employment and integration of disabled workers	Pages 24-29	
8	Social initiatives	Pages 49	69 % of companies within the scope defined have set up at least one community programme
9	Importance of subcontracting	Pages 24-29	
ART 148-3	ENVIRONMENTAL TOPICS	PAGES	COMMENTS
1	Consumption of water, raw materials and energy. Measures taken to improve energy efficiency, use of renewable energy, usage of soil, emissions into air, water and soil, noise pollution, offensive odors, waste	Pages 20-21, 50-51, 56-57	Noise pollution relates mainly to cement plant crushers, explosions at quarries and circulation of trucks and extraction machinery. At Group level we monitor only waste sent to landfill
2	Measures taken to limit harm to biological equilibrium, natural environments and protected fauna and flora	Pages 41	
3	Evaluation or certification measures taken on environmental matters	Pages 56-57	
4	Measures taken to ensure the company's activities comply with the laws and regulations applicable to this matter	See below	
5	Expenditure incurred to avert any impact on the environment from the company's activities	Pages 50-51, 56-57	
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 50-51, 56-57	
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 below	
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 below	
9	All elements of the objectives set by the company for its foreign subsidiaries with regard to points 1 to 6 above	Pages 42-43	

**1.2. Organization of working time:** This varies according to the rules in force in the countries where the Group is present or according to the functions performed. As a result, the details (variable hours, length of working day, etc) are relatively diversified and cannot be consolidated. In 2006, 12% of Business Units were found to be in breach of working time standards. **2.4. Measures taken to ensure the company's activities comply with the laws and regulations applicable to this matter:** Environmental audits, which are conducted at least every four years, include verification of compliance with regulations. **2.7 Amount of provisions and guarantees for environment-related risks:** 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 €240 million in 2006. **2.8. 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:** The Group made no major payment of this kind in 2006. No major payment at local level was notified to the Group.

# Comparability of performance

## Benchmarking WBCSD Cement Sustainability Initiative

To assist stakeholders' and analysts' need for easily comparable data we have benchmarked our performance against competitors who are members of the WBCSD Cement Sustainability Initiative. Benchmarking can be found on pages 54-55. The data was compiled 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 2005, and for 2006 when available.

All comparisons must be considered taking into account differences in each company's scope and reporting perimeters. The table on page 54 gives an overview of such factors, which sometimes limits the relevance of such comparisons.

## Evaluation by SAM (DJSI Index)

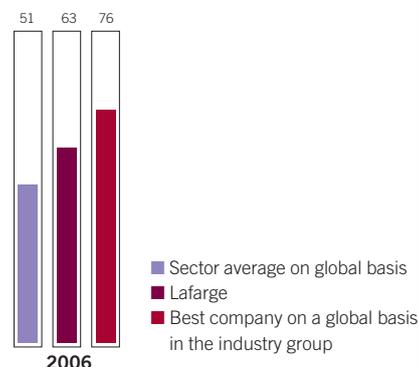
Lafarge had an overall score of 63% in 2006. Lafarge exceeded the average scores in all three dimensions: economic, environmental and social. Lafarge achieved the best scores for environmental and social reporting of any company in the group. In the economic dimension Lafarge's best score was in the corporate governance element where we came just short of the leader.

As a result of actions taken during the year and as a result of our sustainability ambitions for 2012, we believe that the 2007 evaluation will recognise improvements in our customer relationship management, corporate citizenship and occupational health and safety scores. Lafarge is a member of DJSI STOXX index. It fell just one point short of qualifying for the DJSI world Index.

## Evaluation by Vigeo

Lafarge leads the buildings materials sector in Vigeo's latest survey in community involvement, customers and suppliers, environment, human resources and in human rights. In all cases Vigeo gives Lafarge a ++ rating. The only area where Lafarge is not rated by Vigeo as leader is corporate governance. Vigeo cites the Lafarge stakeholder panel as best practice within the sector. Vigeo is a company whose shares are held 27.96% by French labour unions, 27.16% by large listed French companies. Lafarge holds 0.73% of the Vigeo equity.

Note SAM/DJSI (Score global)



## Benchmarking our performance

Presence in main sustainability stock indices

Index / Rating Agency	FTSE4Good World / EIRIS	FTSE4Good Europe / EIRIS	DJSI World / SAM	DJSI STOXX / SAM	ESI / ETHIBEL	ASPI / Vigeo
Lafarge	●	●		●	●	●
Cemex						
CRH	●	●	●	●	●	●
Heidelberg	●	●				
Holcim	●	●	●	●	●	
Hanson-BPB						
Saint-Gobain	●	●				●

## Governance index

TOPIC	PAGE REFERENCE
Business strategy and sustainable development vision	Pages 42-43
CEO statement	Pages 2-3
Company profile	Pages 8-9
Compensation link to performance on Form 20-F Section 5	See Annual Report 2006
Competition law	Page 10
Customer influence market shaping	Pages 30-35
Governance and structure	Page 11
Independence of directors	Page 10
Industry influence	Page 59
Industry profile	Pages 6-7
Informing consulting employees	Page 27
Investor relations	Page 45
Issue identification and prioritisation	Pages 42-43
Management procedures	Pages 11, 60
Meeting tomorrow's needs	Pages 6-7, 30-35
Opportunities	Pages 30-35
Philanthropy/Social Investment	Page 49
Political contributions	Page 10
Public policy/regulatory affairs	Pages 46-47
Risk management	Page 10
Sarbanes Oxley	Page 10
Stakeholder engagement	Page 44, and comments throughout pages 12-41
Sustainable Development Implementation challenges	Covered throughout but especially in the Big Issues sections pages 12-41
Value chain management	Page 48
Values, Principles, Policies	Page 10

# 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, were drawn up in 2004 and updated in 2005. A document specific to the cement business, Business System Reference, completes the Group's reference standards for indicators relating solely to the cement business, such as CO<sub>2</sub> emissions and dust emissions.

We have developed the social reporting standards over the last four years, trying to improve the system and adapting the reporting to our priorities. Our reporting is based on the Group Policies and Group Standards: Global Compact Principles and ILO conventions. Pages 52-53 outline how our reporting takes into account the GRI G3 principles.

Our health and safety management systems in the workplace have been developed taking into account our 2006 Health and Safety Policy and Rules.

## Reporting perimeter

Environmental reporting covers all the Business Units and their industrial production sites under the Group's business control throughout the world.

Over time, Lafarge acquires whole or interest in new existing sites. New sites acquired are never fully in line with Lafarge standards. As a rule, we give a maximum of three years to meet our standards fully. This delay corresponds to CSI recommendations. The three year period is necessary to implement the appropriate management and data collection system, and to yield reliable data for reporting. In the data reporting, standards figures are

used until the Business Unit Performance is reliable, in any case never later than the fourth year after the acquisition date. Data is published with the relevant coverage factor indicated.

With regard to the targets for reduction we have set for dust/SO<sub>x</sub>/NO<sub>x</sub> the 2005 baseline reference for emissions will be retroactively recalculated with the 2005 performances of the new consolidated sites. This rule is identical to the one approved for CO<sub>2</sub> emissions. Our social reporting is based on voluntary declarations by the human resources departments of the Group's Business Units. For the 2006 report, 78 Business Units participated, covering 93% of the Group's consolidated workforce.

Where not stated otherwise, the indicators presented do not include data relating to the Roofing division.

## Consolidation and control

Social data is consolidated and controlled by the Group's Social Policies Department.

Environmental data is consolidated and controlled within each business line and is then consolidated at Group level.

Data on our CO<sub>2</sub> emissions relates solely to the direct emissions from the cement business. For this indicator alone the 1990 perimeter is reconstructed each year to provide comparability with the past year.

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.

## 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. The voluntary nature of the questionnaire sent to human resources departments for some of the social reporting means that it is not possible to cover 100% of the Group's workforce; moreover the reliability of the data collected via Peoplesoft human resources software depends on the frequency of updating information in the system- as it is a voluntary process, updating is not systematically controlled by the Group.

This is why for some indicators, we have specified the definitions and methodologies used and, where applicable, the associated limits and margins of uncertainty. This applies in particular to the indicators: Percentage of women in senior management (page 28), Our emissions data (page 21) and quarries with rehabilitation plan conforming to Group standards (page 40).

# Ernst & Young Assurance

Lafarge, S.A. — Financial year ended on December 31, 2006  
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 as statutory auditor of Lafarge, we have performed a limited review on the environmental, safety and human resources indicators for the financial year 2006 identified by the ✓ symbol in the sustainable development report on pages 43, 56 and 57 (the "Indicators").

These Indicators were prepared under the responsibility of Lafarge's Sustainable Development and Public Affairs Department, in accordance with the reporting criteria applicable in 2006 (the Reporting Criteria), consisting of:

- External standards and guidelines elaborated by the Cement Sustainable Initiative (CSI) of the World Business Council for Sustainable Development (WBCSD) for environmental and safety indicators and the international Hay job evaluation method for data concerning 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 60 under the heading "reporting methodology" and in the comments related to the presentation of indicators on pages 56 and 57 of the Sustainable development report.

It is our responsibility to express a conclusion on these Indicators on the basis of our review.

## Nature and scope of our review

We performed the following review to obtain limited assurance that the Indicators are free of material misstatements. A higher level of assurance would have required more extensive work.

- We have assessed the Reporting Criteria with respect to its relevance, completeness, neutrality, understandability, and reliability.
- At the Group level and the Cement, Concrete and Aggregates, and Gypsum Branch levels, we have conducted interviews with the persons responsible for environmental, safety, and human resources 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:

– Clinker, cement and additives production data used for the denominator of specific CO<sub>2</sub> and dust emissions with data issued from the financial control,

– CO<sub>2</sub> emissions with figures declared to authorities and verified in the framework of the European Trading Scheme.

- We have selected a sample of seven sites or business units<sup>2</sup> 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 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.

On average, our tests covered 26% of environmental indicators<sup>3</sup>, 12% of hours worked used in the calculation of the lost time injury frequency rate, and 8% of senior management staff.

In performing our review, we were assisted by our specialized sustainable development teams, which are placed under the responsibility of Mr. Duvaud.

## Information about the Reporting Criteria

### Relevance

- The Group publishes key performance indicators defined for cement manufacturing activities by the Cement Sustainable Initiative (CSI) of the World Business Council for Sustainable Development (WBCSD),
- 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 methodological notes on pages 56, 57 and 60.

### Completeness

- The reporting perimeters for environment, safety, and human resources data are specified in the "Reporting Methodology" section on page 60,
- The Indicator reporting perimeter aims to cover the entire Group worldwide. Methods for estimating missing data, notably atmospheric emissions of recently-acquired facil-

ities in China, and the perimeters covered by the Indicators expressed in percentage of quantities produced or headcount have been indicated where applicable.

### Neutrality

- The Group provides information on the methodologies used to establish the Indicators in the Methodological Note on page 60 and in the comments next to the data published on pages 56 and 57, in particular, for the Indicators "percentage of women in senior management," "quarries with a rehabilitation plan," "share of audited sites," and "dust emissions."

### Reliability

- The internal controls carried out by the environment, technical, and financial departments is high for production data (cement, clinker, and fuels) used in the calculation of CO<sub>2</sub> emissions and the denominator of specific emissions (CO<sub>2</sub> and dust). However, the potential for misunderstanding has to be reduced and internal controls need to be strengthened for indicators related to site audits, quarry rehabilitation, women in senior management, dust emissions, and number of hours worked used in the calculation of the lost time injury frequency rate.

## Conclusion

- During our review, we detected inconsistencies in the application of the new definitions for the "quarries with a rehabilitation plan" indicator.
- For the "percentage of women in senior management" indicator, we are not able to express a conclusion given the identified risks of outdated and incomplete data.

Based on our review, and except for the qualifications described above, 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 26, 2007

The Statutory Auditor  
ERNST & YOUNG Audit

**Alain Perroux**

**Eric Duvaud**

1 | [www.wbcsd.org/](http://www.wbcsd.org/) Sector Project/ Cement and [www.haygroup.com/](http://www.haygroup.com/) Service Line / Job evaluation 2 | Four cement plant outside of the European Union: Korkino (Russia), Sonadih (India), Meknes and Tétouan (Morocco) and three business units of the Concrete and Aggregates Branch: Lafarge Béton (France), Lafarge UK Aggregates, and Lafarge East Canada. 3 | 30% of net CO<sub>2</sub> emissions, 18% of dust emissions, 37% of sites and 21% of active quarries.

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**www.lafarge.com**

Since 2002, Lafarge provides 2,000 tonnes of sand to Paris from a nearby quarry for its annual Paris-Beach Summer event, delivering it by barge rather than trucks to reduce transport nuisance. At the end of this event, Lafarge entirely recycles the sand into construction materials.

